IFRS® Sustainability

July 2025

Exposure Draft

SASB® Standards

Proposed amendments to the SASB Standards

Comments to be received by 30 November 2025

International Sustainability Standards Board

SASB/ED/2025/1

Exposure Draft of Proposed Amendments to the SASB Standards

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INTRODUCTION

Why is the ISSB publishing this Exposure Draft?

IN1 As part of its 2024–2026 work plan, the International Sustainability Standards Board (ISSB) is enhancing the SASB Standards to provide timely support to entities in applying IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* (IFRS S1) and IFRS S2 *Climate-related Disclosures* (IFRS S2).

IN2 The SASB Standards serve as a source of guidance for entities applying IFRS S1. IFRS S1 does not require entities to apply the SASB Standards. However, the SASB Standards help entities develop decision-useful and comparable disclosures in the absence of specific IFRS Sustainability Disclosure Standards.

Summary of the proposals in the Exposure Draft

IN3 The Exposure Draft sets out proposed amendments to nine SASB Standards that have been prioritised by the ISSB for comprehensive review (priority industries):[1]

(a) the *Coal Operations* SASB Standard;

(b) the *Construction Materials* SASB Standard;

(c) the *Iron & Steel* SASB Standard;

(d) the *Metals & Mining* SASB Standard;

(e) the *Oil & Gas – Exploration & Production* SASB Standard;

(f) the *Oil & Gas – Midstream* SASB Standard;

(g) the *Oil & Gas – Refining & Marketing* SASB Standard;

(h) the *Oil & Gas – Services* SASB Standard; and

(i) the *Processed Foods* SASB Standard.

IN4 The ISSB also proposes making targeted amendments to other SASB Standards beyond the priority industries to maintain consistent disclosures on common topics among industries, where appropriate. The targeted amendments would affect disclosure topics and metrics related to:

(a) greenhouse gas emissions;

(b) energy management;

(c) water management;

[1] The ISSB intends to publish an exposure draft of proposed amendments to three additional prioritised industries before the end of 2025 (the *Agricultural Products* SASB Standard, the *Meat, Poultry & Dairy* SASB Standard and the *Electric Utilities & Power Generators* SASB Standard).

(d) labour practices; and

(e) workforce health and safety.

IN5 Forty-one additional industries would be affected by the proposed targeted amendments. A full list of the SASB Standards and metrics that would be affected by the proposed targeted amendments can be found in Appendix A to the accompanying Basis for Conclusions.

IN6 The objective of the project is to support the high-quality implementation of IFRS S1 and IFRS S2 through timely enhancements to the SASB Standards, including a focus on:

(a) further enhancing the international applicability of:

(i) industry groupings, including to reflect value chains in emerging markets and developing economies;

(ii) disclosure topics in those industry groupings; and

(iii) metrics and supporting technical protocols;[2]

(b) exploring opportunities to improve interoperability with other sustainability-related standards and frameworks, while ensuring continued focus on the needs of investors in order to serve as a global baseline of sustainability-related disclosures to meet the needs of capital markets;

(c) exploring opportunities to amend the disclosure topics and metrics in the SASB Standards related to biodiversity, ecosystems and ecosystem services (BEES) and human capital, to align the SASB enhancements with the ISSB's research projects on those topics and to enable feedback on this Exposure Draft to provide input to those research projects; and

(d) exploring opportunities to align the language and concepts in the SASB Standards with IFRS Sustainability Disclosure Standards.

IN7 The proposed amendments are also intended to enhance the SASB Standards' clarity, conciseness and cost-effectiveness for preparers.

Due process provisions applicable to the Exposure Draft

IN8 The ISSB ratified the Exposure Draft in June 2025. Consistent with the due process applicable to IFRS Sustainability Disclosure Standards, all comment letters and responses on the proposed amendments will be posted on the IFRS Foundation's website.

IN9 Further information about the due process used to develop the Exposure Draft can be found in paragraphs BC22–BC26 of the accompanying Basis for Conclusions.

[2] The term 'metrics' in the SASB Standards is used to describe disclosures and encompasses qualitative and quantitative information. The technical protocols provide guidance on definitions, scope, implementation and presentation of metrics.

When would the proposed amendments be effective?

IN10 The ISSB proposes to set an effective date for the amendments to the SASB Standards that will occur between 12 and 18 months after their issuance and permits early application.

IN11 The ISSB will decide the effective date of the amendments after considering the feedback on the proposed amendments.

Next steps

IN12 The ISSB will discuss the feedback on the Exposure Draft and decide whether and, if so, how to amend the SASB Standards.

INVITATION TO COMMENT

The ISSB invites comments on the proposals in this Exposure Draft, particularly on the questions set out in this section. The ISSB expects that some stakeholders will want to comment on all the proposals set out in the Exposure Draft, whereas others might only have comments on specific elements, such as the SASB Standard for a particular industry or the proposed targeted amendments relating to a particular topic.

To enable stakeholders to provide feedback on the area or areas of interest to them, the questions have been grouped to show whether they relate to more than one SASB Standard or to a particular industry. The ISSB encourages stakeholders to use the online survey to submit comments. The survey has been designed to enable stakeholders to respond either to all aspects of the Exposure Draft or only to the questions relevant to their perspectives and areas of interest.

Comments are most helpful if they:

(a) respond to the questions as stated;

(b) specify the part of the SASB Standards (for example, disclosure topic name or metric code) to which they relate;

(c) contain a clear rationale;

(d) identify jurisdiction-specific considerations that could affect the relevance, decision-usefulness or cost of preparing particular disclosures;

(e) identify any wording in the proposals that is not clear or would be difficult to translate; and

(f) include any alternative the ISSB should consider, if applicable.

Respondents need not answer all the questions in this invitation to comment.

Questions for respondents—Proposed approach to the amendments

QUESTION 1—OBJECTIVE
The ISSB is proposing to amend the SASB Standards with the objective of providing timely support to entities applying IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* and IFRS S2 *Climate-related Disclosures*. The proposed amendments have been drafted under the assumption that an entity would apply the SASB Standards alongside IFRS Sustainability Disclosure Standards. This assumption allows the SASB Standards to remain targeted and proportionate while avoiding unnecessary duplication of requirements already included in IFRS S1 and IFRS S2. The proposed amendments aim: • to further enhance the international applicability of: ◦ industry groupings, including to reflect value chains in emerging markets and developing economies; ◦ disclosure topics in those industry groupings; and ◦ metrics and supporting technical protocols; • to improve interoperability with other sustainability-related standards and frameworks, while ensuring continued focus on the needs of investors in order to serve as a global baseline of sustainability-related disclosures to meet the needs of capital markets; • to amend the disclosure topics and metrics in the SASB Standards related to biodiversity, ecosystems and ecosystem services (BEES) and human capital, to align the SASB enhancements with the ISSB's research projects on those topics and to enable feedback on this Exposure Draft to provide input to those research projects; • to align the language and concepts in the SASB Standards with IFRS Sustainability Disclosure Standards; and • to enhance the SASB Standards' clarity, conciseness and cost-effectiveness for preparers. (a) Do you agree with the objective of the proposed amendments to the SASB Standards and related areas of focus? (b) Do the proposed amendments meet this objective? Why or why not?

QUESTION 2—ENHANCEMENTS TO INTEROPERABILITY WITH OTHER STANDARDS AND FRAMEWORKS
In considering necessary amendments to the SASB Standards, the ISSB has identified possible amendments that would enhance the interoperability and alignment of the SASB Standards with other sustainability-related standards and frameworks, such as those of the Global Reporting Initiative (GRI), European Sustainability Reporting Standards, and the guidance published by the Taskforce on Nature-related Financial Disclosures (TNFD). Paragraphs BC33–BC41 of the Basis for Conclusions explain the approach taken to improving interoperability and alignment with other sustainability-related standards and frameworks. Appendix B of the Basis for Conclusions provides a list of some of the proposed amendments that would enhance interoperability with the GRI Standards and alignment with TNFD disclosure recommendations, while maintaining a focus on the needs of primary users of general purpose financial reports. (a) Do you agree with the proposed approach to enhancing interoperability and alignment with other sustainability-related standards and frameworks? Why or why not? (b) Do you agree that the proposed amendments to the nine priority industries and targeted amendments to other SASB Standards will result in improved interoperability and thus achieve the objectives of improving the decision-usefulness of disclosed information for primary users and cost-effectiveness for preparers? Why or why not? (c) Could the interoperability and alignment of any disclosure topics or metrics be further enhanced while achieving the objectives of improving the decision-usefulness and cost-effectiveness of the information? What amendments would you propose and why?

QUESTION 3—AMENDMENTS TO THE CLIMATE-RELATED CONTENT IN THE SASB STANDARDS
The ISSB is proposing to enhance the nine priority industries comprehensively, including the climate-related content in the priority industries. The ISSB also is proposing targeted amendments to some climate-related metrics in other SASB Standards. The proposed amendments are intended to assist preparers in identifying climate-related risks and opportunities and to enhance the decision-usefulness of industry-specific information about these risks and opportunities. The *Industry-based Guidance on Implementing IFRS S2* (IFRS S2 industry-based guidance) is derived from, and is largely identical to, the climate-related content in the SASB Standards. The ISSB has maintained alignment between the SASB Standards and the IFRS S2 industry-based guidance. Therefore, the ISSB considered that the proposed amendments to the climate-related content in the SASB Standards could have implications for preparers who are implementing IFRS S2. The ISSB decided that it should propose making consequential amendments to the IFRS S2 industry-based guidance should it amend the climate-related content in the SASB Standards. That proposal is set out in the separate Exposure Draft *Proposed Amendments to the Industry-based Guidance on Implementing IFRS S2*. The ISSB also considered how it could use the effective date of the final amendments to ensure that they would not negatively affect preparers' implementation of IFRS S1 and IFRS S2. (a) Do you agree that the ISSB should amend the climate-related content in the SASB Standards for the priority industries and make targeted amendments to the climate-related content in the SASB Standards for other industries, as proposed in this Exposure Draft? Why or why not? (b) Do you agree that the proposed amendments would enhance the decision-usefulness of the industry-specific information about climate-related risks and opportunities? Why or why not? (c) Do you agree that the proposed amendments would further clarify how the climate-related content in the SASB Standards and the IFRS S2 industry-based guidance relates to the requirements in IFRS S2?

QUESTION 4—INFORMATION RELATED TO BIODIVERSITY, ECOSYSTEMS AND ECOSYSTEM SERVICES AND HUMAN CAPITAL

The ISSB proposes to amend disclosure topics and metrics in the SASB Standards related to biodiversity, ecosystems and ecosystem services (BEES) and human capital. The ISSB is pursuing research projects on BEES and human capital.[3]

The ISSB seeks to understand the extent to which the SASB Standards, and the proposed amendments, meet user needs for information on risks and opportunities related to BEES and human capital.

(a) Do the SASB Standards, including the proposed amendments, enable entities to provide decision-useful information about their BEES-related risks and opportunities to users of general purpose financial reports? Why or why not?

(b) In the nine industries that the ISSB has prioritised for enhancement in the Exposure Draft, are there other BEES-related disclosures not addressed through the proposed amendments that would be useful for users of general purposes financial reports in their decision-making? If so, please explain which disclosures and why.

(c) Do the SASB Standards, including the proposed amendments, enable entities to provide decision-useful information about their human capital-related risks and opportunities to users of general purpose financial reports? Why or why not?

(d) In the nine industries that the ISSB has prioritised for enhancement in the Exposure Draft, are there other human capital-related disclosures not addressed through the proposed amendments that would be useful for users of general purposes financial reports in their decision-making? If so, please explain which disclosures and why.

QUESTION 5—EFFECTIVE DATE

The ISSB proposes to set an effective date for the amendments that will occur between 12 and 18 months after their issuance and permits early application. The ISSB's rationale for this proposal can be found in paragraph BC161 of the Basis for Conclusions.

Do you agree with the proposed approach for setting the effective date of the amendments and permitting early application? Why or why not?

3 'Biodiversity, ecosystems and ecosystem services (BEES)' refers to biodiversity as a foundational characteristic of natural systems and a proxy for functional, productive and resilient ecosystems that provide the ecosystem services upon which life on earth relies. 'Human capital' refers to the people who make up a company's own workforce and workers in the company's value chain. Further descriptions of these terms and the research projects can be found in the ISSB's June 2024 *Feedback Statement on Consultation on Agenda Priorities*: https://www.ifrs.org/content/dam/ifrs/project/issb-consultation-on-agenda-priorities/agenda-consultation-feedback-statement-june-2024.pdf.

Questions for respondents—Proposed amendments to individual SASB Standards

QUESTION 6—*COAL OPERATIONS* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Coal Operations* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Coal Operations* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

The ISSB proposes:

- to revise the Coal Operations industry description;
- to add two activity metrics relating to workforce composition;
- to revise the Greenhouse Gas Emissions disclosure topic and associated metrics, and add metric EM-CO-110a.3 *Total Scope 1 methane emissions*;
- to revise the Water Management disclosure topic and associated metrics, remove metric EM-CO-140a.2 and add three metrics:
  - EM-CO-140a.3 *Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress*;
  - EM-CO-140a.4 *Total water discharged by (1) destination and (2) level of treatment*; and
  - EM-CO-140a.5 *Percentage of production from mine sites where acid and metalliferous drainage (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation*;
- to revise the Waste Management disclosure topic and associated metrics, including changing the disclosure topic name to Waste & Hazardous Materials Management;
- to revise the Biodiversity Impacts disclosure topic and associated metrics, including changing the disclosure topic name to Ecological Impacts, remove metric EM-CO-160a.2 and add metric EM-CO-160a.4 *(1) Total spatial footprint of operations, (2) area disturbed and (3) area restored*;
- to revise the metrics in the Rights of Indigenous Peoples disclosure topic, relocate them to the Community Relations disclosure topic and rename the topic ‘Community Relations & Rights of Indigenous Peoples’, resulting in the metrics:
  - EM-CO-210b.3 *Percentage of (1) proved and (2) probable coal reserves in or near Indigenous Peoples’ land*; and
  - EM-CO-210b.4 *Description of engagement processes and due diligence practices related to upholding Indigenous Peoples’ rights*;

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QUESTION 6—*COAL OPERATIONS* SASB STANDARD

- to add an Operations in Conflict Areas disclosure topic and two metrics:
    - EM-CO-210c.1 *Percentage of (1) proved and (2) probable coal reserves in conflict-affected and high-risk areas*; and
    - EM-CO-210c.2 *Description of engagement processes and due diligence practices related to operating in conflict-affected and high-risk areas*;
- to revise the Labour Relations disclosure topic and associated metrics, including changing the disclosure topic name to Labour Practices;
- to revise the Workforce Health & Safety disclosure topic and associated metrics;
- to revise the Reserves Valuation & Capital Expenditures disclosure topic and associated metrics, including changing the disclosure topic name to Climate Resilience; and
- to revise the Tailings Storage Facilities Management disclosure topic and associated metrics.

The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals.

(a) Do you agree with the proposed amendments to the *Coal Operations* SASB Standard? Why or why not?

(b) Do you agree with the Coal Operations industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not?

(c) Do you agree with the disclosure topics in the *Coal Operations* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry?

(d) Do you agree with the metrics and technical protocols in the *Coal Operations* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to primary users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why?

(e) Do you agree with the proposed addition of metric EM-CO-110a.3 *Total Scope 1 methane emissions*? Why or why not? If not, what would you suggest instead and why?

(f) Are there any jurisdictional considerations related to the *Coal Operations* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain.

(g) Do you have any comments on how the proposed amendments would affect the *Coal Operations* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 7—*CONSTRUCTION MATERIALS* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Construction Materials* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Construction Materials* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

The ISSB proposes:

- to revise the Construction Materials industry description;
- to add two activity metrics relating to workforce composition;
- to revise the Greenhouse Gas Emissions disclosure topic and associated metrics;
- to revise the Air Quality disclosure topic and associated metric;
- to revise the Energy Management disclosure topic and associated metric;
- to revise the Water Management disclosure topic and associated metric;
- to revise the Waste Management disclosure topic and associated metric;
- to revise the Biodiversity Impacts disclosure topic and associated metrics, including changing the disclosure topic name to Ecological Impacts;
- to revise the Workforce Health & Safety disclosure topic and associated metrics;
- to revise the Product Innovation disclosure topic and associated metrics;
- to add a Supply Chain Management disclosure topic and associated metric EM-CM-430a.1 *Description of the process to manage supply chain risks arising from environmental and social issues*; and
- to revise the Pricing Integrity & Transparency disclosure topic and associated metric.

The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals.

(a) Do you agree with the proposed amendments to the *Construction Materials* SASB Standard? Why or why not?

(b) Do you agree with the Construction Materials industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not?

(c) Do you agree with the disclosure topics in the *Construction Materials* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry?

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QUESTION 7—*CONSTRUCTION MATERIALS* SASB STANDARD

(d) Do you agree with the metrics and technical protocols in the *Construction Materials* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to primary users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why?

(e) Do you agree with the proposed addition of the Supply Chain Management disclosure topic and associated metric? If you disagree, which aspects do you disagree with and what would you suggest instead?

(f) Are there any jurisdictional considerations related to the *Construction Materials* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain.

(g) Do you have any comments on how the proposed amendments would affect the *Construction Materials* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 8—*IRON & STEEL PRODUCERS* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Iron & Steel Producers* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Iron & Steel Producers* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

The ISSB proposes:

- to revise the Iron & Steel Producers industry description;
- to revise the activity metric EM-IS-000.A, add two activity metrics relating to workforce composition and add one activity metric to disaggregate recycled steel production;
- to revise the Greenhouse Gas Emissions disclosure topic and associated metrics;
- to revise the Air Quality disclosure topic and associated metric;
- to revise the Energy Management disclosure topic and one associated metric, and remove one metric;
- to revise the Water Management disclosure topic and associated metric;
- to revise the Waste Management disclosure topic and associated metric;

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QUESTION 8—*IRON & STEEL PRODUCERS* SASB STANDARD

- to add a Labour Practices disclosure topic and two associated metrics:
    - EM-IS-310a.1 *Percentage of employees covered by collective agreements*; and
    - EM-IS-310a.2 *(1) Number of work stoppages and (2) the total days idle*;
- to revise the Workforce Health & Safety disclosure topic and associated metric; and
- to revise the Supply Chain Management disclosure topic and associated metric.

The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals.

(a) Do you agree with the proposed amendments to the *Iron & Steel Producers* SASB Standard? Why or why not?

(b) Do you agree with the Iron & Steel Producers industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not?

(c) Do you agree with the disclosure topics in the *Iron & Steel Producers* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry?

(d) Do you agree with the metrics and technical protocols in the *Iron & Steel Producers* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why?

(e) Are there any jurisdictional considerations related to the *Iron & Steel Producers* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain.

(f) Do you have any comments on how the proposed amendments would affect the *Iron & Steel Producers* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 9—*METALS & MINING* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Metals & Mining* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Metals & Mining* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments achieve the objective of meeting the needs of users in a manner that is cost-effective for preparers.

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QUESTION 9—*METALS & MINING* SASB STANDARD
The ISSB proposes: • to revise the Metals & Mining industry description; • to revise the activity metrics and add one activity metric relating to workforce composition; • to revise the Greenhouse Gas Emissions disclosure topic and associated metrics; • to revise the Air Quality disclosure topic and associated metric; • to revise the Water Management disclosure topic and one associated metric, remove one metric and add three metrics: ◦ EM-MM-140a.3 *Total water discharged by (1) destination and (2) level of treatment*; ◦ EM-MM-140a.4 *Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress*; and ◦ EM-MM-140a.5 *Percentage of production from mine sites where acid and metalliferous drainage (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation*; • to revise the Waste & Hazardous Materials Management disclosure topic and associated metrics; • to revise the Biodiversity Impacts disclosure topic and associated metrics, including changing the disclosure topic name to Ecological Impacts, and to remove one metric and add metric EM-MM-160a.4 *(1) Total spatial footprint of operations, (2) area disturbed and (3) area restored*; • to revise the Security, Human Rights & Rights of Indigenous Peoples disclosure topic and associated metrics through separating them into two disclosure topics: a revised Community Relations disclosure topic titled Community Relations & Rights of Indigenous Peoples, and a new disclosure topic, Operations in Conflict Areas. Revisions to the metrics would include: ◦ revising metrics EM-MM-210a.2 and EM-MM-210a.3 and relocating them to the revised Community Relations & Rights of Indigenous Peoples disclosure topic with new metrics EM-MM-210b.3 and EM-MM-210b.4; ◦ revising metric EM-MM-210a.1 and relocating it to the proposed Operations in Conflict Areas disclosure topic as metric EM-MM-210c.1; and ◦ adding new metric EM-MM-210c.2 to the proposed Operations in Conflict Areas disclosure topic; • to revise the Labour Practices disclosure topic and associated metrics; • to revise the Workforce Health & Safety disclosure topic and associated metric and add metric EM-MM-320a.2 *Description of management systems used to foster a safe working environment*; • to add a Supply Chain Management disclosure topic and associated metric EM-MM-430a.1 *Description of the process to manage supply chain risks arising from environmental and social issues*;

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QUESTION 9—*METALS & MINING* SASB STANDARD

- to revise the Business Ethics & Transparency disclosure topic, including changing the disclosure topic name to Business Ethics, and associated metrics; and

- to revise the Tailings Storage Facilities Management disclosure topic and associated metrics.

The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals.

(a) Do you agree with the proposed amendments to the *Metals & Mining* SASB Standard? Why or why not?

(b) Do you agree with the Metals & Mining industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not?

(c) Do you agree with the disclosure topics in the *Metals & Mining* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry?

(d) Do you agree with the metrics and technical protocols in the *Metals & Mining* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why?

(e) Do you agree with the proposed addition of a Supply Chain Management disclosure topic and associated metric? Why or why not? If not, what would you suggest instead and why?

(f) Are there any jurisdictional considerations related to the *Metals & Mining* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain.

(g) Do you have any comments on how the proposed amendments would affect the *Metals & Mining* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 10—*OIL & GAS – EXPLORATION & PRODUCTION* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Oil & Gas – Exploration & Production* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Oil & Gas – Exploration & Production* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

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QUESTION 10—*OIL & GAS – EXPLORATION & PRODUCTION* SASB STANDARD

The ISSB proposes:

- to revise the Oil & Gas – Exploration & Production industry description;
- to revise the activity metrics and add two activity metrics relating to workforce composition;
- to revise the Greenhouse Gas Emissions disclosure topic and associated metrics and add metric EM-EP-110a.4 *Total Scope 1 methane emissions*;
- to revise the Air Quality disclosure topic and associated metric.
- to revise the Water Management disclosure topic and associated metrics and add two new metrics:
    - EM-EP-140a.5 *Total water discharged by (1) destination and (2) level of treatment*; and
    - EM-EP-140a.6 *Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress*;
- to revise the Biodiversity Impacts disclosure topic and associated metrics, including changing the disclosure topic name to Ecological Impacts, and to add metric EM-EP-160a.4 *(1) Total spatial footprint of operations, (2) area disturbed and (3) area restored*;
- to revise the Security, Human Rights & Rights of Indigenous Peoples disclosure topic and associated metrics through separating them into two disclosure topics: a revised Community Relations disclosure topic titled Community Relations & Rights of Indigenous Peoples, and a new disclosure topic, Operations in Conflict Areas. Revisions to the metrics would include:
    - revising metrics EM-EP-210a.2 and EM-EP-210a.3 and relocating them to the revised Community Relations & Rights of Indigenous Peoples disclosure topic as new metrics EM-EP-210b.3 and EM-EP-210b.4;
    - revising metric EM-EP-210a.1 and relocating it to the proposed Operations in Conflict Areas disclosure topic as metric EM-EP-210c.1; and
    - adding new metric EM-EP-210c.2 to the proposed Operations in Conflict Areas disclosure topic;
- to revise the Workforce Health & Safety disclosure topic and associated metrics;
- to revise the Reserves Valuation & Capital Expenditures disclosure topic and associated metrics—including changing the disclosure topic name to Climate Resilience;
- to revise the Business Ethics & Transparency disclosure topic and associated metrics—including changing the disclosure topic name to Business Ethics;
- to revise the Management of the Legal & Regulatory Environment disclosure topic and associated metric;
- to revise the Critical Incident Risk Management disclosure topic and associated metrics;

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QUESTION 10—*OIL & GAS – EXPLORATION & PRODUCTION* SASB STANDARD
The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals. (a) Do you agree with the proposed amendments to the *Oil & Gas – Exploration & Production* SASB Standard? Why or why not? (b) Do you agree with the Oil & Gas – Exploration & Production industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not? (c) Do you agree with the disclosure topics in the *Oil & Gas – Exploration & Production* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry? (d) Do you agree with the metrics and technical protocols in the *Oil & Gas – Exploration & Production* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why? (e) Do you agree that the proposed amendments to the Water Management disclosure topic would provide useful information to primary users in a cost-effective manner for preparers? (f) Do you agree with the proposed addition of metric EM-EP-160a.4 *(1) Total spatial footprint of operations, (2) area disturbed and (3) area restored* and with the content of that metric? Why or why not? If not, what do you recommend and why? (g) Are there any jurisdictional considerations related to the *Oil & Gas – Exploration & Production* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain. (h) Do you have any comments on how the proposed amendments would affect the *Oil & Gas – Exploration & Production* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 11—*OIL & GAS – MIDSTREAM* SASB STANDARD
The Exposure Draft includes proposals to enhance the *Oil & Gas – Midstream* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry. The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Oil & Gas – Midstream* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

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QUESTION 11—*OIL & GAS – MIDSTREAM* SASB STANDARD

The ISSB proposes:

- to revise the Oil & Gas – Midstream industry description;
- to add two activity metrics relating to workforce composition and one activity metric for the total operational pipeline under management;
- to revise the Greenhouse Gas Emissions disclosure topic and associated metrics and add metric EM-MD-110a.3 *Total Scope 1 methane emissions*;
- to revise the Air Quality disclosure topic and associated metric;
- to revise the Ecological Impacts disclosure topic and associated metrics;
- to add a Workforce Health & Safety disclosure topic and two associated metrics:
    - EM-MD-320a.1 *(1) Number of fatalities and (2) total recordable incident rate for (a) employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training*; and
    - EM-MD-320a.2 *Description of management systems used to foster a safe working environment*;
- to revise the Competitive Behaviour disclosure topic and associated metric; and
- to revise the Operational Safety, Emergency Preparedness & Response disclosure topic and associated metrics, including changing the disclosure topic name to Critical Incident Risk Management, and to remove two metrics and add two metrics:
    - EM-MD-540a.5 *Process safety event rates for loss of primary containment (1) events of greater consequence (Tier 1) and (2) events of lesser consequence (Tier 2)*; and
    - EM-MD-540a.6 *Description of management systems used to identify and mitigate low-probability, serious accidents*.

The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals.

(a) Do you agree with the proposed amendments to the *Oil & Gas – Midstream* SASB Standard? Why or why not?

(b) Do you agree with the Oil & Gas – Midstream industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not?

(c) Do you agree with the disclosure topics in the *Oil & Gas – Midstream* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry?

(d) Do you agree with the metrics and technical protocols in the *Oil & Gas – Midstream* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why?

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QUESTION 11—*OIL & GAS – MIDSTREAM* SASB STANDARD

(e) Do you agree with the proposed addition of metric EM-MD-110a.3 *Total Scope 1 methane emissions*? Why or why not? If not, what would you suggest instead and why?

(f) Are there any jurisdictional considerations related to the *Oil & Gas – Midstream* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain.

(g) Do you have any comments on how the proposed amendments would affect the *Oil & Gas – Midstream* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 12—*OIL & GAS – REFINING & MARKETING* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Oil & Gas – Refining & Marketing* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Oil & Gas – Refining & Marketing* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

The ISSB proposes:

- to revise the Oil & Gas – Refining & Marketing industry description;
- to revise the activity metrics and add two activity metrics relating to workforce composition;
- to revise the Greenhouse Gas Emissions disclosure topic and associated metrics;
- to revise the Air Quality disclosure topic and associated metrics;
- to revise the Water Management disclosure topic and one associated metric, remove one metric and add metric EM-RM-140a.3 *Total water discharged by (1) destination and (2) level of treatment*;
- to revise the Hazardous Materials Management disclosure topic and associated metrics;
- to revise the Workforce Health & Safety disclosure topic and associated metrics;
- to revise the Product Specifications & Clean Fuel Blends disclosure topic and associated metrics;
- to revise the Pricing Integrity & Transparency disclosure topic and associated metric;
- to revise the Management of the Legal & Regulatory Environment disclosure topic and associated metric; and
- to revise the Critical Incident Risk Management disclosure topic and associated metrics and remove one metric.

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QUESTION 12—*OIL & GAS – REFINING & MARKETING* SASB STANDARD

The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals.

(a) Do you agree with the proposed amendments to the *Oil & Gas – Refining & Marketing* SASB Standard? Why or why not?

(b) Do you agree with the Oil & Gas – Refining & Marketing industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not?

(c) Do you agree with the disclosure topics in the *Oil & Gas – Refining & Marketing* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry?

(d) Do you agree with the metrics and technical protocols in the *Oil & Gas – Refining & Marketing* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why?

(e) Are there any jurisdictional considerations related to the *Oil & Gas – Refining & Marketing* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain.

(f) Do you have any comments on how the proposed amendments would affect the *Oil & Gas – Refining & Marketing* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 13—*OIL & GAS – SERVICES* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Oil & Gas – Services* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Oil & Gas – Services* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

The ISSB proposes:

- to revise the Oil & Gas – Services industry description;
- to revise one activity metric, remove three activity metrics and add two activity metrics relating to workforce composition;

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QUESTION 13—*OIL & GAS – SERVICES* SASB STANDARD

- to revise the Emissions Reduction Services & Fuels Management disclosure topic and one associated metric, including changing the disclosure topic name to Greenhouse Gas Emissions, and to remove metric EM-SV-110a.3 and add metric EM-SV-110a.4 *(1) Gross Scope 1 emissions and (2) percentage subject to emissions-limiting regulations*;
- to add an Air Quality disclosure topic and associated metric EM-SV-120a.1 *Air pollutant emissions: (1) NOx (excluding N_2O), (2) SOx, (3) volatile organic compounds and (4) particulate matter*;
- to revise the Water Management Services disclosure topic and an associated metric, including changing the disclosure topic name to Water Management, and to remove metric EM-SV-140a.1 and add two metrics:
    - EM-SV-140a.3 *(1) Total water withdrawal, by source, (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations*; and
    - EM-SV-140a.4 *Total water discharged by (1) destination and (2) level of treatment*;
- to revise the Chemicals Management disclosure topic and an associated metric, including changing the disclosure topic name to Hazardous Materials Management, and remove metric EM-SV-150a.1;
- to revise the Ecological Impact Management disclosure topic and associated metrics, including changing the disclosure topic name to Ecological Impacts, and remove metric EM-SV-160a.1;
- to revise the Workforce Health & Safety disclosure topic and associated metrics;
- to revise the Business Ethics & Payments Transparency disclosure topic and associated metrics, including changing the disclosure topic name to Business Ethics;
- to revise the Management of the Legal & Regulatory Environment disclosure topic and associated metric; and
- to revise the Critical Incident Risk Management disclosure topic and associated metric.

The section on ‘Proposed amendments to the SASB Standards’ in the Basis for Conclusions sets out the ISSB’s reasoning for these proposals.

(a) Do you agree with the proposed amendments to the *Oil & Gas – Services* SASB Standard? Why or why not?

(b) Do you agree with the Oil & Gas – Services industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not?

(c) Do you agree with the disclosure topics in the *Oil & Gas – Services* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry?

(d) Do you agree with the metrics and technical protocols in the *Oil & Gas – Services* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why?

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QUESTION 13—*OIL & GAS – SERVICES* SASB STANDARD
(e) The proposed amendments discussed in paragraphs BC126–BC130 would revise, add and remove a series of metrics in the *Oil & Gas – Services* SASB Standard to better reflect an entity's business activities while 'off-contract'. Do you agree with these proposed amendments? Why or why not? If not, what would you suggest instead and why? (f) Are there any jurisdictional considerations related to the *Oil & Gas – Services* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain. (g) Do you have any comments on how the proposed amendments would affect the *Oil & Gas – Services* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

QUESTION 14—*PROCESSED FOODS* SASB STANDARD

The Exposure Draft includes proposals to enhance the *Processed Foods* SASB Standard, with a focus on ensuring that the Standard enables entities applying IFRS Sustainability Disclosure Standards internationally to provide decision-useful information to users of general purpose financial reports. The information provided should enable users to understand the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of an entity engaging in activities associated with this industry.

The ISSB is interested in feedback on the amendments proposed in this Exposure Draft and on the *Processed Foods* SASB Standard as a whole. The ISSB is particularly interested in feedback related to whether the proposed amendments result in a Standard that achieves the objective of meeting the needs of users in a manner that is cost-effective for preparers.

The ISSB proposes:

- to revise the Processed Foods industry description;
- to revise the Energy Management disclosure topic and associated metric;
- to revise the Water Management disclosure topic and associated metrics, remove metric FB-PF-140a.2 and add new metric FB-PF-140a.4 *Total water discharged by (1) destination and (2) level of treatment*;
- to revise the Food Safety disclosure topic and an associated metric, remove metrics FB-PF-250a.1, FB-PF-250a.2 and FB-PF-250a.3, and add two new metrics:
    - FB-PF-250a.5 *Percentage of production volume from sites certified to internationally recognised food safety standards for (1) own operations and (2) co-packing operations*; and
    - FB-PF-250a.6 *Processes, controls and procedures for ensuring food safety throughout the value chain*;

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QUESTION 14—*PROCESSED FOODS* SASB STANDARD

- to revise the Health & Nutrition disclosure topic and associated metrics by removing metrics FB-PF-260a.1 and FB-PF-260a.2, and adding three new metrics:
    - FB-PF-260a.3 *Approach and strategy for managing health and nutrition attributes of product portfolio, including any targets set to monitor progress*;
    - FB-PF-260a.4 *Revenue from products classified as healthy by a recognised nutrient profile model*; and
    - FB-PF-260a.5 *Revenue from products sold (1) in jurisdictions that require health warning labels and (2) that are required to carry a health warning label*;
- to revise the Product Labelling & Marketing disclosure topic and associated metrics by removing metrics FB-PF-270a.1, FB-PF-270a.2 and FB-PF-270a.4, and adding two new metrics:
    - FB-PF-270a.5 *Description of marketing policy and related governance and oversight processes*; and
    - FB-PF-270a.6 *Revenue from products sold (1) in jurisdictions that restrict the advertising of specific products to children and (2) subject to regulations that restrict the advertising of specific products to children*;
- to revise the Packaging Lifecycle Management disclosure topic and associated metrics;
- to add a Product Innovation disclosure topic and associated metric FB-PF-410b.1 *Use of innovation in food products to address sustainability-related risks and opportunities*;
- to remove the Environmental & Social Impacts of Ingredient Supply Chain and Ingredient Sourcing disclosure topics and all associated metrics, and replace them with new Environmental Supply Chain Management and Social Supply Chain Management disclosure topics;
- to add three metrics to the proposed Environmental Supply Chain Management disclosure topic:
    - FB-PF-430b.1 *Percentages of sourced commodities determined to be deforestation- or conversion-free, including any targets set to monitor progress*;
    - FB-PF-430b.2 *Priority commodities and products that are sensitive to environmental risks in the supply chain*;
    - FB-PF-430b.3 *Description of strategies to manage environmental resources and implement sustainable agriculture practices in the supply chain*;
- to add three metrics to the proposed Social Supply Chain Management disclosure topic:
    - FB-PF-430c.1 *Processes, controls and procedures for managing labour conditions and impacts on local communities in the supply chain, including human rights due diligence*;
    - FB-PF-430c.2 *Percentages of sourced commodities certified to internationally recognised standards that trace the path of products through the supply chain*; and
    - FB-PF-430c.3 *Percentage of high-risk suppliers subject to an independent third-party audit or verification in the previous three years, with description of non-conformances and corrective actions*.

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QUESTION 14—*PROCESSED FOODS* SASB STANDARD
The section on 'Proposed amendments to the SASB Standards' in the Basis for Conclusions sets out the ISSB's reasoning for these proposals. (a) Do you agree with the proposed amendments to the *Processed Foods* SASB Standard? Why or why not? (b) Do you agree with the Processed Foods industry description, and does it accurately describe the business activities of this industry? Do you agree with the industry classification that forms the basis of this Standard? Why or why not? (c) Do you agree with the disclosure topics in the *Processed Foods* SASB Standard? Do they accurately identify the sustainability-related risks and opportunities that could reasonably be expected to affect the prospects of entities in this industry? (d) Do you agree with the metrics and technical protocols in the *Processed Foods* SASB Standard? Do the metrics help an entity to provide information about sustainability-related risks and opportunities that is useful to users in making decisions relating to providing resources to the entity? If not, what would you suggest instead and why? (e) Are there any jurisdictional considerations related to the *Processed Foods* SASB Standard that have not been addressed in the proposals that should be taken into account? If so, please explain. (f) Do you have any comments on how the proposed amendments would affect the *Processed Foods* SASB Standard's interoperability and alignment with other sustainability-related standards or frameworks? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

Questions for respondents—Proposed targeted amendments to other SASB Standards

QUESTION 15—PROPOSED TARGETED AMENDMENTS TO THE SASB STANDARDS

Beyond the amendments proposed to the nine priority SASB Standards, the ISSB proposes that the corresponding metrics in other SASB Standards be aligned to maintain consistent disclosures on these common topics among industries where appropriate. Forty-one additional industries would be affected by the proposed targeted amendments.

The ISSB proposes targeted amendments to the metrics in other SASB Standards for:

- greenhouse gas emissions;
- energy management;
- water management;
- labour practices; and
- workforce health and safety.

Paragraphs BC47–BC48 of the Basis for Conclusions set out the ISSB's reasoning for proposing the targeted amendments. The section on 'Proposed amendments for the SASB Standards' in the Basis for Conclusions sets out the reasoning for specific amendments to the topics noted above. Appendix A to the Basis for Conclusions contains a full list of SASB Standards and metrics within those that would be affected by the targeted amendments.

(a) Do you agree with the proposal to align corresponding metrics in other SASB Standards beyond the nine priority industries to maintain consistent disclosures on these common topics in industries subject to equivalent disclosure requirements? Do you agree that doing so would improve the comparability of information? Why or why not?

(b) Do you agree that these proposed targeted amendments should be implemented before completing a comprehensive review of each of the SASB Standards affected by these amendments? Do you agree that this approach would support the objective of enhancing the SASB Standards to provide timely support to entities in applying IFRS S1? Why or why not?

(c) Do you agree with the proposed targeted amendments associated with greenhouse gas emissions? Why or why not?

(d) Do you agree with the proposed targeted amendments associated with energy management? Why or why not?

(e) Do you agree with the proposed targeted amendments associated with water management? Why or why not?

(f) Do you agree with the proposed targeted amendments associated with labour practices? Why or why not?

(g) Do you agree with the proposed targeted amendments associated with workforce health and safety? Why or why not?

(h) Are the proposed targeted amendments to the additional 41 industries appropriate and relevant for the individual SASB Standards? Are there any jurisdictional considerations related to these SASB Standards that have not been addressed in the proposals for targeted amendments that should be taken into account? If so, please explain.

(i) Do you agree that the proposed targeted amendments to the SASB Standards would enhance the interoperability and alignment with other sustainability-reporting standards and frameworks? Why or why not? (Note that the ISSB is focused on providing material information for users about the effects of sustainability-related risks and opportunities on an entity's prospects.)

Coal Operations

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards.~~ and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

Table of Contents

INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®). ~~Sustainable Industry Classification System® (SICS®).~~

SASB Standards include:

1. **industry ~~Industry~~ descriptions** — ~~—~~ which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry; ~~.~~

2. **disclosure ~~Disclosure~~ topics** — ~~—~~ which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry; ~~.~~

3. **metrics** — ~~**Metrics** —~~ which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic; ~~.~~

4. **technical ~~Technical~~ protocols** — ~~—~~ which provide guidance on definitions, scope, implementation and presentation of associated metrics; and ~~.~~

5. **activity ~~Activity~~ metrics** — ~~—~~ which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS®. However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

~~The~~ Coal Operations ~~industry includes~~ entities ~~that~~ mine coal and ~~those that~~ manufacture coal-based ~~coal~~ products such as coke. Typical business activities include ~~Mining activity covers both~~ underground and surface mining, and thermal and metallurgical coal production.

Note: this SASB Standard is intended for entities engaged in producing coal and associated products. For content related to metals and other hard minerals production, refer to the Metals & Mining (EM-MM) SASB Standard.

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	(1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations	~~Quantitative~~	Metric tonnes (t) CO_2-e, Percentage (%)	EM-CO-110a.1
	Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets	~~Discussion and Analysis~~	n/a	EM-CO-110a.2
	Total Scope 1 methane emissions		Metric tonnes (t) CH_4	EM-CO-110a.3
Water Management	(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	Megalitres (ML), ~~Thousand cubic metres (m^3),~~ Percentage (%)	EM-CO-140a.1
	~~Number of incidents of non-compliance associated with water quality permits, standards and regulations~~	~~Quantitative~~	~~Number~~	~~EM-CO-140a.2~~
	Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress		n/a	EM-CO-140a.3
	Total water discharged by (1) destination and (2) level of treatment		Megalitres (ML)	EM-CO-140a.4
	Percentage of production from mine sites where acid and metalliferous drainage (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation		Percentage (%)	EM-CO-140a.5

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Waste & Hazardous Materials Management	Non-mineral ~~Total weight of non-mineral~~ waste generated	~~Quantitative~~	Metric tonnes (t)	EM-CO-150a.2
	Tailings ~~Total weight of tailings~~ produced	~~Quantitative~~	Metric tonnes (t)	EM-CO-150a.3
	Waste ~~Total weight of waste~~ rock generated	~~Quantitative~~	Metric tonnes (t)	EM-CO-150a.4
	Hazardous ~~Total weight of hazardous~~ waste generated	~~Quantitative~~	Metric tonnes (t)	EM-CO-150a.5
	Hazardous ~~Total weight of hazardous~~ waste recycled	~~Quantitative~~	Metric tonnes (t)	EM-CO-150a.6
	Number of significant incidents associated with hazardous waste management	~~Quantitative~~	Number	EM-CO-150a.7
	Waste ~~Description of waste~~ management policies and procedures for active and inactive operations	~~Discussion and Analysis~~	n/a	EM-CO-150a.8
Ecological ~~Biodiversity~~ Impacts	Description of environmental management policies and practices for operational facilities~~active sites~~	~~Discussion and Analysis~~	n/a	EM-CO-160a.1
	~~Percentage of mine sites where acid rock drainage is: (1) predicted to occur, (2) actively mitigated, and (3) under treatment or remediation~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-CO-160a.2~~
	Percentage of (1) proved and (2) probable coal reserves in or near environmentally sensitive locations ~~sites with protected conservation status or endangered species habitat~~	~~Quantitative~~	Percentage (%)	EM-CO-160a.3
	(1) Total spatial footprint of operations, (2) area disturbed and (3) area restored		Square kilometres (km^2)	EM-CO-160a.4
~~Rights of Indigenous Peoples~~	~~Percentage of (1) proved and (2) probable reserves in or near indigenous land~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-CO-210a.1~~
	~~Discussion of engagement processes and due diligence practices with respect to the management of indigenous rights~~	~~Discussion and Analysis~~	~~n/a~~	~~EM-CO-210a.2~~

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Community Relations & Rights of Indigenous Peoples	Processes used ~~Discussion of process~~ to manage risks and opportunities associated with community rights and interests	~~Discussion and Analysis~~	n/a	EM-CO-210b.1
	(1) Number of non-technical delays and (2) the total days idle~~duration of non-technical delays~~	~~Quantitative~~	Number, Days	EM-CO-210b.2
	Percentage of (1) proved and (2) probable coal reserves in or near Indigenous Peoples' land		Percentage (%)	EM-CO-210b.3
	Description of engagement processes and due diligence practices related to upholding Indigenous Peoples' rights		n/a	EM-CO-210b.4
Operations in Conflict Areas	Percentage of (1) proved and (2) probable coal reserves in conflict-affected and high-risk areas		Percentage (%)	EM-CO-210c.1
	Description of engagement processes and due diligence practices related to operating in conflict-affected and high-risk areas		n/a	EM-CO-210c.2
Labour Practices~~Relations~~	Percentage of employees covered by ~~active workforce employed under~~ collective agreements	~~Quantitative~~	Percentage (%)	EM-CO-310a.1
	(1) Number of work stoppages and (2) the total days idle ~~and (2) duration of strikes and lockouts~~ [4]	~~Quantitative~~	Number, Days	EM-CO-310a.2
Workforce Health & Safety	(1) Number of fatalities and (2) total recordable incident rate ~~(1) All-incidence rate, (2) fatality rate, and (3) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~	~~Quantitative~~	Number, Rate, Hours (h) ~~Rate~~	EM-CO-320a.1
	Description ~~Discussion~~ of management systems used to foster a safe working environment ~~of accident and safety risks and long-term health and safety risks~~	~~Discussion and Analysis~~	n/a	EM-CO-320a.2

continued...

[4] ~~Note to **EM-CO-310a.2** – The disclosure shall include the number, duration and reason for the stoppage.~~

...continued

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Climate Resilience~~Reserves Valuation & Capital Expenditures~~	Sensitivity of coal reserves to changes in market prices under different climate transition risk-related scenarios~~coal reserve levels to future price projection scenarios that account for a price on carbon emissions~~	~~Quantitative~~	Million metric tonnes (Mt)	EM-CO-420a.1
	Estimated carbon dioxide emissions latent ~~embedded~~ in proved ~~proven~~ coal reserves	~~Quantitative~~	Metric tonnes (t) CO_2-e	EM-CO-420a.2
	Description of how climate-related risks and opportunities influence capital strategy and investments~~Discussion of how price and demand for coal or climate regulation influence the capital expenditure strategy for exploration, acquisition and development of assets~~	~~Discussion and Analysis~~	n/a	EM-CO-420a.3
Tailings Storage Facilities Management	Tailings storage facility inventory table: (1) facility name, (2) location, (3) ownership status, (4) operational status, (5) construction method, (6) maximum permitted storage capacity, (7) current quantity ~~amount~~ of tailings stored, (8) consequence classification, (9) date of most recent independent technical review, (10) material findings, (11) mitigation measures and ~~,~~ (12) site-specific emergency preparedness and response plans ~~EPRP~~	~~Quantitative~~	Various	EM-CO-540a.1
	Description ~~Summary~~ of tailings management systems and governance structure used to monitor and maintain the stability of tailings storage facilities	~~Discussion and Analysis~~	n/a	EM-CO-540a.2
	Development ~~Approach to development~~ of emergency preparedness and response plans ~~Emergency Preparedness and Response Plans (EPRPs)~~ for tailings storage facilities	~~Discussion and Analysis~~	n/a	EM-CO-540a.3

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Production of thermal coal	~~Quantitative~~	Million metric tonnes (Mt)	EM-CO-000.A
Production of metallurgical coal	~~Quantitative~~	Million metric tonnes (Mt)	EM-CO-000.B
Total number of (1) employees and (2) non-employee workers		Number	EM-CO-000.C

continued...

...continued

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Total hours worked disaggregated by (1) employees and (2) non-employee workers		Hours	EM-CO-000.D

Greenhouse Gas Emissions

Topic Summary

Coal operations are energy intensive and generate significant Scope 1 ~~direct~~ greenhouse gas ~~(GHG)~~ emissions, including carbon dioxide emissions from fuel use and methane emissions released from coal beds during mining and post-mining activities. Regulatory efforts to reduce greenhouse gas ~~GHG~~ emissions in response to the risks posed by climate change may result in higher operating costs and capital expenditures based on the magnitude of their ~~direct~~ emissions. Improving operational efficiencies can reduce operating costs and greenhouse gas emissions. ~~Operational efficiencies can be achieved through the cost-effective reduction of GHG emissions.~~ Such efficiencies can mitigate the potential financial effects ~~impact~~ of increased fuel costs from regulations that price or limit greenhouse gas ~~—or put a price on—GHG~~ emissions.

Metrics

EM-CO-110a.1. (1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose (1) its gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e), and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is theIntergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014).~~

~~1.2 Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

~~2 Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 ~~2.1~~ These emissions include Scope 1 greenhouse gas ~~direct~~ emissions ~~of GHGs~~ from stationary or mobile sources that ~~; these sources~~ include equipment at mine sites, mine mouth electric generating facilities, coal seam methane emissions, production and processing facilities, storage facilities~~,~~ and office buildings; and vehicles used for product and personnel transport ~~, and transportation~~ (air, marine, road~~,~~ and rail).

~~2.2 Acceptable calculation methodologies include those that conform to the *GHG Protocol* as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.2.1 *GHG Reporting Guidance for the Aerospace Industry* provided by the International Aerospace Environmental Group (IAEG)~~

~~2.2.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* provided by the U.S. Environmental Protection Agency (EPA)~~

~~2.2.3 India GHG Inventory Program~~

~~2.2.4 ISO 14064-1~~

~~2.2.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.2.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* published by Entreprises pour l'Environnement (EpE)~~

~~2.3 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which is generally aligned with the 'financial control' approach defined by the GHG Protocol as well as:~~

~~2.3.1 The financial approach detailed in Chapter 3 of the Ipieca/API/OGP *Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions*, 2nd Edition, 2011 (hereafter, the 'Ipieca GHG Guidelines')~~

~~2.3.2 The approach provided by the Climate Disclosure Standards Board (CDSB) that is described in REQ-07, 'Organisational boundary,' of the *CDSB Framework for reporting environmental and social information*~~

2~~3~~ An ~~The~~ entity shall disclose (2) the percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~3.1 Examples of emissions-limiting regulations include:~~

~~3.1.1 California Cap-and-Trade (California Global Warming Solutions Act)~~

~~3.1.2 European Union Emissions Trading Scheme (EU ETS)~~

~~3.1.3 Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

2.1 ~~3.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) that are covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

2.1.1 ~~3.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

2.2 ~~3.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

~~4 The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

~~5 In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure program) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

~~6 The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

EM-CO-110a.2. Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall disclose: ~~discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined according to *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1~~ ~~The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2~~ ~~Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3~~ ~~The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4~~ ~~The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5~~ ~~The mechanism(s) for achieving the target; and~~

~~2.6~~ ~~Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively or the target or base year has been reset.~~

3 An entity shall disclose the targets it has set or is required to meet by law or regulation on reducing methane emissions.

4 An ~~The~~ entity shall disclose ~~discuss~~ the activities and investments required to achieve its ~~the plans or~~ targets, and any risks or limiting factors that might affect achievement of those~~the plans or targets~~.

~~4~~ ~~The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~5~~ ~~The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

~~6~~ ~~Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

EM-CO-110a.3. Total Scope 1 methane emissions

1 An entity shall disclose its total gross Scope 1 methane (CH_4) emissions, in metric tonnes.

1.1 Total methane emissions include methane emissions from all sources, including operational, idle or decommissioned facilities.

2 An entity shall disaggregate its total gross Scope 1 methane emissions disclosed between:

2.1 the consolidated accounting group (for an entity applying IFRS Accounting Standards, this group would comprise the parent and its consolidated subsidiaries); and

2.2 other investees excluded from the consolidated accounting group (for an entity applying IFRS Accounting Standards, these investees would include associates, joint ventures and unconsolidated subsidiaries).

3 An entity shall disclose how it calculates its methane emissions (based on emissions factors or direct measurement), how frequently its facilities are inspected, the technologies used and which of its assets are subject to inspection.

3.1 The entity shall disclose the protocols, frameworks or guidance used for the methane emissions calculations.

Water Management

Topic Summary

Coal operations are water-intensive and affect ~~have an impact on~~ both the availability and quality ~~and quantity~~ of local water resources. ~~Coal operations are water intensive.~~ The use of water in coal washing to remove sulphur, cool drilling equipment and transport coal in slurry pipelines can adversely affect local water ~~impact~~ resources. The severity of these risks varies ~~can vary~~ depending on the region's water availability and the regulatory environment. Reducing water use and contamination also could improve ~~create~~ operational efficiencies for entities and reduce ~~lower~~ their operating costs. Wastewater treatment and discharge quality ~~often~~ is typically regulated by jurisdictional authorities. Violating wastewater effluent limits on selenium, sulphate and dissolved solids could affect Coal Operations ~~coal operations~~ entities through significant penalties, compliance costs, delays in production or higher costs related to mine closure.

Metrics

EM-CO-140a.1. (1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

~~2 The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1 Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2 Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period.~~that evaporates during withdrawal, use and discharge~~

~~3.1.2 Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3 Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea~~

~~4 The entity shall analyse all of its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

3~~5~~ An ~~The~~ entity shall disclose (3a) the volume of ~~its~~ water withdrawn, in megalitres, from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4~~6~~ An ~~The~~ entity shall disclose (3b) the volume of ~~its~~ water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

~~EM-CO-140a.2. Number of incidents of non-compliance associated with water quality permits, standards and regulations~~

~~1 The entity shall disclose the total number of incidents of non-compliance, including violations of a technology-based standard and exceedances of quantity or quality-based standards.~~

~~2 The scope of disclosure includes incidents governed by applicable jurisdictional statutory permits and regulations, which include the discharge of a hazardous substance, violation of pre-treatment requirements or total maximum daily load (TMDL) exceedances.~~

~~2.1 Typical parameters of concern include selenium, total dissolved solids (TDS), sulphate, total suspended solids (TSS) and pH.~~

~~3 The scope of disclosure shall only include incidents of non-compliance that resulted in a formal enforcement action(s).~~

~~3.1 Formal enforcement actions are defined as governmental recognised actions that address a violation or threatened violation of water quantity or quality laws, regulations, policies or orders, and can result in administrative penalty orders, administrative orders and judicial actions, among others.~~

~~4 Violations shall be disclosed, regardless of their measurement methodology or frequency. These include violations for:~~

~~4.1 Continuous discharges, limitations, standards and prohibitions that are generally expressed as maximum daily, weekly or monthly averages; and~~

~~4.2 Non-continuous discharges, limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge and mass or concentration of specified pollutants.~~

EM-CO-140a.3. Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress

1 An entity shall describe its risks associated with water withdrawals, water consumption and discharge of water or wastewater.

1.1 Risks associated with water withdrawals and water consumption include risks to the availability and quality of water resources, which include:

1.1.1 environmental constraints—such as operating in water-stressed regions, drought, floods, concerns of aquatic impingement or entrainment, interannual or seasonal variability, water quality that requires additional treatment at the point of input, and risks from the impact of climate change; and

1.1.2 regulatory and financial constraints—such as water price volatility, stakeholder perceptions and concerns related to water withdrawals (for example, those involving local communities, non-governmental organisations and regulatory agencies), direct competition with other users (for example, commercial and municipal users), restrictions to withdrawals because of regulations, and constraints on the entity's ability to obtain or retain water rights or permits.

1.2 Risks associated with discharged water or wastewater include the ability to obtain or retain rights or permits related to discharges, regulatory compliance related to discharges, restrictions on to discharges, temperature control of discharges and risks stemming from impacts on local ecosystems and communities.

2 An entity shall describe how its water-related risks vary by:

2.1 withdrawal source;

2.2 discharge destinations, including surface water, groundwater, seawater or wastewater utilities;

2.3 local regulations, including emerging regulations; and

2.4 location of operating facilities.

3 An entity shall disclose the locations of operating facilities where water-related risks are concentrated.

4 An entity shall disclose quantitative and qualitative information about how water-related risks and opportunities have affected, and are anticipated to affect, the entity's financial position, financial performance and cash flows both for the reporting period and over the short, medium and long term.

5 The entity shall disclose any targets it has set, and any targets it is required to meet by law or regulation, to mitigate or adapt to water-related risks or take advantage of water-related opportunities.

5.1 In preparing disclosure on water-related targets, the entity shall apply the requirements in paragraphs 51–53 of IFRS S1.

6 The entity shall disclose its strategies for managing water-related risks and opportunities, and achieving water-related targets, including:

6.1 efficiency efforts (for example, using water recycling or closed-loop systems);

6.2 product innovations (for example, redesigning products or services to require less water);

6.3 process and equipment innovations (for example, reducing aquatic impingements or entrainments);

6.4 use of tools and technologies (for example, the World Wildlife Fund *Water Risk Filter*) to analyse water use, risks and opportunities; and

6.5 collaborations or programmes with communities or other organisations.

7 An entity shall disclose whether its water management practices resulted in any lifecycle impacts or trade-offs in its organisation, including trade-offs in land use, energy production and greenhouse gas emissions, and why the entity chose these practices despite such trade-offs.

EM-CO-140a.4. Total water discharged by (1) destination and (2) level of treatment

1 An entity shall disclose (1) the total volume of water discharged, in megalitres, disaggregated by destination.

1.1 Water discharge is defined as the sum of effluents, used water, and unused water released to surface water, groundwater, seawater or a third party, for which the organisation has no further use.

1.1.1 Surface water is defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams.

1.1.2 Groundwater is defined as water held in and recoverable from an underground formation.

1.1.3 Seawater is defined as water in a sea or ocean.

1.1.4 Third-party water is defined as water discharged by municipal water suppliers and municipal wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

1.2 The scope of disclosure includes water released into a receiving waterbody at either a defined discharge point (point-source discharge) or dispersed over land in an undefined manner (non-point-source discharge).

2 An entity shall disclose (2) the total volume of water discharged, in megalitres, disaggregated by level of treatment.

2.1 Water treatment is defined as the physical, chemical or biological processes that improve water quality by removing solids, pollutants, and organic matter from water and effluents.

2.2 Treatment levels include:

2.2.1 primary treatment, which aims to remove solid substances that settle or float on the water surface;

2.2.2 secondary treatment, which aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it; and

2.2.3 tertiary treatment, which aims to upgrade water to a higher level or quality before it is discharged, for example, removing heavy metals, nitrogen, and phosphorus.

2.3 If the entity discharges water that it determines does not require treatment, it shall disclose the associated volume in megalitres.

2.4 The level of treatment shall be reported for any water or effluents at the point of discharge, whether treated by the entity on-site or sent to a third party for treatment.

2.5 The entity shall disclose how it determines the appropriate level of treatment for water discharges.

EM-CO-140a.5. Percentage of production from mine sites where acid and metalliferous drainage (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation

1 An entity shall separately disclose the percentage of total production by mass, in metric tonnes, from its mine sites where acid and metalliferous drainage (AMD) (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation at the reporting date.

1.1 AMD includes acidic drainage, pH neutral metalliferous drainage, and saline drainage generally caused by the oxidation of sulphide minerals.

1.1.1 AMD sources include: waste rock dumps; ore stockpiles; tailings storage facilities and tailings dams; roadways and embankments constructed with sulphidic material; open cuts and mine pits; underground mines; heap and dump leach piles; and acid sulphate soils.

1.1.2 AMD could be referenced as 'acid-generating seepage', 'acid mine drainage' or 'acid rock drainage'.

1.2 Computer simulations, chemical evaluations and acid-based accounting are all ways of predicting whether AMD has the potential to occur at the mine site.

1.2.1 AMD does not actually have to occur, nor does AMD need to be treated, for it to have the potential to occur.

1.3 AMD is defined as actively mitigated if the entity is preventing AMD through methods including: storing or covering sulphite-bearing minerals to prevent oxidation; preventing flooding; sealing mines; mixing of acid-buffering material with acid-producing materials; and chemically treating sulphide waste (for example, using organic chemicals designed to kill sulphide-oxidising bacteria).

1.4 AMD is defined as under treatment or remediation if the mine water discharged is captured and undergoes a wastewater treatment process (whether active or passive) to remediate the AMD.

2 The percentages are separately calculated as the tonnage of production at sites where AMD (1) has the potential to occur, (2) is actively mitigated or (3) is treated or remediated divided by the total tonnage of production.

Waste & Hazardous Materials Management

Topic Summary

The Coal Operations industry generates large volumes of mineral and non-mineral waste, including process refuse, liquid coal waste, and solid rock and clay waste, which can ~~may~~ contain toxic elements such as mercury, arsenic or cadmium. Waste produced during coal mining and processing operations can~~, depending on its type,~~ be treated, discarded~~,~~ or stored off- or on-site, in impoundments or disused mine pits. Improper disposal or storage of hazardous materials or mining waste can present significant long-term threats to human health, to the safety of nearby residential areas and to ecosystems through potential contamination of air, soil, groundwater or surface water ~~used for drinking or agriculture~~, posing operational and regulatory challenges for entities. Entities that reduce waste streams, effectively manage risks related to waste containing heavy metals and maintain rigorous hazardous waste disposal practices can ~~may~~ reduce regulatory and litigation risks, remediation liabilities and operating costs.

Metrics

EM-CO-150a.2. Non-mineral ~~Total weight of non-mineral~~ waste generated

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of non-mineral waste generated.

1.1 Non-mineral waste is defined as material for which the entity has no further use and that is discarded, intended to be discarded or released into the environment.

1.2 The ~~scope of the~~ disclosure includes non-mineral waste generated from all activities.

1.2.1 Non-mineral waste ~~The scope of non-mineral waste~~ includes scrap metal, reject coal, used oil, tyres, batteries and other solid and liquid waste.~~wastes.~~

1.2.2 ~~1.3~~ Non-mineral ~~The scope of non-mineral~~ waste excludes overburden, waste rock, tailings and gaseous waste.~~wastes.~~

EM-CO-150a.3. Tailings ~~Total weight of tailings~~ produced

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of tailings it produced.

1.1 The definition of tailings is ~~shall be consistent with that~~ provided by ~~in~~ the Global Tailings Review *Global Industry Standard on Tailings Management* ~~(GISTM)~~.

EM-CO-150a.4. Waste ~~Total weight of waste~~ rock generated

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of waste rock generated.

1.1 Waste rock is defined as mineral material and low-grade ore with target minerals in concentrations too low for economic recovery at the time of mining.

EM-CO-150a.5. Hazardous ~~Total weight of hazardous~~ waste generated

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of hazardous waste generated.

1.1 Hazardous waste is ~~wastes are~~ defined in accordance with the applicable jurisdictional law or regulation ~~legal or regulatory framework~~ where the waste is generated.

1.1.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the ~~The~~ entity shall instead use ~~may use definitions from~~ the United Nations Environment Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* definition of hazardous waste.

2 If an entity is subject to more than one jurisdictional law or regulation that defines hazardous waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define hazardous waste and the amounts defined in accordance with each applicable framework.~~

2.2 If the entity defines and manages its hazardous waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

EM-CO-150a.6. Hazardous ~~Total weight of hazardous~~ waste recycled

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of hazardous waste it generated that was recycled by being reused, reclaimed or remanufactured.

1.1 Hazardous waste is ~~wastes are~~ defined using ~~in accordance with~~ the applicable jurisdictional law or regulation ~~legal or regulatory framework~~ where the waste is generated.

1.1.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the ~~The~~ entity shall instead use ~~may use definitions from~~ the United Nations Environment Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (Basel Convention) definition of recycled hazardous waste.

1.2 Recycled materials are defined as waste reprocessed or treated through production or manufacturing processes and made into a final product or a component to be integrated into a product, in accordance with the Basel Convention.

~~1.2.1 This definition is based on the Basel Convention.~~

1.3 Materials incinerated, including for energy recovery, are excluded from ~~shall not be considered within the scope of~~ recycled waste.

1.3.1 Energy recovery is defined as the use of combustible waste to generate energy through direct incineration, with or without other waste, but with recovery of the heat.

2 If an entity is subject to more than one jurisdictional law or regulation that defines recycled hazardous waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define recycled hazardous waste and the amounts defined in accordance with each applicable framework.~~

2.1 If the entity defines and manages its recycled hazardous waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

EM-CO-150a.7. Number of significant incidents associated with hazardous waste management

1 An ~~The~~ entity shall disclose the total number of significant incidents associated with the handling, storage, transportation or disposal of hazardous waste being generated.

1.1 The ~~scope of the~~ disclosure includes incidents of mishandling and improper disposal of hazardous waste. Such incidents include seepage from tailings facilities that contain a meaningful concentration of hazardous waste, or major spills or releases that occurred during the handling, storage, transportation or disposal of hazardous waste that impacted ~~that are significant or have impacts on~~ the environment, workforce ~~employees~~ or surrounding communities.

1.1.1 A meaningful concentration is defined as a concentration that exceeds the limits of applicable jurisdictional law or regulation or industry-wide accepted codes.

1.1.2 ~~1.1.1~~ Impacts on the environment, employees or surrounding communities may include contamination of surface water, groundwater and land that required response and remediation, reduced biodiversity, or caused injuries or deaths among employees or community members.

1.2 A significant incident is defined as a release of hazardous waste to the environment that: exceeds the volume and concentration limits of applicable jurisdictional law or regulation ~~local regulatory requirements~~ or industry-accepted codes; ~~is included in the entity's financial statements (for example, because of resulting liabilities); is recorded by the entity as an incident required to be reported to applicable local jurisdictions;~~ or does not meet any of these criteria but is judged by the entity as significant. ~~by the operator.~~

1.2.1 The disclosure includes information about whether the entity has developed ~~may disclose~~ its own criteria for establishing the threshold in volume and concentration exceeding that ~~in excess of~~ which it considers a significant ~~an~~ incident ~~significant~~.

1.3 The entity shall identify hazardous waste ~~Hazardous wastes are defined~~ in accordance with the applicable jurisdictional law or regulation ~~legal or regulatory frameworks~~ where the waste was generated.

1.3.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the entity shall instead use ~~The entity may use definitions from~~ the United Nations Environment Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* definition of hazardous waste.

2 If an entity is subject to more than one jurisdictional law or regulation that defines hazardous waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define hazardous waste and the number of incidents defined in accordance with each applicable framework.~~

2.1 If the entity defines and manages its hazardous waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

EM-CO-150a.8. Waste ~~Description of waste~~ management policies and procedures for active and inactive operations

1 An ~~The~~ entity shall describe the policies and procedures used in its waste management strategy.

1.1 The ~~scope of the~~ disclosure includes ~~shall include~~ policies and procedures for the entity's active and inactive operations.

1.2 Waste ~~The scope of waste~~ includes mineral and non-mineral waste.

1.2.1 Mineral waste is defined as material generated during the extraction and beneficiation of ores and minerals.

1.2.2 Non-mineral waste is defined as all material other than mineral waste for which the entity has no further use and that is discarded, intended to be discarded or released into the environment.

2 An ~~The~~ entity shall describe how its policies and procedures compare with those required under applicable jurisdictional law or regulation.~~laws or regulations.~~

2.1 The entity shall disclose ~~discuss~~ whether and how its policies and procedures exceed the requirements of local jurisdictions.

2.2 The entity shall explain ~~discuss~~ how its policies and procedures vary by region.

3 An ~~The~~ entity shall describe its ~~approach to~~ waste management throughout the project life cycle.~~lifecycle.~~

~~3.1~~ The entity shall describe its:~~scope of the disclosure shall include a discussion of the entity's:~~

3.1 ~~3.1.1~~ approach to risk assessment of potential environmental impacts associated with waste streams;

3.2 ~~3.1.2~~ policies and procedures related to waste avoidance;

3.3 ~~3.1.3~~ approach to identification, assessment and application of recycling, reuse and repurposing as waste management strategies;

3.4 ~~3.1.4~~ policies and procedures related to waste disposal or incineration;

3.5 ~~3.1.5~~ policies and procedures related to the remediation of environmental or social impacts of incidents associated with the mishandling of hazardous waste; and

3.6 ~~3.1.6~~ approach to decommissioning waste facilities.

4 An ~~The~~ entity shall disclose information about ~~include a description of~~ how its waste management efforts are coordinated among business partners (for example, contractors and subcontractors).

5 An ~~The~~ entity shall disclose information about ~~describe~~ how it ensures compliance and conformance with its waste management policies and procedures.

Ecological ~~Biodiversity~~ Impacts

Topic Summary

Coal operations can have varied effects ~~a range of impacts~~ on biodiversity, ecosystems and ecosystem services. Surface mining and mountaintop removal can alter watersheds, ~~the landscape, removing vegetation~~ cause deforestation and destroy wildlife habitats. One ~~A particularly concerning~~ effect of coal operations is acid rock drainage, in which surface and shallow subsurface water encounters coal mining overburden, contaminating the water with heavy metals and rendering it highly acidic, with adverse ~~harmful~~ effects on human health, local communities and the environment. The nature-related effects ~~humans, animals and vegetation. Biodiversity impacts~~ of coal operations can affect the valuation of reserves and create operational risks. The ~~Because of increasing interest in the protection of ecosystems, the~~ environmental characteristics of a mine site can ~~the land where reserves are located may~~ lead to higher extraction costs. Entities might also face regulatory or reputational barriers to accessing reserves in ecologically sensitive areas, such as new protection status afforded to areas where reserves are located. Coal Operations ~~operations~~ entities face regulatory risks related to reclamation after a mine is decommissioned, using ~~in accordance with~~ applicable regulatory requirements to restore mined property according to an ~~a prior,~~ approved reclamation plan. Removing ~~Material costs may arise from removing~~ or covering refuse piles, fulfilling water treatment obligations and dismantling infrastructure at decommissioning can be costly. Furthermore, coal operations are subject to law or regulation ~~laws~~ protecting endangered species. Entities with an effective environmental management plan for each stage of the project life cycle can better manage ~~lifecycle may minimise~~ their compliance costs and legal liabilities, minimising difficulties ~~face less resistance~~ in developing new mines, ~~avert delays in project completion, and avoid difficulties in~~ obtaining permits, accessing reserves and completing projects.

Metrics

EM-CO-160a.1. Description of environmental management policies and practices for operational facilities~~active sites~~

1 An ~~The~~ entity shall disclose information about ~~describe~~ its environmental management policies and practices ~~plans~~ implemented at operational facilities, including:~~active sites, including, if relevant:~~

1.1 the life cycle ~~lifecycle~~ stages to which the plans apply, such as pre-bid (when the entity is considering an acquisition~~ of a site~~), exploration and appraisal, site development, production, closure, site decommissioning and restoration;

1.2 the types of ecological impacts included in ~~topics addressed by~~ the plans, such as ecological and biodiversity impacts, waste generation, noise, emissions to air, discharges to water, natural resource consumption and hazardous chemical use;

1.3 whether the entity integrates an environmental mitigation hierarchy into its project development and operations, such as using the 2020 Science Based Targets Network's *Initial Guidance for Business* AR3T Action Framework or the 2015 Cross Sector Biodiversity Initiative's *A Cross-sector Guide for Implementing the Mitigation Hierarchy*;

1.4 the underlying definitions and references for its plans, including whether they originate from ~~are~~ codes, guidelines, standards or regulations; and

1.5~~1.4~~ whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the environmental management policies and practices.

2 If environmental management policies and practices vary significantly by the type of resource, by location or by type of operation, then the entity shall describe the differences.

~~If relevant, the entity shall describe specific policies and practices that apply to areas with protected conservation status or areas of critical habitat, which are defined by the International Finance Corporation (IFC) Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources* as:~~

~~2.1 areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered or Endangered species; (ii) habitat of significant importance to endemic or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species or congregatory species; (iv) highly threatened or rare ecosystems; or (v) areas associated with important evolutionary processes.~~

3 If the environmental management policies and practices do not apply to all the entity's operational facilities, ~~sites or operations,~~ it shall disclose ~~include~~ the percentage of sites to which they ~~were~~ applied at the reporting date.

4 The entity shall explain whether ~~disclose the degree to which~~ its policies and practices are aligned with the International Finance Corporation's (IFC) ~~IFC~~ *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 IFC Performance Standard 1, *Assessment and Management of Environmental and Social Risks and Impacts*;

4.2 IFC Performance Standard 3, *Resource Efficiency and Pollution Prevention*;

4.3 IFC Performance Standard 4, *Community Health, Safety, and Security*; and

4.4 IFC Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources*.

~~5 Additional relevant references may include:~~

~~5.1 Joint E&P Forum/UNEP, *Environmental management in oil and gas exploration and production—An overview of issue and management approaches*, 1997; and~~

~~5.2 World Bank Multistakeholder Initiative, *Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies*.~~

~~EM-CO-160a.2. Percentage of mine sites where acid rock drainage is: (1) predicted to occur, (2) actively mitigated, and (3) under treatment or remediation~~

~~1 The entity shall disclose the percentage of its mine sites, by annual production output from mines by weight, for which acid-generating seepage into surrounding surface water or groundwater is: (1) predicted to occur, (2) actively mitigated and (3) under treatment or remediation.~~

~~2 Acid rock drainage (ARD) is predicted to occur if computer simulations, chemical evaluations or acid-base accounting, evaluate that ARD is likely form at the mine site.~~

~~3 ARD is considered actively mitigated if the entity is preventing ARD through methods that include: storing or covering sulphite-bearing minerals to prevent oxidation, flood prevention, mine sealing, mixing of acid-buffering materials with acid-producing materials, and chemical treatment of sulphide wastes (for example, using organic chemicals designed to kill sulphide-oxidising bacteria).~~

~~4 ARD is considered under treatment or remediation if the acidic water discharged from the mine area is captured and undergoes a wastewater treatment process (whether active or passive).~~

~~5 ARD also may be referenced as acid-generating seepage or acid mine drainage.~~

EM-CO-160a.3. Percentage of (1) proved and (2) probable coal reserves in or near environmentally sensitive locations ~~sites with protected conservation status or endangered species habitat~~

1 An ~~The~~ entity shall separately disclose ~~(1)~~ the percentages ~~percentage~~ of its (1) proved coal reserves and (2) probable coal reserves associated with operational facilities located in or near environmentally sensitive locations at the reporting date.~~, by weight, in sites with protected conservation status or in endangered species habitat.~~

1.1 Each ~~The~~ percentage is separately ~~of proved reserves shall be~~ calculated as the tonnage ~~quantity (tonnage)~~ of proved or probable coal reserves associated with operational facilities located in or near environmentally sensitive locations, ~~areas with protected conservation status or endangered species habitat,~~ divided by the total tonnage ~~quantity~~ of proved reserves or the total tonnage of probable reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

~~The entity shall disclose (2) the percentage of its probable reserves, by weight, in sites with protected conservation status or endangered species habitat.~~

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

~~The percentage of probable reserves shall be calculated as the quantity (tonnage) of probable reserves located in areas with protected conservation status or endangered species habitat, divided by the total quantity of probable reserves.~~

3 Environmentally sensitive locations are defined as areas where an entity's assets or activities interface with nature in areas deemed to be ecologically sensitive. Such locations are defined as:

3.1 being important for biodiversity;

3.2 having high ecosystem integrity;

3.3 exhibiting rapidly declining ecosystem integrity; or

3.4 being important for ecosystem service provision.

4 Environmentally sensitive locations include:

4.1 International Union for Conservation of Nature (IUCN) protected areas (categories I–VI);

4.2 Ramsar Wetlands of International Importance;

4.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;

4.4 UNESCO's Man and the Biosphere Programme's biosphere reserves 'core areas';

4.5 Natura 2000 sites;

4.6 Ocean+ Habitats 'Protected Areas' (marine and coastal);

4.7 a clearly defined geographical area, recognised, dedicated and managed, through legal or other effective means by applicable jurisdictional authorities, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (such as the protected areas listed in the World Database of Protected Areas and mapped on the Protected Planet website); or

4.8 an endangered species habitat where species on the IUCN Red List of Threatened Species that are classified as Critically Endangered or Endangered are known to reside.

4.8.1 Species reside in an area if they are resident, present during breeding or non-breeding season, or if they use the area for passage.

4.8.2 For the purposes of this disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.

~~3 Reserves are considered to be in areas of protected conservation status if they are located within:~~

~~3.1 International Union for Conservation of Nature (IUCN) Protected Areas (categories I–VI);~~

~~3.2 Ramsar Wetlands of International Importance;~~

~~3.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;~~

3.4 ~~Biosphere Reserves recognised within the framework of UNESCO's Man and the Biosphere (MAB) Programme;~~

~~3.5 Natura 2000 sites; or~~

~~3.6 sites that meet the IUCN's definition of a protected area: 'A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.'~~

~~3.6.1 These sites may be listed in the World Database of Protected Areas (WDPA) and mapped on Protected Planet.~~

4 ~~Reserves are considered to be in endangered species habitat if they are in or near areas where species on the IUCN Red List of Threatened Species that are classified Critically Endangered (CR) or Endangered (EN) are extant.~~

~~4.1 A species is considered extant in an area if it is a resident, present during breeding or non-breeding season, or if it makes use of the area for passage.~~

~~4.1.1 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.~~

5 An entity's operational facilities are defined as 'in or near' an environmentally sensitive location if any part of a facility's spatial footprint of operations is in or ~~For the purposes of this disclosure, 'near' is defined as~~ within five kilometres (km) of the boundary of an environmentally sensitive location. ~~an area of protected conservation status or an endangered species habitat and the location of the entity's proved and probable reserves.~~

6 An entity shall determine the proved and probable coal reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles or practices.

~~Reserves are defined as the weight of a mineral deposit that could be economically and legally extracted or produced at the time of the reserves determination.~~

6.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of coal reserves reported in its related financial statements or other general purpose financial reports.

~~Proved reserves are reserves for which (i) the quantity of the mineral deposit is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade or quality are computed from the results of detailed sampling; and (ii) the sites for inspection, sampling and measurement are spaced so closely, and the geographical character is so well-defined, that size, shape, depth and mineral content of reserves are well-established.~~

6.2 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine coal reserves, the entity shall instead use the guidance for classifying coal reserves published in the Committee for Mineral Reserves International Reporting Standards.

~~Probable reserves are reserves for which quantity and grade (quality) are computed from information similar to that used for proved reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance for probable reserves, although lower than that for proved reserves, is high enough to assume continuity between points of observation.~~

~~7 The entity may separately identify reserves in areas with additional ecological, biodiversity or conservation designations such as those listed by the Biodiversity A–Z resource prepared by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).~~

~~8 The entity may discuss reserves located in protected areas or endangered species habitats, but that present low risks to biodiversity or ecosystem services. The entity may provide similar discussion for reserves located in areas with no official designation of high biodiversity value, but that present high risks to biodiversity or ecosystem services.~~

EM-CO-160a.4. (1) Total spatial footprint of operations, (2) area disturbed and (3) area restored

1 An entity shall disclose (1) the total spatial footprint (area) of its operations in square kilometres (km^2) at the reporting date.

1.1 The total spatial footprint of the entity's operations includes the cumulative area disturbed during the current and prior periods by its operations that has not been restored.

1.2 The area disturbed is defined as the aggregate geographical area that has been subject to human activity that has changed the condition of the area, relative to an original reference state.

1.2.1 Human activity is defined as the entity's activities and operations that have physically disrupted, modified, covered, compacted, moved or otherwise altered the characteristics of terrestrial, freshwater aquatic or marine ecosystems from before such activity.

1.2.2 The entity's total spatial footprint of operations includes the area disturbed during the current period and continues to be the area disturbed in all subsequent reporting periods unless the area disturbed is restored.

1.2.3 For bodies of water, the disturbed area includes the bottom or seabed beneath the water's surface.

1.3 The disclosure includes information about the aggregate measured area of the entity's spatial footprint in terrestrial, freshwater aquatic or marine ecosystems (land, wetlands, riverine, navigable waterways, littoral or ocean) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

1.4 This disclosure includes all active sites, recently decommissioned sites awaiting restoration and sites being restored.

1.5 Area restored is defined as a previously disturbed area that has been restored according to applicable jurisdictional law or regulation.

1.6 If the jurisdiction in which the entity operates has no applicable law or regulation to define a previously disturbed area that has been restored, a restored area is defined as the cumulative geographical area that has been subject to human intervention to return a degraded, damaged or destroyed area or ecosystem to an approximation of an original reference state.

1.6.1 Ecological restoration is defined as re-establishing the ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original. Ecological restoration focuses on biodiversity conservation and ecological integrity.

1.6.2 Ecosystem restoration is defined as a restored area that demonstrates resilience to normal ranges of environmental stress and disturbance and interacts with contiguous ecosystems in terms of biotic and abiotic flows and cultural interactions. An ecosystem is restored when it contains sufficient biotic and abiotic resources to sustain itself structurally and functionally and can continue its development without further assistance or subsidy.

2 An entity shall disclose (2) the area disturbed by the entity's operations, in km^2, during the current reporting period.

3 An entity shall disclose (3) the area previously disturbed by operations that has been restored in km^2 during the reporting period.

3.1 An area is no longer part of the entity's spatial footprint of operations once post-closure restoration and remediation efforts are complete as defined by applicable jurisdictional law or regulation (even if after-monitoring is necessary).

4 The disclosure includes information about any adjustments to the entity's total spatial footprint of operations, area disturbed or area restored resulting from acquisitions, mergers and divestments or disposals completed during the reporting period.

~~Rights of Indigenous Peoples~~

~~Topic Summary~~

~~Entities in the Coal Operations industry can operate and hold assets in areas occupied by indigenous peoples. Entities perceived as contributing to human rights violations or failing to account for indigenous peoples' rights may be affected by protests, riots or suspension of permits. These entities could face substantial costs related to compensation or settlement payments, and write-downs in the value of their reserves in such areas. In the absence of applicable jurisdictional laws or regulations to address such cases, several international instruments have emerged to provide guidelines for entities. These instruments include obtaining the free, prior and informed consent of indigenous peoples for decisions that affect them. Several countries have implemented specific laws protecting indigenous peoples' rights, creating increasing regulatory risk for entities that violate those rights.~~

Metrics

~~EM-CO-210a.1. Percentage of (1) proved and (2) probable reserves in or near indigenous land~~

~~1 The entity shall disclose (1) the percentage of its proved reserves, by weight, located in or near areas considered to be indigenous peoples' land.~~

~~1.1 The percentage of proved reserves shall be calculated as the quantity (tonnage) of proved reserves located in or near indigenous land divided by the total quantity of proved reserves.~~

~~2 The entity shall disclose (2) the percentage of its probable reserves, by weight, located in or near areas considered to be indigenous peoples' land.~~

~~2.1 The percentage of probable reserves shall be calculated as the quantity (tonnage) of probable reserves located in or near indigenous land divided by the total quantity of probable reserves.~~

~~3 Indigenous peoples' lands are considered as those occupied by people who self-identify as indigenous in accordance with Article 33 of the United Nations *Declaration on the Rights of Indigenous Peoples* and the International Labour Organization Convention 169, and based on the working definition of 'Indigenous Peoples' adopted by the United Nations, probably have one or more characteristics, such as:~~

~~3.1 historical continuity with pre-colonial or pre-settler societies;~~

~~3.2 strong link to territories and surrounding natural resources;~~

~~3.3 distinct social, economic or political systems;~~

~~3.4 distinct language, culture and beliefs;~~

~~3.5 form non-dominant groups of society; and~~

3.6 ~~resolve to maintain and reproduce ancestral environments and systems as distinct peoples and communities.~~

4 ~~For the purposes of this disclosure, 'near' is defined as within five kilometres of the recognised boundary of an area considered to be indigenous land and the location of the entity's proved and probable reserves.~~

5 ~~Reserves are defined as the weight of a mineral deposit that could be economically and legally extracted or produced at the time of the reserves determination.~~

5.1 ~~Proved reserves are reserves for which (i) the quantity of the mineral deposit is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade or quality are computed from the results of detailed sampling and (ii) the sites for inspection, sampling and measurement are spaced so closely and the geographical character is so well-defined that size, shape, depth and mineral content of reserves are well-established.~~

5.2 ~~Probable reserves are reserves for which quantity and grade (quality) are computed from information similar to that used for proved reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance for probable reserves, although lower than that for proved reserves, is high enough to assume continuity between points of observation.~~

~~EM-CO-210a.2. Discussion of engagement processes and due diligence practices with respect to the management of indigenous rights~~

1 ~~The entity shall describe its due diligence practices and procedures with respect to indigenous rights of communities in which it operates or intends to operate, which may include:~~

1.1 ~~upholding International Labour Organization (ILO) Convention 169;~~

1.2 ~~use of free, prior and informed consent (or consultation) processes;~~

1.3 ~~the establishment of project grievance mechanisms; and~~

1.4 ~~the establishment of formal community agreements.~~

2 ~~The discussion shall include due diligence processes employed during all stages of project development (prior, during and post).~~

3 ~~The discussion may include governance mechanisms the entity puts in place to ensure all levels of the organisation adhere to its policies and practices.~~

4 ~~The discussion shall include how practices apply to business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.~~

4.1 ~~If practices do not apply to business partners, the entity may discuss factors that prevent the application of such practices.~~

Community Relations & Rights of Indigenous Peoples

Topic Summary

Coal operations activities take place over many years and can have ~~a~~ wide-ranging ~~range of adverse~~ effects on communities. Local community support is necessary for an entity to obtain permits and leases to engage in coal operations activities. Such activities can raise concerns related to community livelihood and lead to competition between entities and communities over local resources. Entities that derive economic benefits from these resources rely on the goodwill of host governments and communities to operate and must provide commensurate socioeconomic benefits in good faith to retain it. The loss of that goodwill can result in additional taxes, levies or regulatory penalties, restricted access to reserves and export restrictions. Entities can face increased risks when operating in areas in or near Indigenous Peoples' land, where mismanagement of community relationships could result in protests or legal action disrupting operations. Entities failing to account for community concerns and Indigenous Peoples' rights can face fines and penalties, compensation and settlement payments and impairment of their assets. Entities can reduce these risks by fostering community engagement, adhering to local laws and following international guidelines like obtaining free, prior and informed consent from Indigenous Peoples. An entity that adopts effective community engagement strategies, such as integrating community engagement into each phase of a project, can avoid disruptions, cultivate goodwill, build a positive reputation and enhance its prospects.~~Community rights and interests may be affected by the environmental and social impacts of operations, air emissions, waste generation, wastewater discharges and decommissioning activities. Entities often need support from local communities to obtain permits and leases and conduct their activities without disruptions. The expected value of reserves could be affected if the community interferes or lobbies its government to interfere with the rights of a coal entity to extract those reserves. In addition to community concerns about the direct impacts of projects, the presence of coal mining activities may create associated socioeconomic concerns related to education, health and livelihoods. Coal entities that engage in rent-seeking and exploiting a community's resources without providing proportional socioeconomic benefits in return may be exposed to actions by host governments and communities that restrict their activities or impose additional costs. Entities in the extractives industries can adopt various community engagement strategies in their global operations to manage risks and opportunities associated with community rights and interests, such as integrating community engagement into each phase of the project cycle. Entities that adopt a 'shared value' approach may be able to provide significant socioeconomic benefits to communities and allow them to operate profitably.~~

Metrics

EM-CO-210b.1. Processes used ~~Discussion of process~~ to manage risks and opportunities associated with community rights and interests

1 An ~~The~~ entity shall disclose information about how it manages the sustainability-related ~~discuss its processes, procedures and practices to manage~~ risks and opportunities associated with community ~~the~~ rights and interests ~~of communities~~ in areas where it operates. These include rights and interests related to economic, environmental, social and cultural factors, such as:~~conducts business. Community rights and interests include:~~

1.1 ~~economic rights and interests, which may include~~ employment, fair wages, payment transparency, national resource governance and respect for infrastructure and agricultural land;

1.2 ~~environmental rights and interests, which may include clean local~~ air and water, as well as safe ~~discharge and~~ disposal of waste;

1.3 ~~social rights and interests, which may include~~ adequate healthcare, ~~health care,~~ education and housing; and

1.4 ~~cultural rights and interests, which may include~~ protection and preservation of places of cultural significance (for example, sacred sites or burial sites).

2 An ~~The~~ entity shall disclose information about:~~, if relevant:~~

2.1 the life cycle ~~lifecycle~~ stages to which its processes ~~practices~~ apply, such as~~:~~ pre-bid (when the entity is considering an acquisition~~ of a site~~), exploration and appraisal, site development, coal production, closure, decommissioning and restoration;

2.2 the community rights and interests ~~(enumerated above)~~ specifically addressed by the entity's processes;~~practices; and~~

2.3 how the entity identifies, assesses, prioritises and monitors the risks and opportunities associated with community rights and interests, including whether and how those processes are integrated into and inform the entity's overall risk management process;

2.4~~2.3~~ the underlying definitions and references for its processes, ~~procedures,~~ including whether they are codes, guidelines, standards or regulations; and

2.5 whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the processes.

3 Community-related risks ~~Risks~~ and opportunities ~~may~~ include: corruption, non-technical delays, legal and regulatory complexities, local community employment, availability of skilled labour, purchases of local goods and services, availability ~~and development~~ of local goods and services, quality of ~~content, availability~~ and access to adequate infrastructure (for example, ports, roads, bridges, or shipping channels), ~~community actions, and challenges associated with~~ resettlement and access to land and social licence to operate.

4 An ~~The~~ entity shall disclose whether its processes align ~~the degree to which its policies and practices are aligned~~ with the International Finance Corporation's ~~Entity's~~ (IFC) *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 IFC Performance Standard 4, *Community Health, Safety, and Security*;

4.2 IFC Performance Standard 5, *Land Acquisition and Involuntary Resettlement*; and

4.3 IFC Performance Standard 8, *Cultural Heritage*.

5 The disclosure includes information about how the entity's processes ~~discussion shall include how practices~~ apply to business partners such as contractors, subcontractors, suppliers and joint arrangement partners.

6 The disclosure includes information about an entity's ~~entity may describe its~~ efforts to eliminate or mitigate community risks or address community concerns, including:~~which may include:~~

6.1 the use of a social impact assessment ~~(SIA)~~ that evaluates, manages and mitigates risks;

6.2 efforts to engage with stakeholders, build consensus and collaborate with communities; ~~and~~

6.3 the frequency of community engagement;

6.4 the amount invested in community engagement programmes; and

6.5 'shared' or 'blended' value projects that provide quantifiable benefits to the community and the entity.

7 An ~~The~~ entity shall disclose relevant quantitative information to characterise its exposure to community-related risks, such as the entity's estimated value at risk.~~may quantify its community risks by calculating the aggregate estimated value at risk as the difference in value between a project free from country, regional or community risks (hereafter, country risk) and the value of a project adjusted for these risks.~~

~~7.1~~ ~~This calculation may be conducted using an appropriate valuation model; variations of the Capital Asset Pricing Model (CAPM) are commonly used to assess country risk.~~

~~7.1.1~~ ~~Value at risk can be calculated by applying an additional discount rate premium in calculating the net present value of a project using discounted cash flow (DCF) analysis.~~

~~7.1.2~~ ~~Value at risk can be expressed as a reduction in the expected cash flows of a project because of country risk in calculating the net present value of a project using DCF.~~

~~7.1.3~~ ~~If a project is insured for country risks, the value at risk can be expressed as a reduction in the cash flows of a project because of the cost of insurance in calculating the net present value of a project using DCF analysis.~~

7.1~~7.2~~ Value at risk is defined as the difference in value between the value of a project not taking into account community-related risks, and the value of the project adjusted for those risks.

~~Country, regional or community risks may include: corruption, business legal structure, political stability, regulation, ethnic conflict, stability of the local market, availability of a skilled labour force, resettlement and access to land, quality of access to infrastructure (for example, ports, roads, shipping channels) or general licence to operate.~~

7.1.1 ~~7.2.1~~ These risks could ~~may~~ vary by jurisdiction and project ~~level~~.

~~7.2.2~~ ~~These risks differ from sovereign risk, which is defined as the potential for a central bank or government-backed entity to willingly or unwillingly default on debt obligations, or significantly alter important economic variables such as currency exchange rates, import ratios and money supply.~~

~~7.3~~ ~~The entity shall identify and describe country risks specific to its projects and unique operating context.~~

~~7.3.1 This description may include the identification of country, regional and community risks or the discussion of specific projects.~~

~~7.3.2 This description may include discussion of how the entity has mitigated these risks (for example, through community engagement partnerships and blended value projects); the entity shall quantify this reduction in risk according to the methods described above.~~

~~7.3.3 The discussion should be in addition to broad country risk classification (for example, the prevailing Organisation for Economic Co-operation and Development (OECD) country risk classification, Standard & Poor's Country Risk ratings and the World Economic Forum Global Competitiveness Index).~~

~~7.4 The entity may describe the model or approach used to value capital expenditure projects such as adjusted discount rate, expected cash flow or other methods.~~

EM-CO-210b.2. (1) Number of non-technical delays and (2) the total days idle~~duration of non-technical delays~~

1 An ~~The~~ entity shall disclose (1) the total number of non-technical delays.~~and (2) duration, in days, of site shutdowns or project delays because of non-technical factors.~~

1.1 Non-technical delays are defined as shutdowns and project delays resulting from pending regulatory permits or other delays resulting from community-related risks such as protests.

2 An entity shall disclose (2) the total days idle resulting from non-technical delays.

2.1 'Days idle' is defined as the number of workdays lost resulting from a non-technical delay.

2.2 Total days idle is calculated as the sum of days idle for each non-technical delay.

2.2.1 If the entity experiences concurrent site shutdowns or project delays at different locations, the overlapping periods are counted only once.

~~2 The scope may include shutdowns and project delays resulting from pending regulatory permits, or other political delays related to community concerns, community or stakeholder resistance or protest, or armed conflict.~~

3 The disclosure excludes delays resulting from organised labour collective actions (strikes), employer actions (lockouts) and technical situations unrelated to community-related risks (permitting delays).

~~3 The scope of the disclosure excludes delays because of strikes and lockouts disclosed in EM-CO-310a.2.~~

4 An ~~The~~ entity shall provide information about the ~~may discuss specific~~ delays including associated costs, the root cause of each non-technical delay, the effect on production, the ~~and corrective actions for resolved delays, and~~ status of ongoing non-technical delays and corrective action taken.

EM-CO-210b.3. Percentage of (1) proved and (2) probable coal reserves in or near Indigenous Peoples' land

1 An entity shall separately disclose the percentages of its (1) proved coal reserves and (2) probable coal reserves associated with operational facilities located in or near Indigenous Peoples' land at the reporting date.

1.1 Each percentage is separately calculated as the tonnage of proved or probable coal reserves associated with operational facilities located in or near Indigenous Peoples' land divided by the total tonnage of proved reserves or the total tonnage of probable reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

3 Indigenous Peoples' land is defined as an area occupied by Indigenous Peoples as determined by Article 33 of the 2007 United Nations *Declaration on the Rights of Indigenous Peoples* and the International Labour Organization *Indigenous and Tribal Peoples Convention*, 1989 (No. 169). Based on the working definition adopted by the United Nations, Indigenous Peoples have one or more of the following characteristics:

3.1 historical continuity with pre-colonial or pre-settler societies;

3.2 strong link to territories and surrounding natural resources;

3.3 distinct social, economic or political systems;

3.4 distinct language, culture and beliefs;

3.5 form non-dominant groups of society; and

3.6 resolve to maintain and reproduce ancestral environments and systems as distinct peoples and communities.

4 An entity's operational facilities are defined as being 'in or near' Indigenous Peoples' land if any part of the facility's spatial footprint of operations is in or within five kilometres of the recognised boundary of Indigenous Peoples' land.

5 The entity shall determine the proved and probable coal reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles.

5.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of coal reserves reported in its related financial statements or other general purpose financial reports.

5.2 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine coal reserves, the entity shall instead use the guidance for classifying coal reserves published in the Committee for Mineral Reserves International Reporting Standards.

EM-CO-210b.4. Description of engagement processes and due diligence practices related to upholding Indigenous Peoples' rights

1 An entity shall disclose information about its engagement processes and due diligence practices related to upholding Indigenous Peoples' rights in the areas in which it operates or intends to operate including whether the entity:

1.1 upholds the principles of the International Labour Organization *Indigenous and Tribal Peoples Convention*, 1989 (No. 169) and the 2007 United Nations *Declaration on the Rights of Indigenous Peoples*;

1.2 uses free, prior and informed consent (or consultation) processes;

1.3 develops partnerships and shared decision-making mechanisms;

1.4 establishes project grievance procedures; and

1.5 executes formal community agreements.

2 An entity shall include information about the engagement process and due diligence practices it employs during project development such as the local or regional factors it examines and its governance mechanisms to monitor workforce compliance.

3 An entity shall describe whether and, if so, how these processes and practices apply to its business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.

Operations in Conflict Areas

Topic Summary

Coal Operations entities might operate in conflict-affected and high-risk areas characterised by political instability, weak governance or active conflict and lacking strong legal institutions and regulatory oversight or enforcement. In these areas, safeguarding workers and asset integrity against security risks could help an entity to avoid workforce injuries, operational disruptions, increased costs, asset impairment and reduced access to coal reserves. Entities using private or government security forces to protect their workers and assets could knowingly or unknowingly contribute to human rights violations, including the use of excessive force, leading to increased public and legal scrutiny. These risks can limit future development, negatively affect investment opportunities and raise the entity's cost of capital. To manage these risks, entities can adopt engagement processes and due diligence practices in conflict-affected and high-risk areas, including aligning security practices with international standards. By strengthening risk management related to operating in volatile security situations, an entity can protect its workforce, preserve asset value, reduce financing costs and improve its long-term resilience and prospects.

Metrics

EM-CO-210c.1. Percentage of (1) proved and (2) probable coal reserves in conflict-affected and high-risk areas

1 An entity shall separately disclose the percentages of its (1) proved coal reserves and (2) probable coal reserves associated with operational facilities located in conflict-affected and high-risk areas at the reporting date.

1.1 Each percentage is separately calculated as the tonnage of proved or probable coal reserves associated with operational facilities located in conflict-affected and high-risk areas divided by the total tonnage of proved reserves or the total tonnage of probable reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

3 Conflict-affected and high-risk areas are defined according to the 2016 Organisation for Economic Co-operation and Development *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, Third Edition.

3.1 Conflict-affected and high-risk areas are identified by the presence of armed conflict, widespread violence or other risks. Such areas are often characterised by widespread human rights abuses and violations of national or international law.

3.2 Conflict-affected areas take a variety of forms and include international conflicts involving two or more states, or non-international conflicts, such as wars of liberation, insurgencies or civil wars.

3.3 High-risk areas include areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence.

4 An entity's operational facilities are defined as being in conflict-affected or high-risk areas if any part of the facility's spatial footprint of operations is in a conflict-affected or high-risk area.

4.1 If operational facilities are adjacent to a conflict-affected or high-risk area and can be reasonably expected to be affected, then the entity shall include the coal reserves associated with those operational facilities in the disclosure.

5 An entity shall determine the proved and probable coal reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles.

5.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of coal reserves reported in its related financial statements or other general purpose financial reports.

5.2 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine coal reserves, the entity shall instead use the guidance for classifying coal reserves published in the Committee for Mineral Reserves International Reporting Standards.

EM-CO-210c.2. Description of engagement processes and due diligence practices related to operating in conflict-affected and high-risk areas

1 An entity shall disclose information about its engagement processes and due diligence practices related to conflict-affected and high-risk areas in which it operates or intends to operate including whether the entity:

1.1 upholds the principles of the Five-Step Framework for Risk-Based Due Diligence in the Mineral Supply Chain outlined in Annex I of the 2016 Organisation for Economic Co-operation and Development *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, Third Edition (OECD Due Diligence Guidance); and

1.2 upholds the principles covered in human rights frameworks such as the Voluntary Principles on Security and Human Rights.

2 Conflict-affected and high-risk areas are defined according to the OECD Due Diligence Guidance.

3 An entity shall include information about the engagement process and due diligence practices it employs during project development, such as the local or regional factors it examines and its governance mechanisms to monitor workforce compliance.

4 An entity shall describe whether and, if so, how these processes and practices apply to its business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.

Labour Practices~~Relations~~

Topic Summary

Working conditions related to coal operations are usually physically demanding and hazardous. Labour unions play an important role in representing workers' interests and managing collective bargaining for better wages and working conditions. Conflict ~~This makes the management of labour relations critical, since conflict~~ with workers can result in labour strikes and other disruptions that can delay or stop production, leading to lost revenue and reputational damage. Persistent labour disputes can adversely affect the long-term profitability of the entity. For these reasons, Coal Operations entities can benefit from better managing their relations with their workforce and associated representative bodies.

Metrics

EM-CO-310a.1. Percentage of employees covered by ~~active workforce employed under~~ collective agreements

1 An ~~The~~ entity shall disclose the percentage of its total employees covered by ~~in the active workforce employed under~~ collective agreements at the reporting date. ~~during any part of the reporting period.~~

~~1.1 The number of employees in the active workforce of an entity is calculated as the maximum number of unique employees it employed at any time during the reporting period.~~

1.1 ~~1.2~~ Collective agreements are defined as agreements between an entity and an employees' organisation on behalf of some or all ~~employees~~ of the entity's employees ~~entity~~ concerning working conditions and terms of employment. ~~the engagement of employees, termination of employment, terms of employment, labour relations, and the rights and obligations of the organisations which are parties to the agreement.~~

1.2 ~~1.3~~ Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using various indicators such as economic dependency. ~~on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant, or hourly employees. Employees excludes contract workers.~~

1.2.1 ~~1.3.1~~ Employees include permanent employees, temporary employees, non-guaranteed hours employees, full-time employees and part-time employees.

1.2.2 Contract workers are defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).

2 The percentage is ~~shall be~~ calculated as the number of employees covered by ~~in the active workforce who were employed under~~ collective agreements ~~during any part of the reporting period~~ divided by the total ~~average~~ number of employees ~~workers~~ employed. ~~during the reporting period.~~

3 ~~The scope of the disclosure includes all employees employed by the entity, including full-time, part-time and temporary employees.~~

EM-CO-310a.2. (1) Number of work stoppages and (2) the total days idle ~~and (2) duration of strikes and lockouts~~

1 An ~~The~~ entity shall disclose (1) the total number of work stoppages ~~involving 1,000 or more workers lasting one full shift or longer~~.

1.1 Work ~~The scope of work~~ stoppages are defined as shutdowns and project delays resulting from the collective actions of organised labour during disputes with the entity and include ~~includes~~ strikes and lockouts.

1.1.1 A strike is defined as a temporary stoppage of work by a group of employees (not necessarily union members) to express a grievance or enforce a demand.

1.1.2 A lockout is defined as a temporary withholding or denial of employment during a labour dispute to enforce terms of employment upon a group of employees.

2 An ~~The~~ entity shall disclose (2) the ~~duration of strikes and lockouts as the~~ total days idle resulting from ~~because of~~ work stoppages.

2.1 'Days idle' is defined as the ~~aggregate~~ number of workdays lost because of a work stoppage.~~stoppages.~~

2.2 Total days idle is ~~shall be~~ calculated as the sum ~~of the products of the number of workers involved in each work stoppage and the number~~ of days for each ~~respective~~ work stoppage ~~was in effect~~.

2.2.1 If the entity experiences concurrent work stoppages at different locations, the overlapping periods are counted only once.

3 The ~~scope of the~~ disclosure excludes work stoppages because of ~~other~~ non-technical reasons such as those resulting from pending regulatory permits, or other delays related to community concerns, community or stakeholder resistance or protest, or armed conflict disclosed in EM-CO-210c.2 ~~EM-CO-210a.2~~.

~~Note to **EM-CO-310a.2**~~

4~~1~~ An ~~The~~ entity shall provide information about the work stoppages including associated costs, ~~describe~~ the reason for each work stoppage (as stated by labour), the effect on production, the status of ongoing work stoppages and corrective action taken. ~~and any corrective actions taken as a result.~~

Workforce Health & Safety

Topic Summary

Safety is critical to coal mining operations because of the hazardous working conditions involved. Fatalities and injuries can result from the many hazards associated with the industry, including accidents, cave-ins, explosions and flooding. ~~Because of these hazards, the industry is characterised by higher-than-average mortality and injury rates.~~ Coal miners are also susceptible to long-term health risks such as chronic lung disease as well as mental health problems. Some jurisdictional health and safety laws protect coal mining workers and ~~may~~ provide compensation for work-related chronic illnesses that can impose additional costs on entities or result in regulatory penalties. A Coal Operations entity that safeguards workforce health and safety and creates a culture of safety and wellbeing among workers can reduce operating costs, workplace accidents and operational downtime, improving productivity. ~~An entity's ability to protect employee health and safety, and to create a culture of safety and well-being among employees, may prevent accidents, mitigate costs, reduce operational downtime and enhance workforce productivity.~~

Metrics

EM-CO-320a.1. (1) Number of fatalities and (2) total recordable incident rate ~~(1) All-incidence rate, (2) fatality rate, and (3) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2~~1~~ An ~~The~~ entity shall separately disclose (2) ~~(1)~~ its total recordable incident ~~all incidence~~ rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.~~and (2) work-related fatality rate.~~

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 An injury or illness is typically defined as a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid or loss of consciousness.

~~1.1~~ ~~Incidents include:~~

~~1.1.1~~ ~~fatalities or work-related injuries resulting in death of employees on active mine property;~~

~~1.1.2~~ ~~non-fatal days lost cases or occupational injuries that result in the loss of one or more days from the entity's scheduled work, or days of limited or restricted activity while at work;~~

~~1.1.3~~ ~~no days lost cases or occurrences requiring only medical treatment (beyond first aid); that is, non-fatal injury occurrences resulting only in loss of consciousness or medical treatment other than first aid; and~~

~~1.1.4~~ ~~additional criteria defining an incident that are unique to an entity's jurisdiction may also be incorporated.~~

2.1.3 ~~1.2~~ First aid is typically~~,~~ defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but ~~and other non-recordable incidents may be defined in accordance with~~ jurisdictional definitions may vary.~~guidelines. The entity shall disclose the legal, regulatory or industry framework used as the source for these guidelines.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2 The entity shall disclose (3) its near miss frequency rate (NMFR) for work-related near misses.~~

~~2.1 A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage or environmental damage, but had the potential to do so in other circumstances.~~

~~2.2 The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~3 All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~3.1 The '200,000' in the rate calculation represents the total number of hours 100 full-time workers working 40 hours per week for 50 weeks per year can provide annually.~~

4 The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses.~~includes work-related incidents only.~~

4.1 Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~4.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~4.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~4.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~4.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 An entity shall disclose (3) the average number of training hours provided to its workforce for health, safety and emergency preparedness management training.

5.1 Training includes topics such as the health, safety or emergency preparedness related to the occupational risks or hazards to which the workforce is reasonably likely to be exposed and to specific occupational risks or hazards.

5.1.1 Training includes technical health, safety and emergency management training required by applicable jurisdictional authorities related to occupational risks or hazards.

5.2 The average number of hours of health, safety and emergency response training is calculated as the total qualifying training hours provided to the workforce divided by the total workforce.

5.2.1 The total workforce is defined as the number of individual employees and non-employee workers the entity employs at the reporting date.

6 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~5 The entity shall disclose the rates for each of these employee categories:~~

~~5.1 direct employees, defined as individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees; and~~

~~5.2 contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

~~6 The scope of the disclosure includes all employees regardless of employee location or type of employment.~~

EM-CO-320a.2. Description ~~Discussion~~ of management systems used to foster a safe working environment ~~of accident and safety risks and long-term health and safety risks~~

1 An ~~The~~ entity shall disclose information about:~~discuss its management of accident and safety risks.~~

1.1 how it cultivates a safe working environment throughout its operations, avoids accidents and minimises long-term health risks to its workforce;

1.2 ~~The scope of discussion includes~~ how it ~~the entity~~ manages safety and coordinates emergency preparedness throughout its value chain, such as through technology, training, corporate culture, ~~joint management by the workforce and leadership, use of technology,~~ rules and guidelines enforcement, and regulatory compliance;~~the enforcement of rules and guidelines.~~

1.3 how it manages long-term health risks associated with operations, such as through use of personal protective equipment, testing and monitoring;

~~1.2 The scope of discussion includes how emergency preparedness is coordinated among business partners (for example, contractors and subcontractors).~~

1.4~~1.3~~ the ~~The discussion may focus broadly on~~ safety ~~and emergency~~ management systems the entity uses to maintain a safe working environment, including the prevention of incidents, fatalities and illnesses;~~, but it shall specifically address the systems used to avoid and manage emergencies, accidents and incidents that could have catastrophic effects on human health, local communities and the environment.~~

1.5 leading indicators the entity has developed to monitor, manage or improve safety performance, such as near-miss reporting, workforce engagement programmes, hazard reduction, emergency drills or safety-related compliance rates; and

1.6 the implementation of these safety management systems including progress towards tracking safety and health performance, and obtaining third-party verification of the systems' efficacy.

2 An entity shall describe how workforce safety management and emergency preparedness are coordinated among business partners (for example, contractors and subcontractors).

2 ~~The entity shall discuss how it manages long-term health and safety risks associated with coal mining (for example, chronic lung disease) such as through training, use of personal protective equipment, use of technology, rules and guidelines, and the enforcement of rules and guidelines.~~

3 ~~The entity may discuss implementation of relevant management systems including progress towards tracking safety and health metrics, employing management system metrics and obtaining third-party verification.~~

Climate Resilience~~Reserves Valuation & Capital Expenditures~~

Topic Summary

Coal Operations entities could ~~may~~ be unable to extract a significant proportion of their coal reserves if greenhouse gas ~~(GHG)~~ emissions are controlled to limit global temperature increases. ~~Stewardship of capital resources while considering medium- to long-term trends, particularly related to climate change mitigation actions, is critical to prevent asset impairment and maintain profitability and creditworthiness.~~ Globally, regulations and policies could limit greenhouse gas ~~are and may continue to be put into place to limit GHG~~ emissions from coal-fired power plants, ~~—the customers of coal entities—thus~~ reducing demand for ~~and the price of~~ coal. Coal demand is also ~~is being~~ affected by regulations governing other harmful air emissions that apply to coal-fired power plants. ~~An expansion of GHG-mitigation regulations may increase the magnitude of potential financial impacts in the medium to long term.~~ Along with improved competitiveness of alternative energy technologies, these jurisdictional regulations and policies pose long-term risks for the reserves and capital investments of coal operations entities. An entity's ability to avoid asset impairment, maintain profitability and preserve creditworthiness depends on how it manages its climate-related transition risks and its climate resilience.

Metrics

EM-CO-420a.1. Sensitivity of coal reserves to changes in market prices under different climate transition risk-related scenarios~~coal reserve levels to future price projection scenarios that account for a price on carbon emissions~~

1 An entity shall disclose information about the resilience of its proved and probable coal reserves to changes in prices being applied to greenhouse gas emissions.

~~The entity shall perform a sensitivity analysis of its reserves to determine how several future scenarios may affect the determination of whether the reserves are proven or probable.~~

2 An entity shall use climate-related scenario analysis to evaluate how various transition risk scenarios that account for changing coal market demand and prices being applied to greenhouse gas emissions could affect the quantity of proved and probable coal reserves that the entity can produce before reaching the economic limit of those reserves.

~~The entity shall analyse the sensitivity of its current proven and probable reserves using the price trajectories published by the International Energy Agency (IEA) in its World Energy Outlook (WEO) publication, including:~~

2.1 The market demand or price scenarios might vary depending on the type of coal reserves, the regulatory environment in the jurisdictions where the entity has exploration or production activities, the end-use of the entity's products or other factors. Such scenarios might include the named scenarios and associated market prices in the most recently published International Energy Agency *World Energy Outlook* (WEO).

~~Current Policies Scenario, which assumes no changes in policies from the mid-point of the year of publication of the WEO.~~

2.2 Other than using the market prices published in the WEO scenarios, the entity shall determine the coal reserves for this disclosure using the same data, assumptions and calculation methods used in preparing its related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles or practices.

~~New Policies Scenario, which assumes that broad policy commitments and plans that have been announced by countries—including national pledges to reduce greenhouse gas emissions and plans to phase out fossil-energy subsidies—occur, even if the measures to implement these commitments have yet to be identified or announced. This broadly serves as the IEA baseline scenario.~~

2.3 The climate-related scenario analysis of proved and probable coal reserves in this disclosure could be included as part of related requirements in paragraph 22 of IFRS S2.

~~Sustainable Development Scenario, which assumes an energy pathway occurs that is consistent with the goal of limiting the global increase in temperature to 1.5°C by limiting concentration of greenhouse gases in the atmosphere.~~

2.4 For the purposes of this disclosure, the entity shall disclose information about the inputs it used and key assumptions it made in the analysis, consistent with paragraph 22(b) of IFRS S2.

~~The entity shall consider the WEO scenarios as a normative reference, thus any updates to the WEO made year-on-year shall be considered updates to this guidance.~~

~~2.5 Reserves are defined as mineral deposits that could be economically and legally extracted or produced at the time of the reserve determination.~~

~~2.6 Proven reserves are reserves for which (a) quantity is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade or quality are computed from the results of detailed sampling and (b) the sites for inspection, sampling and measurement are spaced so closely and the geographical character is so well defined that size, shape, depth and mineral content of reserves are well established.~~

~~2.7 Probable reserves are reserves for which quantity and grade or quality are computed from information like that used for proven (measured) reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven (measured) reserves, is high enough to assume continuity between points of observation.~~

~~3 The entity shall conduct a reserves sensitivity analysis and disclose, in the aggregate, an estimate of reserves estimated for each product type based on different price and cost criteria, such as a range of prices and costs that may reasonably be achieved, including standardised futures prices or management's own forecasts.~~

3 An entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of its coal reserves reported in its financial statements or other general purpose financial reports.

3.1 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine coal reserves, the entity shall instead use the guidance for classifying coal reserves published in the Committee for Mineral Reserves International Reporting Standards.

4 ~~The entity shall also disclose the price and cost schedules and assumptions on which disclosed values are based.~~

4~~5~~ The following illustrates a possible tabular format to present this information:~~entity may summarise its findings in the following table format:~~

Table 3. Sensitivity of reserves to prices by principal product type and price scenario~~Reserves to Prices By Principal Product Type and Price Scenario~~

PRICE CASE	PROVED ~~PROVEN~~ RESERVES		PROBABLE RESERVES	
(Scenario)	**Coal**	**Product A**	**Coal**	**Product A**
	(tonnes)	**(measure)**	**(tonnes)**	**(measure)**
~~Current Policies~~ Scenario A~~(base)~~				
~~New Policies~~ Scenario B				
~~Sustainable Development~~ Scenario C				

6 ~~The entity may disclose the sensitivity of its reserve levels in other price and demand scenarios in addition to those described above, particularly if these scenarios differ depending on the type of coal reserves, regulatory environment in the countries or regions where mining occurs, end-use of the entity's products, or other factors.~~

7 ~~For additional sensitivity analyses, the entity should consider disclosing the following, per the Task Force on Climate-Related Financial Disclosures (TCFD) Recommendations Report Figure 8 as well as the Implementing the Recommendations of the TCFD Report, Section E:~~

~~7.1 The alternative scenarios used, including other 2ºC or lower scenarios~~

~~7.2 Critical input parameters, assumptions, and analytical choices for the climate-related scenarios used, particularly as they relate to key areas such as policy assumptions, energy deployment pathways, technology pathways, and related timing assumptions~~

~~7.3 Time frames used for scenarios, including short-, medium-, and long-term milestones (e.g., how organisations consider timing of potential future implications under the scenarios used)~~

EM-CO-420a.2. Estimated carbon dioxide emissions latent ~~embedded~~ in proved ~~proven~~ coal reserves

1 An ~~The~~ entity shall ~~calculate and~~ disclose an estimate of the carbon dioxide emissions latent ~~embedded~~ in its proven coal reserves in metric tonnes of carbon dioxide equivalent (CO_2-e).

1.1 This disclosure is an estimate of the maximum latent carbon dioxide emissions and excludes quantities determined using alternative scenarios of ~~estimate applies a factor for potential CO_2 only and does not include an estimate for all~~ potential greenhouse gas emissions, such as non-fuel uses like in petrochemicals or lubricants production.~~because these are dependent on downstream use (for example, utility electricity generation, industrial heating and electricity generation, cement production or steel production).~~

2 Estimated latent ~~potential~~ carbon dioxide emissions from proved ~~proven~~ coal reserves is ~~shall be~~ calculated using ~~according to~~ the following formula:~~, derived from Meinshausen et al:~~

2.1 E = R × V × C, in which emissions (E) = reserves (R) × net caloric value (V) × carbon content (C), such that:~~where:~~

2.1.1 E = the latent carbon dioxide ~~are the potential~~ emissions in CO_2-e;~~kilograms of carbon dioxide (kg CO_2)~~

2.1.2 R = ~~are~~ the mass of proved ~~proven~~ reserves;~~ in gigagrams (Gg)~~

2.1.3 V = ~~is~~ the net calorific value in units of energy produced ~~terajoules~~ per unit of mass of proved coal reserves; and~~gigagram (TJ/Gg)~~

2.1.4 C = ~~is the effective~~ the carbon content (carbon dioxide emission factor in mass of ~~kilograms~~ CO_2 per unit of energy produced).~~terajoule (kg/TJ)~~

~~3 In the absence of data specific to the entity's coal reserves, carbon content shall be calculated using default data for each major type of coal resource published by the Intergovernmental Panel on Climate Change (IPCC) in its *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.~~

~~3.1 The entity shall use default carbon content values per unit of energy listed in IPCC Table 1.3 Default Values of Carbon Content, Volume 2: Energy, Chapter 1.~~

~~3.2 The entity shall use calorific values per weight of coal resource contained in IPCC Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1.~~

3~~4~~ An ~~The~~ entity shall use the same engineering estimates used to determine the mass ~~weight~~ of its proved coal reserves that were used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles or practices.~~in gigagrams.~~

4~~5~~ For other assumptions required to estimate the carbon content of an entity's coal reserves, the entity shall use ~~rely on~~ guidance from the IPCC, the Greenhouse Gas Protocol~~, US Energy Information Agency (EIA)~~ or the International Energy Agency~~ (IEA)~~.

EM-CO-420a.3. Description of how climate-related risks and opportunities influence capital strategy and investments~~Discussion of how price and demand for coal or climate regulation influence the capital expenditure strategy for exploration, acquisition and development of assets~~

1 An ~~The~~ entity shall disclose how climate-related risks and opportunities ~~discuss how projections for price and demand for coal and the path of air quality and climate regulation~~ influence its ~~the entity's capital expenditure (CAPEX)~~ investment, maintenance and disposal plans.~~strategy.~~

1.1 In accordance with paragraph 16(c)(i) of IFRS S2, the disclosure includes information about the entity's plans for capital expenditure, major acquisitions and divestments, joint ventures, business transformation, innovation, new business areas and asset retirements.

~~This discussion should include the entity's projections and assumptions about future coal prices and the likelihood that certain price and demand scenarios occur.~~

2 In accordance with paragraph 22 of IFRS S2, the disclosure includes information about the entity's strategy and the resilience of its strategy to climate-related changes, developments and uncertainties considering its identified climate-related risks and opportunities. Specifically, the entity shall disclose:

~~The entity shall discuss the implications of price and demand scenario planning (EM-CO-420a.1) and how they may affect decisions to explore, acquire and develop new reserves.~~

2.1 an assessment of its capacity to adjust or adapt its strategy and business model to climate change over the short, medium and long term;

2.2 the availability of, and flexibility in, its existing financial resources to respond to the effects on current and planned investments informed by the entity's climate-related scenario analysis;

2.3 an evaluation of new investments it considers as potential market transition opportunities; and

2.4 an evaluation of significant areas of uncertainty considered in its assessment of its climate resilience.

3 The disclosure includes a description of ~~entity may discuss~~ factors that could reasonably be expected to ~~materially~~ influence its investment ~~CAPEX~~ decision making, including:~~which may include:~~

3.1 information about jurisdictional or industry climate-related regulations that could ~~How the scope of air quality and climate change regulation—such as which countries, regions or industries are likely to be impacted—may~~ influence ~~where the entity focuses~~ its investments in exploration and development; and

3.2 information about the extent to which the future returns on capital expenditure are expected to be affected by possible effects of climate-related regulation on the price or demand for coal.~~Its view of the alignment between the time horizon during which price and demand for coal may be affected by climate regulation and time horizons for returns on capital expenditures on reserves~~

~~3.3 How the structure of climate regulations—a carbon tax versus cap-and-trade—may differently affect price and demand, and thus the entity's capital expenditure decision making~~

4 The disclosure includes information about of how regulatory ~~entity may discuss how these~~ trends affect the entity's investment decision making, including the entity's:~~decision-making in the context of the various types of reserve expenditures, including development of assets, acquisition of properties with proven reserves, acquisition of properties with unproven resources and exploration activities.~~

4.1 exploration activities and the development of new assets;

4.2 acquisition of new proved or unproved coal reserves;

4.3 expansion of existing assets; and

4.4 investments in renewable energy or research and development in technologies to improve the entity’s resilience to climate change transition risks.

Tailings Storage Facilities Management

Topic Summary

Coal waste impoundments or fine coal refuse ponds, also called tailings storage facilities (TSFs), can leak and contaminate water supplies if mismanaged, potentially leading to adverse impacts on the environment and human health. These impacts could result in ~~may carry financial implications such as regulatory~~ fines, regulatory penalties, compensation payments, and remediation or compliance obligations for Coal Operations entities. An entity's ~~Entities'~~ ability to reduce the number and size of TSFs ~~fine coal refuse ponds~~ and ensure their ~~the~~ structural integrity ~~of impoundments~~ can minimise such risks.~~impacts.~~ A catastrophic failure of such facilities (for example, a dam failure) could still release significant volumes of waste and materials that are harmful to the environment, leading to severe impacts on ecosystems, human livelihood, community safety and local economies~~ and communities~~. Such ~~catastrophic~~ incidents lead to ~~may result in~~ significant financial losses for entities and ~~may~~ impair their social licence to operate. Robust processes and approaches to tailings facility design, management, operation and closure, as well as appropriate management of associated risks, can help prevent such incidents from occurring. Robust ~~Entities that adopt robust~~ practices an entity can adopt to maintain the safety of TSFs include ensuring full ~~may do so through ensuring~~ accountability for tailings management at the highest levels of the entity, conducting frequent internal and external independent technical reviews of TSFs, and responding to safety concerns with ~~ensuring~~ mitigation measures ~~are implemented~~ in a timely manner. A ~~in case of a safety concern. Additionally, a~~ strong safety culture and well-established emergency preparedness and response plans can mitigate the potential ~~impacts and~~ financial effects ~~implications~~ of such events. ~~Entity obligations related to long-term remediation and compensation for damages may result in additional financial effects in case of failure. An entity's ability to meet such obligations after an incident has occurred is an additional component of emergency preparedness.~~

Metrics

EM-CO-540a.1. Tailings storage facility inventory table: (1) facility name, (2) location, (3) ownership status, (4) operational status, (5) construction method, (6) maximum permitted storage capacity, (7) current quantity ~~amount~~ of tailings stored, (8) consequence classification, (9) date of most recent independent technical review, (10) material findings, (11) mitigation measures and ~~,~~ (12) site-specific emergency preparedness and response plans ~~EPRP~~

1 The entity shall disclose an inventory of its tailings storage facilities.

1.1 The definition of tailings facilities storage facilities is ~~shall be consistent with that~~ provided by ~~in~~ the Global Tailings Review *Global Industry Standard on Tailings Management* (GISTM).

2 For each tailings storage facility, the entity shall disclose (1) the facility name, (2) its location, (3) ownership status, (4) operational status, (5) construction method, (6) maximum permitted storage capacity, (7) current quantity ~~amount~~ of tailings stored, (8) consequence classification, (9) date of the most recent independent technical review, (10) material findings, (11) mitigation measures, and (12) site-specific emergency preparedness and response plan (EPRP).

2.1 The entity shall provide the name or other identifier used by the entity for the facility.

2.2 Disclosure of the facility's location includes ~~shall include~~ the country in which it operates.

2.3 Ownership status includes ~~shall include~~ whether the entity is the operator of the facility.

2.3.1 The definition of an operator is ~~shall be~~ consistent with that provided by ~~in the~~ GISTM Glossary.

2.4 The entity shall disclose the operational status of its facilities (for example, active, inactive—under maintenance~~,~~ or closed).

2.5 The entity shall disclose the facility construction method.

2.5.1 The entity shall disclose the construction method as 'downstream', 'upstream' or 'centreline', consistent with the definitions provided by the International Council on Mining and Metals ~~(ICMM)~~.

2.5.2 If the construction method does not match any of these definitions, the entity shall disclose the construction method as 'other' and provide a brief description of it.

2.6 The entity shall disclose the maximum permitted facility storage capacity, in multiples of cubic metres.~~metric tonnes.~~

2.7 The entity shall disclose the maximum and average volume ~~quantity~~ of tailings stored in the facility during ~~as of the end of~~ the reporting period, in cubic metres.~~metric tonnes.~~

2.8 The entity shall disclose the consequence classification of the facility using requirement ~~in accordance with Requirement~~ 4.1 of the GISTM.

2.9 The entity shall disclose the date of the most recent independent technical review of the facility, conducted using requirement ~~in accordance with Requirement~~ 10.6 of the GISTM.

2.9.1 A review is ~~considered~~ independent if it is conducted by third parties who are not and have not been directly involved with the design or operation of the facility.

2.10 The entity shall disclose whether the most recent independent technical review resulted in 'material findings' as defined by GISTM ~~material findings~~ related to the safety of the facility.

2.10.1 The scope of material findings shall be consistent with the definitions ~~definition of 'material' that~~ provided in the GISTM.~~, in which~~

2.10.2 The entity shall define the criteria for ~~what is~~ material findings, ~~is to be defined by the entity,~~ subject to the provisions of local regulations, and evaluated as part of any audit or external assessment that can ~~may~~ be conducted on implementation.

2.10.3 ~~2.10.2~~ The entity shall state either 'Yes' or 'No'.

2.10.4 ~~2.10.3~~ If the entity has responded 'Yes' for a facility, the entity is permitted to ~~may~~ provide a summary of the material findings in addition to the inventory table.

2.10.5 ~~2.10.4~~ If ~~For facilities of which~~ an independent technical review of a facility was not conducted, the entity shall state 'N/A'.

2.11 If the entity has disclosed 'Yes' regarding material findings, the entity shall disclose whether mitigation measures have been implemented to reduce risk to a level as low as reasonably practicable (ALARP).

2.11.1 The definition of ALARP is ~~shall be consistent with that~~ provided by ~~in~~ the GISTM Glossary.

2.11.2 The entity shall state either 'Yes' or 'No'.

2.11.3 If the entity has responded 'Yes' for a facility, the entity is permitted to ~~may~~ provide a summary of the relevant mitigation measures in addition to the inventory table.

2.12 The entity shall disclose whether a site-specific EPRP is in place using ~~in accordance with~~ Requirements 13.1 and 13.2 of the GISTM.

2.12.1 The definition of EPRP is ~~shall be consistent with that~~ provided by ~~in~~ the GISTM Glossary.

2.12.2 The entity shall disclose ~~state~~ either 'Yes' or 'No'.

~~3 The entity should disclose its inventory in this table format:~~

~~Table 4. Tailings storage facility inventory table~~

~~(a) Facility name~~	~~(b) Location~~	~~(c) Ownership status~~	~~(d) Operational status~~	~~(e) Construction method~~	~~(f) Maximum permitted storage capacity~~	~~(g) Current quantity of tailings stored~~	~~(h) Consequence classification~~	~~(i) Date of most recent independent technical review~~	~~(j) Material findings~~	~~(k) Mitigation measures~~	~~(l) Site specific EPRP~~
-	-	-	-	-	-	-	-	-	-	-	-

EM-CO-540a.2. Description ~~Summary~~ of tailings management systems and governance structure used to monitor and maintain the stability of tailings storage facilities

1 The entity shall disclose ~~provide a summary of~~ the tailings management systems used to monitor and maintain the structural integrity of tailings facilities and to minimise the risk of a catastrophic failure.

1.1 The ~~scope of the~~ disclosure includes ~~shall include~~ a summary of the policies and procedures for the entity's active and inactive tailings facilities for all phases of their life cycle, ~~lifecycle,~~ including closure and post-closure.

1.2 The definitions of tailings facilities and tailings management systems are ~~shall be~~ consistent with those provided in the Global Tailings Review *Global Industry Standard on Tailings Management* (GISTM).

2 The disclosure includes the elements ~~shall include concepts~~ outlined in principles ~~Principles~~ 7–11 of the GISTM, such as:~~and may include:~~

2.1 a summary of the performance monitoring programme for tailings facilities and their related ~~appurtenant~~ structures;

2.2 a summary of the engineering monitoring systems that verify design assumptions and monitor potential failure modes;

2.3 the frequency of risk assessments consistent with requirement ~~Requirement~~ 10.1 of the GISTM;

2.4 the frequency of engineer of record, consistent with the definition provided in the GISTM, or senior independent technical reviewer construction and performance reviews;

~~2.4.1 the definition of engineer of record shall be consistent with that provided in the GISTM;~~

2.5 a summary of the governance framework that outlines ~~the~~ accountability, from the site-level management through to executive leadership and the board of directors; and

2.6 the frequency of reviews to confirm ~~that~~ adequate financial capacity (including insurance, to the extent commercially reasonable) is available for planned closure, early closure, reclamation and post-closure of tailings facilities and their related ~~appurtenant~~ structures.

EM-CO-540a.3. Development ~~Approach to development~~ of emergency preparedness and response plans ~~Emergency Preparedness and Response Plans (EPRPs)~~ for tailings storage facilities

1 The entity shall disclose its ~~approach to the~~ development of emergency preparedness and response plans ~~Emergency Preparedness and Response Plans~~ (EPRPs), including the preparedness of local stakeholders.

1.1 The definition of EPRP is ~~shall be consistent with that~~ provided by ~~in~~ the Global Tailings Review *Global Industry Standard on Tailings Management* (GISTM) Glossary.

1.2 The ~~scope of the~~ disclosure includes ~~shall include~~ a summary of plans, procedures and policies for the entity's active and inactive tailings storage facilities for all phases of the project life cycle, ~~lifecycle,~~ including closure and post-closure.

1.2.1 The definition of tailings facility is ~~shall be consistent with that~~ provided by ~~in~~ the GISTM Glossary.

2 The entity shall disclose its approach to EPRPs at its facilities, including the preparedness of local stakeholders.

2.1 For facility EPRP development, the entity shall disclose:~~The disclosure shall include:~~

2.1.1 how it engages ~~the entity's approach to engaging~~ with employees, contractors, public sector agencies, first responders, and local authorities and institutions using ~~in accordance with~~ requirements 13.1 and 13.2 of the GISTM; and

2.1.2 how often it carries out ~~the entity's frequency of~~ emergency response plan tests and evacuation exercises to minimise the consequences of a potential failure.

Construction Materials

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards. ~~and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

Table of Contents

INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®). ~~Sustainable Industry Classification System® (SICS®).~~

SASB Standards include:

1. **industry ~~Industry~~ descriptions** — ~~—~~ which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry;~~.~~

2. **disclosure ~~Disclosure~~ topics** — ~~—~~ which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry;~~.~~

3. **metrics— ~~Metrics~~** ~~—~~ which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic;~~.~~

4. **technical ~~Technical~~ protocols** — ~~—~~ which provide guidance on definitions, scope, implementation and presentation of associated metrics; and~~.~~

5. **activity ~~Activity~~ metrics** — ~~—~~ which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS®. However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

Construction Materials (EM-CM) entities ~~have global operations and~~ produce construction materials for sale to construction entities or wholesale distributors. These primarily include cement and aggregates, but also glass, plastic materials, insulation, bricks and roofing material. Materials producers can operate their own quarries, mine stone, sand or gravel, or source their raw minerals from independent suppliers. ~~mining crushed stone or sand and gravel. They may also purchase raw materials from the mining and petroleum industries.~~

Note: this SASB Standard is intended for entities producing mineral-based construction materials. For content related to ~~Entities producing~~ wood-building products or associated raw materials production, refer to ~~are included~~ the Building Products & Furnishings (CG-BF)~~ industry~~, Forestry Management~~ industry~~ (RR-FM)~~,~~ and Pulp & Paper Products ~~industry~~ (RR-PP) SASB Standards. ~~under the Sustainable Industry Classification System (SICS) and are not included in the Construction Materials standard.~~

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	(1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations	~~Quantitative~~	Metric tonnes (t) CO_2-e, Percentage (%)	EM-CM-110a.1
	Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets	~~Discussion and Analysis~~	n/a	EM-CM-110a.2
Air Quality	Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) persistent organic pollutants, (4) ~~particulate matter (PM_{10}), (4) dioxins/ furans, (5)~~ volatile organic compounds, (5) hazardous air pollutants and (6) particulate matter ~~(VOCs),~~ ~~(6) polycyclic aromatic hydrocarbons (PAHs) and (7) heavy metals~~	~~Quantitative~~	Metric tonnes (t)	EM-CM-120a.1
Energy Management	(1) Total energy consumed, (2) purchased electricity consumed, ~~percentage grid electricity,~~ (3) ~~percentage~~ alternative energy consumed and (4) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts	~~Quantitative~~	Gigajoules (GJ)~~,~~ ~~Percentage (%)~~	EM-CM-130a.1
Water Management	(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	Megalitres (ML), ~~Thousand cubic metres (m^3),~~ Percentage (%)	EM-CM-140a.1
Waste Management	(1) Waste ~~Amount of waste~~ generated, (2) ~~percentage~~ hazardous waste generated and (3) waste ~~percentage~~ recycled	~~Quantitative~~	Metric tonnes (t)~~, Percentage (%)~~	EM-CM-150a.1
Ecological ~~Biodiversity~~ Impacts	Description of environmental management policies and practices for operational facilities ~~active sites~~	~~Discussion and Analysis~~	n/a	EM-CM-160a.1
	(1) Total spatial footprint of operations, (2) ~~Terrestrial land~~ area disturbed and (3) ~~,~~ ~~percentage of impacted~~ area restored	~~Quantitative~~	Square kilometres (km^2) ~~Hectares (ha), Percentage (%)~~	EM-CM-160a.2

continued...

...continued

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Workforce Health & Safety	(1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR) and (2) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers ~~contract employees~~	~~Quantitative~~	Number, Rate, Hours (h) ~~Rate~~	EM-CM-320a.1
	Number of reported cases of silicosis ~~[5]~~	~~Quantitative~~	Number	EM-CM-320a.2
Product Innovation	Percentage of products that qualify for credits in sustainable building design and construction certifications	~~Quantitative~~	Percentage (%) by ~~annual sales~~ revenue	EM-CM-410a.1
	Total revenue from ~~addressable market and share of market for~~ products that reduce environmental ~~energy, water or material~~ impacts caused during ~~usage or~~ production or use	~~Quantitative~~	Presentation currency~~,~~ ~~Percentage (%)~~	EM-CM-410a.2
Supply Chain Management	Description of the process to manage supply chain risks arising from environmental and social issues		n/a	EM-CM-430a.1
Pricing Integrity & Transparency	Total amount of expenses incurred from ~~monetary losses as a result of~~ legal proceedings associated with cartel activities, price fixing~~,~~ and antitrust activities ~~[6]~~	~~Quantitative~~	Presentation currency	EM-CM-520a.1

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Production by major product line[7]	~~Quantitative~~	Metric tonnes (t)	EM-CM-000.A
Total number of (1) employees and (2) non-employee workers		Number	EM-CM-000.B
Total hours worked disaggregated by (1) employees and (2) non-employee workers		Hours	EM-CM-000.C

5 ~~Note to **EM-CM-320a.2** – The disclosure shall include a discussion of efforts to minimise workers' exposure to crystalline silica.~~

6 ~~Note to **EM-CM-520a.1** – The entity shall briefly describe the nature, context and any corrective actions taken because of monetary losses.~~

7 Note to **EM-CM-000.A** – The determination of major product line (for example, cement and aggregates, composites, roofing materials, fibreglass, brick, tile and others) should be based on revenue generation and may include a category of 'other' construction materials products that combines multiple smaller revenue streams.

Greenhouse Gas Emissions

Topic Summary

The production of construction materials, particularly cement, generates significant Scope 1 ~~direct~~ greenhouse gas ~~(GHG)~~ emissions from on-site fuel combustion and chemical processes. The industry has achieved efficiency gains in reducing emissions per tonne of materials produced. At the same time, increasing production is associated with increasing absolute emissions from cement production. The production of construction materials remains carbon-intensive relative to other industries, exposing the industry to higher operating and capital expenditures from emissions regulations. Strategies to reduce greenhouse gas ~~GHG~~ emissions include improving energy efficiency, using ~~use of~~ alternative and renewable fuels, sequestering carbon ~~sequestration~~ and replacing clinker with supplementary cementitious materials. Improving operational ~~substitution. Operational~~ efficiencies can achieve ~~be achieved through the~~ cost-effective reduction of greenhouse gas ~~GHG~~ emissions. Such efficiencies can mitigate the potential financial effects ~~impact~~ of increased fuel costs or regulations that price or limit greenhouse gas emissions. ~~as well as direct emissions from regulations that limit—or put a price on—GHG emissions.~~

Metrics

EM-CM-110a.1. (1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose (1) its gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e) and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is the Intergovernmental Panel on Climate Change (IPCC) *Fifth Assessment Report* (2014).~~

~~1.2 Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

~~2 Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 ~~2.1~~ These emissions include Scope 1 greenhouse gas ~~direct~~ emissions ~~of GHGs~~ from stationary or mobile sources that include equipment at quarrying sites, production facilities and ~~,~~ office buildings; and vehicles used for product and personnel transport ~~transportation~~ (air, marine, road and rail).

~~2.2 Acceptable calculation methodologies include those that conform to the GHG Protocol as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.2.1 *GHG Reporting Guidance for the Aerospace Industry* published by the International Aerospace Environmental Group (IAEG)~~

~~2.2.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* published by the US Environmental Protection Agency (EPA)~~

~~2.2.3 India GHG Inventory Program~~

~~2.2.4 ISO 14064-1~~

~~2.2.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.2.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* published by Entreprises pour l'Environnement (EpE)~~

~~2.3 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which is generally aligned with the 'financial control' approach defined by the GHG Protocol and the approach provided by the Climate Disclosure Standards Board (CDSB) that is described in REQ-07, 'Organisational boundary,' of the *CDSB Framework for reporting environmental and social information.*~~

2 ~~3~~ An ~~The~~ entity shall disclose the (2) percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~3.1 Examples of emissions-limiting regulations include:~~

~~3.1.1 California Cap-and-Trade (California Global Warming Solutions Act)~~

~~3.1.2 European Union Emissions Trading Scheme (EU ETS)~~

~~3.1.3 Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

2.1 ~~3.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

2.1.1 ~~3.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

2.2 ~~3.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

~~4 The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

~~5 In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure programme) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

~~6 The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

EM-CM-110a.2. Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall disclose: ~~discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1 The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2 Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3 The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4 The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5 The mechanism(s) for achieving the target; and~~

~~2.6 Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively or the target or base year has been reset.~~

3 An ~~The~~ entity shall disclose ~~discuss~~ the activities and investments required to achieve its ~~the plans or~~ targets, and any risks or limiting factors that might affect achievement of those ~~the plans or~~ targets.

~~4 The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~5 The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

~~6 Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

Air Quality

Topic Summary

On-site fuel combustion and production processes in the Construction Materials industry emit criteria air pollutants and hazardous chemicals, including small quantities of organic compounds and heavy metals. Emissions of particular concern include nitrogen oxides, sulphur dioxides, particulate matter, heavy metals (for example, mercury), dioxins and volatile organic compounds, among others. These air emissions can have significant~~,~~ localised human health and environmental impacts. The effects of ~~Financial impacts resulting from~~ air emissions will vary depending on the specific location of operations and the applicable air emissions regulations, but they could include higher operating or capital expenditures and regulatory or legal penalties. Active management of the issue—through technological and process improvements—may allow entities to limit the regulatory effects ~~impact of regulations~~ and to benefit from operational efficiencies that could lead to a lower cost structure over time.

Metrics

EM-CM-120a.1. Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) persistent organic pollutants, (4) ~~particulate matter (PM_{10}), (4) dioxins/furans, (5)~~ volatile organic compounds, (5) hazardous air pollutants and (6) particulate matter ~~(VOCs), (6) polycyclic aromatic hydrocarbons (PAHs) and (7) heavy metals~~

1 An ~~The~~ entity shall disclose its air pollutant emissions ~~of air pollutants~~, in metric tonnes for each ~~per~~ pollutant, released into the atmosphere.

1.1 The ~~scope of~~ disclosure includes air pollutants associated with the entity's operational ~~direct air emissions resulting from all the entity's~~ activities and sources of emissions, which ~~may~~ include stationary and mobile sources~~, production facilities, office buildings and transportation fleets~~.

1.2 The entity shall define air pollutant emissions according to the applicable jurisdictional law or regulation.

1.3 If the entity is subject to more than one jurisdictional law or regulation that defines air pollutant emissions, the entity shall disclose whether and how variations between these frameworks affect the reported data.

1.4 If the entity defines and manages its air pollutant emissions using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

2 An ~~The~~ entity shall disclose its emissions of (1) nitrogen oxides ~~of nitrogen~~ (NO_x), reported as NO_x.

2.1 The scope of NO_x includes NO and NO_2 but excludes nitrogen oxide, N_2O.

2.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define NO_x emissions, the entity shall instead use the United Nations Economic Commission for Europe (UNECE) Convention, *Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes*, 1988 definition of NO_x emissions.

3 An ~~The~~ entity shall disclose its emissions of (2) sulphur oxides ~~of sulphur~~ (SO_x), reported as SO_x.

3.1 The scope of SO_x includes SO_2 and SO_3.

3.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define SO_x emissions, the entity shall instead use the UNECE Convention, *Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes*, 1985 definition of SO_x emissions.

4 An entity shall disclose its emissions of (3) persistent organic pollutants (POPs).

4.1 POP emissions include dioxins and furans (polychlorinated dibenzodioxins and polychlorinated dibenzofurans).

4.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define POP emissions, the entity shall instead use the United Nations Environment Programme (UNEP) Convention, *Stockholm Convention on Persistent Organic Pollutants*, annex A, B, and C, 2009 definition of POPs.

~~4 The entity shall disclose its emissions of (3) particulate matter 10 micrometres or less in diameter (PM_{10}), reported as PM_{10}.~~

~~4.1 PM_{10} is defined as any airborne finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal 10 micrometres.~~

~~5 The entity shall disclose its emissions of (4) dioxins/furans.~~

~~5.1 Dioxins/furans include, but are not limited to the sum of the 17 congeners of polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) that contain chlorine~~

5 ~~6~~ An ~~The~~ entity shall disclose its emissions of (4) ~~(5)~~ non-methane volatile organic compounds (VOCs).

5.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define VOC emissions, the entity shall instead use the UNECE Convention, *Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes*, 1991 definition of VOC emissions.

~~6.1 VOCs are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate and methane, that participates in atmospheric photochemical reactions, except those designated under applicable jurisdictional law or regulation as having negligible photochemical reactivity.~~

~~6.1.1 If applicable regulatory definitions of VOCs may conflict with this definition, the entity may define VOCs in accordance with the applicable regulatory definition.~~

6 An entity shall disclose its emissions of (5) hazardous air pollutants (HAPs).

6.1 HAPs are defined as pollutants known to cause adverse health or environmental effects.

6.1.1 HAPs include gases such as carbon monoxide, hydrogen chloride, hydrogen sulphide and polycyclic aromatic hydrocarbons or metals such as cadmium, chromium, lead, manganese and mercury.

6.2 For the purposes of this disclosure, HAPs exclude NO_x, SO_x, VOCs and particulate matter.

~~7 The entity shall disclose its emissions of (6) polycyclic aromatic hydrocarbons (PAHs).~~

~~7.1 PAHs are a large group of organic compounds containing two or more fused aromatic (benzene) rings. A main source of emission is the incomplete combustion or pyrolysis of organic material.~~

~~7.2 PAHs include those listed in the World Health Organization's *2021 Human health effects of polycyclic aromatic hydrocarbons as ambient air pollutants: report of the Working Group on Polycyclic Aromatic Hydrocarbons of the Joint Task Force on the Health Aspects of Air Pollution*.~~

~~8 The entity shall disclose its emissions of (7) heavy metals.~~

~~8.1 The scope of heavy metals includes lead (Pb), mercury (Hg), and cadmium (Cd).~~

7 An entity shall separately disclose its emissions of (6) particulate matter (PM), disaggregated as (a) PM_{10} and (b) $PM_{2.5}$.

7.1 PM_{10} is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 10 micrometres.

7.2 $PM_{2.5}$ is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 2.5 micrometres.

8 ~~9~~ An ~~The~~ entity shall disclose ~~may discuss~~ the calculation method ~~methodology~~ for its emissions disclosure, such as whether data is ~~are~~ from: ~~continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

8.1 direct measurement of emissions (such as online analysers);

8.2 calculations based on site-specific data;

8.3 calculations based on published emission factors; or

8.4 estimation.

Energy Management

Topic Summary

Construction ~~The production of construction~~ materials production can require ~~requires~~ significant energy, sourced primarily from direct fossil fuel combustion, such as natural gas, or ~~as well as from~~ purchased electricity, which has implications for climate-related transition risks. ~~Energy-intense production has implications for climate change, and electricity purchases from the grid can create indirect Scope 2 emissions.~~ Construction Materials ~~materials~~ entities also use alternative fuels for kilns, such as scrap tyres and waste oil—often waste generated by other industries. If properly managed, these alternative fuels can reduce ~~lower~~ energy costs and greenhouse gas ~~(GHG)~~ emissions. However, potentially negative impacts could occur, such as releases of harmful air pollutants that entities need to minimise to obtain net benefits from using such fuels. Decisions about using ~~use of~~ alternative fuels, renewable energy and on-site electricity generation ~~of electricity (versus purchases from the grid)~~ can be important in influencing both the costs and reliability of energy supply. Affordable, easily accessible and reliable energy is an important competitive factor in this industry, with purchased fuels and electricity accounting for a significant proportion of total production costs. How a Construction Materials ~~construction materials~~ entity manages energy efficiency, reliance on various sources ~~different types~~ of energy and associated sustainability risks, and access to alternative energy sources can ~~of energy may~~ influence its profitability.

Metrics

EM-CM-130a.1. (1) Total energy consumed, (2) purchased electricity consumed, ~~percentage grid electricity,~~ (3) ~~percentage~~ alternative energy consumed and (4) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts

1 An ~~The~~ entity shall disclose (1) the total quantity ~~amount~~ of energy it consumed ~~as an aggregate figure,~~ in gigajoules (GJ).

1.1 Total ~~The scope of~~ energy consumed ~~consumption~~ includes all forms of energy used by the entity, ~~from all sources,~~ including fuel, electricity, heating, cooling and steam. ~~energy purchased from external sources and energy produced by the entity itself (self-generated). For example, direct fuel usage, purchased electricity, and heating, cooling and steam energy are all included within the scope of energy consumption.~~

1.2 Total energy consumed includes purchased or acquired energy and self-generated energy used by the entity. ~~The scope of energy consumption includes only energy directly consumed by the entity during the reporting period.~~

1.2.1 Purchased and acquired energy is energy that is purchased or otherwise brought into the entity's boundary.

1.2.2 Purchased energy includes energy from owned or operated generation facilities where energy attributes, such as certificates, have been sold or transferred.

1.2.3 Self-generated energy is generation owned or operated by the entity that consumes the energy.

1.2.4 In preparing this disclosure, the entity shall determine ownership or control using the same measurement approach that it uses to determine greenhouse gas emissions.

1.2.5 Total energy consumed excludes any energy the entity generates using fuel it has already consumed—that is, self-generated electricity consumed from fuel is counted only once as fuel consumed. For example, if the entity has a co-generator that uses fuel to produce electricity and then consumes the generated electricity, that energy would be counted only once as fuel consumed.

1.2.6 If the entity stores any energy, that energy is counted only once when the entity has consumed the energy and it is no longer stored.

1.3 An ~~In calculating energy consumption from fuels and biofuels, the~~ entity shall use lower ~~higher~~ heating values (LHV), ~~(HHV),~~ also known as net ~~gross~~ calorific values, to calculate energy consumed from fuels and biofuels. The entity shall measure these values directly ~~(GCV), which are measured directly~~ or use the default net calorific values in the 2006 IPCC *Guidelines for National Greenhouse Gas Inventories* (Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1).~~taken from the Intergovernmental Panel on Climate Change (IPCC).~~

1.3.1 The requirement to use such heating values applies unless the entity is required, in whole or in part, by a jurisdictional authority or an exchange on which it is listed to use different heating values for converting fuels into GJ. In such a case, the entity is permitted to instead use the heating values required by such a jurisdictional authority or exchange for the part of the entity to which that requirement applies, for as long as that requirement applies to that part of the entity.

1.3.2 If the entity uses heating values other than LHV for converting fuels into GJ, the entity shall disclose information about the heating values used.

2 An ~~The~~ entity shall disclose (2) the quantity ~~percentage~~ of purchased or acquired electricity ~~energy~~ it consumed (in GJ) included in the quantity disclosed as total energy consumed. ~~that was supplied from grid electricity.~~

2.1 Purchased electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as purchased grid electricity consumption divided by total energy consumption.~~

3 An ~~The~~ entity shall disclose (3) the quantity ~~percentage~~ of energy it consumed from alternative sources (in GJ), in terms of its energy content, included in the quantity disclosed as total energy consumed.

3.1 Alternative sources of energy include used tyres, spent solvents and waste oils, processed municipal solid waste, household waste, ~~wastes,~~ agricultural waste ~~wastes~~ such as rice, peanut shells and coffee husks, animal meal and sewage sludge.

4 An ~~The~~ entity shall disclose ~~(3)~~ the quantity of electricity from renewable energy sources it consumed (in GJ), disaggregated between (3a) self-generation and (3b) direct contracts. ~~percentage of energy it consumed that was renewable energy.~~

4.1 Renewable energy sources are ~~is~~ defined as sources capable of being replenished in a short time through ecological cycles or agricultural processes, ~~energy from sources that are replenished at a rate greater than or equal to their rate of depletion,~~ such as geothermal, wind, solar, hydro and biomass.

4.2 Renewable electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as renewable energy consumption divided by total energy consumption.~~

4.3 Renewable electricity from self-generation is limited to that consumed from owned or operated equipment, where the electricity is produced and consumed by the same entity.

~~The scope of renewable energy includes renewable fuel the entity consumed, renewable energy the entity directly produced and renewable energy the entity purchased, if purchased through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs) or Guarantees of Origin (GOs), a Green-e Energy Certified utility or supplier programme, or other green power products that explicitly include RECs or GOs, or for which Green-e Energy Certified RECs are paired with grid electricity.~~

~~4.3.1 For any renewable electricity generated on-site, any RECs and GOs shall be retained (not sold) and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~4.3.2 For renewable PPAs and green power products, the agreement shall explicitly include and convey that RECs and GOs be retained or replaced and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~4.3.3 The renewable portion of the electricity grid mix that is outside of the control or influence of the entity is excluded from the scope of renewable energy.~~

4.4 For the purposes of this disclosure, renewable electricity from self-generation excludes electricity associated with contractual instruments entered into by the entity if the contractual instrument has been sold by the entity.

4.5 Direct contracts include renewable electricity consumed that comes from a direct line transfer, such as when electricity production is fed directly and exclusively to a single entity. Direct contracts also include renewable electricity consumed related to contracts where the entity has negotiated with a specific electricity generator to supply renewable electricity to the entity with no grid transfers.

4.6 If the entity purchases or acquires renewable electricity through other contractual instruments, the entity shall provide information about any of these instruments that is necessary to inform the understanding of users of general purpose financial reports of the procurement decisions made by the entity regarding various energy sources to manage energy consumption-related risks and opportunities, including those associated with Scope 2 emissions.

4.6.1 If the entity purchases renewable electricity through a contractual instrument, the entity shall apply the Scope 2 Quality Criteria as defined in the Greenhouse Gas Protocol's *GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard* (2015).

4.7 ~~4.4~~ If the entity consumes renewable electricity ~~For the purposes of this disclosure, the scope of renewable energy~~ from biomass sources, it shall disclose the quantity (in GJ) separately. ~~is limited to materials certified to a third-party standard (for example, Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification or American Tree Farm System), materials considered eligible sources of supply according to the *Green-e Framework for Renewable Energy Certification, Version 1.0* (2017) or Green-e regional standards, or materials eligible for an applicable jurisdictional renewable portfolio standard.~~

4.7.1 Renewable electricity from biomass sources includes only materials certified to a third-party standard.

4.7.2 An entity shall disclose the third-party standard to which the materials are certified.

~~5 The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel usage (including biofuels) and conversion of kilowatt hours (kWh) to GJ (for energy data including electricity from solar or wind energy).~~

Water Management

Topic Summary

Construction materials production requires substantial volumes of water. Entities face operational, regulatory and reputational risks associated with water scarcity, costs of water acquisition, regulations on effluents or amount of water used, and competition with local communities and other industries for limited water resources. Risks are likely to be higher in regions of water scarcity because of potential water availability constraints and price volatility. Entities unable to secure a stable water supply could face production disruptions. Rising ~~, while rising~~ water prices could directly increase operating ~~production~~ costs. Entities that adopt ~~Consequently, the adoption of~~ technologies and processes that reduce water consumption could reduce ~~lower~~ operating risks and costs ~~for entities~~ by minimising regulatory effects, ~~the impact of regulations,~~ water supply shortages and community-related disruptions. ~~on entity operations.~~

Metrics

EM-CM-140a.1. (1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

~~2 The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1 Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2 Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1 ~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. ~~that evaporates during withdrawal, use and discharge~~

~~3.1.2 Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3 Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea~~

~~4 The entity shall analyse all its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

3 ~~5~~ An ~~The~~ entity shall disclose (3a) the volume of ~~its~~ water withdrawn, in megalitres, from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 ~~6~~ An ~~The~~ entity shall disclose (3b) the volume of water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

Waste Management

Topic Summary

Construction materials production recycling rates are high, and materials efficiency can be an important competitive advantage for Construction Materials entities. However, waste from production processes, pollution control devices and from hazardous waste management activities presents ~~present~~ a regulatory risk and can increase operating costs. Cement kiln dust—~~(CKD)—consisting of~~ fine-grained, solid, highly alkaline waste removed from cement kiln exhaust gas by air pollution control devices—is the most significant waste category in the industry. Regulatory risk remains high from evolving environmental laws. Entities that reduce waste streams—hazardous waste streams in particular—and recycle by-products, can reduce regulatory and litigation risks and costs.

Metrics

EM-CM-150a.1. (1) Waste ~~Amount of waste~~ generated, (2) ~~percentage~~ hazardous waste generated and (3) waste ~~percentage~~ recycled

1 An ~~The~~ entity shall disclose (1) the total mass ~~amount~~ of waste that it generated, in metric tonnes.

1.1 Waste is defined as anything for which the entity has no further use~~,~~ and that ~~which~~ is discarded or released to the environment by the entity.

1.2 Waste ~~The scope~~ includes slag, dust, other solid waste, sludge, ~~slags, dusts, sludges,~~ used oil and other liquid waste. ~~solid wastes that meet the above definition.~~

1.3 Waste ~~The scope~~ excludes gaseous waste and wastewater.

1.4 Waste includes hazardous waste.

2 An ~~The~~ entity shall disclose (2) the mass of hazardous waste that it generated that is included in the total mass of waste generated, in metric tonnes. ~~percentage of waste generated that was hazardous.~~

2.1 Hazardous waste is ~~The percentage of hazardous waste shall be calculated as the weight hazardous waste as~~ defined in accordance with the applicable jurisdictional law or regulation ~~, legal or regulatory framework~~ where the waste was generated ~~divided by the total weight of waste material~~.

~~2.2~~ ~~Hazardous waste generally displays the following characteristics: ignitability, corrosivity, reactivity or toxicity.~~

2.2 ~~2.3~~ If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the ~~The~~ entity shall ~~may~~ use the United Nations Environmental Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal* (Basel Convention) to define ~~for the purposes of defining~~ hazardous waste or recycled hazardous waste. ~~for operations located in jurisdictions that lack applicable legal or regulatory definitions.~~

3 An ~~The~~ entity shall disclose (3) the mass ~~percentage~~ of waste generated that has been ~~was~~ recycled, in metric tonnes.

3.1 The mass of waste ~~percentage~~ recycled is defined ~~shall be calculated~~ as the mass ~~weight~~ of waste ~~material~~ reused~~,~~ plus the mass ~~weight~~ recycled or remanufactured (through treatment or processing) by the entity, plus the mass ~~amount~~ sent externally for further recycling, such that:~~divided by the total weight of waste material.~~

3.1.1 reused ~~Reused~~ materials are defined as those recovered products or components of products used for the same purpose for which they were conceived;~~.~~

3.1.2 recycled ~~Recycled~~ and remanufactured materials are defined as waste ~~materials that have been~~ reprocessed or treated through ~~by means of~~ production or manufacturing processes and made into a final product or made into a component to be integrated ~~for incorporation~~ into a product;~~.~~

3.1.3 ~~The scope of~~ recycled and remanufactured products include ~~includes~~ primary recycled materials, co-products (outputs of equal value to primary recycled materials) and by-products (outputs of lesser value than ~~to~~ primary recycled materials);~~.~~

3.1.4 portions ~~Portions~~ of products and materials discarded in landfills do not qualify as ~~are not considered~~ recycled;

3.1.5 recycled waste includes only the portions of products directly used in ~~incorporated into~~ new products, co-products or by-products ~~shall be included in the percentage recycled~~; and

3.1.6 ~~3.1.5~~ materials ~~Materials~~ sent for further recycling include those ~~materials~~ transferred to a third party for the ~~expressed~~ purpose of reuse, recycling or refurbishment.

3.2 Materials incinerated, including for energy recovery, are excluded from ~~shall not be considered within the scope of~~ recycled materials.

3.2.1 Energy recovery is defined as the use of combustible waste to generate energy through direct incineration, with or without other waste, but with recovery of the heat.

~~3.2.2 The entity may separately disclose the percentage of hazardous waste generated that was incinerated.~~

4 If an entity is subject to more than one jurisdictional law or regulation that defines waste, hazardous waste and recycled waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the legal or regulatory framework(s) used to define waste, hazardous waste and recycled hazardous waste.~~

4.1 If the entity defines and manages its waste, hazardous waste and recycled waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

Ecological ~~Biodiversity~~ Impacts

Topic Summary

Construction Materials ~~materials~~ entities often operate their own quarries close to processing facilities. Quarrying requires the removal of vegetation and topsoil and blasting, digging, moving ~~. It also requires the blasting~~ and crushing the ~~of~~ underlying stone, clay, sand and gravel deposits. The process can result in permanent landscape alterations, with associated biodiversity impacts. Because of an increasing awareness and protection of ecosystems, the environmental characteristics of the area ~~land~~ where quarrying takes place could increase extraction costs. Entities could also face regulatory or reputational barriers to accessing sites in environmentally sensitive locations. These barriers might ~~ecologically sensitive areas. This may~~ include new protection status afforded to areas where quarries ~~reserves~~ are located, and quarrying ~~. Quarrying~~ operations could ~~also may~~ be subject to laws protecting endangered species. Entities that have an effective environmental management plan for each stage of the project life cycle~~lifecycle~~—including restoration during site decommissioning—could minimise their compliance costs and legal liabilities. These entities could ~~may~~ face less community resistance in quarrying at new sites and avoid delays ~~difficulties~~ in obtaining permits that can affect ~~and delays in~~ project completion.

Metrics

EM-CM-160a.1. Description of environmental management policies and practices for operational facilities ~~active sites~~

1 An ~~The~~ entity shall disclose information about ~~describe~~ its environmental management policies and practices ~~plans~~ implemented at operational facilities, including:~~active sites, including, if relevant:~~

1.1 the life cycle ~~lifecycle~~ stages to which the plans apply, such as pre-bid (when the entity is considering an acquisition ~~of a site~~), ~~during~~ exploration and appraisal, site development, production, closure, site decommissioning and restoration;

1.2 the types of ecological impacts included in ~~topics addressed by~~ the plans, such as ecological and biodiversity impacts, waste generation, noise, emissions to air, discharges to water, natural resource consumption and hazardous chemical use;

1.3 whether the entity integrates an environmental mitigation hierarchy into its project development and operations, such as using the 2020 Science Based Targets Network's *Initial Guidance for Business* AR3T Action Framework or the 2015 Cross Sector Biodiversity Initiative's *A Cross-sector Guide for Implementing the Mitigation Hierarchy*;

1.4 the underlying definitions and references for its plans, including whether they originate from ~~are~~ codes, guidelines, standards or regulations; and

1.5 ~~1.4~~ whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the environmental management policies and practices.

2 If environmental management policies and practices vary significantly by the type of resource, by location or by type of operation, then the entity shall describe the differences.

~~If relevant, the entity shall describe specific policies and practices that apply to areas with protected conservation status or areas of critical habitat, which are defined by the International Finance Corporation (IFC) Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources* as:~~

~~2.1~~ ~~areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered or Endangered species; (ii) habitat of significant importance to endemic or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species or congregatory species; (iv) highly threatened or rare ecosystems; or (v) areas associated with important evolutionary processes.~~

3 If the environmental management policies and practices do not apply to all the entity's operational facilities, ~~sites or operations,~~ it shall disclose ~~include~~ the percentage of sites to which they ~~were~~ applied at the reporting date.

~~4~~ ~~If environmental management policies and practices differ significantly by resource or mineral (for example, silica as compared to gypsum), then the entity shall describe the differences between these policies and practices for each resource.~~

4 ~~5~~ The entity shall explain whether ~~disclose the degree to which~~ its policies and practices are aligned with the International Finance Corporation's (IFC) ~~IFC's~~ *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 ~~5.1~~ IFC Performance Standard 1, *Assessment and Management of Environmental and Social Risks and Impacts*;

4.2 ~~5.2~~ IFC Performance Standard 3, *Resource Efficiency and Pollution Prevention*;

4.3 ~~5.3~~ IFC Performance Standard 4, *Community Health, Safety, and Security*; and

4.4 ~~5.4~~ IFC Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources*.

~~6~~ ~~Additional relevant references may include:~~

~~6.1~~ ~~International Finance Corporation, *Environmental, Health and Safety Guidelines for Mining*; and~~

~~6.2~~ ~~World Bank Multistakeholder Initiative, *Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies*.~~

EM-CM-160a.2. (1) Total spatial footprint of operations, (2) ~~Terrestrial land~~ area disturbed and (3) ~~, percentage of impacted~~ area restored

1 An ~~The~~ entity shall disclose (1) the total spatial footprint (area) of its operations ~~area of disturbed land,~~ in square kilometres (km^2) at the reporting date. ~~measured in hectares, including land in the exploration, development, production, closure and post-closure project phases.~~

1.1 The total spatial footprint of the entity's operations includes the cumulative area disturbed during the current and prior periods by its operations that has not been restored.

1.2 The area disturbed is defined as the aggregate geographical area that has been subject to human activity that has changed the condition of the area, relative to an original reference state.

1.2.1 Human activity is defined as the entity's activities and operations that have physically disrupted, modified, covered, compacted, moved or otherwise altered the characteristics of terrestrial, freshwater aquatic or marine ecosystems from before such activity.

1.2.2 The entity's total spatial footprint of operations includes the area disturbed during the current period and continues to be the area disturbed in all subsequent reporting periods unless the area disturbed is restored.

1.2.3 For bodies of water, the disturbed area includes the bottom or seabed beneath the water's surface.

1.3 The disclosure includes information about the aggregate measured area of the entity's spatial footprint in terrestrial, freshwater aquatic or marine ecosystems (land, wetlands, riverine, navigable waterways, littoral or ocean) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

1.4 ~~1.1~~ This disclosure includes all ~~shall be a cumulative total of all currently~~ active sites, recently decommissioned sites awaiting restoration and sites being restored.~~; it is not limited to land newly disturbed during the reporting period.~~

~~1.2 Land shall no longer be considered disturbed once post-closure restoration and remediation efforts are substantially complete (even if monitoring is ongoing).~~

1.5 Area restored is defined as a previously disturbed area that has been restored according to applicable jurisdictional law or regulation.

1.6 If the jurisdiction in which the entity operates has no applicable law or regulation to define a previously disturbed area that has been restored, a restored area is defined as the cumulative geographical area that has been subject to human intervention to return a degraded, damaged or destroyed area or ecosystem to an approximation of an original reference state.

1.6.1 Ecological restoration is defined as re-establishing the ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original. Ecological restoration focuses on biodiversity conservation and ecological integrity.

1.6.2 Ecosystem restoration is defined as a restored area that demonstrates resilience to normal ranges of environmental stress and disturbance and interacts with contiguous ecosystems in terms of biotic and abiotic flows and cultural interactions. An ecosystem is restored when it contains sufficient biotic and abiotic resources to sustain itself structurally and functionally and can continue its development without further assistance or subsidy.

2 An entity shall disclose (2) the area disturbed by the entity's operations, in km^2, during the current reporting period.

3 ~~2~~ An ~~The~~ entity shall disclose (3) the area previously disturbed by operations that has been ~~percentage of disturbed land, measured in hectares, that was~~ restored during the reporting period. ~~At a minimum, restoration should meet the Society for Ecological Restoration definition: 'the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed'.~~

~~2.1~~ ~~Restoration may be further defined by applicable jurisdictional laws or regulations, industry standards or the entity's own guidelines.~~

~~2.2~~ ~~The entity shall disclose the definition of restoration and accompanying practices it follows.~~

3.1 An area is no longer part of the entity's spatial footprint of operations once post-closure restoration and remediation efforts are complete as defined by applicable jurisdictional law or regulation (even if after-monitoring is necessary).

4 The disclosure includes information about any adjustments to the entity's total spatial footprint of operations, area disturbed or area restored resulting from acquisitions, mergers and divestments or disposals completed during the reporting period.

Workforce Health & Safety

Topic Summary

Construction Materials ~~Employees and contractors of construction materials~~ entities face significant workforce health and safety risks. Industry hazards include those arising from heavy equipment use and quarrying operations. In addition to acute impacts, workers can develop chronic health conditions from silica dust inhalation, among other factors. Because of these hazards, the industry has relatively high mortality rates, and many entities strive to foster a ~~have implemented a strong safety~~ culture of safety, which includes ~~and~~ health and safety policies to mitigate associated risks. Worker injuries, illnesses and fatalities can result in regulatory penalties, negative publicity, low worker morale and productivity, and increased healthcare ~~health care~~ and compensation costs.

Metrics

EM-CM-320a.1. (1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR) and (2) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2 ~~1~~ An ~~The~~ entity shall separately disclose (2) ~~(1)~~ its total recordable incident rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 ~~1.1~~ An injury or illness is typically defined as ~~considered~~ a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid~~,~~ or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare ~~health care~~ professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.

2.1.3 ~~1.1.1~~ First aid is typically defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but jurisdictional definitions may vary.

~~1.1.2 The entity may use applicable jurisdictional criteria for definitions of a recordable incident and a non-recordable incident such as first aid. The entity shall disclose the legal, regulatory or industry framework used as the source for these criteria and definitions.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2 The entity shall disclose (2) its near miss frequency rate (NMFR) for work-related near misses.~~

~~2.1 A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage or environmental damage, but had the potential to do so in other circumstances.~~

~~2.2 The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~3 All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~3.1 The '200,000' in the rate calculation represents the total number of hours 100 full-time workers working 40 hours per week for 50 weeks per year can provide annually.~~

4 The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses. ~~closure includes work-related incidents only.~~

4.1 Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~4.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~4.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~4.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~4.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~The entity shall disclose the rates for each of these employee categories:~~

~~5.1 direct employees, defined as those individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees; and~~

~~5.2 contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

6 ~~The scope of the disclosure includes all employees regardless of employee location or type of employment.~~

EM-CM-320a.2. Number of reported cases of silicosis

1 An ~~The~~ entity shall disclose the total number of reported cases of silicosis affecting the entity's current workforce or past employees.

1.1 Silicosis is defined in accordance with the World Health Organization's International Classification of Diseases, 11th edition, as pneumoconiosis resulting from exposure to dust containing silica.

1.2 The entity shall disclose ~~scope of the disclosure includes~~ clinically diagnosed cases of chronic, acute and accelerated silicosis.

~~Note to **EM-CM-320a.2**~~

2 ~~1~~ An ~~The~~ entity shall disclose information about its efforts to minimise workforce ~~workers'~~ exposure to crystalline silica, such as respirator programmes, engineering controls or safety training programmes.

3 ~~2~~ An ~~The~~ entity shall describe its processes (for example, ~~for~~ rules and ~~their~~ enforcement), procedures, training ~~trainings~~ and technologies used to minimise workforce ~~its workforce's~~ exposure to crystalline silica.

3.1 ~~2.1~~ This includes information about ~~may include~~ systems for maintaining compliance with applicable jurisdictional law or regulation ~~laws or regulations~~ on ventilation, air and air contaminants, focusing on mineral dust. ~~dusts.~~

3.1.1 If the entity defines and manages its silica exposure limits using the strictest compliance guidelines from applicable legal, regulatory or trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

~~3 The entity may discuss the recommended and permissible silica exposure limits and standards it follows.~~

4 If an entity is prevented by law or regulation from collecting or reporting the workforce medical data necessary for this disclosure, it shall disclose that fact.

Product Innovation

Topic Summary

Construction materials product innovations ~~Innovations in building materials~~ are an essential component in the growth of sustainable construction. Consumer demand and regulatory trends are driving the adoption of sustainable construction ~~building~~ materials and processes that are more resource efficient and can reduce the negative health effects ~~health impacts~~ of buildings throughout their life cycle. Product innovation provides Construction Materials ~~lifecycle. This is creating new business drivers for construction materials~~ entities~~,~~ with an opportunity to improve their prospects. ~~increase revenue.~~ Furthermore, some new products require less energy to produce, or use largely recycled inputs, reducing production costs. Innovation in ~~Therefore,~~ sustainable construction materials can contribute to an entity's long-term growth and competitiveness.

Metrics

EM-CM-410a.1. Percentage of products that qualify for credits in sustainable building design and construction certifications

1 An ~~The~~ entity shall disclose the percentage of its products, by revenue, that qualifies for credits used in leading sustainable design and construction certifications.

1.1 The ~~calculate the~~ percentage is calculated as the revenue recognised ~~during the reporting period~~ from the sale of products that qualify for credits in leading ~~recognised~~ sustainable design and construction certifications divided by the total revenue recognised from the sale of building products.

1.2 ~~1.1~~ The percentage ~~scope of products~~ excludes revenue recognised from raw or intermediate materials requiring ~~that would require~~ additional manufacturing before being integrated ~~incorporated~~ into a building; the entity shall exclude revenue recognised from these products from the numerator and denominator of the calculation.

2 Sustainable ~~Recognised sustainable~~ building design and construction certifications and guidelines include BREEAM® (BRE Global), Green Globes® (Green Building Initiative), LEED® (US Green Building Council) or other similar certifications generally accepted in a jurisdiction or globally. ~~and ICC-700 National Green Building Standard® (National Association of Home Builders).~~[8]

2.1 If the entity's products can be used to obtain credits in design and construction certifications other than those identified in paragraph 2, ~~described above,~~ it shall provide information about ~~the name of~~ the certification and an explanation ~~evidence~~ of why it is equal to or more rigorous than those standards listed here.

[8] ~~The ISSB is not affiliated with any of the standards or organisations listed, and listing should not be taken as an endorsement of any standard or organisation. Listing of standards is not meant to imply that standards are identical in scope, underlying requirements or criteria, or that standards are interchangeable.~~

3 Products that qualify for credits used in sustainable design and construction certifications include those with an Environmental Product Declaration (EPD) or a similar product declaration or certification based on a detailed, independently verified life cycle assessment (LCA).

3.1 An EPD is an environmental declaration (type III) compliant with the International Organization for Standardization's ISO 14025 standard based on data from an LCA providing quantified information about a product's environmental impact throughout its entire life cycle, determined according to established product category rules and verified by a qualified, independent third party.

4 ~~3~~ The disclosure includes information about the entity's ~~entity may disclose and discuss which~~ specific products and associated management systems that contribute to sustainable building practices, as well as its strategy ~~plans~~ to satisfy ~~address~~ market demand for these types of products.

EM-CM-410a.2. Total revenue from ~~addressable market and share of market for~~ products that reduce environmental ~~energy, water or material~~ impacts caused during ~~usage or~~ production or use

1 An ~~The~~ entity shall disclose the total revenue that it recognised from the sale of ~~provide an estimate of the total addressable market for~~ products that reduce ~~show reduced~~ environmental impacts at various life cycle ~~lifecycle~~ stages, including during material sourcing, manufacturing and product use (reduced environmental impact products). ~~usage (hereafter, 'reduced environmental impact products').~~

~~1.1 Total addressable market is defined as potential revenue should the entity capture 100% of the market share of the product category (for example, the global market for reduced environmental impact products).~~

2 The ~~scope of~~ products for this disclosure include ~~includes~~ those:

2.1 with ~~With~~ product attributes that reduce energy consumption or increase energy efficiency for users, such as by providing improved insulation compared to typical products;

2.2 with ~~With~~ process or product attributes that reduce the quantity ~~amount~~ of water required in manufacturing, during product assembly or product usage;

2.3 that ~~That~~ use secondary or recycled materials ~~in place of virgin materials such~~ that reduce negative environmental effects in the supply chain in place of virgin raw materials; and ~~upstream impacts are reduced~~

2.4 that are designed to reduce greenhouse gas ~~Made with design innovations that reduce carbon~~ emissions during manufacturing by using ~~, such as use of~~ renewable fuels, improving energy efficiency ~~improvements~~ or reducing ~~the use of materials requiring less~~ processing requirements.

~~3 If a significant difference exists between the total addressable market and the market that the entity can serve through its existing or planned capabilities, sales channels or products (the serviceable available market), then the entity should disclose this information.~~

~~4 The entity shall disclose the share of the total addressable market for reduced environmental impact products it currently captures with its products.~~

4.1 ~~Market share shall be calculated as revenue from these products divided by the size of the total addressable market.~~

5 ~~The entity may provide a projection of growth of this market, where the projected addressable market is represented—based on a reasonable set of assumptions about changes in market conditions—as a percentage of year-on-year growth or as an estimate of the market size after a defined period (the market size in 10 years).~~

5.1 ~~The entity may disclose its target three-year market share as a measurement of targeted growth, where the target is the percentage of the total addressable market the entity plans to address over a three-year time horizon.~~

Supply Chain Management

Topic Summary

Instead of extracting their raw materials directly from the environment, some Construction Materials entities can draw from a wide variety of upstream suppliers for the raw materials in their products. Through various forms of raw materials extraction, these raw materials suppliers can have substantial environmental and social impacts on local communities, workers and ecosystems. Construction Materials entities face increasing scrutiny to manage their supply chain successfully to mitigate the negative environmental and social effects associated with their raw materials suppliers effectively. Entities could also face potential supply disruptions if these suppliers ineffectively manage their environmental and social risks. By minimising such risks through supplier screening, monitoring and engagement, Construction Materials entities can manage their raw materials suppliers proactively to ensure those suppliers are not engaged in illegal or otherwise environmentally or socially damaging practices.

Metrics

EM-CM-430a.1. Description of the process to manage supply chain risks arising from environmental and social issues

1 An entity shall disclose information about its policies and procedures for managing environmental and social risks in its supply chain.

1.1 The disclosure includes information about any current or expected risks, constraints or opportunities associated with sourcing raw materials, such as those related to competition for restricted or limited supplies, geopolitical uncertainties, local labour conditions, natural disasters, the effects of climate change or changes in applicable jurisdictional law or regulation.

1.2 The disclosure includes a description of the processes the entity uses to manage environmental and social risks in its supply chains, such as supplier screening, codes of conduct, audits and certifications.

2 An entity shall disclose the proportion (by cost) of its sourced raw materials certified or accredited by third-party verified supply chain certifications related to environmental or social issues.

2.1 The entity shall disclose the sustainable supply chain certifications and accreditations the entity used to prepare this disclosure.

3 If an entity uses supplier audits to manage these risks, the entity shall disclose whether the audits are internal (first party), independent (third party) or administered by peers (for example, trade organisations).

Pricing Integrity & Transparency

Topic Summary

Construction Materials entities have ~~The construction materials market has~~ been subject to instances of prosecution for anti-competitive behaviour, such as the manipulation of market prices. ~~artificially high prices maintained through cartel activity.~~ Most jurisdictions ~~countries~~ have well-established fair business practice laws to prevent such behaviour and ~~. Business activity leading~~ to punish instances of price fixing or other manipulation of prices. Associated legal penalties can result in ~~material legal~~ fines or business disruption. Entities that effectively manage and minimise ~~Managing~~ anti-competitive behaviour in their organisations can ~~within an organisation can effectively~~ mitigate regulatory risks, including those related to investigations of mergers and acquisitions, or compliance costs.

Metrics

EM-CM-520a.1. Total amount of expenses incurred from ~~monetary losses as a result of~~ legal proceedings associated with cartel activities, price fixing~~,~~ and antitrust activities

1 An ~~The~~ entity shall disclose the total amount of expenses ~~monetary losses~~ incurred ~~during the reporting period~~ resulting from legal proceedings associated with anti-competitive behaviour, such as fines and penalties ~~those~~ related to cartel activities, price fixing and antitrust activities.

2 The legal proceedings ~~shall~~ include any adjudicative proceeding involving the entity, whether before a court, a regulator, an arbitrator or otherwise.

3 The expenses incurred ~~losses shall~~ include all amounts due ~~monetary liabilities~~ to the opposing party or to others (whether as the result of settlement, verdict after trial or otherwise), including fines, penalties and other ~~monetary~~ liabilities incurred ~~during the reporting period~~ as a result of civil actions (for example, civil judgments ~~judgements~~ or settlements), regulatory proceedings (for example, penalties, disgorgement or restitution) and criminal actions (for example, criminal judgments ~~judgements~~, penalties or restitution) brought by any other entity (for example, governmental, business or individual).

4 The expenses incurred ~~scope of monetary losses shall~~ exclude legal costs and other fees ~~and expenses incurred by~~ the entity incurs in its defence.

~~Note to **EM-CM-520a.1**~~

5 ~~1~~ The entity shall briefly describe the type ~~nature~~ (for example, judgment ~~judgement~~ or order issued after trial, settlement, guilty plea, deferred prosecution agreement or non-prosecution agreement) and context (for example, cartel activities, price fixing or antitrust activities) of all expenses incurred ~~monetary losses~~ resulting from legal proceedings.

6 ~~2~~ The entity shall describe any corrective actions implemented in response to the legal proceedings. Such actions ~~This may~~ include specific changes in operations, management, processes, products, business partners, training or technology.

Iron & Steel Producers

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards.~~ and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

Table of Contents

INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®).~~Sustainable Industry Classification System® (SICS®).~~

SASB Standards include:

1. **industry ~~Industry~~ descriptions**— ~~—~~which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry;~~.~~

2. **disclosure ~~Disclosure~~ topics**— ~~—~~which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry;~~.~~

3. **metrics—~~Metrics~~** ~~—~~which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic;~~.~~

4. **technical ~~Technical~~ protocols**— ~~—~~which provide guidance on definitions, scope, implementation and presentation of associated metrics; and~~.~~

5. **activity ~~Activity~~ metrics**— ~~—~~which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS®. However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

~~The~~ Iron & Steel Producers convert iron ore into pig iron and process pig iron into cast iron, wrought iron and various grades of steel in foundries and mills. Secondary steel producers recycle wrought iron and scrap steel in 'minimills'. Iron & Steel Producers then cast, forge and roll the resulting intermediate feedstocks into iron and steel products. ~~industry primarily consists of entities producing iron and steel in mills and foundries. The steel producers segment produces iron and steel products from its own mills.~~ These products include flat-rolled sheets, ~~tin~~ plates, pipes, tubes~~,~~ and other forms. ~~products made of stainless steel, titanium and high alloy steels. Iron and steel foundries, which cast~~

~~various products, typically purchase iron and steel from other entities.~~ The industry also includes metal service centres and other metal merchant wholesalers, which distribute, import or export ferrous products. Though Iron & Steel Producers ~~entities~~ are developing alternative processes, steel production mainly ~~primarily~~ relies on two primary methods: the basic oxygen furnace ~~(BOF)~~, which uses iron ore as an input, and the electric arc furnace ~~(EAF)~~, which mainly uses scrap steel. Many entities in the industry operate on an international scale.

Note: this Standard is intended for entities engaged in providing services to the iron and steel industry. The primary raw materials sourced for iron and steel production are iron ore, limestone and coal (or coke). With a few exceptions, most Iron & Steel Producers ~~entities~~ do not mine their own ore to manufacture ~~steel and iron~~ products. For content related to mining activities and coke production, refer to ~~There exists a separate standard for~~ the Metals & Mining (EM-MM) and Coal Operations (EM-CO) SASB Standards. ~~industry.~~

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	(1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations	~~Quantitative~~	Metric tonnes (t) CO_2-e, Percentage (%)	EM-IS-110a.1
	Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets	~~Discussion and Analysis~~	n/a	EM-IS-110a.2
Air Quality	Air pollutant emissions of ~~the following pollutants~~: (1) ~~CO, (2)~~ NO_x (excluding N_2O), (2) ~~(3)~~ SO_x, (3) ~~(4) particulate matter (PM_{10}), (5) manganese (MnO), (6) lead (Pb), (7)~~ volatile organic compounds ~~(VOCs)~~, (4) hazardous air pollutants and (5) particulate matter ~~(8) polycyclic aromatic hydrocarbons (PAHs)~~	~~Quantitative~~	Metric tonnes (t)	EM-IS-120a.1
Energy Management	(1) Total energy consumed, (2) purchased electricity consumed, ~~percentage grid electricity and~~ (3) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts, (4) coal consumed and (5) natural gas consumed	~~Quantitative~~	Gigajoules (GJ)~~,~~ ~~Percentage (%)~~	EM-IS-130a.1
	~~(1) Total fuel consumed, (2) percentage coal, (3) percentage natural gas and (4) percentage renewable~~	~~Quantitative~~	~~Gigajoules (GJ), Percentage (%)~~	~~EM-IS-130a.2~~
Water Management	(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	Megalitres (ML), ~~Thousand cubic metres (m^3),~~ Percentage (%)	EM-IS-140a.1
Waste Management	(1) Waste ~~Amount of waste~~ generated, (2) ~~percentage~~ hazardous waste generated and~~,~~ (3) waste ~~percentage~~ recycled	~~Quantitative~~	Metric tonnes (t)~~,~~ ~~Percentage (%)~~	EM-IS-150a.1

continued...

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Labour Practices	Percentage of employees covered by collective agreements	~~Quantitative~~	Percentage (%)	EM-IS-310a.1
	(1) Number of work stoppages and (2) the total days idle	~~Quantitative~~	Number, Days	EM-IS-310a.2
Workforce Health & Safety	(1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers ~~contract employees~~	~~Quantitative~~	Number, Rate, Hours (h) ~~Rate~~	EM-IS-320a.1
Supply Chain Management	Description of the process to manage supply chain ~~Discussion of the process for managing iron ore or coking coal sourcing~~ risks arising from environmental and social issues	~~Discussion and Analysis~~	n/a	EM-IS-430a.1

Table 2. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Raw steel production, percentage from: (1) basic oxygen furnace processes, (2) conventional electric arc furnace processes and (3) hydrogen direct reduction processes[9]	~~Quantitative~~	Metric tonnes (t), Percentage (%)	EM-IS-000.A
Total iron ore production[10]	~~Quantitative~~	Metric tonnes (t)	EM-IS-000.B
Total coking coal production[11]	~~Quantitative~~	Metric tonnes (t)	EM-IS-000.C
Recycled steel production[12]	~~Quantitative~~	Metric tonnes (t)	EM-IS-000.D
Total number of (1) employees and (2) non-employee workers	~~Quantitative~~	Number	EM-IS-000.E
Total number of hours worked disaggregated by (1) employees and (2) non-employee workers	~~Quantitative~~	Number	EM-IS-000.F

9 Note to **EM-IS-000.A** – Conventional electric arc furnace processes exclude hydrogen direct reduction processes.

10 Note to **EM-IS-000.B** – Production ~~The scope of production~~ includes iron ore consumed internally and that which is made available for sale.

11 Note to **EM-IS-000.C** – Production ~~The scope of production~~ includes coking coal consumed internally and that which is made available for sale.

12 Note to **EM-IS-000.D** – Recycled steel production is defined as steelmaking using ferrous scrap metal as a feedstock that has been reclaimed and repurposed from used products, construction materials or manufacturing scrap rather than being produced from raw iron ore.

Greenhouse Gas Emissions

Topic Summary

Iron and steel production generates significant direct greenhouse gas ~~(GHG)~~ emissions, primarily carbon dioxide~~, and methane,~~ from production processes and on-site fuel combustion. Although technological improvements have reduced the greenhouse gas ~~GHG~~ emissions per tonne of steel produced, steel production remains carbon-intensive compared to other industries. Many customers seek to reduce the carbon intensity of the iron and steel products they buy. This trend favours Iron & Steel Producers sourcing less carbon-intensive iron ore, recycling steel and using renewable electricity for steel manufacturing processes. The industry may be subject to increasingly strict regulation and rising operational costs as jurisdictions seek to limit or reduce emissions. Iron & Steel Producers can reduce their greenhouse gas emissions cost-effectively by improving their operational efficiencies, with accompanying positive effects on the entity's prospects. ~~It in additional regulatory compliance costs and risks for iron and steel entities because of climate change mitigation policies. Entities can achieve operational efficiencies through the cost-effective reduction of GHG emissions. Capturing such efficiencies can mitigate the potential financial effects of increased fuel costs from regulations that limit—or put a price on—GHG emissions.~~

Metrics

EM-IS-110a.1. (1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose (1) its gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e) and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is the Intergovernmental Panel on Climate Change (IPCC) *Fifth Assessment Report* (2014).~~

~~1.2 Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

~~2 Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 ~~2.1~~ These emissions include direct emissions of greenhouse gases ~~GHGs~~ from stationary or mobile sources that include equipment at production facilities and ~~,~~ office buildings; and vehicles used for ore, ~~and~~ product and personnel transport ~~transportation~~ (air, marine, road and rail).

~~2.2 Acceptable calculation methodologies include those that conform to the GHG Protocol as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.2.1 *GHG Reporting Guidance for the Aerospace Industry* published by the International Aerospace Environmental Group (IAEG)~~

~~2.2.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* published by the U.S. Environmental Protection Agency (EPA)~~

~~2.2.3 India GHG Inventory Program~~

~~2.2.4 ISO 14064-1~~

~~2.2.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.2.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* published by Entreprises pour l'Environnement (EpE)~~

~~2.3 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which is generally aligned with the 'financial control' approach defined by the GHG Protocol and the approach provided by the Climate Disclosure Standards Board (CDSB) that is described in REQ-07, 'Organisational boundary,' of the *CDSB Framework for reporting environmental and social information*.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~3.1 Examples of emissions-limiting regulations include:~~

~~3.1.1 California Cap-and-Trade (California Global Warming Solutions Act)~~

~~3.1.2 European Union Emissions Trading Scheme (EU ETS)~~

~~3.1.3 Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

2.1 ~~3.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

2.1.1 ~~3.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

2.2 ~~3.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

~~4 The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

~~5 In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure programme) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

~~6 The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

EM-IS-110a.2. Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall disclose: ~~shall discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1 The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2 Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3 The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4 The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5 The mechanism(s) for achieving the target; and~~

~~2.6 Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively or the target or base year has been reset.~~

3 An ~~The~~ entity shall disclose ~~discuss~~ the activities and investments required to achieve its ~~the plans or~~ targets, and any risks or limiting factors that might affect achievement of those ~~the plans or~~ targets.

~~4 The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~5 The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

~~6 Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

Air Quality

Topic Summary

Iron and steel production typically generates ~~criteria~~ air pollutants, ~~volatile organic compounds (VOCs) and hazardous air pollutants,~~ which can have significant localised public health impacts. Of particular concern are sulphur oxides, nitrogen dioxide, lead, carbon monoxide and manganese, as well as particulate matter ~~particles~~ such as soot and dust, released during production. Iron & Steel Producers have used technological ~~Technological~~ innovation and continuous improvements in steel-making processes to reduce air pollutant emissions significantly. ~~have reduced air pollutants significantly from the Iron & Steel Producers industry.~~ However, managing air pollutant emissions remains a sustainability-related risk or opportunity ~~pollutants remain a concern~~ because of increased regulatory and public concern about air pollution. Regulatory ~~, as well as expansion of steel production in emerging markets. In emerging markets, regulatory~~ efforts to curb air pollution could ~~may~~ constrain iron and steel production. Active management of air pollutant ~~facility~~ emissions and implementing ~~through~~ industry best practices ~~implementation across global operations~~ can facilitate the transition to sustainable steel production, reduce operating ~~reducing~~ costs and improve ~~potentially enhancing~~ operational efficiency.

Metrics

EM-IS-120a.1. Air pollutant emissions of ~~the following pollutants~~: (1) ~~CO, (2)~~ NO_x (excluding N_2O), (2) ~~(3)~~ SO_x, (3) ~~(4) particulate matter (PM_{10}), (5) manganese (MnO), (6) lead (Pb), (7)~~ volatile organic compounds ~~(VOCs)~~, (4) hazardous air pollutants and (5) particulate matter ~~(8) polycyclic aromatic hydrocarbons (PAHs)~~

1 An ~~The~~ entity shall disclose its air pollutant emissions ~~of air pollutants~~, in metric tonnes for each ~~per~~ pollutant, released into the atmosphere.

1.1 The ~~scope of the~~ disclosure includes air pollutants associated with the entity's operational ~~direct air emissions resulting from all the entity's~~ activities and sources of emissions, which ~~may~~ include stationary and mobile sources~~, production facilities, office buildings and transportation fleets~~.

1.2 The entity shall define air pollutant emissions according to the applicable jurisdictional law or regulation.

1.3 If the entity is subject to more than one jurisdictional law or regulation that defines air pollutant emissions, the entity shall disclose whether and how variations between these frameworks affect the reported data.

1.4 If the entity defines and manages its air pollutant emissions using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

2 ~~The entity shall disclose its emissions of (1) carbon monoxide, reported as CO.~~

~~3~~ An ~~The~~ entity shall disclose its emissions of (1) ~~(2)~~ nitrogen oxides ~~of nitrogen~~ (NO_x), reported as NO_x.

2.1 ~~3.1~~ The scope of NO_x includes NO and NO_2 but excludes nitrous oxide, N_2O.

2.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define NO_x emissions, the entity shall instead use the United Nations Economic Commission for Europe (UNECE) Convention, *Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes*, 1988 definition of NO_x emissions.

3 ~~4~~ An ~~The~~ entity shall disclose its emissions of (2)~~(3)~~ sulphur oxides ~~of sulphur~~ (SO_x), reported as SO_x.

3.1 ~~4.1~~ The scope of SO_x includes SO_2 and SO_3.

3.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define SO_x emissions, the entity shall instead use the UNECE Convention, *Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes*, 1985 definition of SO_x emissions.

~~5 The entity shall disclose its emissions of (4) particulate matter 10 micrometres or less in diameter (PM_{10}), reported as PM_{10}.~~

~~5.1 PM_{10} is defined as any airborne finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal 10 micrometres.~~

~~6 The entity shall disclose its emissions of (5) oxides of manganese, reported as MnO.~~

~~7 The entity shall disclose its emissions of (6) lead and lead compounds, reported as Pb.~~

4 ~~8~~ An ~~The~~ entity shall disclose its emissions of (3) ~~(7)~~ non-methane volatile organic compounds (VOCs).

4.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define VOC emissions, the entity shall instead use the UNECE Convention, *Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes*, 1991 definition of VOC emissions.

~~8.1 VOCs are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate and methane, that participates in atmospheric photochemical reactions, except those designated under applicable jurisdictional law or regulation as having negligible photochemical reactivity.~~

~~8.2 If applicable regulatory definitions of VOCs conflict with this definition, the entity may define VOCs in accordance with the applicable jurisdictional legal or regulatory definition. In this case, the entity shall identify the source of the definition.~~

5 An entity shall disclose its emissions of (4) hazardous air pollutants (HAPs).

5.1 HAPs are defined as pollutants known to cause adverse health or environmental effects.

5.1.1 HAPs include gases such as carbon monoxide, hydrogen chloride, hydrogen sulphide and polycyclic aromatic hydrocarbons or metals such as cadmium, chromium, lead, manganese and mercury.

5.2 For the purposes of this disclosure, HAPs exclude NO_x, SO_x, VOCs and particulate matter.

6 An entity shall separately disclose its emissions of (5) particulate matter (PM), disaggregated as (a) PM_{10} and (b) $PM_{2.5}$.

6.1 PM_{10} is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 10 micrometres.

6.2 $PM_{2.5}$ is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 2.5 micrometres.

~~9 The entity shall disclose its emissions of (8) polycyclic aromatic hydrocarbons (PAHs).~~

~~9.1 PAHs are a large group of organic compounds containing two or more fused aromatic (benzene) rings. A main source of emission is the incomplete combustion or pyrolysis of organic material.~~

~~9.2 PAHs include those listed in World Health Organization, *Human Health Effects of Polycyclic Aromatic Hydrocarbons as Ambient Air Pollutants: Report of the Working Group on Polycyclic Aromatic Hydrocarbons of the Joint Task Force on the Health Aspects of Air Pollution*, 2021.~~

7 ~~10~~ An ~~The~~ entity shall disclose ~~may discuss~~ the calculation method for its emissions disclosure, such as whether data is from: ~~continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

7.1 direct measurement of emissions (such as online analysers);

7.2 calculations based on site-specific data;

7.3 calculations based on published emission factors; or

7.4 estimation.

Energy Management

Topic Summary

Iron and steel ~~The~~ production ~~of steel~~ requires significant energy, sourced primarily from ~~the~~ direct fossil fuel combustion, and in some cases, ~~as well as~~ energy purchased from third-party sources. Energy-intensive ~~the grid. Energy-intense~~ production can have detrimental social and environmental effects, such as increased greenhouse gas emissions and pollution. Reliance on third-party sources increases the risk of operational disruptions from unreliable providers and strained distribution networks. ~~has implications for climate change, and electricity purchases from the grid can result in indirect Scope 2 emissions.~~ The choice between various production processes—~~electric arc furnaces and~~ integrated basic oxygen furnaces and electric arc furnaces—can influence whether an entity uses fossil fuels or buys ~~purchases~~ electricity. This decision, together with the choice whether to use ~~between using~~ coal versus natural gas or on-site versus ~~grid-~~third-party sourced electricity, could ~~may~~ influence both the costs and reliability of energy supply. Affordable, easily accessible and reliable energy is an important industry competitive factor. Energy costs account for a significant ~~substantial~~ portion of iron and steel manufacturing costs. How an iron and steel entity manages its energy efficiency, its reliance on various types of energy and associated sustainability risks, and its ability to access alternative sources of energy, can influence its profitability.

Metrics

EM-IS-130a.1. (1) Total energy consumed, (2) purchased electricity consumed, ~~percentage grid electricity and~~ (3) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts, (4) coal consumed and (5) natural gas consumed

1 An ~~The~~ entity shall disclose (1) the total quantity ~~amount~~ of energy it consumed ~~as an aggregate figure,~~ in gigajoules (GJ).

1.1 Total ~~The scope of~~ energy consumed ~~consumption~~ includes all forms of energy used by the entity, ~~from all sources,~~ including fuel, electricity, heating, cooling and steam. ~~energy purchased from external sources and energy produced by the entity itself (self-generated). For example, direct fuel usage, purchased electricity, and heating, cooling and steam energy are all included within the scope of energy consumption.~~

1.2 Total energy consumed includes purchased or acquired energy and self-generated energy used by the entity. ~~The scope of energy consumption includes only energy directly consumed by the entity during the reporting period.~~

1.2.1 Purchased and acquired energy is energy that is purchased or otherwise brought into the entity's boundary.

1.2.2 Purchased energy includes energy from owned or operated generation facilities where energy attributes, such as certificates, have been sold or transferred.

1.2.3 Self-generated energy is generation owned or operated by the entity that consumes the energy.

1.2.4 In preparing this disclosure, the entity shall determine ownership or control using the same measurement approach that it uses to determine greenhouse gas emissions.

1.2.5 Total energy consumed excludes any energy the entity generates using fuel it has already consumed—that is, self-generated electricity consumed from fuel is counted only once as fuel consumed. For example, if the entity has a co-generator that uses fuel to produce electricity and then consumes the generated electricity, that energy would be counted only once as fuel consumed.

1.2.6 If the entity stores any energy, that energy is counted only once when the entity has consumed the energy and it is no longer stored.

1.3 An ~~In calculating energy consumption from fuels and biofuels, the~~ entity shall use lower ~~higher~~ heating values (LHV), ~~(HHV),~~ also known as net ~~gross~~ calorific values, to calculate energy consumed from fuels and biofuels. The entity shall measure these values directly ~~(GCV), which are measured directly~~ or use the default net calorific values in the 2006 IPCC *Guidelines for National Greenhouse Gas Inventories* (Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1).~~taken from the Intergovernmental Panel on Climate Change (IPCC).~~

1.3.1 The requirement to use such heating values applies unless the entity is required, in whole or in part, by a jurisdictional authority or an exchange on which it is listed to use different heating values for converting fuels into GJ. In such a case, the entity is permitted to instead use the heating values required by such a jurisdictional authority or exchange for the part of the entity to which that requirement applies, for as long as that requirement applies to that part of the entity.

1.3.2 If the entity uses heating values other than LHV for converting fuels into GJ, the entity shall disclose information about the heating values used.

2 An ~~The~~ entity shall disclose (2) the quantity ~~percentage~~ of purchased or acquired electricity ~~energy~~ it consumed (in GJ) included in the quantity disclosed as total energy consumed. ~~that was supplied from grid electricity.~~

2.1 Purchased electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as purchased grid electricity consumption divided by total energy consumption.~~

3 An ~~The~~ entity shall disclose ~~(3)~~ the quantity of electricity from renewable energy sources it consumed (in GJ), disaggregated between (3a) self-generation and (3b) direct contracts.~~percentage of energy it consumed that was renewable energy.~~

3.1 Renewable energy sources are ~~is~~ defined as sources capable of being replenished in a short time through ecological cycles or agricultural processes, ~~energy from sources that are replenished at a rate greater than or equal to their rate of depletion,~~ such as geothermal, wind, solar, hydro and biomass.

3.2 Renewable electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as renewable energy consumption divided by total energy consumption.~~

3.3 Renewable electricity from self-generation is limited to that consumed from owned or operated equipment, where the electricity is produced and consumed by the same entity.

~~The scope of renewable energy includes renewable fuel the entity consumed, renewable energy the entity directly produced and renewable energy the entity purchased, if purchased through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs) or Guarantees of Origin (GOs), a Green-e Energy Certified utility or supplier programme, or other green power products that explicitly include RECs or GOs, or for which Green-e Energy Certified RECs are paired with grid electricity.~~

~~3.3.1 For any renewable electricity generated on-site, any RECs and GOs shall be retained (not sold) and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~3.3.2 For renewable PPAs and green power products, the agreement shall explicitly include and convey that RECs and GOs be retained or replaced and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~3.3.3 The renewable portion of the electricity grid mix that is outside of the control or influence of the entity is excluded from the scope of renewable energy.~~

3.4 For the purposes of this disclosure, renewable electricity from self-generation excludes electricity associated with contractual instruments entered into by the entity if the contractual instrument has been sold by the entity.

3.5 Direct contracts include renewable electricity consumed that comes from a direct line transfer, such as when electricity production is fed directly and exclusively to a single entity. Direct contracts also include renewable electricity consumed related to contracts where the entity has negotiated with a specific electricity generator to supply renewable electricity to the entity with no grid transfers.

3.6 If the entity purchases or acquires renewable electricity through other contractual instruments, the entity shall provide information about any of these instruments that is necessary to inform the understanding of users of general purpose financial reports of the procurement decisions made by the entity regarding various energy sources to manage energy consumption-related risks and opportunities, including those associated with Scope 2 emissions.

3.6.1 If the entity purchases renewable electricity through a contractual instrument, the entity shall apply the Scope 2 Quality Criteria as defined in the Greenhouse Gas Protocol's *GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard* (2015).

3.7 ~~3.4~~ If the entity consumes renewable electricity ~~For the purposes of this disclosure, the scope of renewable energy~~ from biomass sources, it shall disclose the quantity (in GJ) separately. ~~is limited to materials certified to a third-party standard (for example, Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification or American Tree Farm System), materials considered eligible sources of supply according to the *Green-e Framework for Renewable Energy Certification, Version 1.0* (2017) or Green-e regional standards, or materials eligible for an applicable state renewable portfolio standard.~~

3.7.1 Renewable electricity from biomass sources includes only materials certified to a third-party standard.

3.7.2 An entity shall disclose the third-party standard to which the materials are certified.

4 An entity shall disclose (4) the quantity of coal consumed (in GJ) included in the quantity disclosed as total energy consumed.

~~The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel usage (including biofuels) and conversion of kilowatt hours (kWh) to GJ (for energy data including electricity from solar or wind energy).~~

4.1 Coal consumed includes thermal coal, metallurgical coal, coke and coke breeze.

5 An entity shall disclose (5) the quantity of natural gas consumed (in GJ) included in the quantity disclosed as total energy consumed.

~~EM-IS-130a.2. (1) Total fuel consumed, (2) percentage coal, (3) percentage natural gas and (4) percentage renewable~~

~~1 The entity shall disclose (1) the total amount of energy consumed as an aggregate figure, in gigajoules (GJ).~~

~~1.1 The calculation methodology for fuel consumed shall be based on actual fuel consumed as opposed to design parameters.~~

~~1.2 Acceptable calculation methodologies for fuel consumed may include methodologies based on:~~

~~1.2.1 Adding fuel purchases made during the reporting period to beginning inventory at the start of the reporting period, less any fuel inventory at the end of the reporting period~~

~~1.2.2 Tracking fuel consumed by vehicles~~

~~1.2.3 Tracking fuel expenses~~

~~2 The entity shall disclose (2) the percentage of fuel consumed that was coal.~~

~~2.1 The percentage shall be calculated as the amount of coal consumed (in GJ) divided by the total amount of fuel consumed (in GJ).~~

~~2.2 The scope of coal consumed may include thermal coal, metallurgical coal, coke and coke breeze.~~

~~3 The entity shall disclose (3) the percentage of fuel consumed that was natural gas.~~

~~3.1 The percentage shall be calculated as the amount of natural gas consumed (in GJ) divided by the total amount of fuel consumed (in GJ).~~

~~4 The entity shall disclose (4) the percentage of fuel consumed that was renewable fuel.~~

~~4.1 Renewable fuel generally is defined as fuel that meets all the following requirements:~~

~~4.1.1 Produced from renewable biomass;~~

~~4.1.2 Used to replace or reduce the quantity of fossil fuel present in a transportation fuel, heating oil or jet fuel; and~~

~~4.1.3 Achieved net greenhouse gas (GHG) emissions reduction on a lifecycle basis.~~

~~4.2 The entity shall disclose the standard or regulation used to determine if a fuel is renewable.~~

~~4.3 The percentage shall be calculated as the amount of renewable fuel consumed (in GJ) divided by the total amount of fuel consumed (in GJ).~~

~~5 In calculating energy consumption from fuels, the entity shall use higher heating values (HHV), also known as gross calorific values (GCV), which are directly measured or taken from the Intergovernmental Panel on Climate Change.~~

~~6 The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel usage.~~

Water Management

Topic Summary

Steel production requires significant ~~substantial~~ volumes of water. Entities face increasing operational, regulatory and reputational risks associated with water scarcity, costs of water acquisition, regulations on effluents or amount of water used, and competition with local communities and other industries for limited water resources. These risks are particularly likely to affect regions where water is scarce, resulting in water availability constraints and price volatility. Entities unable to secure a stable water supply could face production disruptions, and ~~while~~ rising water prices could directly increase production costs. Consequently, entities adopting technologies and processes to decrease ~~reduce~~ water consumption could ~~may~~ reduce operating risks and costs by mitigating the operational effects ~~impacts~~ of regulatory changes, water supply shortages and community-related disruptions.

Metrics

EM-IS-140a.1. (1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

~~2 The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1 Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2 Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1 ~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. ~~that evaporates during withdrawal, use and discharge~~

~~3.1.2 Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3 Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea~~

~~4 The entity shall analyse all its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

3 ~~5~~ An ~~The~~ entity shall disclose (3a) the volume of water withdrawn, in megalitres, from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 ~~6~~ An ~~The~~ entity shall disclose (3b) the volume of water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

Waste Management

Topic Summary

Although waste reclamation rates in steel production are high, the industry generates significant quantities of hazardous waste. ~~wastes.~~ Slag, dusts and sludges constitute the three main industry waste types. These by-products often are recycled internally or sold to other industries. However, process waste ~~wastes~~ such as electric arc furnace dust, which could ~~may~~ be regulated as a hazardous material because of its heavy metal content, can have significant environmental and human health impacts, present a regulatory risk~~,~~ and result in additional operating costs for entities. Managing ~~Risks related to~~ the long-term risks ~~impacts~~ of waste disposal could ~~may~~ result in significant costs, including those associated with monitoring and managing contaminated off-site disposal properties. Jurisdictional ~~, for which jurisdictional~~ authorities could ~~may~~ hold Iron & Steel Producers ~~iron and steel producers~~ responsible for remediation and restoration activities. Entities that reduce waste streams, hazardous waste streams in particular, and recycle or sell non-hazardous by-products, could mitigate regulatory risks and reduce costs while increasing revenues.

Metrics

EM-IS-150a.1. (1) Waste ~~Amount of waste~~ generated, (2) ~~percentage~~ hazardous waste generated and~~,~~ (3) waste ~~percentage~~ recycled

1 An ~~The~~ entity shall disclose (1) the total mass ~~weight~~ of waste that it generated, in metric tonnes.

1.1 Waste is defined as material for which the entity has no further use and that is discarded or released to the environment by the entity.

1.2 Waste ~~The scope~~ includes slag, dust, ~~slags, dusts, sludges,~~ scrap steel, reject coal, other solid waste, sludge, used oil and other liquid waste. ~~solid wastes that meet the above definition.~~

1.3 Waste ~~The scope~~ excludes gaseous waste and wastewater. ~~wastes.~~

1.4 Waste includes hazardous waste.

2 An ~~The~~ entity shall disclose (2) the mass of hazardous waste that it generated that is included in the total mass of waste generated, in metric tonnes. ~~percentage of hazardous waste generated, by weight.~~

~~2.1~~ ~~The percentage of hazardous waste shall be calculated as the weight of waste that meets the definition of hazardous waste divided by the total weight of waste material.~~

2.1 ~~2.2~~ Hazardous waste is ~~wastes are~~ defined in accordance with the applicable jurisdictional law or regulation ~~legal or regulatory framework~~ where the waste was generated.

2.2 ~~2.2.1~~ If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the ~~The~~ entity shall ~~may~~ use the United Nations Environmental Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (Basel Convention) to define ~~for the purposes of defining~~ hazardous waste or recycled hazardous waste ~~for operations located in jurisdictions that lack applicable legal or regulatory definitions~~.

3 An ~~The~~ entity shall disclose (3) the mass ~~percentage~~ of waste generated~~, by weight,~~ that has been recycled, in metric tonnes.

3.1 The mass of waste ~~percentage~~ recycled is defined ~~shall be calculated~~ as the mass ~~weight~~ of waste ~~material~~ reused plus the mass ~~weight~~ recycled or remanufactured (through treatment or processing) by the entity, plus the mass ~~amount~~ sent externally for further recycling, ~~divided by the total weight of waste material,~~ such that:

3.1.1 reused materials are defined as those recovered products or components of products used for the same purpose for which they were conceived;

3.1.2 recycled and remanufactured materials are defined as waste ~~materials~~ reprocessed or treated through production or manufacturing processes and made into a final product or made into a component to be integrated into a product;

3.1.3 ~~the scope of~~ recycled and remanufactured products include ~~includes~~ primary recycled materials, co-products (outputs of equal value to primary recycled materials) and by-products (outputs of lesser value than ~~to~~ primary recycled materials);

3.1.4 portions of products and materials discarded in landfills do not qualify as ~~are not considered~~ recycled;

3.1.5 recycled waste includes only the portions of products directly used in ~~incorporated into~~ new products, co-products or by-products ~~shall be included in the percentage recycled~~; and

3.1.6 ~~3.1.5~~ materials sent for further recycling include those ~~materials which are~~ transferred to a third party for the purpose of reuse, recycling or refurbishment.

3.2 Materials incinerated, including for energy recovery, are excluded from ~~shall not be considered within the scope of~~ recycled materials.

3.2.1 Energy recovery is defined as the use of combustible waste to generate energy through direct incineration, with or without other waste, but with recovery of the heat.

~~3.2.2 The entity may separately disclose the percentage of hazardous waste generated that was incinerated.~~

4 If an entity is subject to more than one jurisdictional law or regulation that defines waste, hazardous waste and recycled waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define waste, hazardous waste and recycled waste, and the relevant quantities and percentages defined in accordance with each applicable framework.~~

4.1 If the entity defines and manages its waste, hazardous waste and recycled waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

Labour Practices

Topic Summary

Organised labour serves an important role in highlighting workers' interests and managing collective bargaining for better wages and working conditions. Understanding worker concerns and managing labour relations effectively is a critical operational component for some iron and steel entities. Conflicts with workers can result in labour strikes and other disruptions that can disrupt production. Work stoppages result in lost revenue and reputational damage. Persistent labour disputes can adversely affect the long-term prospects of Iron & Steel Producers.

Metrics

EM-IS-310a.1. Percentage of employees covered by collective agreements

1 An entity shall disclose the percentage of its total employees covered by collective agreements at the reporting date.

1.1 Collective agreements are defined as agreements between an entity and an employees' organisation on behalf of some or all of the entity's employees concerning working conditions and terms of employment.

1.2 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using various indicators such as economic dependency.

1.2.1 Employees include permanent employees, temporary employees, non-guaranteed hours employees, full-time employees and part-time employees.

2 The percentage is calculated as the number of employees covered by collective agreements divided by the total number of employees employed.

EM-IS-310a.2. (1) Number of work stoppages and (2) the total days idle

1 An entity shall disclose (1) the number of work stoppages.

1.1 Work stoppages are defined as shutdowns and project delays resulting from the collective actions of organised labour during disputes with the entity and include strikes and lockouts.

1.1.1 A strike is defined as a temporary stoppage of work by a group of employees (not necessarily union members) to express a grievance or enforce a demand.

1.1.2 A lockout is defined as a temporary withholding or denial of employment during a labour dispute to enforce terms of employment upon a group of employees.

2 An entity shall disclose (2) the total days idle resulting from work stoppages.

2.1 'Days idle' is defined as the number of workdays lost because of a work stoppage.

2.2 Total days idle is calculated as the sum of days for each work stoppage.

2.2.1 If the entity experiences concurrent work stoppages at different locations, the overlapping periods are counted only once.

3 The disclosure excludes work stoppages because of non-technical reasons, such as those resulting from pending regulatory permits, or other delays related to community concerns, community or stakeholder resistance or protest, or armed conflict.

4 An entity shall provide information about the work stoppages including associated costs, the reason for each work stoppage (as stated by labour), the effect on production, the status of ongoing work stoppages and corrective action taken.

Workforce Health & Safety

Topic Summary

Working conditions related to iron and steel operations are physically demanding and hazardous. Iron and steel production processes can present significant risks to employees and non-employee workers ~~contractors working~~ in iron and steel plants. Given the high temperatures and heavy machinery involved, worker injuries and fatalities are a matter of serious concern to Iron & Steel Producers. ~~iron and steel producers.~~ Given the hazardous work environment, the industry has relatively high fatality rates, leading to a need for ~~requiring~~ a strong safety culture and comprehensive health and safety policies. Although accident rates in the industry are in decline, worker injuries and fatalities can result in regulatory penalties, negative publicity, low worker morale and productivity, and increased healthcare and compensation costs.

Metrics

EM-IS-320a.1. (1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2 ~~1~~ An ~~The~~ entity shall separately disclose (2) ~~(1)~~ its total recordable incident rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 ~~1.1~~ An injury or illness is typically defined as ~~considered~~ a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare ~~health care~~ professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid~~,~~ or loss of consciousness.

2.1.3 ~~1.1.1~~ First aid is typically defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but jurisdictional definitions may vary.

~~1.1.2~~ ~~The entity may use applicable jurisdictional criteria for definitions of a recordable incident and a non-recordable incident such as first aid. The entity shall disclose the legal, regulatory or industry framework used as the source for these criteria and definitions.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2~~ ~~The entity shall disclose (2) its fatality rate for work-related fatalities.~~

~~3~~ ~~The entity shall disclose (3) its near miss frequency rate (NMFR) for work-related near misses.~~

~~3.1~~ ~~A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage, or environmental damage, but had the potential to do so in other circumstances.~~

~~3.2~~ ~~The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~4~~ ~~All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~4.1~~ ~~The '200,000' in the rate calculation represents the total number of hours 100 full-time workers working 40 hours per week for 50 weeks per year can provide annually.~~

4 ~~5~~ The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses. ~~includes work-related incidents only.~~

4.1 ~~5.1~~ Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~5.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~5.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~5.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~5.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~6~~ ~~The entity shall disclose the rates for each of these employee categories:~~

~~6.1~~ ~~Direct employees, defined as individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees.~~

~~6.2~~ ~~Contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

~~7~~ ~~The scope of the disclosure includes all employees regardless of employee location or type of employment.~~

Supply Chain Management

Topic Summary

Iron & Steel Producers face potential supply disruptions if their raw materials suppliers fail to effectively manage the environmental and social risks associated with mineral extraction. Iron ore and coal are critical raw material inputs for iron and ~~to the~~ steel production. ~~process.~~ Iron ore mining and coal production are resource-intensive processes. Mineral extraction often involves ~~has~~ substantial environmental and social impacts that can adversely affect ~~affecting~~ local communities, workers and environments. Iron & Steel Producers face scrutiny from their customers to effectively manage the negative externalities in their ore and coal supply chains. ~~ecosystems.~~ Community protests and~~,~~ legal or regulatory action~~, or increased regulatory compliance costs or penalties~~ can disrupt mining operations. Iron & Steel Producers ~~and steel entities~~ could also face potential supply disruptions if their suppliers ineffectively manage their environmental and social risks. By minimising ~~as a result, or in some cases, also may be subject to regulatory penalties associated with the environmental or social impact of the mining entity supplier. Minimising~~ such risks through appropriate supplier screening, monitoring and engagement, Iron & Steel Producers can ~~iron and steel producers may~~ manage their ~~direct critical~~ raw materials suppliers proactively to monitor whether they are ~~ensure they are not~~ engaged in illegal or otherwise environmentally or socially damaging practices that could affect the entity's prospects.

Metrics

EM-IS-430a.1. Description of the process to manage supply chain ~~Discussion of the process for managing iron ore or coking coal sourcing~~ risks arising from environmental and social issues

1 An ~~The~~ entity shall disclose information about ~~discuss~~ its policies and procedures for managing environmental and social risks in its supply chain. ~~that may affect sourcing that are present in its iron ore or coking coal supply chain.~~

1.1 The disclosure includes information about ~~Discussion shall include~~ any current ~~existing~~ or expected risks, constraints or opportunities associated with sourcing ~~projected risks or constraints in obtaining~~ raw materials (for example, iron ore or coking coal), such as ~~within the supply chain, including~~ those related to competition for restricted or limited supplies, geopolitical uncertainties, ~~restricted/limited availability, political situations,~~ local labour conditions, natural disasters, the effects of climate change or changes in applicable jurisdictional law or regulation. ~~regulations.~~

1.2 The disclosure includes a ~~scope of disclosure may include~~ description of the processes the entity uses to manage environmental and social risks in its supply chains, such as supplier ~~use of~~ screening, codes of conduct ~~and~~, audits and certifications.

2 An entity shall disclose the proportion (by cost) of its sourced raw materials certified or accredited by third-party verified supply chain certifications related to environmental or social issues.

2.1 The entity shall disclose the sustainable supply chain certifications and accreditations the entity used to prepare this disclosure.

3 ~~2~~ If an entity uses supplier audits to manage these risks, ~~audits are discussed,~~ the entity shall ~~may~~ disclose whether the audits are internal (first party), independent (third party) or administered by peers (for example, trade organisations).

Metals & Mining

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards. ~~and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

Table of Contents

INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®). ~~Sustainable Industry Classification System® (SICS®).~~

SASB Standards include:

1. **industry ~~Industry~~ descriptions** — ~~—~~ which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry; ~~.~~

2. **disclosure ~~Disclosure~~ topics** — ~~—~~ which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry; ~~.~~

3. **metrics — ~~Metrics~~** ~~—~~ which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic; ~~.~~

4. **technical ~~Technical~~ protocols** — ~~—~~ which provide guidance on definitions, scope, implementation and presentation of associated metrics; and ~~.~~

5. **activity ~~Activity~~ metrics** — ~~—~~ which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS®. However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

~~The~~ Metals & Mining (EM-MM) entities extract minerals, produce ores, smelt and refine metals, manufacture metal products and provide mining support services. ~~industry is involved in extracting metals and minerals, producing ores, quarrying stones, smelting and manufacturing metals, refining metals, and providing mining support activities.~~ Entities ~~also~~ produce metallic ores and concentrates, ~~iron ores, rare earth metals, and~~ precious metals and stones, salt, peat and other minerals. Larger entities in this industry are integrated vertically—~~—~~from mining across global operations to wholesaling metals to customers.

Note: this SASB Standard is intended for entities producing all types of non-hydrocarbon minerals and manufacturing non-ferrous intermediate and end products. For content related to coal production, refer to the Coal Operations SASB Standard. For content related to iron and steel production, refer to the ~~There exists a separate standard for the~~ Iron & Steel Producers (EM-IS) SASB Standard. ~~industry.~~

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	(1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations	~~Quantitative~~	Metric tonnes (t) CO_2-e, Percentage (%)	EM-MM-110a.1
	Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets	~~Discussion and Analysis~~	n/a	EM-MM-110a.2
Air Quality	Air pollutant emissions of ~~the following pollutants~~: (1) ~~CO, (2)~~ NO_x (excluding N_2O), (2) ~~(3)~~ SO_x, (3) ~~(4) particulate matter (PM_{10}), (5) mercury (Hg), (6) lead (Pb), and (7)~~ volatile organic compounds ~~(VOCs)~~, (4) hazardous air pollutants and (5) particulate matter	~~Quantitative~~	Metric tonnes (t)	EM-MM-120a.1
Energy Management	(1) Total energy consumed, (2) purchased electricity consumed, ~~percentage grid electricity and~~ (3) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts and (4) natural gas consumed	~~Quantitative~~	Gigajoules (GJ)~~, Percentage (%)~~	EM-MM-130a.1
Water Management	(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	Megalitres (ML), ~~Thousand cubic metres (m^3),~~ Percentage (%)	EM-MM-140a.1
	~~Number of incidents of non-compliance associated with water quality permits, standards and regulations~~	~~Quantitative~~	~~Number~~	~~EM-MM-140a.2~~
	Total water discharged by (1) destination, and (2) level of treatment		Megalitres (ML)	EM-MM-140a.3
	Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress		n/a	EM-MM-140a.4
	Percentage of production from mine sites where acid and metalliferous drainage (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation		Percentage (%)	EM-MM-140a.5

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Waste & Hazardous Materials Management	Non-mineral ~~Total weight of non-mineral~~ waste generated	~~Quantitative~~	Metric tonnes (t)	EM-MM-150a.4
	Tailings ~~Total weight of tailings~~ produced	~~Quantitative~~	Metric tonnes (t)	EM-MM-150a.5
	Waste ~~Total weight of waste~~ rock generated	~~Quantitative~~	Metric tonnes (t)	EM-MM-150a.6
	Hazardous ~~Total weight of hazardous~~ waste generated	~~Quantitative~~	Metric tonnes (t)	EM-MM-150a.7
	Hazardous ~~Total weight of hazardous~~ waste recycled	~~Quantitative~~	Metric tonnes (t)	EM-MM-150a.8
	Number of significant incidents associated with hazardous materials and waste management	~~Quantitative~~	Number	EM-MM-150a.9
	Waste ~~Description of waste~~ and hazardous materials management policies and procedures for active and inactive operations	~~Discussion and Analysis~~	n/a	EM-MM-150a.10
Ecological ~~Biodiversity~~ Impacts	Description of environmental management policies and practices for operational facilities ~~active sites~~	~~Discussion and Analysis~~	n/a	EM-MM-160a.1
	~~Percentage of mine sites where acid rock drainage is: (1) predicted to occur, (2) actively mitigated, and (3) under treatment or remediation~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-MM-160a.2~~
	Percentage of (1) proved and (2) probable mineral reserves in or near environmentally sensitive locations ~~sites with protected conservation status or endangered species habitat~~	~~Quantitative~~	Percentage (%)	EM-MM-160a.3
	(1) Total spatial footprint of operations, (2) area disturbed and (3) area restored		Square kilometres (km^2)	EM-MM-160a.4
~~Security, Human Rights & Rights of Indigenous Peoples~~	~~Percentage of (1) proved and (2) probable reserves in or near areas of conflict~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-MM-210a.1~~
	~~Percentage of (1) proved and (2) probable reserves in or near indigenous land~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-MM-210a.2~~
	~~Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict~~	~~Discussion and Analysis~~	~~n/a~~	~~EM-MM-210a.3~~

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Community Relations & Rights of Indigenous Peoples	Processes used ~~Discussion of process~~ to manage risks and opportunities associated with community rights and interests	~~Discussion and Analysis~~	n/a	EM-MM-210b.1
	(1) Number of non-technical delays and (2) the total days idle ~~duration of non-technical delays~~	~~Quantitative~~	Number, Days	EM-MM-210b.2
	Percentage of (1) proved and (2) probable mineral reserves in or near Indigenous Peoples' land		Percentage (%)	EM-MM-210b.3
	Description of engagement processes and due diligence practices related to upholding Indigenous Peoples' rights		n/a	EM-MM-210b.4
Operations in Conflict Areas	Percentage of (1) proved and (2) probable mineral reserves in conflict-affected and high-risk areas		Percentage (%)	EM-MM-210c.1
	Description of engagement processes and due diligence practices related to operating in conflict-affected and high-risk areas		n/a	EM-MM-210c.2
Labour Practices	Percentage of employees covered by ~~active workforce employed under~~ collective agreements	~~Quantitative~~	Percentage (%)	EM-MM-310a.1
	(1) Number of work stoppages and (2) the total days idle ~~and (2) duration of strikes and lockouts~~ [13]	~~Quantitative~~	Number, Days	EM-MM-310a.2
Workforce Health & Safety	(1) Number of fatalities and (2) total recordable incident rate ~~All-incidence rate, (2) fatality rate, (3) near miss frequency rate (NMFR) and (4) average hours of health, safety, and emergency response training~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~	~~Quantitative~~	Number, Rate, Hours (h) ~~Rate~~	EM-MM-320a.1
	Description of management systems used to foster a safe working environment		n/a	EM-MM-320a.2
Supply Chain Management	Description of the process to manage supply chain risks arising from environmental and social issues		n/a	EM-MM-430a.1

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[13] ~~Note to **EM-MM-310a.2** – The disclosure shall include a description of the root cause for each work stoppage.~~

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Business Ethics ~~& Transparency~~	Description of the management systems ~~system~~ for the prevention of corruption and bribery throughout the value chain	~~Discussion and Analysis~~	n/a	EM-MM-510a.1
	Revenue ~~Production~~ in countries that have the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index	~~Quantitative~~	Presentation currency ~~Metric tonnes (t) saleable~~	EM-MM-510a.2
Tailings Storage Facilities Management	Tailings storage facility inventory table: (1) facility name, (2) location, (3) ownership status, (4) operational status, (5) construction method, (6) maximum permitted storage capacity, (7) current quantity ~~amount~~ of tailings stored, (8) consequence classification, (9) date of most recent independent technical review, (10) material findings, (11) mitigation measures and ~~,~~ (12) site-specific emergency preparedness and response plan ~~EPRP~~	~~Quantitative~~	Various	EM-MM-540a.1
	Description ~~Summary~~ of tailings management systems and governance structure used to monitor and maintain the stability of tailings storage facilities	~~Discussion and Analysis~~	n/a	EM-MM-540a.2
	Development ~~Approach to development~~ of emergency preparedness and response plans ~~Emergency Preparedness and Response Plans (EPRPs)~~ for tailings storage facilities	~~Discussion and Analysis~~	n/a	EM-MM-540a.3

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Production of (1) metal ores, (2) concentrates and (3) ~~(2)~~ finished metal products	~~Quantitative~~	Million metric ~~Metric~~ tonnes (Mt) ~~(t)~~ saleable	EM-MM-000.A
Total number of (1) employees and (2) non-employee workers~~, percentage contractors~~	~~Quantitative~~	Number~~, Percentage (%)~~	EM-MM-000.B
Total hours worked disaggregated by (1) employees and (2) non-employee workers		Hours	EM-MM-000.C

Greenhouse Gas Emissions

Topic Summary

Mining operations are energy-intensive and generate significant direct greenhouse gas ~~(GHG)~~ emissions, including carbon dioxide from fuel use during mining, ore processing and smelting activities. The extent and type of greenhouse gas ~~GHG~~ emissions can vary depending on the types of mining, ore and processing involved. ~~metal mined and processed.~~ Regulatory efforts to reduce greenhouse gas ~~GHG~~ emissions in response to climate change-related risks may result in additional regulatory compliance costs and risks for metals and mining entities. Entities can reduce greenhouse gas emissions cost-effectively by improving ~~achieve~~ operational efficiencies ~~through the cost-effective reduction of GHG emissions~~. Such efficiencies can mitigate the potential financial effects of increased fuel costs resulting from regulations that price or ~~to~~ limit greenhouse gas ~~—or put a price on— GHG~~ emissions.

Metrics

EM-MM-110a.1. (1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose (1) its gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e) and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014).~~

1.2 These emissions include Scope 1 greenhouse gas emissions from stationary or mobile sources that include equipment at mine sites, mine electricity-generating facilities, refineries and smelting facilities and office buildings; and vehicles used in product and personnel transportation (air, marine, road and rail).

~~Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

~~2 Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

~~2.1 These emissions include direct emissions of GHGs from stationary or mobile sources that may include equipment at mine sites, refineries and smelting facilities, and office buildings, and equipment used in metal transportation (marine, road and rail).~~

~~2.2 Acceptable calculation methodologies include those that conform to the GHG Protocol as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.2.1 *GHG Reporting Guidance for the Aerospace Industry* published by the International Aerospace Environmental Group (IAEG)~~

~~2.2.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* published by the U.S. Environmental Protection Agency (EPA)~~

~~2.2.3 India GHG Inventory Program~~

~~2.2.4 ISO 14064-1~~

~~2.2.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.2.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* published by Entreprises pour l'Environnement (EpE)~~

~~2.3 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which is generally aligned with the 'financial control' approach defined by the GHG Protocol and the approach provided by the Climate Disclosure Standards Board (CDSB) that is described in REQ-07, 'Organisational boundary,' of the *CDSB Framework for reporting environmental and social information*.~~

2~~3~~ An ~~The~~ entity shall disclose (2) the percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~3.1 Examples of emissions-limiting regulations include:~~

~~3.1.1 California Cap-and-Trade (California Global Warming Solutions Act)~~

~~3.1.2 European Union Emissions Trading Scheme (EU ETS)~~

~~3.1.3 Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

2.1 ~~3.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

2.1.1 ~~3.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

2.2 ~~3.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions only subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

~~4 The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

~~5 In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure programme) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

~~6 The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

~~7 The entity may, where relevant, provide a breakdown of its emissions by mineral or business unit.~~

~~7.1 Minerals or business units may include: aluminium, copper, zinc, iron ore, precious metals or diamonds.~~

EM-MM-110a.2. Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall shall disclose: ~~discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1~~ ~~The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2~~ ~~Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3~~ ~~The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4~~ ~~The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5~~ ~~The mechanism(s) for achieving the target; and~~

~~2.6~~ ~~Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively or the target or base year has been reset.~~

3 An ~~The~~ entity shall disclose ~~discuss~~ the activities and investments required to achieve its ~~the plans or~~ targets, and any risks or limiting factors that might affect achievement of those ~~the plans or~~ targets.

~~4~~ ~~The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~5~~ ~~The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

~~6~~ ~~Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

Air Quality

Topic Summary

Non-greenhouse gas ~~(GHG)~~ air pollutants from metals and mining activities ~~emissions from the Metals & Mining industry include hazardous air pollutants from smelting and refining activities. These air pollutants~~ can create significant and localised environmental or health risks. Particulate matter, ~~Depending on the metal,~~ uncaptured sulphur dioxide, lead, mercury, cadmium and arsenic are among the most problematic ~~chief~~ pollutants. The ~~, along with particulate matter. Financial~~ effects on an entity resulting from air emissions ~~will~~ vary depending on the specific location of operations and the applicable jurisdictional air emissions law or regulation. Metals & Mining entities that proactively improve their air quality management can benefit from reduced regulatory risk and compliance costs, as well as lower long-term costs achieved through more efficient production methods. ~~regulations. Active management of the issue—through technological and process improvements—could allow entities to limit the effects of increasingly stringent air quality regulations globally. Entities could also benefit from operational efficiencies that could lead to a lower cost structure over time.~~

Metrics

EM-MM-120a.1. Air pollutant emissions of ~~the following pollutants~~: (1) ~~CO, (2)~~ NO_x (excluding N_2O), (2) ~~(3)~~ SO_x, (3) ~~(4) particulate matter (PM_{10}), (5) mercury (Hg), (6) lead (Pb), and (7)~~ volatile organic compounds ~~(VOCs)~~, (4) hazardous air pollutants and (5) particulate matter

1 An ~~The~~ entity shall disclose its air pollutant emissions ~~of air pollutants~~, in metric tonnes for each ~~per~~ pollutant, released into the atmosphere.

1.1 The ~~scope of the~~ disclosure includes air pollutants associated with the entity's operational ~~direct air emissions resulting from all the entity's~~ activities and sources of emissions, which ~~may~~ include stationary or mobile sources~~, production facilities, office buildings and transportation fleets~~.

1.2 The entity shall define the listed air pollutant emissions according to the applicable jurisdictional law or regulation.

1.3 If the entity is subject to more than one jurisdictional law or regulation that defines air pollutant emissions, the entity shall disclose whether and how variations between these frameworks affect the reported data.

1.4 If the entity defines and manages its air pollutant emissions using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

~~2 The entity shall disclose its emissions of (1) carbon monoxide, reported as CO.~~

2~~3~~ An ~~The~~ entity shall disclose its emissions of (1) ~~(2)~~ nitrogen oxides ~~of nitrogen~~ (NO_x) reported as NO_x.

2.1 ~~3.1~~ The scope of NO_x includes NO and NO_2 but excludes nitrous oxide, N_2O.

2.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define NO_x emissions, the entity shall instead use the United Nations Economic Commission for Europe (UNECE) Convention, *Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes*, 1988 definition of NO_x emissions.

3 ~~4~~ An ~~The~~ entity shall disclose its emissions of (2) ~~(3)~~ sulphur oxides ~~of sulphur~~ (SO_x), reported as SO_x.

3.1 ~~4.1~~ The scope of SO_x includes SO_2 and SO_3.

3.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define SO_x emissions, the entity shall instead use the UNECE Convention, *Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes*, 1985 definition of SO_x emissions.

~~5 The entity shall disclose its emissions of (4) particulate matter 10 micrometres or less in diameter (PM_{10}), reported as PM_{10}.~~

~~5.1 PM_{10} is defined as any airborne finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal 10 micrometres.~~

~~6 The entity shall disclose its emissions of (5) mercury and mercury compounds, reported as Hg.~~

~~7 The entity shall disclose its emissions of (6) lead and lead compounds, reported as Pb.~~

4 ~~8~~ An ~~The~~ entity shall disclose its emissions of (3) ~~(7)~~ non-methane volatile organic compounds (VOCs).

4.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define VOC emissions, the entity shall instead use the UNECE Convention, *Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes*, 1991 definition of VOC emissions.

~~8.1 VOCs are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and methane, that participates in atmospheric photochemical reactions, except those designated under applicable jurisdictional laws or regulations as having negligible photochemical reactivity.~~

~~8.2 If applicable regulatory definitions of VOCs conflict with this definition, the entity may define VOCs in accordance with the applicable jurisdictional legal or regulatory definition. In this case, the entity shall identify the source of the definition.~~

5 An entity shall disclose its emissions of (4) hazardous air pollutants (HAPs).

5.1 An entity shall disclose its emissions of (4) hazardous air pollutants (HAPs).

5.1.1 HAPs include gases such as carbon monoxide, hydrogen chloride, hydrogen sulphide and polycyclic aromatic hydrocarbons or metals such as cadmium, chromium, lead, manganese and mercury.

5.2 For the purposes of this disclosure, HAPs exclude NO_x, SO_x, VOCs and particulate matter.

6 An entity shall separately disclose its emissions of (5) particulate matter (PM), disaggregated as (a) PM_{10} and (b) $PM_{2.5}$.

6.1 PM_{10} is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 10 micrometres.

6.2 $PM_{2.5}$ is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 2.5 micrometres.

7 ~~9~~ An ~~The~~ entity shall disclose ~~may discuss~~ the calculation method for its emissions disclosure, such as whether data is from: ~~continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

7.1 direct measurement of emissions (such as online analysers);

7.2 calculations based on site-specific data;

7.3 calculations based on published emission factors; or

7.4 estimation.

~~10 The entity may provide a disaggregation of its emissions by mineral or business unit, if relevant.~~

~~10.1 Minerals or business units may include aluminium, copper, zinc, iron ore, precious metals or diamonds.~~

Energy Management

Topic Summary

Mining and metals production is often energy-intensive, with a significant proportion of energy consumption supplied ~~in the industry accounted for~~ by purchased electricity. Energy-intensive production can have detrimental social and environmental effects, such as increased greenhouse gas emissions and pollution. ~~Although fuel combustion on-site contributes to the industry's direct (Scope 1) GHG emissions, electricity purchases from the grid can result in indirect, Scope 2 emissions.~~ The energy intensity of operations tends to ~~may~~ increase with decreasing grades of deposits and increasing depth and scale of mining operations. The choice between on-site versus grid-sourced electricity and the use of renewable ~~alternative~~ energy can affect ~~be important in influencing~~ both the cost ~~costs~~ and reliability of energy supply. Affordable and easily accessible energy is an important ~~competitive~~ factor in a highly competitive market in which ~~commodity market driven by global competition, and~~ purchased fuels and electricity can account for a significant proportion of an entity's total production costs. An entity's access to and use of various energy sources can indicate its ability to increase its energy efficiency, integrate new energy sources and improve its climate resilience. ~~The way in which an entity manages its overall energy efficiency and intensity, its reliance on different types of energy, and its ability to access alternative sources of energy, can therefore be a material factor.~~

Metrics

EM-MM-130a.1. (1) Total energy consumed, (2) purchased electricity consumed, ~~percentage grid electricity and~~ (3) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts and (4) natural gas consumed

1 An ~~The~~ entity shall disclose (1) the total quantity ~~amount~~ of energy it consumed ~~as an aggregate figure,~~ in gigajoules (GJ).

1.1 Total ~~The scope of~~ energy consumed ~~consumption~~ includes all forms of energy used by the entity, ~~from all sources,~~ including fuel, electricity, heating, cooling and steam. ~~energy purchased from external sources and energy produced by the entity itself (self-generated). For example, direct fuel usage, purchased electricity, and heating, cooling and steam energy are all included within the scope of energy consumption.~~

1.2 Total energy consumed includes purchased or acquired energy and self-generated energy used by the entity. ~~The scope of energy consumption includes only energy directly consumed by the entity during the reporting period.~~

1.2.1 Purchased and acquired energy is energy that is purchased or otherwise brought into the entity's boundary.

1.2.2 Purchased energy includes energy from owned or operated generation facilities where energy attributes, such as certificates, have been sold or transferred.

1.2.3 Self-generated energy is generation owned or operated by the entity that consumes the energy.

1.2.4 In preparing this disclosure, the entity shall determine ownership or control using the same measurement approach that it uses to determine greenhouse gas emissions.

1.2.5 Total energy consumed excludes any energy the entity generates using fuel it has already consumed—that is, self-generated electricity consumed from fuel is counted only once as fuel consumed. For example, if the entity has a co-generator that uses fuel to produce electricity and then consumes the generated electricity, that energy would be counted only once as fuel consumed.

1.2.6 If the entity stores any energy, that energy is counted only once when the entity has consumed the energy and it is no longer stored.

1.3 An ~~In calculating energy consumption from fuels and biofuels, the~~ entity shall use lower ~~higher~~ heating values (LHV), ~~(HHV),~~ also known as net ~~gross~~ calorific values, to calculate energy consumed from fuels and biofuels. The entity shall measure these values directly ~~(GCV), which are measured directly~~ or use the default net calorific values in the 2006 IPCC *Guidelines for National Greenhouse Gas Inventories* (Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1).~~taken from the Intergovernmental Panel on Climate Change (IPCC).~~

1.3.1 The requirement to use such heating values applies unless the entity is required, in whole or in part, by a jurisdictional authority or an exchange on which it is listed to use different heating values for converting fuels into GJ. In such a case, the entity is permitted to instead use the heating values required by such a jurisdictional authority or exchange for the part of the entity to which that requirement applies, for as long as that requirement applies to that part of the entity.

1.3.2 If the entity uses heating values other than LHV for converting fuels into GJ, the entity shall disclose information about the heating values used.

2 An ~~The~~ entity shall disclose (2) the quantity ~~percentage~~ of purchased or acquired electricity ~~energy~~ it consumed (in GJ) included in the quantity disclosed as total energy consumed. ~~that was supplied from grid electricity.~~

2.1 Purchased electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as purchased grid electricity consumption divided by total energy consumption.~~

3 An ~~The~~ entity shall disclose ~~(3)~~ the quantity of electricity from renewable energy sources it consumed (in GJ), disaggregated between (3a) self-generation and (3b) direct contracts. ~~percentage of energy it consumed that was renewable energy.~~

3.1 Renewable energy sources are ~~is~~ defined as sources capable of being replenished in a short time through ecological cycles or agricultural processes, ~~energy from sources that are replenished at a rate greater than or equal to their rate of depletion,~~ such as geothermal, wind, solar, hydro and biomass.

3.2 Renewable electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as renewable energy consumption divided by total energy consumption.~~

3.3 Renewable electricity from self-generation is limited to that consumed from owned or operated equipment, where the electricity is produced and consumed by the same entity.

~~The scope of renewable energy includes renewable fuel the entity consumed, renewable energy the entity directly produced and renewable energy the entity purchased, if purchased through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs) or Guarantees of Origin (GOs), a Green-e Energy Certified utility or supplier programme, or other green power products that explicitly include RECs or GOs, or for which Green-e Energy Certified RECs are paired with grid electricity.~~

~~3.3.1~~ ~~For any renewable electricity generated on-site, any RECs and GOs must be retained (not sold) and retired or cancelled on behalf of the entity in order for the entity to claim them as renewable energy.~~

~~3.3.2~~ ~~For renewable PPAs and green power products, the agreement shall explicitly include and convey that RECs and GOs be retained or replaced and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~3.3.3~~ ~~The renewable portion of the electricity grid mix that is outside of the control or influence of the entity is excluded from the scope of renewable energy.~~

3.4 For the purposes of this disclosure, renewable electricity from self-generation excludes electricity associated with contractual instruments entered into by the entity if the contractual instrument has been sold by the entity.

3.5 Direct contracts include renewable electricity consumed that comes from a direct line transfer, such as when electricity production is fed directly and exclusively to a single entity. Direct contracts also include renewable electricity consumed related to contracts where the entity has negotiated with a specific electricity generator to supply renewable electricity to the entity with no grid transfers.

3.6 If the entity purchases or acquires renewable electricity through other contractual instruments, the entity shall provide information about any of these instruments that is necessary to inform the understanding of users of general purpose financial reports of the procurement decisions made by the entity regarding various energy sources to manage energy consumption-related risks and opportunities, including those associated with Scope 2 emissions.

3.6.1 If the entity purchases renewable electricity through a contractual instrument, the entity shall apply the Scope 2 Quality Criteria as defined in the Greenhouse Gas Protocol's *GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard* (2015).

3.7 ~~3.4~~ If the entity consumes renewable electricity ~~For the purposes of this disclosure, the scope of renewable energy~~ from biomass sources, it shall disclose the quantity (in GJ) separately. ~~is limited to materials considered eligible sources of supply according to the *Green-e Framework for Renewable Energy Certification, Version 1.0* (2017) or Green-e regional standards, or materials eligible for an applicable jurisdictional renewable portfolio standard.~~

3.7.1 Renewable electricity from biomass sources includes only materials certified to a third-party standard.

3.7.2 An entity shall disclose the third-party standard to which the materials are certified.

4 ~~The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel usage (including biofuels) and conversion of kilowatt hours (kWh) to GJ (for energy data including electricity from solar or wind energy).~~

Water Management

Topic Summary

Metals and mining activities ~~Mining and metals production~~ can affect ~~both~~ the availability and the quality of local water resources. Metals and mining entities face operational, regulatory and reputational risks because of water scarcity, costs of water acquisition, regulations on wastewater ~~effluents~~ or the quantity ~~amount~~ of water used, and competition with local communities and other industries for limited water resources. Mining operations can create acid and metalliferous drainage, in which surface and shallow subsurface water encounters mining overburden, contaminating the water with heavy metals and rendering it highly acidic, with harmful effects on local communities and the environment. Environmentally harmful activities can lead to suspension or termination of operations, resulting in ~~Effects associated with water management may include~~ higher costs, increased liabilities and lost revenues for the entities responsible for those activities. ~~because of curtailment or suspension of operations.~~ The severity of these risks may vary depending on the region's water availability and the regulatory environment. Entities in the industry can make use of ~~may deploy~~ new technologies to manage ~~risks related to~~ water management-related risks, ~~risk,~~ including desalination, water recirculation and innovative waste-disposal solutions. Reducing water use and contamination can create operational efficiencies for entities and reduce their operating costs.

Metrics

EM-MM-140a.1. (1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

~~2~~ ~~The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1~~ ~~Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2~~ ~~Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1 ~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. ~~that evaporates during withdrawal, use and discharge~~

~~3.1.2~~ ~~Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3~~ ~~Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea~~

~~4~~ ~~The entity shall analyse all its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

~~4.1~~ ~~The entity shall list its facilities or operations which are located in areas of High or Extremely High Baseline Water Stress.~~

3 ~~5~~ An ~~The~~ entity shall disclose (3a) the volume of water withdrawn, in megalitres, from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute’s *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund’s *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 ~~6~~ An ~~The~~ entity shall disclose (3b) the volume of water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

~~EM-MM-140a.2. Number of incidents of non-compliance associated with water quality permits, standards and regulations~~

~~1 The entity shall disclose the total number of incidents of non-compliance, including violations of a technology-based standard and exceedances of quantity or quality-based standards.~~

~~2 The scope of disclosure includes incidents governed by applicable jurisdictional statutory permits and regulations, which include the discharge of a hazardous substance, violation of pre-treatment requirements or total maximum daily load (TMDL) exceedances.~~

~~2.1 Typical parameters of concern include arsenic, copper, lead, nickel, zinc, cyanide, radium-226, total suspended solids, pH and toxicity.~~

~~3 The scope of disclosure shall only include incidents of non-compliance that resulted in a formal enforcement action(s).~~

~~3.1 Formal enforcement actions are defined as governmental recognised actions that address a violation or threatened violation of water quantity or quality laws, regulations, policies or orders, and can result in administrative penalty orders, administrative orders and judicial actions, among others.~~

~~4 Violations shall be disclosed, regardless of their measurement methodology or frequency. These include violations for:~~

~~4.1 Continuous discharges, limitations, standards and prohibitions that are generally expressed as maximum daily, weekly and monthly averages; and~~

~~4.2 Non-continuous discharges, limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge and mass or concentration of specified pollutants.~~

EM-MM-140a.3. Total water discharged by (1) destination, and (2) level of treatment

1 An entity shall disclose the (1) total volume of water discharged, in megalitres, disaggregated by destination.

1.1 Water discharge is defined as the sum of effluents, used water, and unused water released to surface water, groundwater, seawater or a third party, for which the organisation has no further use.

1.1.1 Surface water is defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams.

1.1.2 Groundwater is defined as water held in and recoverable from an underground formation.

1.1.3 Seawater is defined as water in a sea or ocean.

1.1.4 Third-party water is defined as water discharged by municipal water suppliers and municipal wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

1.2 The scope of disclosure includes water released into a receiving waterbody at either a defined discharge point (point-source discharge) or dispersed over land in an undefined manner (non-point-source discharge).

2 An entity shall disclose (2) the total volume of water discharged, in megalitres, disaggregated by level of treatment.

2.1 Water treatment is defined as the physical, chemical or biological processes that improve water quality by removing solids, pollutants and organic matter from water and effluents.

2.2 Treatment levels include:

2.2.1 primary treatment, which aims to remove solid substances that settle or float on the water surface;

2.2.2 secondary treatment, which aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it; and

2.2.3 tertiary treatment, which aims to upgrade water to a higher level or quality before it is discharged, for example, removing heavy metals, nitrogen and phosphorus.

2.3 If the entity discharges water that it determines does not require treatment, it shall disclose the associated volume in megalitres.

2.4 The level of treatment shall be reported for any water or effluents at the point of discharge, whether treated by the entity on-site or sent to a third party for treatment.

2.5 The entity shall disclose how it determines the appropriate level of treatment for water discharges.

EM-MM-140a.4. Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress

1 An entity shall describe its risks associated with water withdrawals, water consumption and discharge of water or wastewater.

1.1 Risks associated with water withdrawals and water consumption include risks to the availability and quality of water resources, which include:

1.1.1 environmental constraints—such as operating in water-stressed regions, drought, floods, concerns of aquatic impingement or entrainment, interannual or seasonal variability, water quality that requires additional treatment at the point of input, and risks from the impact of climate change; and

1.1.2 regulatory and financial constraints—such as water price volatility, stakeholder perceptions and concerns related to water withdrawals (for example, those involving local communities, non-governmental organisations and regulatory agencies), direct competition with other users (for example, commercial and municipal users), restrictions to withdrawals because of regulations, and constraints on the entity's ability to obtain or retain water rights or permits.

1.2 Risks associated with discharged water or wastewater include the ability to obtain or retain rights or permits related to discharges, regulatory compliance related to discharges, restrictions on discharges, temperature control of discharges and risks stemming from impacts on local ecosystems and communities.

2 An entity shall describe how its water-related risks vary by:

2.1 withdrawal source;

2.2 discharge destinations, including surface water, groundwater, seawater or wastewater utilities;

2.3 local regulations, including emerging regulations; and

2.4 location of operating facilities.

3 An entity shall disclose the locations of operating facilities where water-related risks are concentrated.

4 An entity shall disclose quantitative and qualitative information about how water-related risks and opportunities have affected, and are anticipated to affect, the entity's financial position, financial performance and cash flows both for the reporting period and over the short, medium and long term.

5 The entity shall disclose any targets it has set, and any targets it is required to meet by law or regulation, to mitigate or adapt to water-related risks or take advantage of water-related opportunities.

5.1 In preparing disclosure on water-related targets, the entity shall apply the requirements in paragraphs 51–53 of IFRS S1.

6 The entity shall disclose its strategies for managing water-related risks and opportunities, and achieving water-related targets, including:

6.1 efficiency efforts (for example, using water recycling or closed-loop systems);

6.2 product innovations (for example, redesigning products or services to require less water);

6.3 process and equipment innovations (for example, reducing aquatic impingements or entrainments);

6.4 use of tools and technologies (for example, the World Wildlife Fund *Water Risk Filter*) to analyse water use, risks and opportunities; and

6.5 collaborations or programmes with communities or other organisations.

7 An entity shall disclose whether its water management practices resulted in any lifecycle impacts or trade-offs in its organisation, including trade-offs in land use, energy production and greenhouse gas emissions, and why the entity chose these practices despite such trade-offs.

EM-MM-140a.5. Percentage of production from mine sites where acid and metalliferous drainage (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation

1 An entity shall separately disclose the percentage of total production by mass, in metric tonnes, from its mine sites where acid and metalliferous drainage (AMD) (1) has the potential to occur, (2) is actively mitigated or (3) is under treatment or remediation at the reporting date.

1.1 AMD includes acidic drainage, pH neutral metalliferous drainage, and saline drainage generally caused by the oxidation of sulphide minerals.

1.1.1 AMD sources include: waste rock dumps; ore stockpiles; tailings storage facilities and tailings dams; roadways and embankments constructed with sulphidic material; open cuts and mine pits; underground mines; heap and dump leach piles; and acid sulphate soils.

1.1.2 AMD could be referenced as 'acid-generating seepage', 'acid mine drainage' or 'acid rock drainage'.

1.2 Computer simulations, chemical evaluations and acid-based accounting are all ways of predicting whether AMD has the potential to occur at the mine site.

1.2.1 AMD does not actually have to occur, nor does AMD need to be treated, for it to have the potential to occur.

1.3 AMD is defined as actively mitigated if the entity is preventing AMD through methods including: storing or covering sulphite-bearing minerals to prevent oxidation, preventing flooding, sealing mines, mixing of acid-buffering material with acid-producing materials, and chemically treating sulphide waste (for example, using organic chemicals designed to kill sulphide-oxidising bacteria).

1.4 AMD is defined as under treatment or remediation if the mine water discharged is captured and undergoes a wastewater treatment process (whether active or passive) to remediate the AMD.

2 The percentages are separately calculated as the tonnage of production at sites where AMD (1) has the potential to occur, (2) is actively mitigated or (3) is treated or remediated divided by the total tonnage of production.

Waste & Hazardous Materials Management

Topic Summary

Even after excluding wastewater effluents, the ~~The~~ Metals & Mining industry generates large volumes of ~~non-mineral and~~ mineral and non-mineral waste, ~~wastes,~~ including waste rock, tailings, slurries, ~~slags,~~ sludges, and smelting and industrial waste, ~~wastes,~~ some of which can ~~may~~ contain toxic, hazardous or chemically reactive substances. Mineral processing sometimes also requires the use of hazardous materials for metal extraction. Waste produced during mining operations~~, depending on its type,~~ can be treated, discarded, or stored in on- or off-site impoundments or old mining pits. Improper hazardous materials storage or disposal can present a significant long-term threat to human health and ecosystems through ~~potential~~ contamination of groundwater or surface water used for drinking or agriculture purposes. Entities that reduce waste streams while implementing policies to manage risks related to handling hazardous materials could ~~may~~ reduce regulatory and litigation risks, operating costs and site decommissioning ~~remediation~~ liabilities~~ and costs~~.

Metrics

EM-MM-150a.4. Non-mineral ~~Total weight of non-mineral~~ waste generated

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of non-mineral waste generated.

1.1 Non-mineral waste is defined as material for which the entity has no further use and that is discarded, intended to be discarded or released into the environment.

1.2 The ~~scope of the~~ disclosure includes non-mineral waste generated from all activities.

1.2.1 Non-mineral waste ~~The scope of non-mineral waste~~ includes scrap metal, reject coal, used oil, tyres, batteries and other solid and liquid waste. ~~wastes.~~

1.2.2 ~~1.3~~ Non-mineral ~~The scope of non-mineral~~ waste excludes overburden, waste rock, tailings and gaseous waste. ~~wastes.~~

EM-MM-150a.5. Tailings ~~Total weight of tailings~~ produced

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of tailings it produced.

1.1 The definition of tailings is ~~shall be consistent with that~~ provided by ~~in~~ the Global Tailings Review *Global Industry Standard on Tailings Management* ~~(GISTM)~~.

EM-MM-150a.6. Waste ~~Total weight of waste~~ rock generated

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of waste rock generated.

1.1 Waste rock is defined as mineral material and low-grade ore with target minerals in concentrations too low for economic recovery at the time of mining.

EM-MM-150a.7. Hazardous ~~Total weight of hazardous~~ waste generated

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of hazardous waste generated ~~that was hazardous~~.

1.1 Hazardous waste is ~~wastes are~~ defined in accordance with the applicable jurisdictional law or regulation ~~legal or regulatory framework~~ where the waste is generated.

1.1.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the ~~The~~ entity shall instead use ~~may use definitions from~~ the United Nations Environment Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* definition of hazardous waste.

2 If an entity is subject to more than one jurisdictional law or regulation that defines hazardous waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define hazardous waste and the amounts defined in accordance with each applicable framework.~~

2.1 If the entity defines and manages its hazardous waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

EM-MM-150a.8. Hazardous ~~Total weight of hazardous~~ waste recycled

1 An ~~The~~ entity shall disclose the total mass, ~~weight,~~ in metric tonnes, of hazardous waste it generated that was recycled by being reused, reclaimed or remanufactured.

1.1 Hazardous waste is ~~wastes are~~ defined using ~~in accordance with~~ the applicable jurisdictional law or regulation ~~legal or regulatory framework~~ where the waste is generated.

1.1.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the ~~The~~ entity shall instead use ~~may use definitions from~~ the United Nations Environment Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (Basel Convention) definition of recycled hazardous waste.

1.2 Recycled materials are defined as waste reprocessed or treated through production or manufacturing processes and made into a final product or a component to be integrated into a product, in accordance with the Basel Convention.

~~1.2.1 This definition is based on the Basel Convention.~~

1.3 Materials incinerated, including for energy recovery, are excluded from ~~shall not be considered within the scope of~~ recycled waste.

1.3.1 Energy recovery is defined as the use of combustible waste to generate energy through direct incineration, with or without other waste, but with recovery of the heat.

2 If an entity is subject to more than one jurisdictional law or regulation that defines recycled hazardous waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define recycled hazardous waste and the amounts defined in accordance with each applicable framework.~~

2.1 If the entity defines and manages its recycled hazardous waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

EM-MM-150a.9. Number of significant incidents associated with hazardous materials and waste management

1 An ~~The~~ entity shall disclose the total number of significant incidents associated with the handling, storage, transportation or disposal of hazardous materials being used ~~in mineral processing activities~~ and hazardous waste being generated.

1.1 The ~~scope of the~~ disclosure includes incidents of mishandling of hazardous materials and improper disposal of hazardous waste. Such incidents include seepage from tailings facilities that contain a meaningful concentration of hazardous materials or waste, ~~raw materials,~~ or major ~~significant~~ spills or releases that occurred during handling, storage, transportation, use or disposal of ~~raw~~ hazardous materials or waste that impacted the environment, workforce ~~employees~~ or surrounding communities.

1.1.1 A meaningful concentration is defined as a concentration that exceeds the ~~concentration~~ limits of applicable jurisdictional law or regulation ~~local regulatory requirements~~ or industry-wide accepted codes~~, such as the International Cyanide Management Code regarding cyanide~~.

1.1.2 Impacts on the environment, employees or surrounding communities ~~may~~ include contamination of surface water, groundwater ~~ground water~~ and land that required response and remediation, reduced biodiversity, or caused injuries or deaths among employees or community members.

1.2 A significant incident is defined as a release of hazardous waste to the environment that~~:~~ exceeds the volume and concentration limits of applicable jurisdictional law or regulation ~~local regulatory requirements~~ or industry-accepted codes, ~~; is included in the entity's financial statements (for example, because of resulting liabilities); is recorded by the entity as an incident required to be reported to applicable local jurisdictions;~~ or does not meet any of these criteria but is judged by the entity as significant. ~~by the operator.~~

1.2.1 The disclosure includes information about whether the entity has developed ~~may disclose~~ its own criteria for establishing the threshold in volume and concentration exceeding that ~~in excess of~~ which it considers a significant ~~an~~ incident ~~significant~~.

1.3 The entity shall identify hazardous ~~Hazardous~~ materials or waste ~~are defined~~ in accordance with the applicable jurisdictional law or regulation ~~legal or regulatory framework~~ where the hazardous materials were used and the waste was generated.

1.3.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous materials or waste, the entity shall instead use the United Nations Environment Programme *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* definitions of hazardous materials and waste.

~~Hazardous materials used in direct mineral processing may include cyanides, sulphuric acid, hydrochloric acid, nitric acid, ammonia, mercury and lead.~~

~~1.4 Hazardous wastes are defined in accordance with the applicable jurisdictional legal or regulatory framework where the waste was generated.~~

~~1.4.1 The entity may use definitions from the United Nations Environment Programme (UNEP) *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*.~~

~~1.5 Mineral processing is defined as the process through which commercially valuable minerals are separated from their ores.~~

~~1.5.1 Examples of mineral processing may include leaching and flotation.~~

2 If an entity is subject to more than one jurisdictional law or regulation that defines hazardous materials and waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define hazardous materials and waste and the number of significant incidents defined in accordance with each applicable framework.~~

2.1 If the entity defines and manages its hazardous materials and waste using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

EM-MM-150a.10. Waste ~~Description of waste~~ and hazardous materials management policies and procedures for active and inactive operations

1 An ~~The~~ entity shall describe the policies and procedures used in its waste and hazardous materials management strategy.

1.1 The ~~scope of the~~ disclosure includes ~~shall include~~ policies and procedures for the entity's active and inactive operations.

1.2 Waste ~~The scope of waste~~ includes mineral and non-mineral waste.

1.2.1 Mineral waste is defined as material generated during the extraction and beneficiation of ores and minerals.

1.2.2 Non-mineral waste is defined as all ~~other~~ material other than mineral waste ~~(other than mineral waste)~~ for which the entity has no further use and that is discarded, intended to be discarded or released into the environment.

1.3 Hazardous materials include ~~The scope of hazardous raw materials includes~~ chemicals and materials used for procedures such as leaching and flotation, which ~~may~~ include cyanides, sulphuric acid, hydrochloric acid and nitric acid.

2 An ~~The~~ entity shall describe how its policies and procedures compare with those required under applicable jurisdictional law or regulation. ~~laws or regulations.~~

2.1 The entity shall disclose ~~discuss~~ whether and how its policies and procedures exceed the requirements of local jurisdictions.

2.2 The entity shall explain ~~discuss~~ how its policies and procedures vary by region.

3 An ~~The~~ entity shall describe its ~~approach to~~ waste management throughout the project life cycle.

~~3.1~~ The entity shall describe its:~~scope of the disclosure shall include a discussion of the entity's:~~

3.1 ~~3.1.1~~ approach to assessment of potential environmental impacts associated with waste streams;

3.2 ~~3.1.2~~ policies and procedures related to waste avoidance;

3.3 ~~3.1.3~~ approach to identification, assessment and application of recycling, reuse and repurposing as waste management strategies;

3.4 ~~3.1.4~~ policies and procedures related to waste disposal or incineration;

3.5 ~~3.1.5~~ policies and procedures related to the remediation of environmental or social impacts of incidents associated with the mishandling of hazardous waste disposal; and

3.6 ~~3.1.6~~ approach to decommissioning waste facilities.

4 An ~~The~~ entity shall describe its ~~approach to the~~ management of hazardous materials ~~used in processing~~. The entity ~~scope of the disclosure~~ shall disclose information about its: ~~include:~~

4.1 way of determining ~~process through which the entity determines~~ which materials are hazardous, including applicable entity-specific policies or applicable regulations;

4.2 approach to assessing risks ~~risk assessment of potential impacts~~ associated with handling and use of hazardous materials;

4.3 policies and procedures to mitigate ~~related to avoiding and mitigating~~ the risk of spills, seepage, poisoning, accidents and incidents that could have severe adverse effects ~~have catastrophic impacts~~ on human health, local communities or ~~and~~ the environment; and

4.4 policies and procedures related to the remediation of consequences of spills, seepage, poisoning, accidents and incidents that could have severe adverse effects ~~have catastrophic impacts~~ on human health, local communities or ~~and~~ the environment.

5 An ~~The~~ entity shall disclose information about ~~include a description of~~ how its waste and hazardous materials management efforts are coordinated among business partners (for example, contractors and subcontractors).

6 An ~~The~~ entity shall disclose information about ~~describe~~ how it ensures compliance and conformance with waste and hazardous materials ~~material~~ management policies and procedures.

Ecological ~~Biodiversity~~ Impacts

Topic Summary

The development, operation, decommissioning ~~closure~~ and remediation of mines can have a range of ecological impacts on landscapes, vegetation and wildlife habitats. ~~biodiversity, such as alterations of landscape, vegetation removal and~~ The ecological ~~impacts on wildlife habitats. A particularly concerning effect of coal operations is acid rock drainage, in which surface and shallow subsurface water encounters coal mining overburden, contaminating the water with heavy metals and rendering it highly acidic, with harmful effects on humans, animals and vegetation. Biodiversity~~ impacts of mining operations can affect the valuation of reserves and create operational risks. The ~~Because of increasing interest in the protection of ecosystems, the~~ environmental characteristics of a mine site could expose an entity to reputational or regulatory risks leading ~~the land where reserves are located may lead~~ to higher extraction costs. Entities might ~~also~~ face regulatory or reputational barriers to accessing reserves in environmentally sensitive locations such as areas with protected conservation status. Metals and mining entities can also face regulatory risks related to site reclamation after a mine is decommissioned, subject to ~~in accordance with~~ applicable regulatory requirements to restore ~~mined~~ property according to ~~a~~ previously approved reclamation plans. Significant ~~plan. Material~~ costs could ~~may~~ arise from removing or covering refuse piles, meeting water treatment obligations and dismantling infrastructure during site decommissioning. ~~at the end of life.~~ Furthermore, mining operations are often subject to laws protecting endangered species. Entities with ~~an~~ effective environmental management plans ~~plan~~ for each stage of the project life cycle could reduce ~~lifecycle may minimise~~ their compliance costs and legal liabilities, face less resistance in developing new mines, and avoid difficulties in obtaining permits, accessing reserves and completing projects.

Metrics

EM-MM-160a.1. Description of environmental management policies and practices for operational facilities ~~active sites~~

1 An ~~The~~ entity shall disclose information about ~~describe~~ its environmental management policies and practices ~~plans~~ implemented at operational facilities, including: ~~active sites, including, if relevant:~~

1.1 the life cycle ~~lifecycle~~ stages to which the plans apply, such as~~:~~ pre-bid (when the entity is considering an acquisition ~~of a site~~), exploration and appraisal, site development, production, closure, site decommissioning and restoration;

1.2 the types of ecological impacts included in ~~topics addressed by~~ the plans, such as ecological and biodiversity impacts, waste generation, noise, emissions to air, discharges to water, natural resource consumption and hazardous chemical use;

1.3 whether the entity integrates an environmental mitigation hierarchy into its project development and operations, such as using the 2020 Science Based Targets Network's *Initial Guidance for Business* AR3T Action Framework or the 2015 Cross Sector Biodiversity Initiative's *A Cross-sector Guide for Implementing the Mitigation Hierarchy*;

1.4 the underlying definitions and references for its plans, including whether they originate from ~~are~~ codes, guidelines, standards or regulations; and

1.5 ~~1.4~~ whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the environmental management policies and practices.

2 If environmental management policies and practices vary significantly by the type of resource, by location or by type of operation, then the entity shall describe the differences.

~~If relevant, the entity shall describe specific policies and practices that apply to areas with protected conservation status or areas of critical habitat, which are defined by the International Finance Corporation (IFC) Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources* as:~~

~~2.1~~ ~~areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered or Endangered species; (ii) habitat of significant importance to endemic or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species or congregatory species; (iv) highly threatened or rare ecosystems; or (v) areas associated with important evolutionary processes.~~

3 If the environmental management policies and practices do not apply to all the entity's operational facilities, ~~sites or operations,~~ it shall disclose ~~include~~ the percentage of sites to which they ~~were~~ applied at the reporting date.

4 ~~If environmental management policies and practices differ significantly by mineral resource (for example, bauxite mining as compared to silver mining), then the entity shall describe the relevant differences for each resource.~~

4 ~~5~~ An ~~The~~ entity shall explain whether ~~disclose the degree to which~~ its policies and practices are aligned with the International Finance Corporation's (IFC) ~~IFC's~~ *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 ~~5.1~~ IFC Performance Standard 1, *Assessment and Management of Environmental and Social Risks and Impacts*;

4.2 ~~5.2~~ IFC Performance Standard 3, *Resource Efficiency and Pollution Prevention*;

4.3 ~~5.3~~ IFC Performance Standard 4, *Community Health, Safety, and Security*; and

4.4 ~~5.4~~ IFC Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources*.

~~6~~ ~~Additional relevant references may include:~~

~~6.1~~ ~~Joint E&P Forum/UNEP, *Environmental Management in Oil and Gas Exploration and Production–an Overview of Issue and Management Approaches*, 1997; and~~

~~6.2~~ ~~World Bank Multistakeholder Initiative, *Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies*.~~

~~EM-MM-160a.2. Percentage of mine sites where acid rock drainage is: (1) predicted to occur, (2) actively mitigated, and (3) under treatment or remediation~~

~~1~~ ~~The entity shall disclose the percentage of its mine sites (by annual production output from mines by weight) for which acid-generating seepage into surrounding surface water or groundwater is: (1) predicted to occur, (2) actively mitigated, and (3) under treatment or remediation.~~

~~2~~ ~~Acid rock drainage (ARD) is predicted to occur if computer simulations, chemical evaluations or acid-base accounting evaluate that ARD is likely to form at the mine site.~~

~~3~~ ~~ARD is considered actively mitigated if the entity is preventing ARD through methods that include: storing or covering sulphite-bearing minerals to prevent oxidation, flood prevention, mine sealing, mixing of acid-buffering materials with acid-producing materials, and chemical treatment of sulphide wastes (for example, using organic chemicals designed to kill sulphide-oxidising bacteria).~~

~~4~~ ~~ARD is considered under treatment or remediation if the acidic water discharged from the mine area is captured and undergoes a wastewater treatment process (whether active or passive).~~

~~5~~ ~~The entity may provide a disaggregation by mineral or business unit.~~

~~5.1~~ ~~Minerals or business units may include, for example: aluminium, copper, zinc, iron ore, precious metals or diamonds.~~

~~6~~ ~~ARD also may be referenced as acid-generating seepage or acid mine drainage.~~

EM-MM-160a.3. Percentage of (1) proved and (2) probable <u>mineral</u> reserves in or near <u>environmentally sensitive locations</u> ~~sites with protected conservation status or endangered species habitat~~

1 <u>An</u> ~~The~~ entity shall <u>separately</u> disclose ~~(1)~~ the <u>percentages and grades (percentage metal content) of its (1) proved mineral reserves and (2) probable mineral reserves associated with operational facilities located in or near environmentally sensitive locations at the reporting date.</u> ~~percentage, by weight, and grade (in percentage metal content) of its proved reserves in sites with protected conservation status or in endangered species habitat.~~

1.1 <u>Each</u> ~~The~~ percentage <u>is separately</u> ~~of proved reserves shall be~~ calculated as the <u>tonnage</u> ~~quantity (tonnage)~~ of proved <u>or probable mineral</u> reserves <u>associated with operational facilities</u> located in <u>or near environmentally sensitive locations,</u> ~~areas with protected conservation status or endangered species habitat,~~ divided by the total <u>tonnage</u> ~~quantity~~ of proved reserves <u>or the total tonnage of probable reserves</u>.

~~1.2~~ ~~The entity shall provide a disaggregation of the disclosure by grade (in percentage metal content) of its proved reserves.~~

~~1.3~~ ~~The entity shall, if relevant, provide a disaggregation of the disclosure by mineral or business unit where minerals or business units include, for example, aluminium, copper, zinc, iron ore, platinum group metals or diamonds.~~

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

~~The entity shall disclose the (2) percentage, by weight, and grade (in percentage of metal content) of its probable reserves in sites with protected conservation status or endangered species habitat.~~

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

~~The percentage of probable reserves shall be calculated as the quantity (tonnage) of probable reserves located in areas with protected conservation status or endangered species habitat divided by the total quantity of probable reserves.~~

~~2.2~~ ~~The entity shall provide a disaggregation of the disclosure by grade (in percentage metal content) of probable reserves.~~

~~2.3~~ ~~The entity shall, if relevant, provide a disaggregation of the disclosure by mineral or business unit where minerals or business units include, for example: aluminium, copper, zinc, iron ore, platinum group metals or diamonds.~~

3 Environmentally sensitive locations are defined as areas where an entity's assets or activities interface with nature in areas deemed to be ecologically sensitive. Such locations are defined as:

3.1 being important for biodiversity;

3.2 having high ecosystem integrity;

3.3 exhibiting rapidly declining ecosystem integrity; or

3.4 being important for ecosystem service provision.

4 Environmentally sensitive locations include:

4.1 International Union for Conservation of Nature (IUCN) protected areas (categories I–VI);

4.2 Ramsar Wetlands of International Importance;

4.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;

4.4 UNESCO's Man and the Biosphere Programme's biosphere reserves 'core areas';

4.5 Natura 2000 sites;

4.6 Ocean+ Habitats 'Protected Areas' (marine and coastal);

4.7 a clearly defined geographical area, recognised, dedicated and managed, through legal or other effective means by applicable jurisdictional authorities, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (such as the protected areas listed in the World Database of Protected Areas and mapped on the Protected Planet website); or

4.8 an endangered species habitat where species on the IUCN Red List of Threatened Species that are classified as Critically Endangered or Endangered are known to reside.

4.8.1 Species reside in an area if they are resident, present during breeding or non-breeding season, or if they use the area for passage.

4.8.2 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.

~~3 Reserves are considered to be in areas of protected conservation status if they are located within:~~

~~3.1 International Union for Conservation of Nature (IUCN) Protected Areas (categories I–VI);~~

~~3.2 Ramsar Wetlands of International Importance;~~

~~3.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;~~

~~3.4 Biosphere Reserves recognised within the framework of UNESCO's Man and the Biosphere (MAB) Programme;~~

~~3.5 Natura 2000 sites; or~~

~~3.6 sites that meet the IUCN's definition of a protected area: 'A protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.'~~[14]

~~3.6.1 These sites may be listed in the World Database of Protected Areas (WDPA) and mapped on Protected Planet.~~

~~4 Reserves are considered to be in endangered species habitat if they are in or near areas where species on the IUCN Red List of Threatened Species that are classified Critically Endangered (CR) or Endangered (EN) are extant.~~

~~4.1 A species is considered extant in an area if it is a resident, present during breeding or non-breeding season, or if it makes use of the area for passage.~~

~~4.1.1 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.~~

[14] ~~IUCN, *Guidelines for Applying Protected Areas Management Categories*, 2008, pp. 8–9.~~

5 An entity's operational facilities are defined as being 'in or near' an environmentally sensitive location if any part of the facility's spatial footprint of operations is in or ~~For the purposes of this disclosure, 'near' is defined as~~ within five kilometres ~~(km)~~ of the boundary of an environmentally sensitive location. ~~an area of protected conservation status or an endangered species habitat and the location of the entity's proved and probable reserves.~~

6 An entity shall determine the proved and probable mineral reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles or practices.

~~Reserves are defined as the weight of a mineral deposit that could be economically and legally extracted or produced at the time of the reserves determination.~~

6.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of mineral reserves reported in its related financial statements or other general purpose financial reports.

~~Proved reserves are reserves for which (i) the quantity of the mineral deposit is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade or quality are computed from the results of detailed sampling, and (ii) the sites for inspection, sampling and measurement are spaced so closely, and the geographical character is so well defined, that size, shape, depth and mineral content of reserves are well established.~~

6.2 If the jurisdiction in which the entity operates has no applicable jurisdictional law or regulation, or other guidance to determine mineral reserves, the entity shall instead use the guidance for classifying mineral reserves published in the Committee for Mineral Reserves International Reporting Standards.

~~Probable reserves are reserves for which quantity and grade (quality) are computed from information similar to that used for proved reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance for probable reserves, although lower than that for proved reserves, is high enough to assume continuity between points of observation.~~

~~7 The entity should follow the Combined Reserves International Reporting Standards Committee (CRIRSCO) guidance for classifying ore reserves and mineral resources, including the use of a 'competent person' to compile information.~~

~~8 The entity may separately identify reserves in areas with additional ecological, biodiversity or conservation designations such as those listed by the Biodiversity A–Z resource prepared by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).~~

~~9 The entity may discuss reserves located in protected areas or endangered species habitats, but that present low risks to biodiversity or ecosystem services; the entity may provide similar discussion for reserves located in areas with no official designation of high biodiversity value but that present high risks to biodiversity or ecosystem services.~~

EM-MM-160a.4. (1) Total spatial footprint of operations, (2) area disturbed and (3) area restored

1 An entity shall disclose (1) the total spatial footprint (area) of its operations in square kilometres (km^2) at the reporting date.

1.1 The total spatial footprint of the entity's operations includes the cumulative area disturbed during the current and prior periods by its operations that has not been restored.

1.2 The area disturbed is defined as the aggregate geographical area that has been subject to human activity that has changed the condition of the area, relative to an original reference state.

1.2.1 Human activity is defined as the entity's activities and operations that have physically disrupted, modified, covered, compacted, moved or otherwise altered the characteristics of terrestrial, freshwater aquatic or marine ecosystems from before such activity.

1.2.2 The entity's total spatial footprint of operations includes the area disturbed during the current period and continues to be the area disturbed in all subsequent reporting periods unless the area disturbed is restored.

1.2.3 For bodies of water, the disturbed area includes the bottom or seabed beneath the water's surface.

1.3 The disclosure includes information about the aggregate measured area of the entity's spatial footprint in terrestrial, freshwater aquatic or marine ecosystems (land, wetlands, riverine, navigable waterways, littoral or ocean) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

1.4 This disclosure includes all active sites, recently decommissioned sites awaiting restoration and sites being restored.

1.5 Area restored is defined as a previously disturbed area that has been restored according to applicable jurisdictional law or regulation.

1.6 If the jurisdiction in which the entity operates has no applicable law or regulation to define a previously disturbed area that has been restored, a restored area is defined as the cumulative geographical area that has been subject to human intervention to return a degraded, damaged or destroyed area or ecosystem to an approximation of an original reference state.

1.6.1 Ecological restoration is defined as re-establishing the ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original. Ecological restoration focuses on biodiversity conservation and ecological integrity.

1.6.2 Ecosystem restoration is defined as a restored area that demonstrates resilience to normal ranges of environmental stress and disturbance and interacts with contiguous ecosystems in terms of biotic and abiotic flows and cultural interactions. An ecosystem is restored when it contains sufficient biotic and abiotic resources to sustain itself structurally and functionally and can continue its development without further assistance or subsidy.

2 An entity shall disclose (2) the area disturbed by the entity's operations, in km^2, during the current reporting period.

3 An entity shall disclose (3) the area previously disturbed by operations that has been restored (in km^2) during the reporting period.

3.1 An area is no longer part of the entity's spatial footprint of operations once post-closure restoration and remediation efforts are complete as defined by applicable jurisdictional law or regulation (even if after-monitoring is necessary).

4 The disclosure includes information about any adjustments to the entity's total spatial footprint of operations, area disturbed or area restored resulting from acquisitions, mergers and divestments or disposals completed during the reporting period.

~~Security, Human Rights & Rights of Indigenous Peoples~~

~~Topic Summary~~

~~Metals and mining entities face additional community-related risks when operating in conflict zones and in areas with weak or absent governance institutions, rule of law or legislation to protect human rights; or in areas with vulnerable communities such as indigenous peoples. Entities using private or government security forces to protect their workers and assets may knowingly, or unknowingly, contribute to human rights violations, including the use of excessive force. Entities perceived as contributing to human rights violations or failing to account for indigenous peoples' rights may be affected by protests, riots or suspension of permits. These entities could face substantial costs related to compensation or settlement payments, and write-downs in the value of their reserves in such areas. In the absence of applicable jurisdictional laws or regulations to address such cases, several international instruments have emerged to provide guidelines for entities. These instruments include obtaining the free, prior and informed consent of indigenous peoples for decisions that affect them. Several countries have implemented specific laws protecting indigenous peoples' rights, increasing the regulatory risk for entities that violate those rights.~~

Metrics

~~EM-MM-210a.1. Percentage of (1) proved and (2) probable reserves in or near areas of conflict~~

~~1~~ ~~The entity shall disclose (1) the percentage, by weight, and grade (in percentage metal content) of its proved reserves located in or near areas of active conflict.~~

~~1.1~~ ~~The percentage of proved reserves shall be calculated as the quantity (tonnage) of proved reserves located in or near areas of active conflict divided by the total quantity of proved reserves.~~

~~1.2~~ ~~The entity shall provide a disaggregation of the disclosure by grade (in percentage metal content) of proved reserves.~~

~~1.3~~ ~~The entity shall, if relevant, provide a disaggregation of the disclosure by mineral or business unit where minerals or business units include, for example: aluminium, copper, zinc, iron ore, platinum group metals and diamonds.~~

~~2~~ ~~The entity shall disclose (2) the percentage, by weight, and grade (in percentage metal content) of its probable reserves located in or near areas of active conflict.~~

~~2.1~~ ~~The percentage of probable reserves shall be calculated as the quantity (tonnage) of probable reserves located in or near areas of active conflict divided by the total quantity of probable reserves.~~

~~2.2~~ ~~The entity shall provide a disaggregation of the disclosure by grade (in percentage metal content) of probable reserves.~~

~~2.3~~ ~~The entity shall, if relevant, provide a disaggregation of the disclosure by mineral or business unit where minerals or business units include, for example: aluminium, copper, zinc, iron ore, platinum group metals or diamonds.~~

~~3 Active conflict is defined according to the Uppsala Conflict Data Program (UCDP) definition:~~

~~3.1 'A conflict, both state-based and non-state, is deemed to be active if there are at least 25 battle-related deaths per calendar year in one of the conflict's dyads.'~~

~~4 Reserves shall be considered to be in or near an area of active conflict if they are located in the same country as the active conflict.~~

~~4.1 If the entity can demonstrate that a conflict is contained to a region, state or designated area not proximate to its reserves, then it may exclude these from the scope of the disclosure.~~

~~4.2 If reserves are located in a country, region or state adjacent to an active conflict or can be reasonably expected to be operationally affected by the conflict, then these reserves shall be included in the scope of the disclosure.~~

~~5 Reserves are defined as the weight of a mineral deposit which could be economically and legally extracted or produced at the time of the reserves determination.~~

~~5.1 Proved reserves are reserves for which (i) the quantity of the mineral deposit is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade or quality are computed from the results of detailed sampling, and (ii) the sites for inspection, sampling and measurement are spaced so closely and the geographical character is so well-defined that size, shape, depth and mineral content of reserves are well-established.~~

~~5.2 Probable reserves are reserves for which quantity and grade (quality) are computed from information similar to that used for proved reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance for probable reserves, although lower than that for proved reserves, is high enough to assume continuity between points of observation.~~

~~6 The entity should follow the Combined Reserves International Reporting Standards Committee (CRIRSCO) guidance for classifying ore reserves and mineral resources, including the use of a 'competent person' to compile information.~~

~~EM-MM-210a.2. Percentage of (1) proved and (2) probable reserves in or near indigenous land~~

~~1 The entity shall disclose (1) the percentage, by weight, and grade (in percentage metal content) of its proved reserves located in or near areas considered to be indigenous peoples' land.~~

~~1.1 The percentage of proved reserves shall be calculated as the quantity (tonnage) of proved reserves located in or near areas considered to be indigenous peoples' land divided by the total quantity of proved reserves.~~

~~1.2 The entity shall provide a disaggregation of the disclosure by the grade (in percentage metal content) of proved reserves.~~

~~1.3 The entity shall, if relevant, provide a disaggregation of the disclosure by mineral or business unit where minerals or business units include, for example: aluminium, copper, zinc, iron ore, platinum group metals or diamonds.~~

~~2 The entity shall disclose (2) the percentage, by weight, and grade (in percentage metal content) of probable reserves located in or near areas that are considered to be indigenous peoples' land.~~

~~2.1 The percentage of probable reserves shall be calculated as the quantity (tonnage) of probable reserves located in or near areas considered to be indigenous peoples' land divided by the total quantity of probable reserves.~~

~~2.2 The entity shall provide a disaggregation of the disclosure by the grade (in percentage metal content) of probable reserves.~~

~~2.3 The entity shall, if relevant, provide a disaggregation of the disclosure by mineral or business unit where minerals or business units include, for example: aluminium, copper, zinc, iron ore, platinum group metals or diamonds.~~

~~3 Indigenous people's lands are considered as those occupied by people who self-identify as indigenous in accordance with Article 33 of the United Nations *Declaration on the Rights of Indigenous Peoples* and the International Labour Organization Convention 169, and based on the working definition of 'Indigenous Peoples' adopted by the United Nations, probably have one or more of the following characteristics, such as:~~

~~3.1 historical continuity with pre-colonial or pre-settler societies;~~

~~3.2 strong link to territories and surrounding natural resources;~~

~~3.3 distinct social, economic or political systems;~~

~~3.4 distinct language, culture and beliefs;~~

~~3.5 form non-dominant groups of society; and~~

~~3.6 resolve to maintain and reproduce ancestral environments and systems as distinct peoples and communities.~~

~~4 For the purposes of this disclosure, 'near' is defined as within five kilometres of the recognised boundary of an area considered to be indigenous land and the location of the entity's proved and probable reserves.~~

~~5 Reserves are defined as the weight of a mineral deposit which could be economically and legally extracted or produced at the time of the reserves determination.~~

~~5.1 Proved reserves are reserves for which (i) the quantity of the mineral deposit is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade or quality are computed from the results of detailed sampling, and (ii) the sites for inspection, sampling and measurement are spaced so closely and the geographical character is so well defined that size, shape, depth and mineral content of reserves are well established.~~

5.2 ~~Probable reserves are reserves for which quantity and grade (quality) are computed from information similar to that used for proved reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance for probable reserves, although lower than that for proved reserves, is high enough to assume continuity between points of observation.~~

6 ~~The entity should follow the Combined Reserves International Reporting Standards Committee (CRIRSCO) guidance for classifying ore reserves and mineral resources, including the use of a 'competent person' to compile information.~~

~~EM-MM-210a.3. Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict~~

1 ~~The entity shall describe its due diligence practices and procedures with respect to indigenous rights of communities in which it operates or intends to operate, which may include:~~

1.1 ~~upholding International Labour Organization (ILO) Convention 169;~~

1.2 ~~use of free, prior and informed consent (or consultation) processes;~~

1.3 ~~the establishment of project grievance mechanisms; and~~

1.4 ~~the establishment of formal community agreements.~~

2 ~~The entity shall describe its due diligence practices and procedures with respect to upholding the principles covered in human rights frameworks, such as the:~~

2.1 ~~International Labour Organization (ILO) *Declaration on Fundamental Principles and Rights at Work* and the fundamental ILO conventions on freedom of association (No. 87), collective bargaining (No. 98), forced labour (No. 29 and No. 105), child labour (No. 138 and No. 182), fair wages (No. 100), and discrimination (No. 111);~~

2.2 ~~United Nations *Guiding Principles on Business and Human Rights*, specifically Human Rights Due Diligence (Principle 17a-c); and~~

2.3 ~~Voluntary Principles on Security and Human Rights.~~

3 ~~The entity shall discuss its practices and procedures while operating in areas of conflict, such as:~~

3.1 ~~describing its approach according to the Five-Step Framework outlined in the Organisation for Economic Co-operation and Development (OECD) *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*.~~

4 ~~An area of conflict is located in the same country as an active conflict or adjacent to an active conflict that can be reasonably expected to affect the entity's operations.~~

5 ~~Active conflict is defined according to the Uppsala Conflict Data Program (UCDP) definition as:~~

~~5.1 'A conflict, both state-based and non-state, is deemed to be active if there are at least 25 battle-related deaths per calendar year in one of the conflict's dyads.'~~

~~6 The discussion shall include due diligence processes employed during all stages of project development (prior, during and post).~~

~~7 The discussion may include how local or regional factors are considered in the entity's engagement processes and due diligence practices with respect to human rights, (and specifically indigenous rights, if applicable) and as well as operations in areas of conflict.~~

~~8 The discussion may include governance mechanisms the entity puts in place to ensure that all levels of the organisation adhere to its policies and practices.~~

~~9 The discussion shall include how practices apply to business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.~~

~~9.1 If practices do not apply to business partners, the entity may discuss factors that prevent the application of such practices.~~

Community Relations & Rights of Indigenous Peoples

Topic Summary

Mining activities take place over many years ~~facilities are frequently active over long periods~~ and can have ~~a~~ wide-ranging ~~range of adverse~~ effects on local communities. Local community support is necessary for an entity to obtain permits and leases to engage in mining activities. Such activities can raise concerns related to community livelihood and lead to competition between entities and communities over local resources. Entities that derive economic benefits from these resources rely on the goodwill of host governments and communities to operate and must provide commensurate socioeconomic benefits in good faith to retain it. The loss of that goodwill can result in additional taxes, levies or regulatory penalties, restricted access to reserves and export restrictions. Entities can face increased risks when operating in areas in or near Indigenous Peoples' land, where mismanagement of community relationships could result in protests or legal action disrupting operations. Entities failing to account for community and Indigenous Peoples' rights can face fines and penalties, compensation and settlement payments and impairment of their assets. Entities can reduce these risks by fostering community engagement, adhering to local laws and following international guidelines like obtaining free, prior and informed consent from Indigenous Peoples. An entity that adopts effective community engagement strategies, such as integrating community engagement into each phase of a project, can avoid disruptions, cultivate goodwill, build a positive reputation and enhance its prospects. ~~Community rights and interests may be affected through environmental and social impacts of mining operations, such as competition for access to local energy or water resources, air and water emissions, and waste from operations. Mining entities rely upon support from local communities to obtain permits and leases as well as to conduct activities without disruptions. Entities may experience adverse financial effects if the community interferes, or lobbies government to interfere, with the rights of a mining entity in relation to their ability to access, develop and produce reserves. In addition to community concerns about the direct impacts of projects, the presence of mining activities may give rise to associated socio-economic concerns, such as education, health, livelihoods and food security for the community. Metals and mining entities engaging in rent-seeking and exploiting a community's resources without providing proportional socio-economic benefits in return may be exposed to actions by host governments and communities that restrict their activities or impose additional costs. These could include imposition of ad hoc taxes and export restrictions. Entities can adopt various community engagement strategies in their global operations to manage risks and opportunities associated with community rights and interests. Strategies are often underpinned by community engagement integrated into the project cycle. Entities are beginning to adopt a 'shared value' approach to provide significant socio-economic benefits to communities and allow them to operate profitably.~~

Metrics

EM-MM-210b.1. Processes used ~~Discussion of process~~ to manage risks and opportunities associated with community rights and interests

1 An ~~The~~ entity shall disclose information about how it manages the sustainability-related ~~discuss its processes, procedures and practices to manage~~ risks and opportunities associated with community rights and interests in areas where it operates. These include rights and interests related to economic, environmental, social and cultural factors, such as: ~~conducts business. Community rights and interests include:~~

1.1 ~~economic rights and interests, which may include~~ employment, fair wages, payment transparency, national resource governance, and respect for infrastructure and agricultural land;

1.2 ~~environmental rights and interests, which may include~~ clean ~~local~~ air and water, as well as safe ~~discharge and~~ disposal of waste;

1.3 ~~social rights and interests, which may include~~ adequate healthcare, ~~health care,~~ education and housing; and

1.4 ~~cultural rights and interests, which may include~~ protection and preservation of places of cultural significance (for example, sacred sites or burial sites).

2 An ~~The~~ entity shall disclose information about:~~, if relevant:~~

2.1 the life cycle ~~lifecycle~~ stages to which its processes ~~practices~~ apply, such as~~:~~ pre-bid (when the entity is considering an acquisition ~~of a site~~), exploration and appraisal, site development, mineral production, closure, decommissioning and restoration;

2.2 the community rights and interests ~~(enumerated above)~~ specifically addressed by the entity's processes; ~~practices; and~~

2.3 how the entity identifies, assesses, prioritises and monitors the risks and opportunities associated with community rights and interests, including whether and how those processes are integrated into and inform the entity's overall risk management process;

2.4 ~~2.3~~ the underlying definitions and references for its processes, ~~procedures,~~ including whether they are codes, guidelines, standards or regulations; and

2.5 whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the processes.

3 Community-related risks ~~Risks~~ and opportunities ~~may~~ include: corruption, non-technical delays, legal and regulatory complexities, local community employment, availability of skilled labour, purchases of local goods and services, availability ~~and development~~ of local goods and services, quality of ~~content, availability~~ and access to adequate infrastructure (for example, ports, roads, bridges or shipping channels), ~~community actions, and challenges associated with~~ resettlement and access to land and social licence to operate.

4 An ~~The~~ entity shall disclose whether its processes align ~~the degree to which its policies and practices are aligned~~ with the International Finance Corporation's (IFC) *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 IFC Performance Standard 4, *Community Health, Safety, and Security*;

4.2 IFC Performance Standard 5, *Land Acquisition and Involuntary Resettlement*; and

4.3 IFC Performance Standard 8, *Cultural Heritage*.

5 The disclosure includes information about how the entity's processes ~~discussion shall include how practices~~ apply to business partners such as contractors, subcontractors, suppliers and joint arrangement partners.

6 The disclosure includes information about an entity's ~~entity may describe its~~ efforts to eliminate or mitigate community risks or address community concerns, including: ~~which may include:~~

6.1 the use of social impact assessment ~~(SIA)~~ that evaluates, manages and mitigates risks;

6.2 efforts to engage with stakeholders, build consensus and collaborate with communities; ~~and~~

6.3 the frequency of community engagement;

6.4 the amount invested in community engagement programmes; and

6.5 'shared' or 'blended' value projects that provide quantifiable benefits to the community and the entity.

7 An ~~The~~ entity shall disclose relevant quantitative information to characterise its exposure to community-related risks, such as the entity's estimated value at risk. ~~may quantify its community risks by calculating the aggregate estimated value at risk as the difference in value between a project free from country, regional or community risks (hereafter, country risk) and the value of a project adjusted for these risks.~~

7.1 Value at risk is defined as the difference in value between the value of a project not taking into account community-related risks, and the value of the project adjusted for those risks.

~~This calculation may be conducted using an appropriate valuation model; variations of the Capital Asset Pricing Model (CAPM) are commonly used to assess country risk.~~

~~7.1.1 Value at risk can be calculated by applying an additional discount rate premium in calculating the net present value of a project using discounted cash flow (DCF) analysis.~~

~~7.1.2 Value at risk can be expressed as a reduction in the expected cash flows of a project because of country risk in calculating the net present value of a project using DCF analysis.~~

~~7.1.3 If a project is insured for country risks, the value at risk can be expressed as a reduction in the cash flows of a project because of the cost of insurance in calculating the net present value of a project using DCF analysis.~~

~~7.2 Country, regional or community risks may include: corruption, business legal structure, political stability, regulation, ethnic conflict, stability of the local market, availability of a skilled labour force, resettlement and access to land, quality of access to infrastructure (for example, ports, roads, shipping channels), or general licence to operate.~~

7.1.1 ~~7.2.1~~ These risks could ~~may~~ vary by jurisdiction and project ~~level~~.

~~7.2.2 These risks differ from sovereign risk, which is defined as the potential for a central bank or government-backed entity to willingly or unwillingly default on debt obligations, or significantly alter important economic variables such as currency exchange rates, import ratios and money supply.~~

~~7.3 The entity should identify and describe country risks specific to its projects and unique operating context.~~

~~7.3.1 This description may include the identification of country, regional and community risks or the discussion of specific projects.~~

~~7.3.2 This description may include discussion of how the entity has mitigated these risks (for example, through community engagement partnerships, and blended value projects); the entity shall quantify this reduction in risk according to the methods described above.~~

~~7.3.3 The discussion should be in addition to broad country risk classification (for example, the prevailing Organisation for Economic Co-operation and Development (OECD) country risk classification, Standard & Poor's Country Risk ratings and the World Economic Forum *Global Competitiveness Index*).~~

~~7.4 The entity may describe the model or approach used to value capital expenditure projects such as adjusted discount rate, expected cash flow or other methods.~~

EM-MM-210b.2. (1) Number of non-technical delays and (2) the total days idle ~~duration of non-technical delays~~

1 An ~~The~~ entity shall disclose (1) the total number of non-technical delays. ~~and (2) duration, in days, of site shutdowns or project delays because of non-technical factors.~~

1.1 Non-technical delays are defined as shutdowns and project delays resulting from pending regulatory permits or other delays resulting from community-related risks such as protests.

2 An entity shall disclose (2) the total days idle resulting from non-technical delays.

~~The scope may include shutdowns and project delays resulting from pending regulatory permits, or other political delays related to community concerns, community or stakeholder resistance or protest, or armed conflict.~~

2.1 'Days idle' is defined as the number of workdays lost resulting from a non-technical delay.

2.2 Total days idle is calculated as the sum of days idle for each non-technical delay.

2.1.1 If the entity experiences concurrent site shutdowns or project delays at different locations, the overlapping periods are counted only once.

3 The disclosure excludes delays resulting from organised labour collective actions (strikes), employer actions (lockouts) and technical situations unrelated to community-related risks (permitting delays).

~~The scope of the disclosure excludes delays because of strikes and lockouts disclosed in EM-MM-310a.2.~~

4 An ~~The~~ entity shall provide information about the ~~may discuss specific~~ delays including associated costs, the root cause of each non-technical delay, the effect on production, the ~~and corrective actions for resolved delays, and~~ status of ongoing non-technical delays and corrective action taken.

EM-MM-210b.3. Percentage of (1) proved and (2) probable mineral reserves in or near Indigenous Peoples' land

1 An entity shall separately disclose the percentages and grades (percentage metal content) of its (1) proved mineral reserves and (2) probable mineral reserves associated with operational facilities located in or near Indigenous Peoples' land at the reporting date.

1.1 Each percentage is separately calculated as the tonnage of proved or probable mineral reserves associated with operational facilities located in or near areas of Indigenous Peoples' land divided by the total tonnage of proved reserves or the total tonnage of probable reserves.

1.2 The entity shall provide a disaggregation of the disclosure by the grade (in percentage metal content) of its proved and probable mineral reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

3 Indigenous Peoples' land is defined as an area occupied by Indigenous Peoples as determined by Article 33 of the 2007 United Nations *Declaration on the Rights of Indigenous Peoples* and the International Labour Organization *Indigenous and Tribal Peoples Convention*, 1989 (No. 169). Based on the working definition adopted by the United Nations, Indigenous Peoples have one or more of the following characteristics:

3.1 historical continuity with pre-colonial or pre-settler societies;

3.2 strong link to territories and surrounding natural resources;

3.3 distinct social, economic or political systems;

3.4 distinct language, culture and beliefs;

3.5 form non-dominant groups of society; and

3.6 resolve to maintain and reproduce ancestral environments and systems as distinct peoples and communities.

4 An entity's operational facilities are defined as being 'in or near' Indigenous Peoples' land if any part of the facility's spatial footprint of operations is in or within five kilometres of the recognised boundary of Indigenous Peoples' land.

5 The entity shall determine the proved and probable mineral reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles.

5.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of mineral reserves reported in its related financial statements or other general purpose financial reports.

5.2 In the absence of an applicable jurisdictional law or regulation to determine mineral reserves, the entity shall instead use the guidance for classifying mineral reserves published in the Committee for Mineral Reserves International Reporting Standards.

EM-MM-210b.4. Description of engagement processes and due diligence practices related to upholding Indigenous Peoples' rights

1 An entity shall disclose information about its engagement processes and due diligence practices related to upholding Indigenous Peoples' rights in the areas in which it operates or intends to operate including whether the entity:

1.1 upholds the principles of the ILO *Indigenous and Tribal Peoples Convention*, 1989 (No. 169) and the 2007 United Nations *Declaration on the Rights of Indigenous Peoples*;

1.2 uses free, prior and informed consent (or consultation) processes;

1.3 develops partnerships and shared decision-making mechanisms;

1.4 establishes project grievance procedures; and

1.5 executes formal community agreements.

2 An entity shall include information about the engagement process and due diligence practices it employs during project development such as the local or regional factors it examines and its governance mechanisms to monitor workforce compliance.

3 An entity shall describe whether and, if so, how these processes and practices apply to its business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.

Operations in Conflict Areas

Topic Summary

Metals & Mining entities might operate in conflict-affected and high-risk areas characterised by political instability, weak governance or active conflict and lacking strong legal institutions and regulatory oversight or enforcement. In these areas, safeguarding workers and asset integrity against security risks could help an entity to avoid workforce injuries, operational disruptions, increased costs, asset impairment and reduced access to petroleum reserves. Entities using private or government security forces to protect their workers and assets could knowingly or unknowingly contribute to human rights violations, including the use of excessive force, leading to increased public and legal scrutiny. These risks can limit future development, negatively affect investment opportunities and raise the entity's cost of capital. To manage these risks, entities can adopt engagement processes and due diligence practices in conflict-affected and high-risk areas including aligning security practices with international standards. By strengthening risk management related to operating in volatile security situations, an entity can protect its workforce, preserve asset value, reduce financing costs and improve its long-term resilience and prospects.

Metrics

EM-MM-210c.1. Percentage of (1) proved and (2) probable mineral reserves in conflict-affected and high-risk areas

1 An entity shall separately disclose the percentages and grades (percentage metal content) of its (1) proved mineral reserves and (2) probable mineral reserves associated with operational facilities located in conflict-affected and high-risk areas at the reporting date.

1.1 Each percentage is separately calculated as the tonnage of proved or probable mineral reserves associated with operational facilities located in conflict-affected and high-risk areas divided by the total tonnage of proved reserves or the total tonnage of probable reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

3 Conflict-affected and high-risk areas are defined according to the 2016 Organisation for Economic Co-operation and Development *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, Third Edition.

3.1 Conflict-affected and high-risk areas are identified by the presence of armed conflict, widespread violence or other risks. Such areas are often characterised by widespread human rights abuses and violations of national or international law.

3.2 Conflict-affected areas take a variety of forms and include international conflicts involving two or more states, or non-international conflicts, such as wars of liberation, insurgencies or civil wars.

3.3 High-risk areas include areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence.

4 An entity's operational facilities are defined as being in conflict-affected or high-risk areas if any part of the facility's spatial footprint of operations is in a conflict-affected or high-risk area.

4.1 If operational facilities are adjacent to a conflict-affected or high-risk area and can be reasonably expected to be affected, then the entity shall include the mineral reserves associated with those operational facilities in the disclosure.

5 An entity shall determine the proved and probable mineral reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles.

5.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of mineral reserves reported in its related financial statements or other general purpose financial reports.

5.2 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine mineral reserves, the entity shall instead use the guidance for classifying mineral reserves published in the Committee for Mineral Reserves International Reporting Standards.

EM-MM-210c.2. Description of engagement processes and due diligence practices related to operating in conflict-affected and high-risk areas

1 An entity shall disclose information about its engagement processes and due diligence practices related to conflict-affected and high-risk areas in which it operates or intends to operate including whether the entity:

1.1 upholds the principles of the Five-Step Framework for Risk-Based Due Diligence in the Mineral Supply Chain outlined in Annex I of the 2016 Organisation for Economic Co-operation and Development *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, Third Edition (OECD Due Diligence Guidance); and

1.2 upholds the principles covered in human rights frameworks such as the Voluntary Principles on Security and Human Rights.

2 Conflict-affected and high-risk areas are defined according to the OECD Due Diligence Guidance.

3 An entity shall include information about the engagement process and due diligence practices it employs during project development, such as the local or regional factors it examines and governance mechanisms it creates to monitor workforce compliance.

4 An entity shall describe whether and, if so, how these processes and practices apply to its business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.

Labour Practices

Topic Summary

Working conditions related to metal and mining operations can ~~may~~ be physically demanding and hazardous. Organised labour serves ~~Labour unions play~~ an important role in representing workers' interests and managing collective bargaining for better wages and working conditions. At the same time, metals and mining entities can ~~often~~ operate in areas where worker rights might be ~~are~~ inadequately protected compared to other jurisdictions, but entities have the opportunity to provide more robust worker protections. The ~~nuances of worker concerns make~~ management of labour relations is critical for metals and mining entities. Conflict with workers can result in labour strikes and other disruptions that can delay or stop production. Work stoppages ~~frequently~~ result in lost revenue and reputational damage. Persistent labour disputes can adversely affect the long-term profitability of mining entities. For opportunities, the benefits of good labour practices include improved workforce retention and recruitment, fewer health and safety incidents and higher productivity. For these reasons, entities can benefit from better managing their relations with workers and their representative bodies.

Metrics

EM-MM-310a.1. Percentage of employees covered by ~~active workforce employed under~~ collective agreements

1 An ~~The~~ entity shall disclose the percentage of its total employees covered by ~~in the active workforce employed under~~ collective agreements at the reporting date. ~~during any part of the reporting period.~~

~~1.1 The number of employees in the active workforce of an entity is calculated as the maximum number of unique employees it employed at any time during the reporting period.~~

1.1 ~~1.2~~ Collective agreements are defined as agreements between an entity and an employees' organisation on behalf of some or all ~~employees~~ of the entity's employees ~~entity~~ concerning working conditions and terms of employment. ~~the engagement of employees, termination of employment, terms of employment, labour relations, and the rights and obligations of the organisations which are parties to the agreement.~~

1.2 ~~1.3~~ Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using various indicators such as economic dependency. ~~on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant, or hourly employees. Employees excludes contract workers.~~

1.2.1 ~~1.3.1~~ Employees include permanent employees, temporary employees, non-guaranteed hours employees, full-time employees and part-time employees.

~~Contract workers are defined as individuals who are not on the entity's payroll, but whom the entity supervises and manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

2 The percentage is ~~shall be~~ calculated as the number of employees covered by ~~in the active workforce who were employed under~~ collective agreements ~~during any part of the reporting period~~ divided by the total ~~average~~ number of employees ~~workers~~ employed. ~~during the reporting period.~~

~~3 The scope of the disclosure includes all employees employed by the entity, including full-time, part-time and temporary employees.~~

EM-MM-310a.2. (1) Number of work stoppages and (2) the total days idle ~~and (2) duration of strikes and lockouts~~

1 An ~~The~~ entity shall disclose (1) the number of work stoppages ~~involving 1,000 or more workers lasting one full shift or longer~~.

1.1 Work ~~The scope of work~~ stoppages are defined as shutdowns and project delays resulting from the collective actions of organised labour during disputes with the entity and include ~~includes~~ strikes and lockouts.

1.1.1 A strike is defined as a temporary stoppage of work by a group of employees (not necessarily union members) to express a grievance or enforce a demand.

1.1.2 A lockout is defined as a temporary withholding or denial of employment during a labour dispute to enforce terms of employment upon a group of employees.

2 An ~~The~~ entity shall disclose (2) the ~~duration of strikes and lockouts as the~~ total days idle resulting from ~~because of~~ work stoppages.

2.1 'Days idle' is defined as the ~~aggregate~~ number of workdays lost because of a work stoppage. ~~stoppages.~~

2.2 Total days idle is ~~shall be~~ calculated as the sum ~~of the products of the number of workers involved in each work stoppage and the number~~ of days for each ~~respective~~ work stoppage ~~was in effect~~.

2.2.1 If the entity experiences concurrent work stoppages at different locations, the overlapping periods are counted only once.

3 The ~~scope of the~~ disclosure excludes work stoppages because of ~~other~~ non-technical reasons, such as those resulting from pending regulatory permits, or other delays related to community concerns, community or stakeholder resistance or protest, or armed conflict. ~~disclosed in EM-MM-210b.2.~~

~~Note to **EM-MM-310a.2**~~

4 ~~1~~ An ~~The~~ entity shall provide information about the work stoppages including associated costs, ~~describe~~ the reason for each work stoppage (as stated by labour), the effect on production, the status of ongoing work stoppages and corrective action taken. ~~and any corrective actions taken as a result.~~

Workforce Health & Safety

Topic Summary

Safety is critical to mining operations because of the hazardous working conditions involved. Metals & Mining entities have ~~The Metals & Mining industry has relatively~~ high fatality rates compared to other industries. Fatalities and injuries can result from the many hazards associated with the industry, including working with powered haulage and machinery, as well as mine integrity. Poor health and safety records can result in fines and penalties, increased ~~and an increase in~~ regulatory compliance costs and ~~resulting from~~ more stringent oversight. An entity's ability to protect employee health and safety, and to create a culture of safety and wellbeing ~~well-being~~ among workers ~~employees~~ at all levels, may prevent accidents, mitigate costs, reduce operational downtime and enhance workforce productivity.

Metrics

EM-MM-320a.1. (1) Number of fatalities and (2) total recordable incident rate ~~All-incidence rate, (2) fatality rate, (3) near miss frequency rate (NMFR) and (4) average hours of health, safety, and emergency response training~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2 ~~1~~ An ~~The~~ entity shall separately disclose (2) its total recordable incident ~~(1) all-incidence~~ rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers. ~~and (2) work-related fatality rate.~~

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 An injury or illness is typically defined as a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid or loss of consciousness.

~~1.1 Incidents include:~~

~~1.1.1 fatalities or work-related injuries resulting in death of employees on active mine property;~~

~~1.1.2 non-fatal days lost cases or occupational injuries that result in the loss of one or more days from the entity's scheduled work, or days of limited or restricted activity while at work;~~

~~1.1.3 no days lost cases or occurrences requiring only medical treatment (beyond first aid); that is, non-fatal injury occurrences resulting only in loss of consciousness or medical treatment other than first aid; and~~

~~1.1.4 additional criteria defining an incident that are unique to an entity's jurisdiction may also be incorporated.~~

2.1.3 ~~1.2~~ First aid is typically~~,~~ defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but ~~and other non-recordable incidents may be defined in accordance with~~ jurisdictional definitions may vary. ~~guidelines. The entity shall disclose the legal, regulatory or industry framework used as the source for these guidelines.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2 The entity shall disclose (3) its near miss frequency rate (NMFR) for work-related near misses.~~

2.1 ~~A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage or environmental damage, but had the potential to do so in other circumstances.~~

~~2.2~~ ~~The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~3~~ ~~All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~3.1~~ ~~The '200,000' in the rate calculation represents the total number of hours 100 full-time workers working 40 hours per week for 50 weeks per year can provide annually.~~

~~4~~ ~~The entity shall disclose (4) the average number of training hours provided to its workforce for health, safety and emergency management training.~~

~~4.1~~ ~~Training shall relate to topics such as the health, safety or emergency preparedness of employees with respect to occupational risks or hazards to which employees are reasonably likely to be exposed, and to specific occupational risks or hazards.~~

~~5~~ ~~The average number of hours of health, safety and emergency response training shall be calculated as: (total qualifying training hours provided by the entity) / (total number of employees).~~

4 ~~6~~ The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses. ~~includes work-related incidents only.~~

4.1 ~~6.1~~ Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~6.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~6.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~6.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~6.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 An entity shall disclose (3) the average number of training hours provided to its workforce for health, safety and emergency preparedness management training.

5.1 Training includes topics such as the health, safety or emergency preparedness related to the occupational risks or hazards to which the workforce is reasonably likely to be exposed and to specific occupational risks or hazards.

5.1.1 Training includes technical health, safety and emergency management training required by applicable jurisdictional authorities related to occupational risks or hazards.

5.2 The average number of hours of health, safety and emergency response training is calculated as the total qualifying training hours provided to the workforce divided by the total workforce.

5.2.1 The total workforce is defined as the number of individual employees and non-employee workers the entity employs at the reporting date.

6 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~7 The entity shall disclose the rates for each of these employee categories:~~

~~7.1 direct employees, defined as individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees; and~~

~~7.2 contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

~~8 The scope of the disclosure includes all employees regardless of employee location or type of employment.~~

EM-MM-320a.2. Description of management systems used to foster a safe working environment

1 An entity shall disclose information about:

1.1 how it cultivates a safe working environment throughout its operations, avoids accidents and minimises long-term health risks to its workforce;

1.2 how it manages safety and coordinates emergency preparedness throughout its value chain, such as through technology, training, corporate culture, rules and guidelines enforcement, and regulatory compliance;

1.3 how it manages long-term health risks associated with operations, such as through use of personal protective equipment, testing and monitoring;

1.4 the safety management systems the entity uses to maintain a safe working environment, including the prevention of incidents, fatalities and illnesses;

1.5 leading indicators the entity has developed to monitor, manage or improve safety performance, such as near-miss reporting, workforce engagement programmes, hazard reduction, emergency drills or safety-related compliance rates; and

1.6 the implementation of these safety management systems including progress towards tracking safety and health performance, and obtaining third-party verification of the systems' efficacy.

2 An entity shall describe how workforce safety management and emergency preparedness are coordinated among business partners (for example, contractors and subcontractors).

Supply Chain Management

Topic Summary

Metals production is critical to a wide variety of downstream manufacturing sectors like the automobile, high technology and other consumer goods industries. Metals production is reliant on raw materials like mineral ores and concentrates, the extraction of which often involves significant environmental and social impacts that can adversely affect local communities, workers and ecosystems. Metals producers face increasing scrutiny from their customers to manage the negative externalities associated with their mineral ore and concentrate supply chains effectively. Metals producers could also face supply disruptions if their suppliers do not effectively manage their environmental and social risks. Metals producers can proactively minimise such risks through appropriate supplier screening, monitoring and engagement to determine whether those suppliers are engaged in illegal, non-compliant or otherwise environmentally or socially damaging practices.

Metrics

EM-MM-430a.1. Description of the process to manage supply chain risks arising from environmental and social issues

1 An entity shall disclose information about its policies and procedures for managing environmental and social risks in its supply chain.

1.1 The disclosure includes information about any current or expected risks, constraints or opportunities associated with sourcing raw materials, such as those related to competition for restricted or limited supplies, geopolitical uncertainties, local labour conditions, natural disasters, the effects of climate change or changes in applicable jurisdictional law or regulation.

1.2 The disclosure includes a description of the processes the entity uses to manage environmental and social risks in its supply chains, such as supplier screening, codes of conduct, audits and certifications.

2 An entity shall disclose the proportion (by cost) of its sourced raw materials certified or accredited by third-party verified supply chain certifications related to environmental or social issues.

2.1 The entity shall disclose the sustainable supply chain certifications and accreditations the entity used to prepare this disclosure.

3 If an entity uses supplier audits to manage these risks, the entity shall disclose whether the audits are internal (first party), independent (third party) or administered by peers (for example, trade organisations).

Business Ethics~~ & Transparency~~

Topic Summary

Managing business ethics and maintaining ~~an appropriate level of~~ transparency in payments to governments or individuals are serious concerns ~~significant issues~~ for the mining industry. Relationships with governments are especially important means by which entities can ~~This is because government relations are important to entities' conducting business in this industry to gain~~ access mineral ~~to mining~~ reserves. Anti-corruption, anti-bribery~~,~~ and payments-transparency laws and initiatives create regulatory mechanisms that ~~to~~ reduce the risk of misconduct. ~~Violations of these laws could result in significant one-time costs or higher compliance costs, whereas successful compliance with such regulations could avoid adverse outcomes.~~ Entities operating ~~with significant reserves or operations~~ in corruption-prone countries could face increased risk of criminal misconduct or regulatory non-compliance. An entity's ~~heightened risks. Entities must ensure their~~ governance structures and business practices can be used to monitor, manage and mitigate ~~reduce~~ the risks associated with corruption and wilful or unintentional participation in illegal or unethical payments, or with gifts to government officials or private individuals. While non-compliant entities can face steep penalties and additional barriers to doing business, compliant entities can avoid such issues, helping maintain their social licence to operate.

Metrics

EM-MM-510a.1. Description of the management systems ~~system~~ for the prevention of corruption and bribery throughout the value chain

1 An ~~The~~ entity shall disclose information about ~~describe~~ its management systems ~~system~~ and due diligence practices ~~procedures~~ for assessing and managing corruption and bribery risks within the scope of its own operations and those associated with business partners in its value chain.

1.1 Business partners ~~may~~ include customers, suppliers, contractors, subcontractors and joint arrangement partners.

1.2 Relevant aspects of a management system include~~, if relevant~~:

1.2.1 employee awareness programmes;

1.2.2 internal mechanisms for reporting and following up on suspected violations;

1.2.3 anti-corruption policies; and

1.2.4 application of the Extractive Industry Transparency Initiative ~~(EITI)~~ Standard, including the ~~which may include~~ provisions related to beneficial ownership and politically exposed persons, licences and contracts, social expenditures, project-level payments, subnational payments, data accessibility and multi-stakeholder engagement.

2 The disclosure includes information about the entity's ~~entity may discuss its~~ implementation of the following organisational guidelines, as applicable:

2.1 Organisation for Economic Co-operation and Development ~~(OECD)~~ anti-corruption guidelines;

2.2 International Chamber of Commerce ~~(ICC)~~: *Rules of Conduct and Recommendations to Combat Extortion and Bribery, 2005*;

2.3 Transparency International: *Business Principles for Countering Bribery*, 2013;

2.4 United Nations Global Compact: 10th Principle; ~~and~~

2.5 World Economic Forum ~~(WEF)~~ Partnering Against Corruption Initiative; and ~~(PACI).~~

2.6 comparable applicable jurisdictional law and regulation related to prevention of corruption and bribery.

3 The disclosure includes information about any ~~entity may discuss~~ applicable jurisdictional law or regulation ~~laws or regulations~~ related to payments transparency to which the entity ~~it~~ is subject.

EM-MM-510a.2. Revenue ~~Production~~ in countries that have the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index

1 An ~~The~~ entity shall disclose the revenue recognised from operations and activities ~~its net production from activities~~ located in the countries with the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index (CPI).

1.1 The 20 lowest numerical ranks are ~~shall be~~ used to generate the country rankings. ~~scope of countries.~~ Because more than one country can share a single rank, the rankings can ~~scope may~~ include more than 20 countries.

1.2 Revenue related to operations and activities includes all revenue recognised by the entity from the transfer of promised goods produced or sold or services provided in countries with low CPI rankings.

2 The entity shall use the latest ~~most current~~ version of the CPI at the reporting date.

~~3 Production shall be disclosed in saleable metric tonnes of minerals.~~

~~3.1 The entity may provide a disaggregation of the calculations by mineral or business unit where minerals or business units may include, for example: aluminium, copper, zinc, iron ore, precious metals or diamonds, if relevant.~~

3~~4~~ An ~~The~~ entity shall include information about its operations and activities ~~may discuss operations~~ located in countries in the 20 lowest ~~with low~~ rankings in the CPI ~~index~~ but that present low business ethics risks. The entity shall also include information about ~~and may provide similar discussion for~~ operations located in countries not in ~~that do not have one of~~ the 20 lowest rankings if the entity determines them to ~~in the index but that~~ present unique or high business ethics risks.

Tailings Storage Facilities Management

Topic Summary

The Metals & Mining industry faces significant operational hazards, particularly those associated with the structural integrity of tailings storage facilities (TSFs). A catastrophic failure of such facilities (for example, a dam failure) can release significant volumes of waste ~~streams~~ and potentially harmful materials into the environment, leading to significant impacts on ecosystems, human livelihood, local economies and communities. Such catastrophic incidents can ~~may~~ result in significant financial losses for entities and could ~~and may~~ impair their social licence to operate. Robust approaches to tailings facilities design, management, operation and closure, as well as appropriate management of associated risks, can help prevent such incidents from occurring. Entities that adopt comprehensive practices to maintain the integrity and safety of TSFs ensure ~~may do so through ensuring~~ accountability for tailings management among the entity's senior management, conduct ~~at the highest levels of the entity, conducting~~ frequent internal and external independent technical reviews of TSFs and respond to safety concerns with ~~ensuring~~ mitigation measures ~~are implemented~~ in a timely manner. A ~~in case of a safety concern. Additionally, a~~ strong safety culture and well-established emergency preparedness and response plans can mitigate the impacts and financial implications of such events. An entity's ~~should they occur. Entity~~ obligations ~~related~~ to long-term remediation and compensation for damages in cases of failure could last indefinitely. ~~may result in additional financial effects in case of failure.~~ The entity's ability ~~of entities~~ to meet such obligations after an incident has occurred is an additional component of emergency preparedness.

Metrics

EM-MM-540a.1. Tailings storage facility inventory table: (1) facility name, (2) location, (3) ownership status, (4) operational status, (5) construction method, (6) maximum permitted storage capacity, (7) current quantity ~~amount~~ of tailings stored, (8) consequence classification, (9) date of most recent independent technical review, (10) material findings, (11) mitigation measures and ~~,~~ (12) site-specific emergency preparedness and response plan ~~EPRP~~

1 The entity shall disclose an inventory of its tailings storage facilities.

1.1 The definition of tailings storage facilities is ~~shall be consistent with that~~ provided by ~~in~~ the Global Tailings Review *Global Industry Standard on Tailings Management* (GISTM).

2 For each tailings storage facility, the entity shall disclose (1) the facility name, (2) its location, (3) ownership status, (4) operational status, (5) construction method, (6) maximum permitted storage capacity, (7) current quantity ~~amount~~ of tailings stored, (8) consequence classification, (9) date of the most recent independent technical review, (10) material findings, (11) mitigation measures, and (12) site-specific emergency preparedness and response plan (EPRP).

2.1 The entity shall provide the name or other identifier used by the entity for the facility.

2.2 Disclosure of the facility's location includes ~~shall include~~ the country in which it operates.

2.3 Ownership status includes ~~shall include~~ whether the entity is the operator of the facility.

2.3.1 The definition of an operator is ~~shall be consistent with that~~ provided by ~~in~~ the GISTM Glossary.

2.4 The entity shall disclose the operational status of its facilities (for example, active, inactive—under maintenance~~,~~ or closed).

2.5 The entity shall disclose the facility construction method.

2.5.1 The entity shall disclose the construction method as 'downstream', 'upstream' or 'centreline', consistent with the definitions provided by the International Council on Mining and Metals ~~(ICMM)~~.

2.5.2 If the construction method does not match any of these definitions, the entity shall disclose the construction method as 'other' and provide a brief description of it.

2.6 The entity shall disclose the maximum permitted facility storage capacity, in multiples of cubic metres. ~~metric tonnes.~~

2.7 The entity shall disclose the maximum and average volume ~~quantity~~ of tailings stored in the facility during ~~as of the end of~~ the reporting period, in cubic metres. ~~metric tonnes.~~

2.8 The entity shall disclose the consequence classification of the facility using requirement ~~in accordance with Requirement~~ 4.1 of the GISTM.

2.9 The entity shall disclose the date of the most recent independent technical review of the facility, conducted using requirement ~~in accordance with Requirement~~ 10.6 of the GISTM.

2.9.1 A review is ~~considered~~ independent if it is conducted by third parties who are not and have not been directly involved with the design or operation of the facility.

2.10 The entity shall disclose whether the most recent independent technical review resulted in 'material findings' as defined by GISTM ~~material findings~~ related to the safety of the facility.

2.10.1 The scope of material findings shall be consistent with the definitions ~~definition of 'material'~~ provided in the GISTM.~~, in which~~

2.10.2 The entity shall define the criteria for ~~what is~~ material findings, ~~is to be defined by the entity,~~ subject to the provisions of local regulations, and evaluated as part of any audit or external assessment that can ~~may~~ be conducted on implementation.

2.10.3 ~~2.10.2~~ The entity shall state either 'Yes' or 'No'.

2.10.4 ~~2.10.3~~ If the entity has responded 'Yes' for a facility, the entity is permitted to ~~may~~ provide a summary of the material findings in addition to the inventory table.

2.10.5 ~~2.10.4~~ If an independent technical review of a facility was not conducted, the entity shall state 'N/A'.

2.11 If the entity has responded 'Yes' regarding material findings, the entity shall disclose whether mitigation measures have been implemented to reduce risk to a level as low as reasonably practicable (ALARP).

2.11.1 The definition of ALARP is ~~shall be consistent with that~~ provided by ~~in~~ the GISTM Glossary.

2.11.2 The entity shall state either ‘Yes’ or ‘No’.

2.11.3 If the entity has responded ‘Yes’ for a facility, the entity is permitted to ~~may~~ provide a summary of the relevant mitigation measures in addition to the inventory table.

2.12 The entity shall disclose whether a site-specific emergency preparedness and response plan (EPRP) ~~EPRP~~ is in place using ~~in accordance with~~ requirements 13.1 and 13.2 of the GISTM.

2.12.1 The definition of EPRP is ~~shall be consistent with that~~ provided by ~~in~~ the GISTM Glossary.

2.12.2 The entity shall disclose ~~state~~ either ‘Yes’ or ‘No’.

~~3 The entity should disclose its inventory in this table format:~~

~~Table 3. Tailings storage facility inventory table~~

~~(a) Facility name~~	~~(b) Location~~	~~(c) Ownership status~~	~~(d) Operational status~~	~~(e) Construction method~~	~~(f) Maximum permitted storage capacity~~	~~(g) Current quantity of tailings stored~~	~~(h) Consequence classification~~	~~(i) Date of most recent independent technical review~~	~~(j) Material findings~~	~~(k) Mitigation measures~~	~~(l) Site-specific EPRP~~
-	-	-	-	-	-	-	-	-	-	-	-

EM-MM-540a.2. Description ~~Summary~~ of tailings management systems and governance structure used to monitor and maintain the stability of tailings storage facilities

1 The entity shall disclose ~~provide a summary of~~ the tailings management systems used to monitor and maintain the structural integrity of tailings facilities and to minimise the risk of a catastrophic failure.

1.1 The ~~scope of the~~ disclosure includes ~~shall include~~ a summary of ~~the~~ policies and procedures for the entity’s active and inactive tailings facilities for all phases of their life cycle, ~~lifecycle,~~ including closure and post-closure.

1.2 The definitions of tailings facilities and tailings management systems are ~~shall be~~ consistent with those provided in the Global Tailings Review *Global Industry Standard on Tailings Management* (GISTM).

2 The disclosure includes the elements ~~shall include concepts~~ outlined in principles ~~Principles~~ 7–11 of the GISTM such as: ~~and may include:~~

2.1 a summary of the performance monitoring programme for tailings facilities and their related ~~appurtenant~~ structures;

2.2 a summary of the engineering monitoring systems that verify design assumptions and monitor potential failure modes;

2.3 the frequency of risk assessments consistent with requirement ~~Requirement~~ 10.1 of the GISTM;

2.4 the frequency of engineer of record, consistent with the definition provided in the GISTM, or senior independent technical reviewer construction and performance reviews;

~~2.4.1 the definition of engineer of record shall be consistent with that provided in the GISTM;~~

2.5 a summary of the governance framework that outlines ~~the~~ accountability, from the site-level management through to executive leadership and the board of directors; and

2.6 the frequency of reviews to confirm ~~that~~ adequate financial capacity (including insurance, to the extent commercially reasonable) is available for planned closure, early closure, reclamation~~,~~ and post-closure of tailings facilities and their related ~~appurtenant~~ structures.

EM-MM-540a.3. Development ~~Approach to development~~ of emergency preparedness and response plans ~~Emergency Preparedness and Response Plans (EPRPs)~~ for tailings storage facilities

1 The entity shall disclose its ~~approach to the~~ development of emergency preparedness and response plans ~~Emergency Preparedness and Response Plans~~ (EPRPs), including the preparedness of local stakeholders.

1.1 The definition of EPRP is ~~shall be consistent with that~~ provided by ~~in~~ the Global Tailings Review *Global Industry Standard on Tailings Management* (GISTM) Glossary.

1.2 The ~~scope of the~~ disclosure includes ~~shall include~~ a summary of plans, procedures and policies for the entity's active and inactive tailings storage facilities for all phases of the project life cycle, ~~lifecycle,~~ including closure and post-closure.

1.2.1 The definition of tailings facility is ~~shall be consistent with that~~ provided by ~~in~~ the GISTM Glossary.

2 The entity shall disclose its approach to EPRPs at its facilities, including the preparedness of local stakeholders.

2.1 For facility EPRP development, the entity shall disclose: ~~The disclosure shall include:~~

2.1.1 how it engages ~~the entity's approach to engaging~~ with employees, contractors, public sector agencies, first responders, and local authorities and institutions using ~~in accordance with~~ requirements 13.1 and 13.2 of the GISTM; and

2.1.2 how often it carries out ~~the entity's frequency of~~ emergency response plan tests and evacuation exercises to minimise the consequences of a potential failure.

Oil & Gas – Exploration & Production

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards.~~ and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

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INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®). ~~Sustainable Industry Classification System® (SICS®).~~

SASB Standards include:

1. **industry ~~Industry~~ descriptions** — ~~—~~ which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry;~~.~~

2. **disclosure ~~Disclosure~~ topics** — ~~—~~ which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry;~~.~~

3. **metrics — ~~Metrics —~~** which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic;~~.~~

4. **technical ~~Technical~~ protocols** — ~~—~~ which provide guidance on definitions, scope, implementation and presentation of associated metrics; and~~.~~

5. **activity ~~Activity~~ metrics** — ~~—~~ which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS®. However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

Oil & Gas – Exploration & Production (EM-EP) ~~(E&P)~~ entities explore for, extract or produce petroleum, mostly ~~energy products such as~~ crude oil and natural gas, which are ~~comprise~~ the 'upstream' portion ~~upstream operations~~ of the oil and gas value chain. Petroleum is defined as a naturally occurring mixture consisting of hydrocarbons in a gaseous, liquid or solid state. Entities in the industry develop ~~conventional and unconventional~~ oil and gas reserves including unconventional resources like ~~; these include~~ shale oil or gas ~~reserves~~, oil sands and gas hydrates. Activities covered by this Standard ~~standard~~ include the development of both onshore and offshore ~~on-shore and off-shore~~ reserves. Oil

& Gas – Exploration & Production entities typically contract ~~The E&P industry creates contracts~~ with the Oil & ~~and~~ Gas – Services industry to provide oilfield services, technologies and associated equipment. ~~conduct several E&P activities and to obtain equipment and oilfield services.~~

Note: this SASB Standard is intended for entities engaged in upstream oil and gas activities. ~~These disclosure topics are for 'pure-play' E&P activities or independent E&P entities.~~ Integrated oil and gas activities typically include upstream, midstream (transportation, processing and storage) and downstream (refining and marketing)—and, in some cases, petrochemical and biofuels production. For content related to those other oil and gas value chain segments, refer to the Oil & Gas – Midstream (EM-MD), Oil & Gas – Refining & Marketing (EM-RM), Chemicals (RT-CH) and Biofuels (RR-BI) SASB Standards. ~~entities conduct upstream operations but also may distribute, refine or market crude oil, natural gas or refined products. Separate standards exist for the Oil and Gas Midstream (EM-MD) and Refining & Marketing (EM-RM) industries. As such, integrated entities should also consider the disclosure topics and metrics from these Standards. A separate standard also exists for the Oil and Gas Services industry (EM-SV).~~

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	(1) Gross ~~global~~ Scope 1 emissions, (2) percentage methane~~,~~ and (3) percentage subject to ~~covered under~~ emissions-limiting regulations	~~Quantitative~~	Metric tonnes (t) CO_2-e ~~(t)~~, Percentage (%)	EM-EP-110a.1
	Quantity ~~Amount~~ of gross ~~global~~ Scope 1 emissions from: (1) flaring, ~~flared hydrocarbons,~~ (2) other combustion, (3) ~~process emissions, (4) other~~ vented emissions and (4) ~~(5)~~ fugitive emissions	~~Quantitative~~	Metric tonnes (t) CO_2-e	EM-EP-110a.2
	Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets	~~Discussion and Analysis~~	n/a	EM-EP-110a.3
	Total Scope 1 methane emissions		Metric tonnes (t) CH_4	EM-EP-110a.4
Air Quality	Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) volatile organic compounds ~~(VOCs),~~ and (4) particulate matter ~~(PM_{10})~~	~~Quantitative~~	Metric tonnes (t)	EM-EP-120a.1

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Water Management	(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	Megalitres (ML), ~~Thousand cubic metres (m^3),~~ Percentage (%)	EM-EP-140a.1
	(1) Volume of produced water and flowback generated; (2) percentage (a) ~~(1) discharged, (2)~~ injected and (b) ~~, (3)~~ recycled; and (3) hydrocarbon content in discharged water	~~Quantitative~~	Megalitres (ML), ~~Thousand cubic metres (m^3),~~ Percentage (%), Metric tonnes (t)	EM-EP-140a.2
	Percentage of wells using hydraulic fracturing ~~hydraulically fractured wells~~ for which ~~there is public disclosure of~~ all fracturing fluid chemicals have been publicly disclosed ~~used~~	~~Quantitative~~	Percentage (%)	EM-EP-140a.3
	Percentage of wells using hydraulic fracturing ~~sites~~ where ground or surface water quality deteriorated compared to a baseline ~~[15]~~	~~Quantitative~~	Percentage (%)	EM-EP-140a.4
	Total water discharged by (1) destination and (2) level of treatment		Megalitres (ML)	EM-EP-140a.5
	Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress		n/a	EM-EP-140a.6

continued...

[15] ~~Note to **EM-EP-140a.4** – The entity shall disclose its policies and practices related to ground and surface water quality management.~~

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Ecological ~~Biodiversity~~ Impacts	Description of environmental management policies and practices for operational facilities ~~active sites~~	~~Discussion and Analysis~~	n/a	EM-EP-160a.1
	(1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in environmentally sensitive locations, ~~Arctic,~~ (4) volume in bodies of water ~~impacting shorelines with ESI rankings 8-10,~~ and (5) volume recovered	~~Quantitative~~	Number, Barrels (bbls)	EM-EP-160a.2
	Percentage of (1) proved and (2) probable petroleum reserves in or near environmentally sensitive locations ~~sites with protected conservation status or endangered species habitat~~	~~Quantitative~~	Percentage (%)	EM-EP-160a.3
	(1) Total spatial footprint of operations, (2) area disturbed and (3) area restored		Square kilometres (km²)	EM-EP-160a.4
~~Security, Human Rights & Rights of Indigenous Peoples~~	~~Percentage of (1) proved and (2) probable reserves in or near areas of conflict~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-EP-210a.1~~
	~~Percentage of (1) proved and (2) probable reserves in or near indigenous land~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-EP-210a.2~~
	~~Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict~~	~~Discussion and Analysis~~	~~n/a~~	~~EM-EP-210a.3~~
Community Relations & Rights of Indigenous Peoples	Processes used ~~Discussion of process~~ to manage risks and opportunities associated with community rights and interests	~~Discussion and Analysis~~	n/a	EM-EP-210b.1
	(1) Number of non-technical delays and (2) the total days idle ~~duration of non-technical delays~~	~~Quantitative~~	Number, Days	EM-EP-210b.2
	Percentage of (1) proved and (2) probable petroleum reserves in or near Indigenous Peoples' land		Percentage (%)	EM-EP-210b.3
	Description of engagement processes and due diligence practices related to upholding Indigenous Peoples' rights		n/a	EM-EP-210b.4
Operations in Conflict Areas	Percentage of (1) proved and (2) probable petroleum reserves in conflict-affected and high-risk areas		Percentage (%)	EM-EP-210c.1
	Description of engagement processes and due diligence practices related to operating in conflict-affected and high-risk areas		n/a	EM-EP-210c.2

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Workforce Health & Safety	(1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~	~~Quantitative~~	Number, Rate, Hours (h)	EM-EP-320a.1
	Description ~~Discussion~~ of management systems used to foster a safe working environment ~~integrate a culture of safety throughout the exploration and production lifecycle~~	~~Discussion and Analysis~~	n/a	EM-EP-320a.2
Climate Resilience ~~Reserves Valuation & Capital Expenditures~~	Sensitivity of petroleum reserves to changes in market prices under different climate transition risk-related scenarios ~~hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions~~	~~Quantitative~~	Million barrels of oil equivalent (MMBOE) ~~(MMbbls), Million standard cubic feet (MMscf)~~	EM-EP-420a.1
	Estimated carbon dioxide emissions latent ~~embedded~~ in proved petroleum ~~hydrocarbon~~ reserves	~~Quantitative~~	Metric tonnes (t) CO_2-e	EM-EP-420a.2
	(1) Amount invested in renewable energy and (2)~~,~~ revenue generated by renewable energy sales	~~Quantitative~~	Presentation currency	EM-EP-420a.3
	Description of how climate-related risks and opportunities influence capital strategy and investments ~~Discussion of how price and demand for hydrocarbons or climate regulation influence the capital expenditure strategy for exploration, acquisition and development of assets~~	~~Discussion and Analysis~~	n/a	EM-EP-420a.4
Business Ethics ~~& Transparency~~	Revenue ~~Percentage of (1) proved and (2) probable reserves~~ in countries that have the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index	~~Quantitative~~	Presentation currency ~~Percentage (%)~~	EM-EP-510a.1
	Description of the management systems ~~system~~ for the prevention of corruption and bribery throughout the value chain	~~Discussion and Analysis~~	n/a	EM-EP-510a.2
Management of the Legal & Regulatory Environment	Description of entity ~~Discussion of corporate~~ positions related to government regulations or policy proposals ~~that address environmental and social factors~~ affecting the industry	~~Discussion and Analysis~~	n/a	EM-EP-530a.1

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Critical Incident Risk Management	Process safety event ~~Process Safety Event (PSE)~~ rates for loss of primary containment (1) events ~~Loss of Primary Containment (LOPC)~~ of greater consequence (Tier 1) and (2) events of lesser consequence (Tier 2)	~~Quantitative~~	Rate	EM-EP-540a.1
	Description of management systems used to identify and mitigate low-probability, serious accidents ~~catastrophic and tail-end risks~~	~~Discussion and Analysis~~	n/a	EM-EP-540a.2

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Production of: (1) oil, (2) natural gas, (3) synthetic oil~~,~~ and (4) synthetic gas	~~Quantitative~~	Million ~~Thousand~~ barrels of oil equivalent (MMBOE) ~~per day (Mbbl/day); Million standard cubic feet per day (MMscf/day)~~	EM-EP-000.A
Production associated with ~~Number of~~ offshore sites	~~Quantitative~~	Million barrels of oil equivalent (MMBOE) ~~Number~~	EM-EP-000.B
Production associated with onshore ~~Number of terrestrial~~ sites	~~Quantitative~~	Million barrels of oil equivalent (MMBOE) ~~Number~~	EM-EP-000.C
Total number of (1) employees and (2) non-employee workers		Number	EM-EP-000.D
Total hours worked disaggregated by (1) employees and (2) non-employee workers		Hours	EM-EP-000.E

Greenhouse Gas Emissions

Topic Summary

Exploration and production ~~& Production (E&P)~~ activities generate significant Scope 1 ~~direct~~ greenhouse gas ~~(GHG)~~ emissions from a variety of sources. Emissions may result from fuel or residual petroleum product combustion, such as ~~be combusted, including those arising~~ from running heavy equipment or flaring natural gas, or from uncombusted greenhouse gases, such as those ~~or power generation equipment, or uncombusted, including those emissions~~ arising from gas processing equipment, venting, incomplete flaring and other fugitive methane sources. Regulatory efforts to reduce greenhouse gas ~~GHG~~ emissions ~~in response to climate change related risks~~ may result in climate-related transition risks. The ~~additional regulatory compliance costs and risks for E&P entities. With natural gas production from shale resources expanding, the~~ management of the methane emissions, ~~emission of methane,~~ a highly potent greenhouse gas that can be emitted during ~~GHG, from~~ oil and gas exploration and production, ~~E&P systems~~ has emerged as a significant ~~major operational,~~ reputational and regulatory risk. ~~for entities.~~ Furthermore, the greenhouse gas emissions from the development of some unconventional hydrocarbon resources, such as oil sands and shale gas, may be different ~~more or less GHG-intensive~~ than conventional oil and gas, with associated effects on regulatory risk. Energy efficiency, use of less carbon-intensive fuels, or process improvements to reduce fugitive emissions, venting and flaring, can provide direct benefits to exploration and production ~~E&P~~ entities in the form of reduced costs or increased revenue.

Metrics

EM-EP-110a.1. (1) Gross ~~global~~ Scope 1 emissions, (2) percentage methane~~,~~ and (3) percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose (1) its gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e) and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014).~~

~~1.2 Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

~~2 Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 ~~2.1~~ These emissions include Scope 1 greenhouse gas ~~direct~~ emissions ~~of GHGs~~ from stationary or mobile sources; these sources may include: equipment at well sites, gathering line networks, production facilities, refineries, chemical plants, terminals, fixed site drilling rigs~~,~~ and office buildings; vehicles used for product and personnel transport (air, marine, road and rail);~~, marine vessels transporting products, tank truck fleets, mobile drilling rigs,~~ and moveable equipment at drilling sites and production facilities.

~~2.2 Acceptable calculation methodologies include those that conform to the GHG Protocol as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.2.1 *GHG Reporting Guidance for the Aerospace Industry* published by the International Aerospace Environmental Group (IAEG)~~

~~2.2.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* published by the U.S. Environmental Protection Agency (EPA)~~

~~2.2.3 India GHG Inventory Program~~

~~2.2.4 ISO 14064-1~~

~~2.2.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.2.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* published by Entreprises pour l'Environnement (EpE)~~

~~2.3 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which is generally aligned with the 'financial control' approach defined by the GHG Protocol as well as:~~

~~2.3.1 The financial approach detailed in Chapter 3 of the Ipieca/API/OGP *Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions*, 2nd Edition, 2011 (hereafter, the 'Ipieca GHG Guidelines')~~

~~2.3.2 *CDSB Framework for reporting environmental and social information*~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the percentage of gross ~~global~~ Scope 1 emissions from methane emissions.

2.1 ~~3.1~~ The percentage of methane is ~~of gross global Scope 1 GHG emissions from methane emissions shall be~~ calculated as the Scope 1 methane emissions in metric tonnes CO_2-e ~~of carbon dioxide equivalents (CO_2-e)~~ divided by the gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions in metric tonnes CO_2-e. ~~tons of carbon dioxide equivalents (CO_2-e).~~

3 ~~4~~ A ~~The~~ entity shall disclose (3) the percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~4.1~~ ~~Examples of emissions-limiting regulations include:~~

~~4.1.1~~ ~~California Cap-and-Trade (California Global Warming Solutions Act)~~

~~4.1.2~~ ~~European Union Emissions Trading Scheme (EU ETS)~~

~~4.1.3~~ ~~Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

3.1 ~~4.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

3.1.1 ~~4.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

3.2 ~~4.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

~~5~~ ~~The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

~~6~~ ~~In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure programme) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

~~7~~ ~~The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

EM-EP-110a.2. Quantity ~~Amount~~ of gross ~~global~~ Scope 1 emissions from: (1) flaring, ~~flared hydrocarbons,~~ (2) other combustion, (3) ~~process emissions, (4) other~~ vented emissions and (4) ~~(5)~~ fugitive emissions

1 An ~~The~~ entity shall separately disclose its gross Scope 1 ~~the amount of direct~~ greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalent (CO_2-e) ~~CO_2-e~~ from: ~~the following sources~~ (1) flaring, ~~flared hydrocarbons,~~ (2) other combustion, (3) ~~process emissions, (4) other~~ vented emissions and (4) ~~(5)~~ fugitive emissions from operations.

1.1 Flaring includes ~~Flared hydrocarbons shall include~~ all flared emissions ~~emitted from flares and which are~~ associated with the management and disposal of unrecovered gases combusted during ~~unrecoverable natural gas via combustion of hydrocarbon products from~~ routine operations, upsets or emergencies.

1.2 Emissions from other combustion include: (i) emissions from stationary devices, which include boilers, heaters, furnaces, reciprocating internal combustion engines and turbines, incinerators, and thermal/catalytic oxidisers; and (ii) emissions from mobile sources, which include barges, ships, railcars and trucks for product and equipment transport; aircraft, buses and other entity-owned or leased vehicles used for personnel transport; forklifts, all-terrain vehicles, construction equipment and other off-road mobile equipment. ~~Other combusted emissions shall include:~~

1.2.1 Emissions from other combustion excludes flaring emissions.

~~Emissions from stationary devices, which may include boilers, heaters, furnaces, reciprocating internal combustion engines and turbines, incinerators, and thermal/catalytic oxidisers~~

~~1.2.2~~ ~~Emissions from mobile sources, which may include barges, ships, railcars and trucks for material transport; planes/helicopters and other entity vehicles for personnel transport; forklifts, all-terrain vehicles, construction equipment and other off-road mobile equipment~~

~~1.3~~ ~~Other combusted emissions shall exclude those emissions disclosed as flared hydrocarbons.~~

~~1.4~~ ~~Process emissions shall include those emissions that are not combusted and are intentional or designed into the process or technology to occur during normal operations and are a result of some form of chemical transformation or processing step. Such emissions may include emissions from hydrogen plants, amine units, glycol dehydrators, fluid catalytic cracking unit and reformer generation, and flexi-coker coke burn.~~

1.3 ~~1.5~~ Vented emissions ~~shall~~ include uncombusted ~~those~~ emissions from various processes in a facility routed to the atmosphere. These emissions result from planned and selected operational solutions ~~that are not combusted and are intentional or~~ designed to occur as part of a ~~into the~~ process or technology ~~to occur~~ during normal operations. Such emissions ~~, and which~~ include:

1.3.1 ~~1.5.1~~ venting ~~Venting~~ from ~~crude oil, condensate or natural gas product~~ storage tanks, gas-driven pneumatic devices, gas samplers, chemical injection pumps, exploratory drilling, loading/ballasting/transit and loading racks;

1.3.2 ~~1.5.2~~ venting during ~~Venting resulting from~~ maintenance/turn-arounds, such as ~~which may include~~ decoking ~~of~~ furnace tubes, well unloading, vessel and gas compressor depressurising, compressor starts, gas sampling, and pipeline blowdowns; and

1.3.3 ~~1.5.3~~ venting during ~~Venting from~~ non-routine activities involving ~~, which may include~~ pressure relief valves, pressure control valves, fuel supply unloading valves and emergency shut-down devices.

~~1.6~~ ~~Vented emissions shall exclude those emissions disclosed as process emissions.~~

1.4 ~~1.7~~ Fugitive emissions ~~shall~~ include ~~those~~ emissions from leaks that can be detected and repaired ~~individually found and fixed~~ to reduce emissions. Such emissions ~~rates to near zero and which may~~ include emissions from valves, flanges, connectors, pumps, compressor seal leaks, and other related equipment. ~~Cata-Dyne® heaters, and wastewater treatment and surface impoundments.~~

EM-EP-110a.3. Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall disclose: ~~discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1 The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2 Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3 The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4 The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5 The mechanism(s) for achieving the target; and~~

~~2.6 Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively, or the target or base year has been reset, which may include energy efficiency efforts, energy source diversification, carbon capture and storage, or the implementation of leak detection and repair processes.~~

3 An entity shall disclose the targets it has set or is required to meet by law or regulation on reducing methane emissions.

4 An ~~The~~ entity shall disclose ~~discuss~~ the activities and investments required to achieve its ~~the plans or~~ targets, and any risks or limiting factors that might affect achievement of those ~~the plans or~~ targets.

~~4 The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~4.1 Categories of emissions sources include:~~

~~4.1.1 Flared hydrocarbons, including all emissions emitted from flares and which are associated with the management and disposal of unrecoverable natural gas via combustion of hydrocarbon products from routine operations, upsets or emergencies~~

~~4.1.2 Other combusted emissions, which may include: (1) emissions from stationary devices, which may include boilers, heaters, furnaces, reciprocating internal combustion engines and turbines, incinerators, and thermal/catalytic oxidisers, (2) emissions from mobile sources, which may include barges, ships, railcars and trucks for material transport; planes/helicopters and other entity vehicles for staff transport; forklifts, all-terrain vehicles, construction equipment and other off-road mobile equipment, and (3) other combusted emissions shall exclude those emissions disclosed as flared hydrocarbons~~

~~4.1.3 Process emissions, which include those emissions that are not combusted and are intentional or designed into the process or technology to occur during normal operations and are a result of some form of chemical transformation or processing step. Such emissions may include those from hydrogen plants, amine units, glycol dehydrators, fluid catalytic cracking unit and reformer generation, and flexi-coker coke burn~~

~~4.1.4 Vented emissions, including those emissions that are not combusted and are intentional or designed into the process or technology to occur during normal operations, and which may include: (1) venting from crude oil, condensate or natural gas product storage tanks, gas-driven pneumatic devices, gas samplers, chemical injection pumps, exploratory drilling, loading/ballasting/transit and loading racks, (2) venting resulting from maintenance/turn-arounds, which may include decoking of furnace tubes, well unloading, vessel and gas compressor depressurising, compressor starts, gas sampling, and pipeline blowdowns, and (3) venting from non-routine activities, which may include pressure relief valves, pressure control valves, fuel supply unloading valves and emergency shut-down devices~~

4.1.5 ~~Fugitive emissions, which may include those emissions which can be individually found and 'fixed' to make emissions 'near zero' and which may include emissions from valves, flanges, connectors, pumps, compressor seal leaks, catadyne heaters, and wastewater treatment and surface impoundments~~

5 ~~The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

6 ~~Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

EM-EP-110a.4. Total Scope 1 methane emissions

1 An entity shall disclose its total gross Scope 1 methane (CH_4) emissions, in metric tonnes.

1.1 Total methane emissions include methane emissions from all sources, including operational, idle or decommissioned facilities.

2 An entity shall disaggregate its total gross Scope 1 methane emissions disclosed between:

2.1 the consolidated accounting group (for an entity applying IFRS Accounting Standards, this group would comprise the parent and its consolidated subsidiaries); and

2.2 other investees excluded from the consolidated accounting group (for an entity applying IFRS Accounting Standards, these investees would include associates, joint ventures and unconsolidated subsidiaries).

3 An entity shall disclose whether it is a member of the United Nations Environment Programme Oil and Gas Methane Partnership 2.0 (OGMP 2.0) and, if so, the relevant OGMP 2.0 reporting level (Levels 1–5) that the entity has achieved.

3.1 If the entity or any of its investees whose methane emissions are included in the measurement of the entity's methane emissions are not OGMP 2.0 members, the entity shall disclose how it calculates methane emissions (based on emissions factors or direct measurement), the frequency of leak detection and repair inspections, the technologies used and the assets subject to inspection.

3.2 The entity shall disclose the protocols, frameworks or guidance used for the methane emissions calculations.

Air Quality

Topic Summary

Non-greenhouse gas air ~~Air~~ emissions from exploration and production activities ~~Exploration & Production (E&P) operations other than greenhouse gas emissions include air pollutants and volatile organic compounds (VOCs), which~~ can create significant and localised environmental or health risks. Of particular concern are emissions of sulphur dioxide, nitrogen dioxide and volatile organic compounds. ~~VOC emissions.~~ The financial consequences entities face from air emissions vary depending on the specific locations of operations and the prevailing air emissions regulations. Impacts on human health can ~~may~~ be exacerbated if exploration and production ~~E&P~~ operations breach air emissions limits close to population centres. Entities that proactively improve their air quality management can benefit from reduced regulatory risk and compliance costs, as well as lower long-term operating costs achieved through more efficient production methods. ~~Amid increasing regulatory and public concerns about air quality, active air quality management through technological and process improvements could allow entities to mitigate adverse financial effects of regulations. Entities could benefit from operational efficiencies that may result in a lower cost structure over time.~~

Metrics

EM-EP-120a.1. Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) volatile organic compounds ~~(VOCs),~~ and (4) particulate matter ~~(PM_{10})~~

1 An ~~The~~ entity shall disclose its air pollutant emissions ~~of air pollutants~~, in metric tonnes for each ~~per~~ pollutant, released into the atmosphere.

1.1 The ~~scope of the~~ disclosure includes air pollutants associated with the entity's operational ~~direct air emissions resulting from all the entity's~~ activities and sources of emissions, which ~~may~~ include stationary or mobile sources~~, production facilities, office buildings and transportation fleets~~.

1.2 The entity shall define air pollutant emissions according to the applicable jurisdictional law or regulation.

1.3 If the entity is subject to more than one jurisdictional law or regulation that defines air pollutant emissions, the entity shall disclose whether and how variations between these frameworks affect the reported data.

1.4 If the entity defines and manages its air pollutant emissions using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

~~2 The entity shall disclose emissions consistent with Ipieca/API/OGP *Sustainability reporting guidance for the oil and gas industry*, as noted below.~~

2 ~~3~~ An ~~The~~ entity shall disclose its emissions of (1) nitrogen oxides ~~of nitrogen~~ (NO_x), reported as NO_x.

2.1 ~~3.1~~ The scope of NO_x includes NO and NO_2 but excludes nitrous oxide, N_2O.

2.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define NO_x emissions, the entity shall instead use the United Nations Economic Commission for Europe (UNECE) Convention, *Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes*, 1988 definition of NO_x emissions.

3 ~~4~~ An ~~The~~ entity shall disclose its emissions of (2) sulphur oxides ~~of sulphur~~ (SO_x), reported as SO_x.

3.1 ~~4.1~~ The scope of SO_x includes SO_2 and SO_3.

3.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define SO_x emissions, the entity shall instead use the UNECE Convention, *Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes*, 1985 definition of SO_x emissions.

4 ~~5~~ An ~~The~~ entity shall disclose its emissions of (3) non-methane volatile organic compounds (VOCs).

4.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define VOC emissions, the entity shall instead use the UNECE Convention, *Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes*, 1991 definition of VOC emissions.

~~5.1 VOCs are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate and methane, that participates in atmospheric photochemical reactions, except those designated under applicable jurisdictional laws or regulations as having negligible photochemical reactivity.~~

~~5.2 If applicable regulatory definitions of VOCs conflict with this definition, the entity may define VOCs in accordance with the applicable jurisdictional legal or regulatory definition. In this case, the entity shall identify the source of the definition.~~

5 ~~6~~ An ~~The~~ entity shall separately disclose its emissions of (4) particulate matter (PM), disaggregated as (a) PM_{10} and (b) $PM_{2.5}$. ~~10 micrometres or less in diameter (PM_{10}), reported as PM_{10}.~~

5.1 ~~6.1~~ PM_{10} is defined as any airborne fine ~~finely divided~~ solid or liquid material with an aerodynamic diameter less than or equal to ~~a nominal~~ 10 micrometres.

5.2 $PM_{2.5}$ is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 2.5 micrometres.

6 ~~7~~ An ~~The~~ entity shall disclose ~~may discuss~~ the calculation method for its emissions disclosure, such as whether data is from: ~~continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

6.1 direct measurement of emissions (such as online analysers);

6.2 calculations based on site-specific data;

6.3 calculations based on published emission factors; or

6.4 estimation.

Water Management

Topic Summary

Depending on the extraction technique, whether onshore or offshore, exploration and production operations can ~~may~~ consume significant quantities of water, which could ~~may~~ expose exploration and production entities to ~~the risk of~~ reduced water availability, regulations limiting use, or related cost increases, particularly in water-stressed regions. Contamination of local water resources can result from incidents involving produced water, flowback water, hydraulic fracturing fluids and other well fluids. The ~~Historically, the~~ possible impacts of hydraulic fracturing operations and the risk of groundwater supply contamination could raise ~~have raised~~ concerns for local communities. Reducing water use and contamination through recycling, other water management strategies~~,~~ and the use of non-toxic fracturing fluids could improve ~~create~~ operational efficiency for entities and reduce their operating costs. Such strategies could also minimise the effects that regulations, water supply shortages and community-related disruptions have on operations.

Metrics

EM-EP-140a.1. (1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

2 ~~The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1~~ ~~Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2~~ ~~Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1 ~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. ~~that evaporates during withdrawal, use and discharge~~

~~3.1.2~~ ~~Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3~~ ~~Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea.~~

~~4~~ ~~The entity shall analyse all its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

3 ~~5~~ An ~~The~~ entity shall disclose (3a) the volume of water withdrawn, in megalitres, from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 ~~6~~ An ~~The~~ entity shall disclose (3b) the volume of water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

EM-EP-140a.2. (1) Volume of produced water and flowback generated; (2) percentage (a) ~~(1) discharged, (2)~~ injected and (b) ~~, (3)~~ recycled; and (3) hydrocarbon content in discharged water

1 An ~~The~~ entity shall disclose (1) the volume, in megalitres, ~~thousands of cubic metres,~~ of produced water and flowback effluent ~~fluid~~ generated during its activities.

1.1 ~~2~~ Produced water is defined as water that enters an entity's boundary because of extraction (for example, crude oil), processing or use of any raw material, and which must be consequently managed by the organisation. ~~(brine) obtained from the hydrocarbon bearing formation strata during the extraction of oil and gas.~~

1.1.1 In oil and gas production, produced ~~Produced~~ water is typically brine obtained from the hydrocarbon-bearing formation strata during the extraction of oil and gas. It can include formation water, injection water~~,~~ and any chemicals added downhole or during the oil and water ~~oil/water~~ separation process.

1.2 ~~3~~ Flowback is defined as the recovered hydraulic fracturing fluid that returns to the surface during a hydraulic fracturing operation that can ~~may~~ often be mixed with produced water.

2 ~~4~~ An ~~The~~ entity shall disclose (2) ~~calculate~~ the percentage of produced water and flowback effluent (a) injected and (b) recycled for use in other drilling and production processes. ~~fluid that was:~~

~~4.1~~ ~~Discharged directly to the environment or indirectly discharged through a third party, such as a local wastewater treatment plant~~

~~4.2~~ ~~Injected~~

~~4.3~~ ~~Recycled for use in other wells, in fracturing fluids or in other drilling and production processes~~

3 ~~5~~ An ~~The~~ entity shall disclose the quantity, ~~amount,~~ in metric tonnes, of hydrocarbons contained in water discharged to the environment.

3.1 ~~5.1~~ Water discharged ~~The scope of disclosure~~ includes produced water, flowback, process water, storm water or other water discharged to the environment.

3.2 ~~5.2~~ The quantity of hydrocarbons contained in water discharged is measured ~~Measurements of hydrocarbon content should be made~~ using test methods required or approved by applicable legal or regulatory authorities (or equivalent applicable standards).

EM-EP-140a.3. Percentage of wells using hydraulic fracturing ~~hydraulically fractured wells~~ for which ~~there is public disclosure of~~ all fracturing fluid chemicals have been publicly disclosed ~~used~~

1 An ~~The~~ entity shall disclose the percentage of ~~hydraulically fractured~~ wells that use hydraulic fracturing for which ~~there is public disclosure of~~ all the fracturing fluid chemicals used have been publicly disclosed.

1.1 The percentage is ~~shall be~~ calculated as the number of wells for which the chemical content of the fracturing fluids has been publicly disclosed ~~hydraulically fractured wells for which it provides public disclosure of all the chemical content of fracturing fluid,~~ divided by the total number of ~~hydraulically fractured~~ wells that use hydraulic fracturing.

1.2 The entity numerator includes ~~shall include in the percentage~~ only those wells for which all fracturing fluid chemicals are publicly disclosed, including the chemicals that meet the definition of a trade secret.

2 Public disclosure includes ~~may include~~ posting to a publicly accessible entity ~~corporate~~ website.

EM-EP-140a.4. Percentage of wells using hydraulic fracturing ~~sites~~ where ground or surface water quality deteriorated compared to a baseline

1 An entity shall disclose the percentage of wells in which ground or surface water quality deteriorated compared to a baseline.

~~The entity shall calculate the percentage as: the total number of hydraulic fracturing well sites for which it detected a deterioration in the ground or surface water surrounding the well site as compared to a baseline measurement, divided by the total number of hydraulic fracturing well sites.~~

1.1 The entity shall disclose information about whether it has detected water quality deterioration against a baseline by monitoring the ground and surface water surrounding hydraulically fractured wells.

1.1.1 The entity shall follow applicable jurisdictional standards, guidelines or regulations for the collection of samples.

1.1.2 The entity shall disclose the jurisdictional standards, guidelines or regulations it used for assessing water quality deterioration and its calculation.

1.2 The percentage is calculated as the number of hydraulic fracturing wells associated with deteriorated ground or surface water around the well site compared to a baseline measurement, divided by the total number of wells using hydraulic fracturing.

~~2 Deterioration in water quality is, at a minimum, defined as occurring when testing indicates:~~

~~2.1 Presence of thermogenic gas or a mixture of thermogenic and biogenic gas not present in baseline testing.~~

~~2.2 An increase in methane concentration by more than 5.0 mg/l between sampling periods.~~

~~2.3 Benzene, toluene, ethylbenzene, xylenes (BTEX compounds) or total petroleum hydrocarbons (TPH) are present in higher concentrations as compared to the baseline.~~

~~3 The entity shall determine whether water quality deteriorated against a baseline through monitoring of ground and surface water surrounding hydraulically fractured well sites.~~

~~3.1 Determinations shall be consistent with Chapter 3 of the Wyoming Oil and Gas Conservation Commission (WOGCC) Rules and Regulations, the Colorado Oil and Gas Conservation Commission's (COGCC) Rule 609 — Statewide Groundwater Baseline Sampling and Monitoring, or a jurisdictional equivalent.~~

~~3.2 The entity shall disclose the jurisdictional standard, guideline or regulation used for its calculation.~~

~~4 The initial baseline sample shall occur:~~

~~4.1 Prior to drilling or before installation of a surface oil and gas facility on a location~~

~~4.2 Prior to re-stimulation of a well, if more than 12 months have passed since the initial pre-drilling sampling event or the most recent re-stimulation sampling event~~

~~5 Ongoing monitoring shall occur with at least the following frequency:~~

~~5.1 One subsequent sampling between 12 and 18 months after well completion or facility installation~~

~~5.2 A second subsequent sampling between 60 and 78 months after the previous sampling event. Dry holes are exempt from this requirement~~

~~6 The entity shall collect initial baseline samples and subsequent monitoring samples from all available water sources within a one-half mile radius of a proposed well, multi-well site, or dedicated injection well.~~

~~6.1 The entity shall follow sampling guidance from the WOGCC and COGCC or jurisdictional equivalent for the collection of samples, including for instances when few or no sampling sites exist or are accessible.~~

2 ~~7~~ An entity ~~If the entity does not conduct baseline water quality assessments and ongoing monitoring for any of its well sites, then it~~ shall disclose the percentage of its wells for which it has (i) not assessed the ~~there is no~~ baseline or (ii) not continued to monitor the water quality. ~~ongoing monitoring.~~

3 ~~8~~ An ~~The~~ entity shall ~~may~~ disclose whether the results of baseline groundwater quality tests and ongoing monitoring are communicated to applicable jurisdictional legal or regulatory authorities ~~(where not required by local law)~~ or residents and business owners close ~~in proximity~~ to hydraulic fracturing sites.

~~Note to **EM-EP-140a.4**~~

~~1 The entity shall describe its policies and practices related to its management of ground and surface water quality.~~

~~2 Applicable policies and practices may include:~~

~~2.1 Well design and well integrity management~~

~~2.2 Hydraulic fracturing procedures~~

~~2.3 Surface facility design, including the use of backflow preventers, storage tank design and impoundment design~~

~~2.4 Surface and groundwater quality and testing~~

~~2.5 Chemicals management~~

~~2.6 Water reuse, processing and disposal~~

EM-EP-140a.5. Total water discharged by (1) destination and (2) level of treatment

1 An entity shall disclose the (1) total volume of water discharged, in megalitres, disaggregated by destination.

1.1 Water discharge is defined as the sum of effluents, used water, and unused water released to surface water, groundwater, seawater or a third party, for which the organisation has no further use.

1.1.1 Surface water is defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams.

1.1.2 Groundwater is defined as water held in and recoverable from an underground formation.

1.1.3 Seawater is defined as water in a sea or ocean.

1.1.4 Third-party water is defined as water discharged by municipal water suppliers and municipal wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

1.2 The scope of disclosure includes water released into a receiving waterbody at either a defined discharge point (point-source discharge) or dispersed over land in an undefined manner (non-point-source discharge).

2 An entity shall disclose (2) the total volume of water discharged, in megalitres, disaggregated by level of treatment.

2.1 Water treatment is defined as the physical, chemical or biological processes that improve water quality by removing solids, pollutants, and organic matter from water and effluents.

2.2 Treatment levels include:

2.2.1 primary treatment, which aims to remove solid substances that settle or float on the water surface;

2.2.2 secondary treatment, which aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it; and

2.2.3 tertiary treatment, which aims to upgrade water to a higher level or quality before it is discharged, for example, removing heavy metals, nitrogen, and phosphorus.

2.3 If the entity discharges water that it determines does not require treatment, it shall disclose the associated volume in megalitres.

2.4 The level of treatment shall be reported for any water or effluents at the point of discharge, whether treated by the entity on-site or sent to a third party for treatment.

2.5 The entity shall disclose how it determines the appropriate level of treatment for water discharges.

EM-EP-140a.6. Description of water-related risks and opportunities and strategies to manage them, including any targets set to monitor progress

1 An entity shall describe its risks associated with water withdrawals, water consumption and discharge of water or wastewater.

1.1 Risks associated with water withdrawals and water consumption include risks to the availability and quality of water resources, which include:

1.1.1 environmental constraints—such as operating in water-stressed regions, drought, floods, concerns of aquatic impingement or entrainment, interannual or seasonal variability, water quality that requires additional treatment at the point of input, and risks from the impact of climate change; and

1.1.2 regulatory and financial constraints—such as water price volatility, stakeholder perceptions and concerns related to water withdrawals (for example, those involving local communities, non-governmental organisations and regulatory agencies), direct competition with other users (for example, commercial and municipal users), restrictions to withdrawals because of regulations, and constraints on the entity's ability to obtain or retain water rights or permits.

1.2 Risks associated with discharged water or wastewater include the ability to obtain or retain rights or permits related to discharges, regulatory compliance related to discharges, restrictions on discharges, temperature control of discharges and risks stemming from impacts on local ecosystems and communities.

2 An entity shall describe how its water-related risks vary by:

2.1 withdrawal source;

2.2 discharge destinations, including surface water, groundwater, seawater or wastewater utilities;

2.3 local regulations, including emerging regulations; and

2.4 location of operating facilities.

3 An entity shall disclose the locations of operating facilities where water-related risks are concentrated.

4 An entity shall disclose quantitative and qualitative information about how water-related risks and opportunities have affected, and are anticipated to affect, the entity's financial position, financial performance and cash flows both for the reporting period and over the short, medium and long term.

5 The entity shall disclose any targets it has set, and any targets it is required to meet by law or regulation, to mitigate or adapt to water-related risks or take advantage of water-related opportunities.

5.1 In preparing disclosure on water-related targets, the entity shall apply the requirements in paragraphs 51–53 of IFRS S1.

6 The entity shall disclose its strategies for managing water-related risks and opportunities, and achieving water-related targets, including:

6.1 efficiency efforts (for example, using water recycling or closed-loop systems);

6.2 product innovations (for example, redesigning products or services to require less water);

6.3 process and equipment innovations (for example, reducing aquatic impingements or entrainments);

6.4 use of tools and technologies (for example, the World Wildlife Fund *Water Risk Filter*) to analyse water use, risks and opportunities; and

6.5 collaborations or programmes with communities or other organisations.

7 An entity shall disclose whether its water management practices resulted in any lifecycle impacts or trade-offs in its organisation, including trade-offs in land use, energy production and greenhouse gas emissions, and why the entity chose these practices despite such trade-offs.

Ecological ~~Biodiversity~~ Impacts

Topic Summary

~~The~~ Exploration and production ~~& Production (E&P) industry's~~ activities can have significant ecological impacts ~~on biodiversity~~. Examples include habitat change and loss, pollution ~~and alteration through land use for exploration, production, disposal of drilling and associated wastes,~~ and decommissioning of onshore and offshore wells and associated facilities. ~~Oil spills and leaks are a threat to species and habitats affected by hydrocarbon contamination. Biodiversity impacts of E&P operations can affect the valuation of oil and gas reserves and create operational risks. Because of increasing protection of ecosystems through popular consensus and legislation, the environmental characteristics of the land where reserves are located may lead to higher, or even prohibitive extraction costs. Entities~~ Activities involving high environmental risks could lead to entities facing ~~also face~~ regulatory or reputational barriers to accessing reserves in or near environmentally sensitive locations, suspended permits, regulatory penalties, litigation, community protests and other costs. Pollution (in the form of oil spills, for example) in such locations is particularly ~~ecologically sensitive areas. This may include new protection statuses afforded to areas where reserves are located. Examples of such areas include the Arctic and shorelines with mangroves and swamps, which are not only extremely ecologically sensitive, but also entail more~~ complex and expensive to clean up. An entity that integrates environmental risk mitigation early in exploration and production development can avoid potential permitting delays and costly redesigns. ~~clean-up operations for hydrocarbon spills or leaks. Depreciation in the future value of reserves may be mitigated by considering the proximity of reserves in or near protected areas as part of the decision-making process.~~ Entities that minimise environmental ~~with a good reputation for minimising biodiversity~~ impacts could also gain a competitive advantage in accessing new reserves in or near environmentally sensitive locations. ~~protected areas. Ongoing E&P operations could be at risk in the absence of effective environmental management plans for various stages of the project lifecycle because of regulatory penalties, litigation, community protests and associated costs.~~

Metrics

EM-EP-160a.1. Description of environmental management policies and practices for operational facilities ~~active sites~~

1 An ~~The~~ entity shall disclose information about ~~describe~~ its environmental management policies and practices ~~plans~~ implemented at operational facilities, including: ~~active sites, including, if relevant:~~

1.1 the life cycle ~~lifecycle~~ stages to which the plans apply, such as~~:~~ pre-bid (when the entity is considering an acquisition ~~of a site~~), exploration and appraisal, site development, ~~hydrocarbon~~ production, closure, site decommissioning, removal and restoration;

1.2 the types of ecological impacts included in ~~topics addressed by~~ the plans, such as ecological and biodiversity impacts, waste generation, noise, emissions to air, discharges to water, natural resource consumption and hazardous chemical use;

1.3 whether the entity integrates an environmental mitigation hierarchy into its project development and operations, such as using the 2020 Science Based Targets Network's *Initial Guidance for Business* AR3T Action Framework or the 2015 Cross Sector Biodiversity Initiative's *A Cross-sector Guide for Implementing the Mitigation Hierarchy*;

1.4 the underlying definitions and references for its plans, including whether they originate from ~~are~~ codes, guidelines, standards or regulations; and

1.5 ~~1.4~~ whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the environmental management policies and practices.

~~2 The scope of the disclosure includes all terrestrial and offshore operations in which the entity is involved as an operator, partner or contractor, and that are in the exploration, development, production or decommissioning phases.~~

~~3 If applicable and relevant, the entity shall describe differences between policies and practices in terrestrial areas and in marine areas.~~

2 ~~4~~ If environmental management policies and practices vary ~~differ~~ significantly by the type of ~~hydrocarbon~~ resource, by location or by type of operation, then the entity shall describe the ~~relevant~~ differences ~~for each resource~~.

~~5 If applicable and relevant, the entity shall describe specific policies and practices that apply to areas with protected conservation status or areas of critical habitat, which are defined by the International Finance Entity (IFC) Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources* as:~~

~~5.1 areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered or Endangered species; (ii) habitat of significant importance to endemic or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species or congregatory species; (iv) highly threatened or unique ecosystems; or (v) areas associated with essential evolutionary processes.~~

3 ~~6~~ If the environmental management policies and practices do not apply to all the entity's operational facilities, ~~sites or operations,~~ it shall disclose ~~include~~ the percentage of sites to which they ~~were~~ applied at the reporting date.

4 ~~7~~ An ~~The~~ entity shall explain whether ~~disclose the degree to which~~ its policies and practices are aligned with the International Finance Corporation's (IFC) ~~IFC~~ *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 ~~7.1~~ IFC Performance Standard 1, *Assessment and Management of Environmental and Social Risks and Impacts*;

4.2 ~~7.2~~ IFC Performance Standard 3, *Resource Efficiency and Pollution Prevention*;

4.3 ~~7.3~~ IFC Performance Standard 4, *Community Health, Safety, and Security*; and

4.4 ~~7.4~~ IFC Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources*.

~~8 Additional relevant references may include:~~

~~8.1~~ ~~Joint E&P Forum/UNEP, Environmental management in oil and gas exploration and production – An overview of issue and management approaches, 1997; and~~

~~8.2~~ ~~World Bank Multistakeholder Initiative, *Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies'.*~~

EM-EP-160a.2. (1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in environmentally sensitive locations, ~~Arctic,~~ (4) volume in bodies of water ~~impacting shorelines with ESI rankings 8-10,~~ and (5) volume recovered

1 An ~~The~~ entity shall disclose (1) the total number and (2) volume (in barrels) of hydrocarbon spills consistent with the 2020 Ipieca *Sustainability reporting guidance for the oil and gas industry*.

1.1 The entity shall disclose all hydrocarbon spills greater than one barrel (1 bbl, or 159 litres) in volume.

1.2 The entity shall disclose spills that reached the environment, and exclude spills contained within impermeable secondary containment.

2 The ~~Consistent with Ipieca/API/OGP *Sustainability reporting guidance for the oil and gas industry* (hereafter, 'Ipieca Guidance'), the~~ volume reported shall represent the ~~total~~ estimated quantity of hydrocarbons ~~amount~~ spilled that reached the environment and shall ~~should~~ not be reduced by the quantity ~~amount of such hydrocarbon~~ subsequently recovered, evaporated or otherwise lost.

3 Spills ~~Consistent with Ipieca Guidance, the scope of releases~~ from operations and events include those from: ~~includes:~~

3.1 above-ground and below-ground facilities;

3.2 sabotage, earthquakes or other events outside operational control;

3.3 entity-owned and operated transport; and

3.4 leakage over time, which is counted once when ~~at the time~~ it is identified.

~~4 The entity may disclose spills to soil and water separately. A spill that qualifies as a spill to both soil and water should be reported as a single spill to water, with the volume of the spill properly apportioned between soil and water.~~

4 ~~5~~ An ~~The~~ entity shall disclose (3) the volume of hydrocarbon spills, in barrels, that occurred in environmentally sensitive locations. ~~the Arctic, defined as the area north of the Arctic Circle at approximately 66° 33′ north latitude.~~

5 Environmentally sensitive locations are defined as areas where an entity's assets or activities interface with nature in areas deemed to be ecologically sensitive. Such locations are defined as:

5.1 being important for biodiversity;

5.2 having high ecosystem integrity;

5.3 exhibiting rapidly declining ecosystem integrity; or

5.4 being important for ecosystem service provision.

6 Environmentally sensitive locations include:

6.1 International Union for Conservation of Nature (IUCN) protected areas (categories I–VI);

6.2 Ramsar Wetlands of International Importance;

6.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;

6.4 UNESCO's Man and the Biosphere Programme's biosphere reserves 'core areas';

6.5 Natura 2000 sites;

6.6 Ocean+ Habitats Protected Areas (marine and coastal);

6.7 a clearly defined geographical area, recognised, dedicated and managed, through legal or other effective means by applicable jurisdictional authorities, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (such as the protected areas listed in the World Database of Protected Areas and mapped on the Protected Planet website); or

6.8 an endangered species habitat in which species on the IUCN Red List of Threatened Species that are classified as Critically Endangered or Endangered are known to reside.

6.8.1 Species reside in an area if they are a resident, present during breeding or non-breeding season, or if they use the area for passage.

6.8.2 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.

7 An entity's hydrocarbon spills are located in environmentally sensitive locations if the spills reach any environmentally sensitive locations.

8 ~~6~~ An ~~The~~ entity shall disclose (4) the volume of spills in bodies of water, such as wetlands, streams, rivers, lakes, navigable waterways and littoral or ocean environments. ~~impacting environmentally sensitive shorelines.~~

~~6.1 The scope of spills to environmentally sensitive shorelines shall include spills to water that reached the soil or spills directly to the soil of shorelines with Environmental Sensitivity Index (ESI) levels 8–10, defined according to Ipieca's *Sensitivity mapping for oil spill response*, for shoreline sensitivity mapping.~~

~~6.2 The entity may use alternative geospatial tools to assess whether a shoreline is environmentally sensitive for shoreline sensitivity mapping if the tools provide results and data interpretation consistent with the Ipieca Environmental Sensitivity Index 8–10, based on shoreline type, exposure to wave and tidal energy and general biological productivity and sensitivity.~~

~~6.2.1 The entity shall disclose the geospatial tools used to assess environmentally sensitive shorelines and why it chose those specific tools.~~

9 If environmentally sensitive locations and bodies of water categories overlap for the purposes of this disclosure, the entity shall avoid double-counting spill volumes. Instead, the entity shall attribute spill volumes involving overlapping categories to the environmentally sensitive locations.

10 ~~7~~ The ~~In accordance with Ipieca Guidance Indicator ENV-6, which defines 'recovered hydrocarbons', the~~ entity shall disclose (5) the volume of spills recovered, ~~which is~~ calculated as the quantity of spilled hydrocarbons (in bbls) removed from the environment through ~~short-term~~ spill response activities, excluding:

10.1 ~~7.1~~ quantities ~~amounts~~ recovered during longer-term remediation at spill sites; and

10.2 ~~7.2~~ quantities ~~amounts that have~~ evaporated, burned or dispersed.

EM-EP-160a.3. Percentage of (1) proved and (2) probable petroleum reserves in or near environmentally sensitive locations ~~sites with protected conservation status or endangered species habitat~~

1 An ~~The~~ entity shall separately disclose ~~(1)~~ the percentages ~~percentage~~ of its (1) proved petroleum reserves and (2) probable petroleum reserves associated with operational facilities located in or near environmentally sensitive locations at the reporting date. ~~, by volume, located in sites with protected conservation status or in endangered species habitat.~~

1.1 Each ~~The~~ percentage is separately ~~of proved reserves shall be~~ calculated as the volume ~~quantity (volume)~~ of proved or probable petroleum reserves associated with operational facilities located in or near environmentally sensitive locations, ~~areas with protected conservation status or endangered species habitat,~~ divided by the total volume ~~amount~~ of proved reserves or the total volume of probable reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

~~The entity shall disclose (2) the percentage of net probable reserves, by volume, located in sites either with protected conservation status or in endangered species habitat.~~

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

~~The percentage of probable reserves shall be calculated as the quantity (volume) of probable reserves located in areas with protected conservation status or endangered species habitat, divided by the total quantity of probable reserves.~~

3 Environmentally sensitive locations are defined as areas where an entity's assets or activities interface with nature in areas deemed to be ecologically sensitive. Such locations are defined as:

3.1 being important for biodiversity;

3.2 having high ecosystem integrity;

3.3 exhibiting rapidly declining ecosystem integrity; or

3.4 being important for ecosystem service provision.

4 Environmentally sensitive locations include:

4.1 International Union for Conservation of Nature (IUCN) protected areas (categories I–VI);

4.2 Ramsar Wetlands of International Importance;

4.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;

4.4 UNESCO's Man and the Biosphere Programme's biosphere reserves 'core areas';

4.5 Natura 2000 sites;

4.6 Ocean+ Habitats 'Protected Areas' (marine and coastal);

4.7 a clearly defined geographical area, recognised, dedicated and managed, through legal or other effective means by applicable jurisdictional authorities, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (such as the protected areas listed in the World Database of Protected Areas and mapped on the Protected Planet website); or

4.8 an endangered species habitat in which species on the IUCN Red List of Threatened Species that are classified as Critically Endangered or Endangered are known to reside.

4.8.1 Species reside in an area if they are resident, present during breeding or non-breeding season, or if they use the area for passage.

4.8.2 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.

~~3 Reserves are considered to be in areas of protected conservation status if they are located within:~~

~~3.1 International Union for Conservation of Nature (IUCN) Protected Areas (categories I–VI);~~

~~3.2 Ramsar Wetlands of International Importance;~~

~~3.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;~~

~~3.4 Biosphere Reserves recognised within the framework of UNESCO's Man and the Biosphere (MAB) Programme;~~

~~3.5 Natura 2000 sites; or~~

3.6 ~~sites that meet the IUCN's definition of a protected area: 'A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values'.[16]~~

3.6.1 ~~These sites may be listed in the World Database of Protected Areas (WDPA) and mapped on Protected Planet.~~

4 ~~Reserves are considered to be in endangered species habitat if they are in or near areas where species on the IUCN Red List of Threatened Species that are classified Critically Endangered (CR) or Endangered (EN) are extant.~~

4.1 ~~A species is considered extant in an area if it is a resident, present during breeding or non-breeding season, or if it makes use of the area for passage.~~

4.1.1 ~~For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.~~

5 An entity's operational facilities are defined as 'in or near' an environmentally sensitive location if any part of a facility's spatial footprint of operations is in or ~~For the purposes of this disclosure, 'near' is defined as~~ within five kilometres ~~(km)~~ of the boundary of an environmentally sensitive location. ~~an area of protected conservation status or an endangered species habitat and the location of the entity's proved and probable reserves.~~

6 An entity shall determine the proved and probable petroleum reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles or practices.

~~The entity shall follow guidance published in the Society of Petroleum Engineers' (SPE) Petroleum Resources Management System (PRMS) or jurisdictional equivalent for the classifying of reserves as proved or probable.~~

6.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of petroleum reserves reported in its related financial statements or other general purpose financial reports.

6.2 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine petroleum reserves, the entity shall instead use the guidance for classifying petroleum reserves published in the Society of Petroleum Engineers' *Petroleum Resources Management System*.

~~7 The entity may separately identify reserves in areas with additional ecological, biodiversity or conservation designations such as those listed by the Biodiversity A-Z resource prepared by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).~~

[16] ~~IUCN, *Guidelines for Applying Protected Areas Management Categories*, 2008, pp.8–9.~~

~~8 The entity may discuss reserves located in protected areas or endangered species habitats, but that present low risks to biodiversity or ecosystem services. The entity may provide similar discussion for reserves located in areas with no official designation of high biodiversity value, but that present high risks to biodiversity or ecosystem services.~~

EM-EP-160a.4. (1) Total spatial footprint of operations, (2) area disturbed and (3) area restored

1 An entity shall disclose (1) the total spatial footprint (area) of its operations area of disturbed land in square kilometres (km^2) at the reporting date.

1.1 The total spatial footprint of the entity's operations includes the cumulative area disturbed during the current and prior periods by its operations that has not been restored.

1.2 The area disturbed is defined as the aggregate geographical area that has been subject to human activity that has changed the condition of the area, relative to an original reference state.

1.2.1 Human activity is defined as the entity's activities and operations that have physically disrupted, modified, covered, compacted, moved or otherwise altered the characteristics of terrestrial, freshwater aquatic or marine ecosystems from before such activity.

1.2.2 The entity's total spatial footprint of operations includes the area disturbed during the current period and continues to be the area disturbed in all subsequent reporting periods unless the area disturbed is restored.

1.2.3 For bodies of water, the disturbed area includes the bottom or seabed beneath the water's surface.

1.3 The disclosure includes information about the aggregate measured area of the entity's spatial footprint in terrestrial, freshwater aquatic or marine ecosystems (land, wetlands, riverine, navigable waterways, littoral or ocean) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

1.4 This disclosure includes all active sites, recently decommissioned sites awaiting restoration and sites being restored.

1.5 Area restored is defined as a previously disturbed area that has been restored according to applicable jurisdictional law or regulation.

1.6 If the jurisdiction in which the entity operates has no applicable law or regulation to define a previously disturbed area that has been restored, a restored area is defined as the cumulative geographical area that has been subject to human intervention to return a degraded, damaged or destroyed area or ecosystem to an approximation of an original reference state.

1.6.1 Ecological restoration is defined as re-establishing the ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original. Ecological restoration focuses on biodiversity conservation and ecological integrity.

1.6.2 Ecosystem restoration is defined as a restored area that demonstrates resilience to normal ranges of environmental stress and disturbance and interacts with contiguous ecosystems in terms of biotic and abiotic flows and cultural interactions. An ecosystem is restored when it contains sufficient biotic and abiotic resources to sustain itself structurally and functionally and can continue its development without further assistance or subsidy.

2 An entity shall disclose (2) the area disturbed by the entity's operations, in km^2, during the current reporting period.

3 An entity shall disclose (3) the area previously disturbed by operations that has been restored in km^2 during the reporting period.

3.1 An area is no longer part of the entity's spatial footprint of operations once post-closure restoration and remediation efforts are complete as defined by applicable jurisdictional law or regulation (even if after-monitoring is necessary).

4 The disclosure includes information about any adjustments to the entity's total spatial footprint of operations, area disturbed or area restored resulting from acquisitions, mergers and divestments or disposals completed during the reporting period.

~~Security, Human Rights & Rights of Indigenous Peoples~~

~~Topic Summary~~

~~Exploration & Production (E&P) entities face additional community-related risks when operating in conflict zones; in areas with weak or absent governance institutions, rule of law, or legislation to protect human rights; or in areas with vulnerable communities such as indigenous peoples. Entities using private or government security forces to protect their workers and assets may knowingly or unknowingly contribute to human rights violations, including the use of excessive force. Entities perceived as contributing to human rights violations or failing to account for indigenous peoples' rights may be affected by protests, riots or suspension of permits. These entities could face substantial costs related to compensation or settlement payments, and write-downs in the value of their reserves in such areas. In the absence of applicable jurisdictional laws or regulations to address such cases, several international instruments have emerged to provide guidelines for entities. These instruments include obtaining the free, prior and informed consent of indigenous peoples for decisions that affect them. Several countries have implemented specific laws protecting indigenous peoples' rights, creating increasing regulatory risk for entities that violate those rights.~~

Metrics

~~EM-EP-210a.1. Percentage of (1) proved and (2) probable reserves in or near areas of conflict~~

~~1 The entity shall disclose (1) the percentage of its proved reserves, by volume, located in or near areas of active conflict.~~

~~1.1 The percentage of proved reserves shall be calculated as the quantity (volume) of proved reserves located in or near areas of active conflict divided by the total quantity of proved reserves.~~

~~2 The entity shall disclose (2) the percentage of its probable reserves, by volume, located in or near areas of active conflict.~~

~~2.1 The percentage of probable reserves shall be calculated as the quantity (volume) of probable reserves located in or near areas of active conflict divided by the total quantity of probable reserves.~~

~~3 Active conflict is defined according to the Uppsala Conflict Data Program (UCDP) definition:~~

~~3.1 'A conflict, both state-based and non-state, is deemed to be active if there are at least 25 battle-related deaths per calendar year in one of the conflict's dyads.'~~

~~4 Reserves shall be considered to be in or near an area of active conflict if they are located in the same country as the active conflict.~~

~~4.1 If the entity can demonstrate that a conflict is contained to a region, state or designated area not proximate to its reserves, then it may exclude these from the scope of the disclosure.~~

4.2 ~~If reserves are located in a country, region or state adjacent to an active conflict or can be reasonably expected to be operationally affected by the conflict, then these reserves shall be included in the scope of the disclosure.~~

5 ~~The entity shall follow guidance published in the Society of Petroleum Engineers' (SPE) Petroleum Resources Management System (PRMS) or the applicable jurisdictional equivalent for the classifying of reserves as proved or probable.~~

~~EM-EP-210a.2. Percentage of (1) proved and (2) probable reserves in or near indigenous land~~

1 ~~The entity shall disclose (1) the percentage of its proved reserves located, by volume, in or near areas considered to be indigenous peoples' land.~~

1.1 ~~The percentage of proved reserves shall be calculated as the quantity (volume) of proved reserves located in or near indigenous land divided by the total quantity of proved reserves.~~

2 ~~The entity shall disclose (2) the percentage of its probable reserves, by volume, located in or near areas considered to be indigenous peoples' land.~~

2.1 ~~The percentage of probable reserves shall be calculated as the quantity (volume) of probable reserves located in or near indigenous land divided by the total quantity of probable reserves.~~

3 ~~Indigenous peoples' lands are considered as those occupied by people who self-identify as indigenous in accordance with Article 33 of the United Nations *Declaration on the Rights of Indigenous Peoples* and the International Labour Organization Convention 169, and based on the working definition of 'Indigenous Peoples' adopted by the United Nations, probably have one or more of the following characteristics, such as:~~

3.1 ~~historical continuity with pre-colonial or pre-settler societies;~~

3.2 ~~strong link to territories and surrounding natural resources;~~

3.3 ~~distinct social, economic or political systems;~~

3.4 ~~distinct language, culture and beliefs;~~

3.5 ~~form non-dominant groups of society; and~~

3.6 ~~resolve to maintain and reproduce ancestral environments and systems as distinct peoples and communities.~~

4 ~~For the purposes of this disclosure, 'near' is defined as within five kilometres of the recognised boundary of an area considered to be indigenous land and the location of the entity's proved and probable reserves.~~

5 ~~The entity shall follow guidance published in the Society of Petroleum Engineers' (SPE) Petroleum Resources Management System (PRMS) or the applicable jurisdictional equivalent for the classifying of reserves as proved or probable.~~

~~EM-EP-210a.3. Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict~~

~~1 The entity shall describe its due diligence practices and procedures with respect to indigenous rights of communities in which it operates or intends to operate, which may include:~~

~~1.1 upholding International Labour Organization (ILO) Convention 169;~~

~~1.2 use of free, prior and informed consent (or consultation) processes;~~

~~1.3 the establishment of project grievance mechanisms; and~~

~~1.4 the establishment of formal community agreements.~~

~~2 The entity shall describe its due diligence practices and procedures with respect to upholding the principles covered in human rights frameworks, such as the:~~

~~2.1 International Labour Organisation (ILO) *Declaration on Fundamental Principles and Rights at Work* and the fundamental ILO conventions on freedom of association (No. 87), collective bargaining (No. 98), forced labour (No. 29 and No. 105), child labour (No. 138 and No. 182), fair wages (No. 100), and discrimination (No. 111);~~

~~2.2 United Nations *Guiding Principles on Business and Human Rights*, specifically Human Rights Due Diligence (Principle 17a-c); and~~

~~2.3 Voluntary Principles on Security and Human Rights.~~

~~3 The entity shall discuss its practices and procedures while operating in areas of conflict, such as:~~

~~3.1 describing its approach with reference to the approaches listed in Ipieca's *Guide to operating in areas of conflict for the oil and gas industry*: 'do no harm', 'do something', and 'do something ++'.~~

~~4 An entity is considered to be operating in an area of conflict if it is conducting operations in the same country as an active conflict, or adjacent to an active conflict, if the conflict can reasonably be expected to affect the entity's operations.~~

~~5 Active conflict is defined according to the Uppsala Conflict Data Program (UCDP) definition:~~

~~5.1 'A conflict, both state-based and non-state, is deemed to be active if there are at least 25 battle-related deaths per calendar year in one of the conflict's dyads.'~~

~~6 The discussion shall include due diligence processes employed during all stages of project development (prior, during and post).~~

~~7 The discussion may include how local or regional factors are considered in the entity's engagement processes and due diligence practices with respect to human rights (and specifically indigenous rights, if applicable) as well as operations in areas of conflict.~~

~~8 The discussion may include governance mechanisms the entity puts in place to ensure that all levels of the organisation adhere to its policies and practices.~~

~~9 The discussion shall include how practices apply to business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.~~

~~9.1 If practices do not apply to business partners, the entity may discuss factors that prevent the application of such practices.~~

Community Relations & Rights of Indigenous Peoples

Topic Summary

Exploration and production ~~& Production (E&P)~~ activities take place over many years and can have a ~~wide~~ range of adverse effects on communities. Local community support is necessary for an entity to obtain permits and leases to engage in exploration and production activities. Such activities can raise concerns related to community livelihood and lead to competition between entities and communities over local resources. Entities that derive economic benefits from these resources rely on the goodwill of host governments and communities to operate and must provide commensurate socioeconomic benefits in good faith to retain it. The loss of that goodwill can result in additional taxes, levies or regulatory penalties, restricted access to reserves and export restrictions. Entities can face increased risks when operating in areas in or near Indigenous Peoples' land, where mismanagement of community relationships could result in protests or legal action disrupting operations. Entities failing to account for community concerns and Indigenous Peoples' rights can face fines and penalties, compensation and settlement payments and impairment of their assets. Entities can reduce these risks by fostering community engagement, adhering to local laws and following international guidelines like obtaining free, prior and informed consent from Indigenous Peoples. An entity that adopts effective community engagement strategies, such as integrating community engagement into each phase of a project, can avoid disruptions, cultivate goodwill, build a positive reputation and enhance its prospects. ~~Community rights and interests may be affected by the environmental and social impacts of E&P operations, such as competition for access to local energy or water resources, air and water emissions, and waste. Entities frequently need support from local communities to obtain permits and leases and conduct their activities without disruptions. Entities may experience adverse financial impacts if the community interferes, or lobbies its government to interfere, with the rights of an E&P entity in relation to their ability to access, develop and produce reserves. In addition to community concerns about the direct impacts of projects, the presence of E&P activities may create associated socioeconomic concerns related to education, health, livelihoods and food security for the community. E&P entities engaging in rent-seeking and exploiting a community's resources without providing proportional socioeconomic benefits in return may be exposed to actions by host governments and communities that restrict their activities or impose additional costs. These could include imposition of ad hoc taxes and export restrictions. These risks vary depending on the country and could be higher in countries heavily reliant on oil and gas for their economic growth. Entities in the extractives industries can adopt various community engagement strategies in their global operations to manage risks and opportunities associated with community rights and interests, such as integrating community engagement into each phase of the project cycle. Entities are beginning to adopt a 'shared value' approach to provide significant socioeconomic benefits to communities and allow them to operate profitably.~~

Metrics

EM-EP-210b.1. Processes used ~~Discussion of process~~ to manage risks and opportunities associated with community rights and interests

1 An ~~The~~ entity shall disclose information about how it manages the sustainability-related ~~discuss its processes, procedures and practices to manage~~ risks and opportunities associated with the rights and interests of communities in areas where it operates. These include rights and interests related to economic, environmental, social and cultural factors, such as: ~~conducts business. Community rights and interests include:~~

1.1 ~~economic rights and interests, which may include~~ employment, fair wages, payment transparency, national resource governance and respect for infrastructure and agricultural land;

1.2 ~~environmental rights and interests, which may include clean local~~ air and water, as well as safe ~~discharge and~~ disposal of waste;

1.3 ~~social rights and interests, which may include~~ adequate healthcare, ~~health care,~~ education and housing; and

1.4 ~~cultural rights and interests, which may include~~ protection and preservation of places of cultural significance (for example, sacred sites or burial sites).

2 An ~~The~~ entity shall disclose information about:~~, if relevant:~~

2.1 the life cycle ~~lifecycle~~ stages to which its processes ~~practices~~ apply, such as~~:~~ pre-bid (when the entity is considering an acquisition ~~of a site~~), exploration and appraisal, site development, hydrocarbon production, closure, decommissioning and restoration;

2.2 the community rights and interests ~~(enumerated above)~~ specifically addressed by the entity's processes; ~~practices; and~~

2.3 how the entity identifies, assesses, prioritises and monitors the risks and opportunities associated with community rights and interests, including whether and how those processes are integrated into and inform the entity's overall risk management process;

2.4 ~~2.3~~ the underlying definitions and references for its processes, ~~procedures,~~ including whether they are codes, guidelines, standards or regulations; and

2.5 whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the processes.

3 Community-related risks ~~Risks~~ and opportunities ~~may~~ include: corruption, non-technical delays, legal and regulatory complexities, local community employment, availability of skilled labour, purchases of local goods and services, availability ~~and development~~ of local goods and services, quality of ~~content, availability~~ and access to adequate infrastructure (for example, ports, roads, bridges, or shipping channels), ~~community actions, and challenges associated with~~ resettlement and access to land and social licence to operate.

4 An ~~The~~ entity shall disclose whether its processes align ~~the degree to which its policies and practices are aligned~~ with the International Finance Corporation's ~~Entity's~~ (IFC) *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 IFC Performance Standard 4, *Community Health, Safety, and Security*;

4.2 IFC Performance Standard 5, *Land Acquisition and Involuntary Resettlement*; and

4.3 IFC Performance Standard 8, *Cultural Heritage*.

5 The disclosure includes information about how the entity’s processes ~~discussion shall include how practices~~ apply to business partners such as contractors, subcontractors, suppliers and joint arrangement partners.

6 The disclosure includes information about an entity’s ~~entity may describe its~~ efforts to eliminate or mitigate community risks or address community concerns, including: ~~which may include:~~

6.1 the use of social impact assessment ~~(SIA)~~ that evaluates, manages and mitigates risks;

6.2 efforts to engage with stakeholders, build consensus and collaborate with communities;~~ and~~

6.3 the frequency of community engagement;

6.4 the amount invested in community engagement programmes; and

6.5 ‘shared’ or ‘blended’ value projects that provide quantifiable benefits to the community and the entity.

7 An ~~The~~ entity shall disclose relevant quantitative information to characterise its exposure to community-related risks, such as the entity’s estimated value at risk. ~~may quantify its community risks by calculating the aggregate estimated value at risk as the difference in value between a project free from country, regional or community risks (hereafter, country risk) and the value of a project adjusted for these risks.~~

~~7.1 This calculation may be conducted using an appropriate valuation model; variations of the Capital Asset Pricing Model (CAPM) are commonly used to assess country risk.~~

~~7.1.1 Value at risk can be calculated by applying an additional discount rate premium in calculating the net present value of a project using discounted cash flow (DCF) analysis.~~

~~7.1.2 Value at risk can be expressed as a reduction in the expected cash flows of a project because of country risk in calculating the net present value of a project using DCF.~~

~~7.1.3 If a project is insured for country risks, the value at risk can be expressed as a reduction in the cash flows of a project because of the cost of insurance in calculating the net present value of a project using DCF analysis.~~

7.1 Value at risk is defined as the difference in value between the value of a project not taking into account community-related risks, and the value of the project adjusted for those risks.

~~Country, regional or community risks may include: corruption, business legal structure, political stability, regulation, ethnic conflict, stability of the local market, availability of a skilled labour force, resettlement and access to land, quality of access to infrastructure (for example, ports, roads, shipping channels), or general licence to operate.~~

7.1.1 ~~7.2.1~~ These risks could ~~may~~ vary by jurisdiction and project~~ level~~.

~~7.2.2 These risks differ from sovereign risk, which is defined as the potential for a central bank or government-backed entity to willingly or unwillingly default on debt obligations, or significantly alter important economic variables such as currency exchange rates, import ratios and money supply.~~

~~7.3 The entity should identify and describe country risks specific to its projects and unique operating context.~~

~~7.3.1 This description may include the identification of country, regional and community risks or the discussion of specific projects.~~

~~7.3.2 This description may include discussion of how the entity has mitigated country risks (for example, through community engagement partnerships and blended value projects). The entity shall quantify this reduction in risk according to the methods described above.~~

~~7.3.3 This description may include discussion of how the entity has mitigated country risks (for example, through community engagement partnerships and blended value projects). The entity shall quantify this reduction in risk according to the methods described above.~~

~~7.4 The entity may describe the model or approach used to value capital expenditure projects such as adjusted discount rate, expected cash flow or other methods.~~

EM-EP-210b.2. (1) Number of non-technical delays and (2) the total days idle ~~duration of non-technical delays~~

1 An ~~The~~ entity shall disclose (1) the total number of non-technical delays. ~~and (2) duration, in days, of site shutdowns or project delays because of non-technical factors.~~

1.1 Non-technical delays are defined as shutdowns and project delays resulting from pending regulatory permits or other delays resulting from community-related risks such as protests.

2 An entity shall disclose (2) the total days idle resulting from non-technical delays.

2.1 ‘Days idle’ is defined as the number of workdays lost resulting from a non-technical delay.

2.2 Total days idle is calculated as the sum of days idle for each non-technical delay.

2.2.1 If the entity experiences concurrent site shutdowns or project delays at different locations, the overlapping periods are counted only once.

~~2 The scope may include shutdowns and project delays resulting from pending regulatory permits, or other political delays, community or stakeholder resistance or protest, or armed conflict.~~

3 The disclosure excludes delays resulting from organised labour collective actions (strikes), employer actions (lockouts) and technical situations unrelated to community-related risks (permitting delays).

4 ~~3~~ An ~~The~~ entity shall provide information about the ~~may discuss specific~~ delays including associated costs, the root cause of each non-technical delay, the effect on production, the ~~and corrective actions for resolved delays, and~~ status of ongoing non-technical delays and corrective action taken.

EM-EP-210b.3. Percentage of (1) proved and (2) probable petroleum reserves in or near Indigenous Peoples' land

1 An entity shall separately disclose the percentages of its (1) proved petroleum reserves and (2) probable petroleum reserves associated with operational facilities located in or near Indigenous Peoples' land at the reporting date.

1.1 Each percentage is separately calculated as the volume of proved or probable petroleum reserves associated with operational facilities located in or near areas of Indigenous Peoples' land divided by the total volume of proved reserves or the total volume of probable reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

3 Indigenous Peoples' land is defined as an area occupied by Indigenous Peoples as determined by Article 33 of the 2007 United Nations *Declaration on the Rights of Indigenous Peoples* and the International Labour Organization *Indigenous and Tribal Peoples Convention*, 1989 (No. 169). Based on the working definition adopted by the United Nations, Indigenous Peoples have one or more of the following characteristics:

3.1 historical continuity with pre-colonial or pre-settler societies;

3.2 strong link to territories and surrounding natural resources;

3.3 distinct social, economic or political systems;

3.4 distinct language, culture and beliefs;

3.5 form non-dominant groups of society; and

3.6 resolve to maintain and reproduce ancestral environments and systems as distinct peoples and communities.

4 An entity's operational facilities are defined as being 'in or near' Indigenous Peoples' land if any part of the facility's spatial footprint of operations is in or within five kilometres of the recognised boundary of Indigenous Peoples' land.

5 An entity shall determine the proved and probable petroleum reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles.

5.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of petroleum reserves reported in its related financial statements or other general purpose financial reports.

5.2 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine petroleum reserves, the entity shall instead use the guidance for classifying petroleum reserves published in the Society of Petroleum Engineers' *Petroleum Resources Management System*.

EM-EP-210b.4. Description of engagement processes and due diligence practices related to upholding Indigenous Peoples' rights

1 An entity shall disclose information about its engagement processes and due diligence practices related to upholding Indigenous Peoples' rights in the areas in which it operates or intends to operate including whether the entity:

1.1 upholds the principles of the ILO *Indigenous and Tribal Peoples Convention*, 1989 (No. 169) and the 2007 United Nations *Declaration on the Rights of Indigenous Peoples*;

1.2 uses free, prior and informed consent (or consultation) processes;

1.3 develops partnerships and shared decision-making mechanisms;

1.4 establishes project grievance procedures; and

1.5 executes formal community agreements.

2 An entity shall include information about the engagement process and due diligence practices it employs during project development, such as the local or regional factors it examines and its governance mechanisms to monitor workforce compliance.

3 An entity shall describe whether and, if so, how these processes and practices apply to its business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.

Operations in Conflict Areas

Topic Summary

Exploration & Production entities might operate in conflict-affected and high-risk areas characterised by political instability, weak governance or active conflict and lacking strong legal institutions and regulatory oversight or enforcement. In these areas, safeguarding workers and asset integrity against security risks could help an entity to avoid workforce injuries, operational disruptions, increased costs, asset impairment and reduced access to petroleum reserves. Entities using private or government security forces to protect their workers and assets could knowingly or unknowingly contribute to human rights violations, including the use of excessive force, leading to increased public and legal scrutiny. These risks can limit future development, negatively affect investment opportunities and raise the entity's cost of capital. To manage these risks, entities can adopt engagement processes and due diligence practices in conflict-affected and high-risk areas including aligning security practices with international standards. By strengthening risk management related to operating in volatile security situations, an entity can protect its workforce, preserve asset value, reduce financing costs and improve its long-term resilience and prospects.

Metrics

EM-EP-210c.1. Percentage of (1) proved and (2) probable petroleum reserves in conflict-affected and high-risk areas

1 An entity shall separately disclose the percentages (by volume) of its (1) proved petroleum reserves and (2) probable petroleum reserves associated with operational facilities located in conflict-affected and high-risk areas at the reporting date.

1.1 Each percentage is separately calculated as the volume of proved or probable petroleum reserves associated with operational facilities located in conflict-affected and high-risk areas divided by the total volume of proved reserves or the total volume of probable reserves.

2 The area of an entity's operational facilities is defined by the facility's spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of disturbed area) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

2.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

3 Conflict-affected and high-risk areas are defined according to the 2016 Organisation for Economic Co-operation and Development *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, Third Edition.

3.1 Conflict-affected and high-risk areas are identified by the presence of armed conflict, widespread violence or other risks. Such areas are often characterised by widespread human rights abuses and violations of national or international law.

3.2 Conflict-affected areas take a variety of forms and include international conflicts involving two or more states, or non-international conflicts, such as wars of liberation, insurgencies or civil wars.

3.3 High-risk areas include those affected by political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence.

4 An entity's operational facilities are defined as being in conflict-affected or high-risk areas if any part of the facility's spatial footprint of operations is in a conflict-affected or high-risk area.

4.1 If operational facilities are adjacent to a conflict-affected or high-risk area and can be reasonably expected to be affected, then the entity shall include the petroleum reserves associated with those operational facilities in the disclosure.

5 An entity shall determine the proved and probable petroleum reserves for this disclosure using the same data, assumptions and calculation methods used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles.

5.1 The entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of petroleum reserves reported in its related financial statements or other general purpose financial reports.

5.2 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine petroleum reserves, the entity shall instead use the guidance for classifying petroleum reserves published in the Society of Petroleum Engineers' *Petroleum Resources Management System*.

EM-EP-210c.2. Description of engagement processes and due diligence practices related to operating in conflict-affected and high-risk areas

1 An entity shall disclose information about its engagement processes and due diligence practices related to conflict-affected and high-risk areas in which it operates or intends to operate including whether the entity:

1.1 upholds the principles of the Five-Step Framework for Risk-Based Due Diligence in the Mineral Supply Chain outlined in Annex I of the 2016 Organisation for Economic Co-operation and Development *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, Third Edition (OECD Due Diligence Guidance);

1.2 upholds the principles covered in human rights frameworks such as the Voluntary Principles on Security and Human Rights; and

1.3 upholds the principles of the 2008 Ipieca *Guide to Operating in Areas of Conflict for the Oil and Gas Industry*.

2 Conflict-affected and high-risk areas are defined according to the OECD Due Diligence Guidance.

3 An entity shall include information about the engagement process and due diligence practices it employs during project development such as the local or regional factors it examines and its governance mechanisms to monitor workforce compliance.

4 An entity shall describe whether and, if so, how these processes and practices apply to its business partners, such as contractors, subcontractors, suppliers and joint arrangement partners.

Workforce Health & Safety

Topic Summary

Workers involved in exploration and production ~~Exploration & Production (E&P)~~ activities face significant health and safety risks because of the harsh working environments, ~~and~~ the hazards associated with ~~of~~ handling oil and gas and ~~.~~ ~~In addition to~~ acute injuries ~~harms~~ resulting from accidents~~, workers may develop chronic health conditions, including those caused by silica or dust inhalation, as well as mental health problems. A significant proportion of the workforce at oil and gas drilling sites consists of temporary workers and employees of oil and gas service entities.~~ An entity's ability to protect workforce ~~employee~~ health and safety, and to create a culture of safety and wellbeing ~~well-being~~ among all workers, could ~~employees, may~~ prevent accidents, mitigate costs, reduce operational downtime and enhance ~~workforce~~ productivity. Entities can make use of additional ~~Additional~~ health and safety protocols ~~may be needed~~ to protect marginalised groups ~~such as women and minorities in regions where they continue to face discrimination~~.

Metrics

EM-EP-320a.1. (1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2 ~~1~~ An ~~The~~ entity shall separately disclose (2) ~~(1)~~ its total recordable incident rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 ~~1.1~~ An injury or illness is typically defined as ~~considered~~ a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare ~~health care~~ professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid or loss of consciousness.

2.1.3 ~~1.1.1~~ First aid is typically defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but jurisdictional definitions may vary.

~~1.1.2 The entity may use applicable jurisdictional criteria for definitions of a recordable incident and a non-recordable incident such as first aid. The entity shall disclose the legal, regulatory or industry framework used as the source for these criteria and definitions.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2 The entity shall disclose (2) its fatality rate for work-related fatalities.~~

~~3 The entity shall disclose (3) its near miss frequency rate (NMFR) for work-related near misses.~~

~~3.1 A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage or environmental damage, but had the potential to do so in other circumstances.~~

~~3.2 The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~4 All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~4.1 The '200,000' in the rate calculation represents the total number of hours 100 full-time workers working 40 hours per week for 50 weeks per year can provide annually.~~

~~5 The entity shall disclose (4) the average number of training hours it provided to its workforce for health, safety and emergency management training.~~

~~5.1 Training shall relate to topics such as the health, safety, or emergency preparedness of employees with respect to occupational risks or hazards to which employees are reasonably likely to be exposed and specific occupational risks or hazards.~~

~~6 The average number of hours of health, safety and emergency response training shall be calculated as: (total qualifying training hours provided by the entity) / (total number of employees).~~

~~6.1 The total number of employees is number of the entity's direct and contract employees at the end of the reporting period. If the total number of employees varied widely during the reporting period, the entity should discuss those variations to provide context.~~

4 ~~7~~ The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses. ~~includes work-related incidents only.~~

4.1 ~~7.1~~ Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~7.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~7.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~7.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~7.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 An entity shall disclose (3) the average number of training hours provided to its workforce for health, safety and emergency preparedness management training.

5.1 Training includes topics such as the health, safety or emergency preparedness related to the occupational risks or hazards to which the workforce is reasonably likely to be exposed and to specific occupational risks or hazards.

5.1.1 Training includes technical health, safety and emergency management training required by applicable jurisdictional authorities related to occupational risks or hazards.

5.2 The average number of hours of health, safety and emergency response training is calculated as the total qualifying training hours provided to the workforce divided by the total workforce.

5.2.1 The total workforce is defined as the number of individual employees and non-employee workers the entity employs at the reporting date.

6 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~8 The entity shall disclose the rates and average hours of training for each of these employee categories:~~

~~8.1 direct employees, defined as individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees; and~~

~~8.2 contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

~~9 The scope of the disclosure includes all employees regardless of employee location or type of employment.~~

EM-EP-320a.2. Description ~~Discussion~~ of management systems used to foster a safe working environment ~~integrate a culture of safety throughout the exploration and production lifecycle~~

1 An ~~The~~ entity shall disclose information about: ~~discuss how it integrates a culture of safety throughout the exploration and production lifecycle.~~

1.1 how it cultivates a safe working environment throughout its operations, avoids accidents and minimises long-term health risks to its workforce;

1.2 ~~The discussion shall include~~ how it ~~the entity integrates a culture of safety~~ manages safety and coordinates emergency preparedness throughout its value chain, such as through technology, training, corporate culture, rules and guidelines enforcement, and regulatory compliance; ~~, monitoring, testing and personal protective equipment.~~

1.3 how it manages long-term health risks associated with operations, such as through use of personal protective equipment, testing and monitoring;

1.4 ~~1.2~~ the ~~The discussion may broadly consider the entity's~~ safety management systems the entity uses ~~, but it shall specifically address systems used~~ to maintain a safe working environment, including the prevention of incidents, fatalities and illnesses; ~~.~~

1.5 leading indicators the entity has developed to monitor, manage or improve safety performance, such as near-miss reporting, workforce engagement programmes, hazard reduction, emergency drills or safety-related compliance rates; and

1.6 the implementation of these safety management systems including progress towards tracking safety and health performance, and obtaining third-party verification of the systems' efficacy.

2 An ~~The~~ entity shall describe ~~include a description of~~ how workforce safety management and emergency preparedness are ~~is~~ coordinated among business partners (for example, contractors and subcontractors).

~~3 The exploration and production lifecycle phases may include geological and seismic surveys, site surveys, exploratory drilling, appraisal drilling, site development, production and decommissioning.~~

Climate Resilience ~~Reserves Valuation & Capital Expenditures~~

Topic Summary

Exploration & Production entities face climate-related transition risks, including policy, legal, technological, market and reputational risks related to the consumption of their products and associated greenhouse gas emissions. Exploration & Production ~~Exploration and production (E&P)~~ entities could face constraints on extracting ~~may be unable to extract~~ a significant proportion of their proved and probable oil and gas reserves as jurisdictions seek to restrict ~~if~~ greenhouse gas ~~(GHG)~~ emissions ~~are controlled to limit global temperature increases~~. Entities with more carbon-intensive reserves and production and higher capital costs ~~may~~ face greater risks than entities with lower capital costs and more diversified businesses. Regulatory restrictions ~~limits~~ on greenhouse gas ~~GHG~~ emissions, together with increased ~~improved~~ competitiveness of alternative energy technologies, could reduce global demand for exploration and production activities, reducing ~~growth, and therefore reduce~~ prices for oil and gas products. An entity's ability to avoid asset impairment, maintain profitability and preserve creditworthiness depends on how it manages its climate-related transition risks and its climate resilience. ~~Extraction costs could increase with regulations that put a price on GHG emissions. These factors could affect the economic viability of oil and gas reserves. Regulatory actions that are more abrupt than anticipated, or those focusing on industries with high emissions, could impair asset values over a short period. Stewardship of capital resources and production decisions that consider near- and long-term trends related to climate change may mitigate potential asset impairment and maintain profitability and creditworthiness.~~

Metrics

EM-EP-420a.1. Sensitivity of petroleum reserves to changes in market prices under different climate transition risk-related scenarios ~~hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions~~

1 An entity shall disclose information about the resilience of its proved and probable petroleum reserves to changes in prices being applied to greenhouse gas emissions.

~~The entity shall perform a sensitivity analysis of its reserves to determine how several future scenarios may affect the determination of whether the reserves are proved or probable.~~

2 An entity shall use climate-related scenario analysis to evaluate how various transition risk scenarios that account for changing petroleum market demand and prices being applied to greenhouse gas emissions could affect the quantity of proved and probable petroleum reserves that the entity can produce before reaching the economic limit of those reserves.

~~The entity shall analyse the sensitivity of its current proven and probable reserves using the price trajectories published by the International Energy Agency (IEA) in its *World Energy Outlook* (WEO) publication, including:~~

2.1 The market demand or price scenarios might vary depending on the type of petroleum reserves, the regulatory environment in the jurisdictions where the entity has exploration or production activities, the end-use of the entity's products or other factors. Such scenarios might include the named scenarios and associated market prices in the most recently published International Energy Agency *World Energy Outlook* (WEO).

~~Current Policies Scenario, which assumes no changes in policies from the mid-point of the year of publication of the WEO.~~

2.2 Other than using the market prices published in the WEO scenarios, the entity shall determine the petroleum reserves for this disclosure using the same data, assumptions and calculation methods used in preparing its related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles or practices.

~~New Policies Scenario, which assumes that broad policy commitments and plans that have been announced by countries (including national pledges to reduce greenhouse gas emissions and plans to phase out fossil-energy subsidies), occur even if the measures to implement these commitments have yet to be identified or announced. This broadly serves as the IEA baseline scenario.~~

2.3 The climate-related scenario analysis of proved and probable petroleum reserves in this disclosure could be included as part of related requirements in paragraph 22 of IFRS S2.

~~Sustainable Development Scenario, which assumes that an energy pathway occurs that is consistent with the goal of limiting the global increase in temperature to 1.5°C by limiting concentration of greenhouse gases in the atmosphere.~~

2.4 For the purposes of this disclosure, the entity shall disclose information about the inputs it used and key assumptions it made in the analysis, consistent with paragraph 22(b) of IFRS S2.

~~The entity shall consider the WEO scenarios as a normative reference; thus, any updates to the WEO made year-on-year shall be considered updates to this guidance.~~

3 An entity shall disclose the applicable jurisdictional law or regulation, or other guidance used to determine the quantity of its petroleum reserves reported in its financial statements or other general purpose financial reports. ~~The entity shall follow the applicable jurisdictional guidance for the following:~~

3.1 If the entity has no applicable jurisdictional law or regulation, or other guidance to determine petroleum reserves, the entity shall instead use the guidance for classifying petroleum reserves published in the Society of Petroleum Engineers' *Petroleum Resources Management System*. ~~Classifying reserves as proved and probable~~

~~3.2~~ ~~Conducting a reserves sensitivity analysis and disclosing, in the aggregate, an estimate of reserves for each product type based on various price and cost criteria, such as a range of prices and costs that may reasonably be achieved, including standardised futures prices or management's own forecasts~~

~~3.2.1 The entity shall disclose the price and cost schedules and assumptions on which disclosed values are based~~

~~3.3 Determining current (or base) case of reserve levels~~

4 The following illustrates a possible tabular ~~disclosure entity may use the following table~~ format to present this information: ~~summarise its findings:~~

Table 3. Sensitivity of reserves to prices by principal product type and price scenario

PRICE CASE	PROVED RESERVES			PROBABLE RESERVES		
(Scenario)	**Oil** **~~(MMbbls)~~**	**Gas** **~~(MMscf)~~**	**Product~~:~~A** **~~(measure)~~**	**Oil** **~~(MMbbls)~~**	**Gas** **~~(MMscf)~~**	**Product~~:~~ A** **~~(measure)~~**
	(MMbbls)	(MMBOE)	(measure)	(MMbbls)	(MMBOE)	(measure)
~~Current Policies~~ Scenario A ~~(base)~~						
~~New Policies~~ Scenario B						
~~Sustainable Development~~ Scenario C						

~~5 The entity may disclose the sensitivity of its reserve levels in other price and demand scenarios in addition to those described above, particularly if these scenarios vary depending on the type of hydrocarbon reserves, regulatory environment in the countries or regions where exploration occurs, end-use of the entity's products, or other factors.~~

~~6 For additional sensitivity analyses, the entity should consider disclosing the following, per the Task Force on Climate- Related Financial Disclosures (TCFD) Recommendations Report Figure 8 as well as the Implementing the Recommendations of the TCFD Report, Section E:~~

~~6.1 The alternative scenarios used, including other 2°C or lower scenarios~~

~~6.2 Critical input parameters, assumptions and analytical choices for the climate-related scenarios used, particularly as they relate to key areas such as policy assumptions, energy deployment pathways, technology pathways and related timing assumptions~~

~~6.3 Time frames used for scenarios, including short-, medium- and long-term milestones (for example, how organisations consider timing of potential future implications under the scenarios used)~~

EM-EP-420a.2. Estimated carbon dioxide emissions latent ~~embedded~~ in proved petroleum ~~hydrocarbon~~ reserves

1 An ~~The~~ entity shall ~~calculate and~~ disclose an estimate of the carbon dioxide emissions latent ~~embedded~~ in its proved petroleum ~~hydrocarbon~~ reserves in metric tonnes of carbon dioxide equivalent (CO_2-e).

1.1 This disclosure is an estimate of the maximum latent carbon dioxide emissions and excludes quantities determined using alternative scenarios of ~~estimate applies a factor for potential CO_2 only and does not include an estimate for all~~ potential greenhouse gas emissions, such as non-fuel uses in petrochemicals or lubricants production.~~, as these are dependent on downstream use (for example, utility electricity generation, industrial heating and electricity generation, residential heating and cooling, transportation, or use in petrochemicals, agrochemicals, asphalt and lubricants).~~

2 Estimated latent ~~potential~~ carbon dioxide emissions from proved petroleum ~~hydrocarbon~~ reserves is ~~shall be~~ calculated using ~~according to~~ the following formula~~, derived from Meinshausen et al.~~:

2.1 E = R × V × C, in which emissions (E) = reserves (R) × net caloric value (V) × carbon content (C), such that: ~~where:~~

2.1.1 E = the latent carbon dioxide ~~are the potential~~ emissions in CO_2-e; ~~kilogrammes of carbon dioxide (kg CO_2);~~

2.1.2 R = ~~are~~ the mass of proved petroleum reserves ~~in gigagrams (Gg)~~;

2.1.3 V = ~~is~~ the net calorific value in units of energy produced ~~terajoules~~ per unit of mass of proved petroleum reserves~~gigagram (TJ/Gg)~~; and

2.1.4 C = ~~is the effective~~ the carbon content (carbon dioxide emission factor in mass of ~~kilogrammes~~ CO_2 per unit of energy produced). ~~terajoule (kg/TJ).~~

~~3 In the absence of data specific to the entity's hydrocarbon reserves, carbon content shall be calculated using default data for each major hydrocarbon resource published by the Intergovernmental Panel on Climate Change (IPCC) in its *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.~~

~~3.1 The entity shall use default carbon content values per unit of energy listed in IPCC Table 1.3 Default Values of Carbon Content, Volume 2: Energy, Chapter 1.~~

~~3.2 The entity shall use calorific values per weight of hydrocarbon contained in IPCC Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1.~~

3 ~~4~~ An ~~The~~ entity shall use the same engineering estimates used to determine the mass ~~weight~~ of its proved petroleum ~~hydrocarbon~~ reserves that were used in preparing the entity's related financial statements or other general purpose financial reports to the extent possible, in accordance with the requirements of IFRS Accounting Standards or other generally accepted accounting principles or practices. ~~in gigagrams.~~

4 ~~5~~ For other assumptions required to estimate the carbon content of an entity's petroleum ~~hydrocarbon~~ reserves, the entity shall use ~~rely on~~ guidance from the IPCC, the Greenhouse Gas Protocol or the International Energy Agency ~~(IEA)~~.

EM-EP-420a.3. (1) Amount invested in renewable energy and (2)~~,~~ revenue generated by renewable energy sales

1 An ~~The~~ entity shall disclose (1) the total amount spent in the reporting period, including amounts capitalised in the entity's financial statements and amounts expensed including ~~capital and~~ research and development focused on ~~expenditures, on~~ renewable or alternative energy sources.

~~1.1 Such disclosure generally corresponds to the renewable energy technology areas per C-OG 9.6 of the CDP Climate Change Questionnaire.~~

2 An ~~The~~ entity shall disclose (2) the revenue ~~sales~~ generated from renewable energy sources.

~~2.1 Such disclosure generally corresponds to the renewable energy strategic development areas Section C4.5a of the CDP Climate Change Questionnaire~~

3 Renewable energy is defined as energy from sources that are capable of being replenished quickly through ecological cycles, such as geothermal, wind, solar, hydro and biomass.

3.1 For the purposes of this disclosure, ~~the scope of~~ renewable energy from biomass sources is limited to materials certified to a third-party standard. ~~(for example, Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification or American Tree Farm System), materials considered 'eligible renewables' according to the Green-e Energy National Standard.~~

3.1.1 The entity shall disclose the third-party certifications it uses for its biomass sources. ~~consider the Green-e Energy National Standard as a normative reference; thus, any updates to the Standard made year-on-year shall be considered updates to this guidance.~~

4 ~~The entity shall consider the CDP Climate Change Questionnaire a normative reference; thus, any updates made year-on-year shall be considered updates to the guidance.~~

EM-EP-420a.4. Description of how climate-related risks and opportunities influence capital strategy and investments ~~Discussion of how price and demand for hydrocarbons or climate regulation influence the capital expenditure strategy for exploration, acquisition and development of assets~~

1 An ~~The~~ entity shall disclose how climate-related risks and opportunities ~~discuss how projections for price and demand for hydrocarbon products and the path of climate regulation~~ influence its ~~the entity's capital expenditure (CAPEX)~~ investment, maintenance and disposal plans. ~~strategy.~~

1.1 In accordance with paragraph 16(c)(i) of IFRS S2, the disclosure includes information about the entity's plans for capital expenditure, major acquisitions and divestments, joint ventures, business transformation, innovation, new business areas and asset retirements.

~~This discussion should include the entity's projections and assumptions about future hydrocarbon prices and the likelihood that various price and demand scenarios occur.~~

2 In accordance with paragraph 22 of IFRS S2, the disclosure includes information about the entity's strategy and the resilience of its strategy to climate-related changes, developments and uncertainties considering its identified climate-related risks and opportunities. Specifically, the entity shall disclose:

~~The entity shall discuss the implications of how price and demand scenario planning (EM-EP-420a.1) may affect decisions to explore, acquire and develop new reserves.~~

2.1 an assessment of its capacity to adjust or adapt its strategy and business model to climate change over the short, medium and long term;

2.2 the availability of, and flexibility in, its existing financial resources to respond to the effects on current and planned investments informed by the entity's climate-related scenario analysis;

2.3 an evaluation of new investments it considers as potential market transition opportunities, such as renewable energy sources, carbon capture and storage, or hydrogen production and distribution; and

2.4 an evaluation of significant areas of uncertainty considered in its assessment of its climate resilience.

3 The disclosure includes a description of ~~entity may discuss~~ factors that could reasonably be expected to ~~materially~~ influence its investment ~~CAPEX~~ decision making, including: ~~which may include:~~

3.1 information about jurisdictional or industry climate-related regulations that could ~~How the scope of climate change regulation—such as which countries, regions or industries are likely to be affected—may~~ influence its investment in ~~the type of hydrocarbon on which the entity focuses its~~ exploration and development; and

3.2 information about the extent to which the future returns on capital expenditure are expected to be affected by possible effects of climate-related regulation on the price or demand for petroleum. ~~Its view of the alignment between the time horizon over which price and demand for hydrocarbons may be affected by climate regulation and time horizons for returns on capital expenditures on reserves~~

~~3.3 How the structure of climate regulation—a carbon tax versus cap-and-trade—may differently affect price and demand, and thus the entity's capital expenditure decision making~~

4 The disclosure includes information about how regulatory ~~entity may discuss how these~~ trends affect the entity's investment decision-making, including the entity's: ~~decision-making in the context of various types of reserve expenditures, including development of assets, acquisition of properties with proved reserves, acquisition of properties with unproved reserves, and exploration activities.~~

4.1 exploration activities and the development of new assets;

4.2 acquisition of new proved or unproved petroleum reserves;

4.3 expansion of existing assets; and

4.4 investments in renewable energy or research and development in technologies to improve the entity's resilience to climate change transition risks.

~~4.1 The entity shall discuss capital expenditures, regardless of the accounting method it uses (full cost or successful efforts).~~

Business Ethics ~~& Transparency~~

Topic Summary

Managing business ethics and maintaining ~~an appropriate level of~~ transparency in payments to governments or individuals are serious concerns for exploration and production ~~significant issues for Exploration & Production (E&P)~~ entities. Relationships with governments are especially important means by which entities can ~~to entities in the E&P industry since entities compete for~~ access ~~to~~ oil and gas reserves. Anti-bribery ~~Anti-corruption, anti-bribery,~~ and payments-transparency law and regulatory ~~payments transparency laws and initiatives globally create regulatory~~ mechanisms ~~to~~ reduce the risk of corruption. ~~misconduct. Violations of these could result in significant one-time costs or higher compliance costs, whereas successful compliance with such regulations could avoid adverse outcomes. Enforcement of these laws could affect an entity's social licence to operate.~~ Entities operating ~~with significant reserves or operations~~ in corruption-prone countries could face increased risk of criminal misconduct and regulatory non-compliance. An entity's ~~risks. Entities must ensure their~~ governance structures and business practices can be used to monitor, manage and mitigate ~~reduce~~ the risks associated with corruption and wilful or unintentional participation in illegal or unethical payments, or with gifts to government officials or private individuals. While non-compliant entities can face steep penalties and additional barriers to doing business, compliant entities can avoid such issues, helping maintain their social licence to operate.

Metrics

EM-EP-510a.1. Revenue ~~Percentage of (1) proved and (2) probable reserves~~ in countries that have the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index

1 An ~~The~~ entity shall disclose the revenue recognised from operations and activities ~~(1) the percentage of its proved reserves, by volume,~~ located in the countries with the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index (CPI).

~~1.1~~ ~~The percentage of proved reserves shall be calculated as the quantity (volume) of proved reserves located in countries that have the lowest 20 rankings in Transparency International's CPI divided by the total quantity (volume) of proved reserves.~~

~~2~~ ~~The entity shall disclose (2) the percentage of its probable reserves, by volume, located in the countries with the 20 lowest rankings in Transparency International's CPI.~~

~~2.1~~ ~~The percentage of probable reserves shall be calculated as the quantity (volume) of probable reserves located in countries that have the lowest 20 rankings in Transparency International's CPI divided by the total quantity (volume) of probable reserves.~~

1.1 ~~3~~ The 20 lowest numerical ranks are ~~shall be~~ used to generate the country rankings. ~~scope of countries.~~ Because more than one country can share a single rank, the rankings can ~~scope may~~ include more than 20 countries.

1.2 Revenue related to operations and activities includes all revenue recognised by the entity from the transfer of promised goods produced or sold or services provided in countries with low CPI rankings.

2 ~~4~~ The entity shall use the latest ~~most current~~ version of the CPI at the reporting date.

3 ~~5~~ An ~~The~~ entity shall include information about its operations and activities ~~may discuss operations~~ located in countries in the 20 lowest ~~with low~~ rankings in the CPI ~~index~~ but that present low business ethics risks. The entity shall also include information about ~~; and may provide similar discussion for~~ operations located in countries not in ~~that do not have one of~~ the 20 lowest rankings if the entity determines them to ~~in the index but that~~ present unique or high business ethics risks.

~~6 The entity shall follow guidance published in the Society of Petroleum Engineers' (SPE) Petroleum Resources Management System (PRMS) or the applicable jurisdictional equivalent for the classifying of reserves as proved or probable.~~

EM-EP-510a.2. Description of the management systems ~~system~~ for the prevention of corruption and bribery throughout the value chain

1 An ~~The~~ entity shall disclose information about ~~describe~~ its management systems ~~system~~ and due diligence practices ~~procedures~~ for assessing and managing corruption and bribery risks within the scope of its own operations and those associated with business partners in its value chain.

1.1 Business partners ~~may~~ include customers, suppliers, contractors, subcontractors and joint arrangement partners.

1.2 Relevant aspects of a management system include~~, if relevant~~:

1.2.1 employee awareness programmes;

1.2.2 internal mechanisms for reporting and following up on suspected violations;

1.2.3 anti-corruption policies; and

1.2.4 application of the Extractive Industry Transparency Initiative ~~(EITI)~~ Standard, including the ~~which may include~~ provisions related to beneficial ownership and politically exposed persons, licences and contracts, social expenditures, project-level payments, subnational payments, data accessibility and multi-stakeholder engagement.

2 The disclosure includes information about the entity's ~~entity may discuss its~~ implementation of the following organisational guidelines, as applicable:

2.1 Organisation for Economic Co-operation and Development ~~(OECD)~~ anti-corruption guidelines;

2.2 International Chamber of Commerce ~~(ICC)~~ *Rules of Conduct and Recommendations to Combat Extortion and Bribery*, 2005;

2.3 Transparency International *Business Principles for Countering Bribery*, 2013;

2.4 United Nations Global Compact 10th Principle;~~ and~~

2.5 World Economic Forum ~~(WEF)~~ Partnering Against Corruption Initiative; and ~~(PACI)~~.

2.6 comparable applicable jurisdictional law and regulation related to prevention of corruption and bribery.

3 The disclosure includes information about any applicable jurisdictional law or regulation ~~entity may discuss laws or regulations~~ related to payments transparency to which the entity ~~it~~ is subject.

Management of the Legal & Regulatory Environment

Topic Summary

~~The~~ Exploration and production entities are ~~& Production (E&P) industry is~~ subject to numerous sustainability-related regulations and a ~~rapidly~~ changing regulatory environment. Entities ~~in the industry~~ regularly participate in and seek to influence the regulatory and legislative process on a wide variety of environmental and societal issues, whether ~~, and they may do so~~ directly or through representative industry associations. ~~representation by an industry association.~~ Entities might ~~may~~ participate in these processes to ensure industry views are represented in the development of regulations affecting the industry, but ~~as well as to represent shareholder interests. However,~~ such attempts to influence environmental law or regulation could adversely affect ~~laws and regulations may have an adverse effect on~~ entities' reputations with stakeholders and could ultimately affect an ~~the~~ entity's ability to maintain its social licence to operate. Entities that can balance these tensions will likely ~~may~~ be better positioned to respond to medium- to long-term ~~medium-to-long-term~~ regulatory developments.

Metrics

EM-EP-530a.1. Description of entity ~~Discussion of corporate~~ positions related to government regulations or policy proposals ~~that address environmental and social factors~~ affecting the industry

1 An ~~The~~ entity shall disclose information about its strategy and efforts to influence ~~identify risks and opportunities related to~~ legislation, regulation or rule-making (the legal and regulatory environment) ~~(hereafter referenced collectively as the 'legal and regulatory environment')~~ associated with environmental and social factors that could reasonably be expected to affect the entity's prospects. ~~may have significant financial consequences.~~

1.1 The disclosure includes information about current, ~~scope shall include existing,~~ emerging~~,~~ and anticipated law or regulation related to environmental and social factors in the jurisdictions where the entity operates. ~~known future risks and opportunities.~~

~~1.2~~ ~~The scope shall include risks and opportunities that exist domestically and internationally.~~

1.2 ~~1.3~~ Environmental ~~The regulatory environment related to relevant environmental~~ and social factors are defined as matters related to ~~includes those factors related to~~ greenhouse gas emissions, other air emissions, water withdrawals and wastewater, waste and hazardous materials management, environmental impacts, ~~effluents, biodiversity impacts,~~ community impacts, workforce ~~employee~~ health and safety, ~~natural resource governance,~~ and business ethics ~~and payments transparency~~.

1.3 ~~2~~ Risks to the entity include the reputational risk incurred if its stance on legal and regulatory matters contradicts ~~Relevant risks to an entity may include risk of increased compliance costs, risk of policy reversal, risk of loss of financial incentives (for example, reduction or elimination of tax deductions associated with oil and gas exploration and production), risk to reputation because of the entity's stance and actions related to the legal and regulatory environment, risk that long-term strategy might be misaligned with the legal and regulatory environment, and risk of misalignment with~~ the expectations of its customers, investors and other stakeholders.

1.4 ~~3~~ Opportunities for the entity include ~~Relevant opportunities may include improved financial conditions (for example, through policies that incentivise oil and gas exploration and production activities),~~ improved community relations because of its stance on legal and regulatory matters. ~~the entity's stance and actions related to the legal and regulatory environment, and other benefits resulting from the entity's long-term strategic alignment with the legal and regulatory environment.~~

~~4 The entity shall discuss its efforts to manage risks and opportunities associated with each aspect of the legal and regulatory environment outlined in the SASB Oil & Gas – Exploration & Production Standard that are relevant to the entity's business and may have significant financial consequences.~~

~~5 The entity shall discuss its strategy to manage risks and opportunities associated with each aspect of the legal and regulatory environment it has identified, such as:~~

~~5.1 any changes it has made or plans to make to its business structure or business model;~~

~~5.2 the development of new technologies or services;~~

~~5.3 any changes it has made or plans to make to its operational processes, controls or organisational structures; and~~

~~5.4 influencing regulatory or legislative processes and outcomes through interactions with regulators, regulatory agencies, legislators, policymakers and any others involved in the regulatory or legislative process.~~

2 ~~6~~ If an entity's stance on influencing regulatory and legislative processes differs from the official stance of its representative industry organisations, the entity shall explain the ~~The entity may describe whether its stance aligns with or differs from the official stance of its industry organisations and discuss any relevant~~ reasons for ~~alignment or~~ divergence.

Critical Incident Risk Management

Topic Summary

The exploration and production ~~Exploration & Production (E&P)~~ industry faces significant hazards associated with exploration, development and production activities. Accidental releases of hydrocarbons or other hazardous substances can also have serious adverse consequences on an entity's workforce, the local environments in which it operates and local communities. ~~significant consequences for an entity's workforce, as well as negative social and environmental externalities.~~ In addition to effective process safety management practices, ~~many~~ entities that prioritise developing a culture of safety can ~~to~~ reduce the probability of accidents and other health and safety incidents. If accidents and other emergencies do occur, entities with a strong safety culture are often able to detect and respond to such incidents more effectively. A culture that engages with and empowers employees and non-employee workers ~~contractors to work with management~~ to safeguard their own health, safety and wellbeing ~~well-being~~ and prevent accidents could ~~may~~ help entities reduce production downtime, mitigate costs, improve ~~ensure~~ workforce productivity and maintain their social licence to operate.

Metrics

EM-EP-540a.1. Process safety event ~~Process Safety Event (PSE)~~ rates for loss of primary containment (1) events ~~Loss of Primary Containment (LOPC)~~ of greater consequence (Tier 1) and (2) events of lesser consequence (Tier 2)

1 An ~~The~~ entity shall separately disclose its (1) Tier 1 process safety events rates (PSE) rate and (2) Tier 2 PSE rate for events involving loss of primary containment (LOPC) of greater and lesser consequence, respectively. ~~(PSE), as defined by~~

1.1 The entity shall use the terms and definitions from the International Association of Oil & Gas Producers ~~(IOGP), for instances of loss of primary containment (LOPC) using terms and definitions from the IOGP~~ Report 456, *Process safety—recommended practice on key performance indicators*, 2023 (IOGP RP 456).

2 A PSE is defined as an unplanned or uncontrolled LOPC of any material including non-toxic and non-flammable materials from a process, or an undesired event or condition that, under different circumstances, could have resulted in an LOPC. ~~a LOPC from a process that is recordable and meets the Tier 1 definition.~~

~~2.1~~ ~~Drilling facilities are considered to be part of a process when operations are 'in-hole', defined as the 'period of time from when the drilling rig first spuds a well until drilling and completion activity has stopped and the well production tree (or well cap) is installed'.~~

~~2.2~~ ~~Land or marine vessels (trucks and ships) are considered to be part of a process if they are physically connected to a production facility.~~

3 An ~~A~~ LOPC is ~~a type of event~~ defined as an unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials ~~(for example, steam, hot water, nitrogen, compressed CO_2 or compressed air)~~.

3.1 ~~For drilling operations, any unplanned or uncontrolled release to the surface (seabed or ground level) should be included.~~ An unplanned or uncontrolled release is an LOPC irrespective of whether the material is released into the environment, secondary containment or into other primary containment not intended to contain the material released under normal operating conditions.

4 A Tier 1 PSE is defined as an ~~a~~ LOPC of the greatest consequence that results ~~, resulting~~ in one or more of the adverse ~~these~~ consequences defined in IOGP RP 456. ~~:~~

4.1 The Tier 1 PSE rate is calculated as the number of Tier 1 PSEs during the reporting period divided by the total hours worked multiplied by 1,000,000.

~~an employee, contractor or subcontractor experiencing a 'days away from work' injury or fatality;~~

~~4.2 a hospital admission or fatality of a third party;~~

~~4.3 an officially declared community evacuation or community shelter-in-place;~~

~~4.4 a fire or explosion resulting in greater than, or equal to, US$25,000 of direct cost to the entity;~~

~~4.5 a pressure relief device (PRD) discharge to atmosphere, whether directly or via a downstream destructive device, that results in one or more of these four consequences:~~

~~4.5.1 liquid carryover;~~

~~4.5.2 discharge to a potentially unsafe location;~~

~~4.5.3 an onsite shelter-in-place; or~~

~~4.5.4 public protective measures (for example, road closure) and a PRD discharge quantity greater than the threshold quantities specified in IOGP Report 456 in any one-hour period; or~~

~~4.6 a release of material greater than the threshold quantities specified in IOGP Report 456 in any one-hour period.~~

5 A Tier 2 PSE is defined as an LOPC of lesser consequence, not disclosed as a Tier 1 PSE, that results in one or more of the adverse consequences defined in IOGP RP 456.

5.1 The Tier 2 PSE rate is calculated as the number of Tier 2 PSEs during the reporting period divided by the total hours worked multiplied by 1,000,000.

~~The rate shall be calculated as (total Tier 1 PSE count / total hours worked) × 200,000.~~

6 ~~5.1~~ Total hours worked includes hours worked by both employees and non-employee workers. ~~contractors.~~

EM-EP-540a.2. Description of management systems used to identify and mitigate low-probability, serious accidents ~~catastrophic and tail-end risks~~

1 An ~~The~~ entity shall disclose information about the ~~describe its~~ management systems it uses ~~used~~ to identify and mitigate low-probability, serious accidents and emergencies that could have catastrophic effects on human health, local communities and the environment. ~~catastrophic and tail-end risks.~~

~~1.1~~ ~~The scope of catastrophic and tail-end risks shall include low-probability, high-impact accidents and emergencies that could have catastrophic effects on human health, local communities and the environment.~~

~~1.2~~ ~~The scope of the disclosure shall include how the entity integrates a culture of safety as well as management systems and technical controls to manage and mitigate catastrophic and tail-end risks.~~

1.1 ~~1.3~~ The information disclosed includes context about workforce ~~description may include employee~~ training, the use of operating procedures, hot work permitting, pre-start-up safety reviews, mechanical integrity programmes, management of change, incident investigation, emergency planning and response, audits and other management systems.

2 An ~~The~~ entity shall describe ~~include a description of~~ how critical risk management is coordinated among business partners (for example, contractors and subcontractors).

3 The information disclosed ~~scope of the disclosure~~ includes all phases of a project's life cycle, such as ~~exploration and production lifecycle phases, which may include~~ geological and seismic surveys, site surveys, exploratory drilling, appraisal drilling, site development, production and decommissioning.

Oil & Gas – Midstream

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards.~~ and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

Table of Contents

INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®). ~~Sustainable Industry Classification System® (SICS®).~~

SASB Standards include:

1. **industry ~~Industry~~ descriptions** — ~~—~~ which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry;~~.~~

2. **disclosure ~~Disclosure~~ topics** — ~~—~~ which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry;~~.~~

3. **metrics — ~~Metrics~~** ~~—~~ which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic;~~.~~

4. **technical ~~Technical~~ protocols** — ~~—~~ which provide guidance on definitions, scope, implementation and presentation of associated metrics; and~~.~~

5. **activity ~~Activity~~ metrics** — ~~—~~ which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS® . However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS~~® industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

Oil & Gas – Midstream ~~industry~~ entities transport or store natural gas, crude oil and refined petroleum products. Midstream natural gas activities involve gathering, transporting and processing natural gas from the wellhead, such as the removal of impurities, processing ~~production of~~ natural gas liquids, storage, pipeline transport and shipping, liquefaction, or regasification of liquefied natural gas. Midstream oil activities mainly involve transporting crude oil and refined products using pipeline networks, truck and rail, and marine transport on tankers or barges. Entities that operate storage and distribution terminals, as well as those that manufacture and install storage tanks and pipelines, are also part of this industry.

Note: this SASB Standard is intended for entities engaged in midstream oil and gas activities. Integrated oil and gas entity activities typically include upstream (exploration and production), midstream and downstream (refining and marketing)—and, in some cases, petrochemical and biofuels production. For content related to those other oil and gas value chain segments, refer to the Oil & Gas – Exploration & Production (EM-EP), Oil & Gas – Refining & Marketing (EM-RM), Chemicals (RT-CH) and Biofuels (RR-BI) SASB Standards.~~The standards discussed below are for 'pure-play' midstream activities or independent midstream entities. Integrated oil and gas entities may own or operate midstream operations, but they also are involved in the upstream operations of the oil and gas value chain and in the refining or marketing of products. Separate standards exist for the Oil and Gas Exploration & Production (EM-EP) and Refining & Marketing (EM-RM) industries. As such, integrated entities also should consider the disclosure topics and metrics from these standards.~~

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	(1) Gross ~~global~~ Scope 1 emissions, (2) percentage methane~~,~~ and (3) percentage subject to ~~covered under~~ emissions-limiting regulations	~~Quantitative~~	Metric tonnes (t) CO_2-e, Percentage (%)	EM-MD-110a.1
	Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets	~~Discussion and Analysis~~	n/a	EM-MD-110a.2
	(1) Total Scope 1 methane emissions		Metric tonnes (t) CH_4	EM-MD-110a.3
Air Quality	Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) volatile organic compounds ~~(VOCs),~~ and (4) particulate matter ~~(PM_{10})~~	~~Quantitative~~	Metric tonnes (t)	EM-MD-120a.1
Ecological Impacts	Description of environmental management policies and practices for operational facilities ~~active operations~~	~~Discussion and Analysis~~	n/a	EM-MD-160a.1
	Percentage of the total spatial footprint of operations in environmentally sensitive locations ~~land owned, leased, or operated within areas of protected conservation status or endangered species habitat~~	~~Quantitative~~	Percentage (%) ~~by land area~~	EM-MD-160a.2
	(1) Total spatial footprint of operations, (2) ~~Terrestrial land~~ area disturbed and (3) ~~,~~ ~~(2) percentage of impacted~~ area restored	~~Quantitative~~	Square kilometres (km^2) ~~Hectares (ha), Percentage (%)~~	EM-MD-160a.3
	(1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in environmentally sensitive locations, ~~Arctic,~~ (4) volume in bodies of water ~~sites with high biodiversity significance,~~ and (5) volume recovered	~~Quantitative~~	Number, Barrels (bbls)	EM-MD-160a.4
Workforce Health & Safety	(1) Number of fatalities and (2) total recordable incident rate for (a) employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training		Number, Rate, Hours (h)	EM-MD-320a.1
	Description of management systems used to foster a safe working environment		n/a	EM-MD-320a.2

continued...

...continued

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Competitive Behaviour	Total amount of expenses incurred from ~~monetary losses as a result of~~ legal proceedings associated with pipeline and storage regulations ~~[17]~~	~~Quantitative~~	Presentation currency	EM-MD-520a.1
Critical Incident Risk Management ~~Operational Safety, Emergency Preparedness & Response~~	~~(1) Number of reportable pipeline incidents, (2) percentage significant~~	~~Quantitative~~	~~Number, Percentage (%)~~	~~EM-MD-540a.1~~
	Percentage of (1) natural gas and (2) hazardous liquid pipelines inspected	~~Quantitative~~	Percentage (%)	EM-MD-540a.2
	Number of (1) accident releases and (2) non-accident releases ~~(NARs)~~ from rail transport ~~transportation~~ [18]	~~Quantitative~~	Number	EM-MD-540a.3
	~~Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project lifecycles~~	~~Discussion and Analysis~~	~~n/a~~	~~EM-MD-540a.4~~
	Process safety event rates for loss of primary containment (1) events of greater consequence (Tier 1) and (2) events of lesser consequence (Tier 2)		Rate	EM-MD-540a.5
	Description of management systems used to identify and mitigate low-probability, serious accidents		n/a	EM-MD-540a.6

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Total metric tonne-kilometres of: (1) natural gas, (2) crude oil~~,~~ and (3) refined petroleum products transported, by mode of transport[19]	~~Quantitative~~	Metric tonne (t) kilometres	EM-MD-000.A
Total operational pipeline		Kilometres (km)	EM-MD-000.B
Total number of (1) employees and (2) non-employee workers		Number	EM-MD-000.C
Total number of hours worked disaggregated by (1) employees and (2) non-employee workers		Number	EM-MD-000.D

[17] ~~Note to **EM-MD-520a.1** – The entity shall briefly describe the nature, context and any corrective actions taken because of monetary losses.~~

[18] ~~Note to **EM-MD-540a.3** – The disclosure shall include a discussion of processes, procedures, and strategies to manage non-accident and accident releases.~~

[19] Note to **EM-MD-000.A** – Relevant transport modes ~~of transport~~ include pipeline, tanker, barge, railcar ~~rail car,~~ and truck.

Greenhouse Gas Emissions

Topic Summary

The Oil & Gas – Midstream industry generates significant greenhouse gases and other air emissions from compressor engine exhausts, oil and condensate tank vents, natural gas processing, and fugitive emissions, in addition to emissions from mobile sources. Greenhouse gas ~~GHG~~ emissions contribute to climate change and create incremental regulatory compliance costs and risks for Oil & Gas – Midstream entities. At the same time, the management of methane fugitive emissions has emerged as a significant operational, reputational and regulatory risk. Financial effects on entities will vary depending on the specific location of operations and prevailing emissions regulations, and they include increased operating costs and ~~or~~ capital expenditures and ~~regulatory or~~ legal and regulatory penalties. Entities that capture and monetise emissions~~,~~ or cost-effectively reduce emissions by implementing innovative monitoring and mitigation efforts and fuel efficiency measures could realise ~~, may enjoy~~ substantial financial benefits. In turn, entities ~~Entities~~ can reduce their regulatory risks and improve their ~~realise~~ operational efficiencies ~~as regulatory and public concerns about air quality and climate change increase~~.

Metrics

EM-MD-110a.1. (1) Gross ~~global~~ Scope 1 emissions, (2) percentage methane~~,~~ and (3) percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose (1) its gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e) and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is the Intergovernmental Panel on Climate Change (IPCC) *Fifth Assessment Report* (2014).~~

~~1.2 Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

~~2 Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 ~~2.1~~ These emissions include Scope 1 greenhouse gas ~~direct~~ emissions ~~of GHGs~~ from stationary or mobile sources; these sources include equipment at processing facilities, ~~: equipment at well sites, production facilities, refineries, chemical plants,~~ terminals, pump stations, petroleum and refined products storage and ~~fixed site drilling rigs,~~ office buildings; and vehicles used for product and personnel transport (air, marine, road and rail). ~~, marine vessels transporting products, tank truck fleets, mobile drilling rigs, and moveable equipment at drilling and production facilities.~~

~~2.2 Acceptable calculation methodologies include those that conform with the GHG Protocol as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.2.1 *GHG Reporting Guidance for the Aerospace Industry* provided by the International Aerospace Environmental Group (IAEG)~~

~~2.2.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* published by the US Environmental Protection Agency (EPA)~~

~~2.2.3 India GHG Inventory Program~~

~~2.2.4 ISO 14064-1~~

~~2.2.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.2.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* provided by Entreprises pour l'Environnement (EpE)~~

~~2.3 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which generally is aligned with the 'financial control' approach defined by the *GHG Protocol* as well as:~~

~~2.3.1 The financial approach detailed in Chapter 3 of the Ipieca/API/OGP *Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions*, 2nd Edition, 2011 (hereafter, the "Ipieca GHG Guidelines")~~

~~2.3.2 The approach provided by the Climate Disclosure Standards Board (CDSB) that is described in REQ-07, 'Organisational boundary', of the *CDSB Framework for reporting environmental and social information*~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the percentage of gross ~~global~~ Scope 1 emissions from methane emissions.

2.1 ~~3.1~~ The percentage methane is ~~of gross global Scope 1 GHG emissions from methane emissions shall be~~ calculated as the Scope 1 methane emissions in metric tonnes CO_2-e ~~of carbon dioxide equivalents (CO_2-e)~~ divided by the gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions in metric tons CO_2-e. ~~of carbon dioxide equivalents (CO_2-e).~~

3 ~~4~~ An ~~The~~ entity shall disclose (3) the percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~4.1~~ ~~Examples of emissions-limiting regulations include:~~

~~4.1.1~~ ~~California Cap-and-Trade (California Global Warming Solutions Act)~~

~~4.1.2~~ ~~European Union Emissions Trading Scheme (EU ETS)~~

~~4.1.3~~ ~~Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

3.1 ~~4.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

3.1.1 ~~4.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

3.2 ~~4.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

~~5~~ ~~The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

~~6~~ ~~In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure programme) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

~~7~~ ~~The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

EM-MD-110a.2. Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall disclose: ~~discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1 The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2 Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3 The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4 The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5 The mechanism(s) for achieving the target; and~~

~~2.6 Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively or the target or base year has been reset, which may include energy efficiency efforts, energy source diversification, carbon capture and storage, or the implementation of leak detection and repair processes.~~

3 An entity shall disclose the targets it has set or is required to meet by law or regulation on reducing methane emissions.

~~The entity shall discuss the activities and investments required to achieve the plans or targets, and any risks or limiting factors that might affect achievement of the plans or targets.~~

4 ~~The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~4.1 Categories of emissions may include:~~

~~4.1.1 Flared hydrocarbons, including all emissions emitted from flares and associated with the management and disposal of unrecoverable natural gas via combustion of hydrocarbon products from routine operations, upsets or emergencies~~

~~4.1.2 Other combusted emissions, which may include: (1) emissions from stationary devices, which may include boilers, heaters, furnaces, reciprocating internal combustion engines and turbines, incinerators, and thermal/catalytic oxidisers, (2) emissions from mobile sources, which may include barges, ships, railcars and trucks for material transport; planes/helicopters and other entity vehicles for staff transport; forklifts, all-terrain vehicles, construction equipment and other off-road mobile equipment, and (3) other combusted emissions shall exclude those emissions disclosed as flared hydrocarbons~~

~~4.1.3 Process emissions, which include those emissions not combusted and are intentional or designed into the process or technology to occur during normal operations and result from some form of chemical transformation or processing step. Such emissions may include those from hydrogen plants, amine units, glycol dehydrators, fluid catalytic cracking unit and reformer generation, and flexi-coker coke burn~~

~~4.1.4 Vented emissions, including those emissions not combusted and are intentional or designed into the process or technology to occur during normal operations, and which may include: (1) venting from crude oil, condensate or natural gas product storage tanks, gas-driven pneumatic devices, gas samplers, chemical injection pumps, exploratory drilling, loading/ballasting/transit, and loading racks, (2) venting resulting from maintenance/turn-arounds, which may include decoking of furnace tubes, well unloading, vessel and gas compressor depressurising, compressor starts, gas sampling, and pipeline blowdowns, and (3) venting from non-routine activities, which may include pressure relief valves, pressure control valves, fuel supply unloading valves and emergency shut-down devices~~

~~4.1.5 Fugitive emissions, including those emissions which can be individually found and 'fixed' to make emissions 'near zero' and which may include emissions from valves, flanges, connectors, pumps, compressor seal leaks, Cata-Dyne® heaters, and wastewater treatment and surface impoundments~~

~~5 The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

~~6 Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

EM-MD-110a.3. (1) Total Scope 1 methane emissions

1 An entity shall disclose its total gross Scope 1 methane (CH_4) emissions, in metric tonnes.

1.1 Total methane emissions include methane emissions from all sources, including operational, idle or decommissioned facilities.

2 An entity shall disaggregate its total gross Scope 1 methane emissions disclosed between:

2.1 the consolidated accounting group (for an entity applying IFRS Accounting Standards, this group would comprise the parent and its consolidated subsidiaries); and

2.2 other investees excluded from the consolidated accounting group (for an entity applying IFRS Accounting Standards, these investees would include associates, joint ventures and unconsolidated subsidiaries).

3 An entity shall disclose whether it is a member of the United Nations Environment Programme Oil and Gas Methane Partnership 2.0 (OGMP 2.0) and, if so, the relevant OGMP 2.0 reporting level (Levels 1–5) that the entity has achieved.

3.1 If the entity or any of its investees whose methane emissions are included in the measurement of the entity's methane emissions are not OGMP 2.0 members, the entity shall disclose how it calculates methane emissions (based on emissions factors or direct measurement), the frequency of leak detection and repair inspections, the technologies used and the assets subject to inspection.

3.2 The entity shall disclose the protocols, frameworks or guidance used for the methane emissions calculations.

Air Quality

Topic Summary

Air emissions from Oil & Gas – Midstream entities include air pollutants from oil and gas processing and transport (marine, road, rail and pipeline), which can create significant and localised environmental or health risks. Of particular concern are sulphur dioxide, nitrogen dioxide and volatile organic compound ~~(VOC)~~ emissions. The financial consequences entities face from air emissions vary depending on the specific locations of operations and the prevailing air emissions regulations. Amid increasing regulatory and public concerns about air quality, active air quality management through technological and process improvements could allow entities to mitigate the adverse financial effects of regulations. Entities that improve their ~~could benefit from~~ operational efficiencies reduce their ~~that may result in a lower~~ cost structure over time.

Metrics

EM-MD-120a.1. Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) volatile organic compounds ~~(VOCs),~~ and (4) particulate matter ~~(PM_{10})~~

1 An ~~The~~ entity shall disclose its air pollutant emissions ~~of air pollutants~~, in metric tonnes for each ~~per~~ pollutant, released into the atmosphere.

1.1 The ~~scope of the~~ disclosure includes air pollutants associated with the entity's operational ~~direct air emissions resulting from all the entity's~~ activities and sources of emissions, which ~~may~~ include stationary or mobile sources~~, production facilities, office buildings and transportation fleets~~.

1.2 The entity shall define air pollutant emissions according to the applicable jurisdictional law or regulation.

1.3 If the entity is subject to more than one jurisdictional law or regulation that defines air pollutant emissions, the entity shall disclose whether and how variations between these frameworks affect the reported data.

1.4 If the entity defines and manages its air pollutant emissions using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

~~2 The entity shall disclose emissions consistent with Ipieca/API/OGP *Sustainability reporting guidance for the oil and gas industry*, as noted below.~~

2 ~~3~~ An ~~The~~ entity shall disclose its emissions of (1) nitrogen oxides ~~of nitrogen~~ (NO_x), reported as NO_x.

2.1 ~~3.1~~ The scope of NO_x includes NO and NO_2 but excludes nitrous oxide, N_2O.

2.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define NO_x emissions, the entity shall instead use the United Nations Economic Commission for Europe (UNECE) Convention, *Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes*, 1988 definition of NO_x emissions.

3 ~~4~~ An ~~The~~ entity shall disclose its emissions of (2) sulphur oxides ~~of sulphur~~ (SO_x), reported as SO_x.

3.1 ~~4.1~~ The scope of SO_x includes SO_2 and SO_3.

3.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define SO_x emissions, the entity shall instead use the UNECE Convention, Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes, 1985 definition of SO_x emissions.

4 ~~5~~ The entity shall disclose its emissions of (3) non-methane volatile organic compounds (VOCs).

4.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define VOC emissions, the entity shall instead use the UNECE Convention, Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes, 1991 definition of VOC emissions.

~~5.1 VOCs are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate and methane, that participates in atmospheric photochemical reactions, except those designated under applicable jurisdictional laws or regulations as having negligible photochemical reactivity.~~

~~5.2 If applicable regulatory definitions of VOCs conflict with this definition, the entity may define VOCs in accordance with the applicable jurisdictional legal or regulatory definition. In this case, the entity shall identify the source of the definition.~~

5 ~~6~~ An ~~The~~ entity shall separately disclose its emissions of (4) particulate matter (PM), disaggregated as (a) PM_{10} and (b) $PM_{2.5}$. ~~10 micrometres or less in diameter (PM_{10}), reported as PM_{10}.~~

5.1 ~~6.1~~ PM_{10} is defined as any airborne fine ~~finely divided~~ solid or liquid material with an aerodynamic diameter less than or equal to ~~a nominal~~ 10 micrometres.

5.2 $PM_{2.5}$ is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 2.5 micrometres.

6 ~~7~~ An ~~The~~ entity shall disclose ~~may discuss~~ the calculation method for its emissions disclosure, such as whether data is from: ~~continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

6.1 direct measurement of emissions (such as online analysers);

6.2 calculations based on site-specific data;

6.3 calculations based on published emission factors; or

6.4 estimation.

Ecological Impacts

Topic Summary

The processing, storage and transport (marine, road, rail and pipeline) of crude oil, natural gas and related products present ~~through a vast system of maritime transportation vehicles, pipelines, trains and trucks presents~~ considerable risks to the environment and local communities. Leaks, accidental discharges, pipeline rights of way ~~rights-of-way~~ and open easements over ecologically sensitive land could negatively impact ecosystems in several ways, including natural habitat loss and changes in species movement. To protect endangered species and ecologically sensitive areas, jurisdictional legal and regulatory authorities are demanding ~~may require~~ increasingly detailed and robust development and decommissioning plans that mitigate or remediate potential ecological impacts before issuing ~~prior to~~ project permits. Integrating this detailed planning early in project development can help entities avoid significant delays and incremental operational, compliance and capital costs. ~~approval. Together with regulatory compliance costs, these plans may require significant capital and operational expenditures.~~ As concerns over ecological impacts increase, greenfield and ~~existing~~ developed sites may be designated as protected environmentally sensitive locations. ~~areas under new laws or the enforcement of existing laws.~~ Entities that effectively manage ecological impacts could avoid associated ~~may avoid~~ project delays, remediation costs and litigation liabilities~~, and could gain easier access to new projects and sources of revenue~~.

Metrics

EM-MD-160a.1. Description of environmental management policies and practices for operational facilities ~~active operations~~

1 An ~~The~~ entity shall disclose information about ~~describe~~ its environmental management policies and practices ~~plans~~ implemented at operational facilities, including: ~~active operations, including, if relevant:~~

1.1 the life cycle ~~lifecycle~~ stages to which the plans apply, such as~~:~~ land acquisition and surveying, development and ~~pipeline~~ construction, revegetation, ~~pipeline~~ operations, closure, site decommissioning, removal~~,~~ and restoration;

1.2 the types of ecological impacts included in ~~topics addressed by~~ the plans, such as ecological and biodiversity impacts, waste generation, noise, emissions to air, discharges to water, spill prevention, natural resource consumption and hazardous chemical usage;

1.3 whether the entity integrates an environmental mitigation hierarchy into its project development and operations, such as using the 2020 Science Based Targets Network's *Initial Guidance for Business* AR3T Action Framework or the 2015 Cross Sector Biodiversity Initiative's *A Cross-sector Guide for Implementing the Mitigation Hierarchy*;

1.4 the underlying definitions and references for its plans, including whether they originate from ~~are~~ codes, guidelines, standards or regulations; and

1.5 ~~1.4~~ whether ~~they were developed by~~ the entity, an industry organisation, a third-party organisation (for example, a non-governmental organisation), a governmental agency or some combination of these groups developed the environmental management policies and practices.

~~2~~ ~~The scope of the disclosure includes all terrestrial and offshore operations in which the entity is involved as an operator, partner or contractor and that are in the exploration, development, production or decommissioning phases.~~

~~3~~ ~~If applicable and relevant, the entity shall describe differences between policies and practices in terrestrial areas and in marine areas.~~

2 ~~4~~ If environmental management policies and practices vary ~~differ~~ significantly by activity, by location or by type of operation, then the entity shall describe the ~~relevant~~ differences ~~for each activity~~.

~~5~~ ~~If applicable and relevant, the entity shall describe specific policies and practices that apply to areas with protected conservation status or areas of critical habitat, which are defined by the International Finance Entity (IFC) Performance Standard 6,~~ ~~*Biodiversity Conservation and Sustainable Management of Living Natural Resources*~~ ~~as:~~

~~5.1~~ ~~areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered or Endangered species; (ii) habitat of significant importance to endemic or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species or congregatory species; (iv) highly threatened or unique ecosystems; or (v) areas associated with essential evolutionary processes.~~

3 ~~6~~ If the environmental management policies and practices do not apply to all the entity's operational facilities, ~~sites or operations,~~ it shall disclose ~~include~~ the percentage of sites to which they ~~were~~ applied at the reporting date.

4 ~~7~~ An ~~The~~ entity shall explain whether ~~disclose the degree to which~~ its policies and practices are aligned with the International Finance Corporation's (IFC) ~~IFC~~ *Performance Standards on Environmental and Social Sustainability*, 2012, including:

4.1 ~~7.1~~ IFC Performance Standard 1, *Assessment and Management of Environmental and Social Risks and Impacts*;

4.2 ~~7.2~~ IFC Performance Standard 3, *Resource Efficiency and Pollution Prevention*;

4.3 ~~7.3~~ IFC Performance Standard 4, *Community Health, Safety, and Security*; and

4.4 ~~7.4~~ IFC Performance Standard 6, *Biodiversity Conservation and Sustainable Management of Living Natural Resources*.

~~8~~ ~~Additional relevant references may include:~~

~~8.1~~ ~~Joint E&P/UNEP,~~ ~~*Environmental management in oil and gas exploration and production—An overview of issue and management approaches*~~~~, 1997; and~~

8.2 ~~World Bank Multistakeholder Initiative, *Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies*.~~

EM-MD-160a.2. Percentage of the total spatial footprint of operations in environmentally sensitive locations ~~land owned, leased, or operated within areas of protected conservation status or endangered species habitat~~

1 An ~~The~~ entity shall disclose the percentage of its total spatial footprint (area) of operational facilities located in environmentally sensitive locations at the reporting date. ~~calculate the percentage of the entity's land area (owned, leased or operated) located in sites with protected conservation status, plus the area of land located in endangered species habitat~~

1.1 The percentage is calculated as the area of the entity's spatial footprint of operational facilities located in environmentally sensitive locations divided by the entity's total spatial footprint of operations. ~~entity's total land area (owned, leased or operated).~~

1.1.1 The entity's spatial footprint of operations is defined as the measured area of its operational physical footprint in terrestrial, freshwater and marine ecosystems.

1.2 The disclosure includes land and bodies of water, such as wetlands, streams, rivers, lakes, navigable waterways and littoral or ocean environments, on any leasehold, concession or property that the entity leases, manages or owns and any rights of way or easements associated with them.

2 Environmentally sensitive locations are defined as areas where an entity's assets or activities interface with nature in areas deemed to be ecologically sensitive. Such locations are defined as:

2.1 being important for biodiversity;

2.2 having high ecosystem integrity;

2.3 exhibiting rapidly declining ecosystem integrity; or

2.4 being important for ecosystem service provision.

3 Environmentally sensitive locations include:

3.1 International Union for Conservation of Nature (IUCN) protected areas (categories I–VI);

3.2 Ramsar Wetlands of International Importance;

3.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;

3.4 UNESCO's Man and the Biosphere Programme's biosphere reserves 'core areas';

3.5 Natura 2000 sites;

3.6 Ocean+ Habitats 'Protected Areas' (marine and coastal);

3.7 a clearly defined geographical area, recognised, dedicated and managed, through legal or other effective means by applicable jurisdictional authorities, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (such as the protected areas listed in the World Database of Protected Areas and mapped on the Protected Planet website); or

3.8 an endangered species habitat where species on the IUCN Red List of Threatened Species that are classified as Critically Endangered or Endangered are known to reside.

3.8.1 Species reside in an area if they are resident, present during breeding or non-breeding season, or if they use the area for passage.

3.8.2 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.

4 An entity's spatial footprint of operations is located in an environmentally sensitive location if any part of that operational footprint is in an environmentally sensitive location.

~~2 Land is considered to be located in areas of protected conservation status if it is located within:~~

4.1 The disclosure includes information about operational facilities for which future operations have been formally announced and planned changes to facility boundaries are included in approved expansion plans.

~~2.1 International Union for Conservation of Nature (IUCN) Protected Areas (categories I–VI);~~

~~2.2 Ramsar Wetlands of International Importance;~~

~~2.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;~~

~~2.4 Biosphere Reserves recognised within the framework of UNESCO's Man and the Biosphere (MAB) Programme;~~

~~2.5 Natura 2000 sites; or~~

~~2.6 sites that meet the IUCN's definition of a protected area: 'A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.'~~[20]

~~2.6.1 These sites may be listed in the World Database of Protected Areas (WDPA) and mapped on Protected Planet.~~

~~3 Land is considered to be endangered species habitat if it is in or near areas where species on the IUCN Red List of Threatened Species that are classified Critically Endangered (CR) or Endangered (EN) are extant.~~

~~3.1 A species is considered extant in an area if it is a resident present during breeding or non-breeding season, or if it makes use of the area for passage.~~

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[20] ~~IUCN, *Guidelines for Applying Protected Areas Management Categories*, 2008, pp.8–9.~~

~~3.1.1 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.~~

~~4 For the purposes of this disclosure, 'near' is defined as within five kilometres (km) of the boundary of an area of protected conservation status or an endangered species habitat and the boundary area of the entity's facilities or operations.~~

~~5 The scope of land for which the entity shall provide disclosure includes that which it owns, leases or operates (for example, rights-of-way, easements and land concessions).~~

~~6 The entity separately may identify land in areas with additional ecological, biodiversity or conservation designations such as those listed by the Biodiversity A–Z resource prepared by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).~~

~~7 The entity may discuss land located in protected areas or endangered species habitats, but that presents low risk to biodiversity or ecosystem services; the entity may provide similar discussion for land located in areas with no official designation of high biodiversity value but that presents high risks to biodiversity or ecosystem services.~~

EM-MD-160a.3. (1) Total spatial footprint of operations, (2) ~~Terrestrial land~~ area disturbed and (3) ~~, (2) percentage of impacted~~ area restored

1 An ~~The~~ entity shall disclose (1) the total spatial footprint (area) of its operations ~~area of disturbed land~~ in square kilometres (km^2) at the reporting date. ~~hectares (ha). The scope of the disclosure includes land that is owned, leased or operated (for example, rights-of-way, easements and land concessions).~~

1.1 The total spatial footprint of the entity's operations includes the cumulative area disturbed during the current and prior periods by its operations that has not been restored.

1.2 The area disturbed is defined as the aggregate geographical area that has been subject to human activity that has changed the condition of the area, relative to an original reference state.

1.2.1 Human activity is defined as the entity's activities and operations that have physically disrupted, modified, covered, compacted, moved or otherwise altered the characteristics of terrestrial, freshwater aquatic or marine ecosystems from before such activity.

1.2.2 The entity's total spatial footprint of operations includes the area disturbed during the current period and continues to be the area disturbed in all subsequent reporting periods unless the area disturbed is restored.

1.2.3 For bodies of water, the disturbed area includes the bottom or seabed beneath the water's surface.

1.3 The disclosure includes information about the aggregate measured area of the entity's spatial footprint in terrestrial, freshwater aquatic or marine ecosystems (land, wetlands, riverine, navigable waterways, littoral or ocean) on any leasehold, concession or property that the entity leases, manages or owns, and any rights of way or easements associated with them.

1.4 ~~1.1~~ This disclosure includes all ~~shall be a cumulative total of all currently~~ active sites, recently decommissioned sites awaiting restoration and~~, or~~ sites being restored.~~, and is not limited to land newly disturbed during the reporting period.~~

~~1.2 Land shall no longer be considered disturbed once post-closure restoration and remediation efforts are substantially complete (even if monitoring is ongoing).~~

1.5 Area restored is defined as a previously disturbed area that has been restored according to applicable jurisdictional law or regulation.

1.6 If the jurisdiction in which the entity operates has no applicable law or regulation to define a previously disturbed area that has been restored, a restored area is defined as the cumulative geographical area that has been subject to human intervention to return a degraded, damaged or destroyed area or ecosystem to an approximation of an original reference state.

1.6.1 Ecological restoration is defined as re-establishing the ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original. Ecological restoration focuses on biodiversity conservation and ecological integrity.

1.6.2 Ecosystem restoration is defined as a restored area that demonstrates resilience to normal ranges of environmental stress and disturbance and interacts with contiguous ecosystems in terms of biotic and abiotic flows and cultural interactions. An ecosystem is restored when it contains sufficient biotic and abiotic resources to sustain itself structurally and functionally and can continue its development without further assistance or subsidy.

2 An entity shall disclose (2) the area disturbed by the entity's operations, in km^2, during the current reporting period.

3 ~~2~~ An ~~The~~ entity shall disclose (3) ~~(2)~~ the area previously disturbed by operations that has been ~~percentage of land area affected by operations that was~~ restored in km^2 during the reporting period.~~ At a minimum, restoration meets the Society for Ecological Restoration's definition: 'the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed'.~~

~~2.1 Restoration may be further defined by applicable jurisdictional laws or regulations, industry standards, or the entity's own guidelines.~~

~~2.2 The entity shall disclose the definition of restoration and accompanying practices it follows in its description of its best practice environmental management plan.~~

3.1 An area is no longer part of the entity's spatial footprint of operations once post-closure restoration and remediation efforts are complete as defined by applicable jurisdictional law or regulation (even if after-monitoring is necessary).

~~3 Relevant references may include:~~

~~3.1 Joint E&P Forum/UNEP, *Environmental management in oil and gas exploration and production – An overview of issue and management approaches*, 1997; and~~

~~3.2 World Bank Multistakeholder Initiative, *Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies*.~~

4 The disclosure includes information about any adjustments to the entity's total spatial footprint of operations, area disturbed or area restored resulting from acquisitions, mergers and divestments or disposals completed during the reporting period.

EM-MD-160a.4. (1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in environmentally sensitive locations, ~~Arctic,~~ (4) volume in bodies of water ~~sites with high biodiversity significance,~~ and (5) volume recovered

1 An ~~The~~ entity shall disclose (1) the total number and (2) volume (in barrels) of hydrocarbon spills consistent with the 2020 Ipieca *Sustainability reporting guidance for the oil and gas industry*.

1.1 The entity shall disclose all hydrocarbon spills greater than one barrel (1 bbl, or 159 litres) in volume.

1.2 The entity shall disclose spills that reached the environment~~,~~ and exclude spills contained within impermeable secondary containment.

2 The ~~Consistent with Ipieca/API/OGP *Sustainability reporting guidance for the oil and gas industry* (hereafter, 'Ipieca Guidance'), the~~ volume reported shall represent the ~~total~~ estimated quantity of hydrocarbons ~~amount~~ spilled that reached the environment and shall ~~that figure will~~ not be reduced by the quantity ~~amount of such hydrocarbon~~ subsequently recovered, evaporated or otherwise lost.

3 Spills ~~Consistent with Ipieca Guidance, the scope of releases~~ from operations and events include those from: ~~includes:~~

3.1 above-ground and below-ground facilities;

3.2 sabotage, earthquakes or other events outside operational control;

3.3 entity-owned and operated transport; and

3.4 leakage over time, which is counted once when ~~at the time~~ it is identified.

4 ~~The entity may disclose spills to soil and water separately. A spill that qualifies as a spill to both soil and water should be reported as a single spill to water, with the volume of the spill properly apportioned between soil and water.~~

4 ~~5~~ An ~~The~~ entity shall disclose (3) the volume of hydrocarbon spills, in barrels, ~~(in bbls)~~ that occurred in environmentally sensitive locations. ~~the Arctic, defined as the area north of the Arctic Circle at approximately 66° 33' north latitude.~~

5 Environmentally sensitive locations are defined as areas where an entity's assets or activities interface with nature in areas deemed to be ecologically sensitive. Such locations are defined as:

5.1 being important for biodiversity;

5.2 having high ecosystem integrity;

5.3 exhibiting rapidly declining ecosystem integrity; or

5.4 being important for ecosystem service provision.

6 Environmentally sensitive locations include:

6.1 International Union for Conservation of Nature (IUCN) protected areas (categories I–VI);

6.2 Ramsar Wetlands of International Importance;

6.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;

6.4 UNESCO’s Man and the Biosphere Programme’s biosphere reserves ‘core areas’;

6.5 Natura 2000 sites;

6.6 Ocean+ Habitats Protected Areas (marine and coastal);

6.7 a clearly defined geographical area, recognised, dedicated and managed, through legal or other effective means by applicable jurisdictional authorities, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (such as the protected areas listed in the World Database of Protected Areas and mapped on the Protected Planet website); or

6.8 an endangered species habitat in which species on the IUCN Red List of Threatened Species that are classified as Critically Endangered or Endangered are known to reside.

6.8.1 Species reside in an area if they are a resident, present during breeding or non-breeding season, or if they use the area for passage.

6.8.2 For the purposes of disclosure, ‘passage’ is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.

7 An entity’s hydrocarbon spills are located in environmentally sensitive locations if the spills reach any environmentally sensitive locations.

8 ~~6~~ An ~~The~~ entity shall disclose (4) the volume of spills in bodies of water, such as wetlands, streams, rivers, lakes, navigable waterways and littoral or ocean environments.~~(in bbls) at sites with a ‘high biodiversity significance’ as defined by the United Nations Environment Programme World Conservation Monitoring (UNEP-WCMC) Biodiversity Indicators for Site-based Impacts.~~

9 If environmentally sensitive locations and bodies of water categories overlap for the purposes of this disclosure, the entity shall avoid double-counting spill volumes. Instead, the entity shall attribute spill volumes involving overlapping categories to the environmentally sensitive locations.

10 ~~7~~ The ~~In accordance with Ipieca Guidance Indicator ENV-6, which defines recovered hydrocarbons, the~~ entity shall disclose (5) the volume of spills recovered ~~(in bbls)~~, ~~which is~~ calculated as the quantity of spilled hydrocarbons (in bbls) removed from the environment through ~~short-term~~ spill response activities, excluding:

10.1 ~~7.1~~ quantities ~~amounts~~ recovered during longer-term remediation at spill sites; and

10.2 ~~7.2~~ quantities ~~amounts~~ evaporated, burned or dispersed.

Workforce Health & Safety

Topic Summary

Oil & Gas – Midstream activities can involve the inherent and significant health and safety risks associated with processing and transporting crude oil, natural gas and refined petroleum products, working in harsh and remote environments, managing large transport fleets and working with heavy equipment. Additional health and safety protocols could be required to protect marginalised groups. An entity's ability to protect workforce health and safety, and to create a culture of safety and wellbeing for its workers, can prevent accidents, mitigate costs, reduce operational downtime and enhance productivity.

Metrics

EM-MD-320a.1. (1) Number of fatalities and (2) total recordable incident rate for (a) employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2 An entity shall separately disclose (2) its total recordable incident rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 An injury or illness is typically defined as a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid or loss of consciousness.

2.1.3 First aid is typically defined as emergency care or treatment for an ill or injured person before regular medical treatment aid can be provided, but jurisdictional definitions may vary.

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

4 The disclosure is limited to fatalities, work-related incidents and work-related illnesses.

4.1 Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 The work environment is the establishment and other locations where one or more workers are working or are present as a condition of their employment.

4.1.2 The work environment includes not only physical locations, but also the equipment or materials used during work.

4.2 Incidents that occur while a worker is travelling are work-related if, at the time of the injury or illness, the worker was engaged in work activities in the interest of the employer.

4.3 A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 An entity shall disclose (3) the average number of training hours provided to its workforce for health, safety and emergency preparedness management training.

5.1 Training includes topics such as the health, safety or emergency preparedness related to the occupational risks or hazards to which the workforce is reasonably likely to be exposed and to specific occupational risks or hazards.

5.1.1 Training includes technical health, safety and emergency management training required by applicable jurisdictional authorities related to occupational risks or hazards.

5.2 The average number of hours of health, safety and emergency response training is calculated as the total qualifying training hours provided to the workforce divided by the total workforce.

5.2.1 The total workforce is defined as the number of individual employees and non-employee workers the entity employs at the reporting date.

6 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

EM-MD-320a.2. Description of management systems used to foster a safe working environment

1 An entity shall disclose information about:

1.1 how it cultivates a safe working environment throughout its operations, avoids accidents and minimises long-term health risks to its workforce;

1.2 how it manages safety and coordinates emergency preparedness throughout its value chain, such as through technology, training, corporate culture, rules and guidelines enforcement, and regulatory compliance;

1.3 how it manages long-term health risks associated with operations, such as through use of personal protective equipment, testing and monitoring;

1.4 the safety management systems the entity uses to maintain a safe working environment, including the prevention of incidents, fatalities and illnesses;

1.5 leading indicators the entity has developed to monitor, manage or improve safety performance, such as near-miss reporting, workforce engagement programmes, hazard reduction, emergency drills or safety-related compliance rates; and

1.6 the implementation of these safety management systems including progress towards tracking safety and health performance, and obtaining third-party verification of the systems' efficacy.

2 An entity shall describe how workforce safety management and emergency preparedness are coordinated among business partners (for example, contractors and subcontractors).

Competitive Behaviour

Topic Summary

Oil & Gas – Midstream entities ~~Entities~~ that own and operate ~~natural gas~~ pipelines, terminals and storage facilities face many ~~numerous~~ and constantly changing regulations in all aspects of their operations, including the rates charged, common carrier access and new facility ~~siting and~~ construction. Many pipelines and terminals are ~~enjoy~~ natural monopolies, and regulations ensure that the entities that own them do not abuse this position through unfair pricing, discriminatory service or ~~by~~ other means. Because of concerns about the effects of oil and gas market distortions on consumers and businesses, market manipulation regulations could also affect entities in the ~~Midstream~~ industry. Prospective rate changes, compensation payments or regulatory penalties for violating regulations governing competitive behaviour could ~~may~~ adversely affect entities. Midstream entities face uncertainty regarding their ability to change the rates charged, which could affect their ability to recover higher costs.

Metrics

EM-MD-520a.1. Total amount of expenses incurred from ~~monetary losses as a result of~~ legal proceedings associated with pipeline and storage regulations

1 An ~~The~~ entity shall disclose the total amount of expenses ~~monetary losses~~ incurred ~~during the reporting period~~ resulting from legal proceedings associated with pipeline, terminal and storage regulations related to competitive behaviour, which include fines and penalties ~~those~~ related to rates, pipeline access, price gouging or price fixing.

2 The legal proceedings ~~shall~~ include any adjudicative proceeding involving the entity, whether before a court, a regulator, an arbitrator or otherwise.

3 The expenses incurred ~~losses shall~~ include all amounts due ~~monetary liabilities~~ to the opposing party or to others (whether as the result of settlement, verdict after trial or otherwise), including fines, penalties and other ~~monetary~~ liabilities incurred ~~during the reporting period~~ as a result of civil actions (for example, civil judgments ~~judgements~~ or settlements), regulatory proceedings (for example, penalties, disgorgement or restitution) and criminal actions (for example, criminal judgments ~~judgements~~, penalties or restitution) brought by any other entity (for example, governmental, business or individual).

4 The expenses incurred ~~scope of monetary losses shall~~ exclude legal costs and other fees ~~and expenses incurred by~~ the entity incurs in its defence.

~~5 The scope of the disclosure shall include legal proceedings associated with the enforcement of applicable jurisdictional laws or regulations.~~

~~Note to **EM-MD-520a.1**~~

5 ~~1~~ The entity shall briefly describe the type ~~nature~~ (for example, judgment ~~judgement~~ or order issued after trial, settlement, guilty plea, deferred prosecution agreement or non-prosecution agreement) and context (for example, price fixing or pipeline access) of all expenses incurred ~~monetary losses~~ resulting from legal proceedings.

6 ~~2~~ The entity shall describe any corrective actions implemented in response to the legal proceedings. Such actions ~~This may~~ include specific changes in operations, management, processes, products, business partners, training or technology.

Critical Incident Risk Management ~~Operational Safety, Emergency Preparedness & Response~~

Topic Summary

Entities in the Oil & Gas – Midstream industry operate a vast network of assets at risk of spills and accidents. Any incident that results in unintended hydrocarbon releases could have severe impacts on the environment, employees and local communities. Because of these concerns, ~~applicable~~ jurisdictional legal and regulatory authorities could ~~may~~ implement new safety regulations related to pipeline and rail operations. Significant mishaps typically ~~events may~~ result in large one-time costs from fines and corrective actions, and contingent liabilities for site remediation or legal damages. These factors also could impair an entity's social licence to operate. An ~~As demonstrated by investigations of past incidents, an~~ entity that develops a strong safety culture and creates ~~establishes~~ a thorough and systematic approach to safety and risk management can ~~may~~ minimise such risks. Robust ~~This includes~~ emergency preparedness and response processes and operational integrity, including clear coordination with ~~within the entity and in its external relationships with~~ contractors, are prioritised in a strong safety culture.

Metrics

~~EM-MD-540a.1. (1) Number of reportable pipeline incidents, (2) percentage significant~~

~~1 The entity shall disclose (1) the total number of reportable pipeline accidents and incidents, including those associated with transportation of hazardous liquid systems and those associated with gas transmission, gathering and distribution.~~

~~2 Reportable accidents associated with hazardous liquid pipeline systems are defined as:~~

~~2.1 failure in a pipeline system in which there was a release of hazardous liquid in transit resulting in:~~

~~2.1.1 explosion or fire not intentionally set by the operator;~~

~~2.1.2 release of 19 litres or more of hazardous liquid, except for a release of less than five barrels (795 litres) resulting from a pipeline maintenance activity, provided the release is:~~

~~2.1.2.1 not otherwise reportable under applicable jurisdictional laws or regulations;~~

~~2.1.2.2 not one resulting in pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines;~~

~~2.1.2.3 confined to entity property or pipeline right-of-way; or~~

~~2.1.2.4 cleaned up promptly.~~

~~2.2 death of any person;~~

2.3 ~~personal injury necessitating hospitalisation; or~~

2.4 ~~estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others (or both), exceeding jurisdictionally defined property damage thresholds for pipeline incident/accident reporting in the local currency.~~

3 ~~Incidents associated with gas transmission, gathering and distribution are defined as any of these events:~~

3.1 ~~an event that involves a release of gas from a pipeline, or of liquefied natural gas (LNG), liquefied petroleum gas, refrigerant gas, or gas from an LNG facility, and results in:~~

3.1.1 ~~a fatality or an injury necessitating in-patient hospitalisation;~~

3.1.2 ~~estimated property damage exceeding jurisdictionally defined property damage thresholds for pipeline incident/accident reporting in the local currency, including loss to the operator and others (or both), but excluding cost of gas lost; or~~

3.1.3 ~~unintentional estimated gas loss of 85,000 cubic metres (3 million cubic feet) or more.~~

3.2 ~~an event that results in an emergency shutdown of an LNG facility (activation of an emergency shutdown system for reasons other than an actual emergency does not constitute an incident); or~~

3.3 ~~an event that is significant in the judgement of the operator, even though it did not meet the criteria of the above paragraphs of this definition.~~

4 ~~The entity shall disclose (2) the percentage of reportable accidents that were significant, in which a significant accident or incident is defined as one that resulted in:~~

4.1 ~~a fatality or an injury requiring in-patient hospitalisation;~~

4.2 ~~total costs exceeding jurisdictionally defined property damage thresholds for pipeline incident/accident reporting in the local presentation currency;~~

4.3 ~~highly volatile liquid releases of five barrels or more, or other liquid releases of 50 barrels or more; or~~

4.4 ~~liquid releases resulting in an unintentional fire or explosion.~~

5 ~~The entity shall disclose reportable incidents involving hazardous liquid pipelines and gas pipelines.~~

5.1 ~~A hazardous liquid pipeline is defined as all parts of a pipeline facility through which a hazardous liquid or carbon dioxide moves in transit, which may include line pipe, valves and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks.~~

5.2 ~~A gas pipeline is defined as all parts of a pipeline facility through which gas moves in transit, including pipe, valves and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders and fabricated assemblies.~~

EM-MD-540a.2. Percentage of (1) natural gas and (2) hazardous liquid pipelines inspected

1 An ~~The~~ entity shall separately disclose the percentage of its (1) natural gas and (2) hazardous liquid pipelines that it has inspected.

1.1 The percentage of natural gas pipelines inspected is calculated as the length of natural gas pipeline inspected divided by the total length of the entity's natural gas pipelines.

1.2 ~~1.1~~ The percentage of ~~(1)~~ hazardous liquid pipelines inspected is calculated as the length of hazardous liquid pipeline inspected divided by the total length of hazardous liquid pipelines.

~~1.2~~ ~~The percentage of (2) natural gas pipelines inspected is calculated as the length of natural gas pipeline inspected divided by the total length of natural gas pipelines.~~

1.3 Inspection activities for gas and liquid pipelines include:

1.3.1 patrolling and leakage surveys;

1.3.2 inspections of rights of way ~~rights-of-way~~ and navigable water crossings;

1.3.3 inspections of areas affected by extreme weather and natural disasters;

1.3.4 pipeline integrity assessments such as in-line inspection, pressure testing and direct assessment;

1.3.5 inspections of associated equipment (for example, relief devices, compressor stations, regulator stations, delivery stations, valves, pumping units and breakout tanks);

1.3.6 assessments to address threats of external corrosion, internal corrosion or stress corrosion cracking; and

1.3.7 other technology that an operator shows ~~demonstrates~~ can provide an equivalent understanding of the condition of the line pipe.

1.4 The entity shall disclose the technologies used for ~~used to conduct~~ these inspections.

~~2~~ ~~The entity shall disclose the percentage separately by natural gas pipelines and hazardous liquid pipelines.~~

2 ~~2.1~~ A natural gas pipeline is defined as all parts of a pipeline facility through which natural gas moves in transit, including pipe, valves ~~and other appurtenance attached to pipe~~, compressor units, metering stations, regulator stations, delivery stations, holders, other related equipment and any fabricated assemblies.

3 ~~2.2~~ A hazardous liquid pipeline is defined as all parts of a pipeline facility through which a hazardous liquid or carbon dioxide moves in transit, which ~~may~~ include ~~line~~ pipe, valves ~~and other appurtenances connected to line pipe~~, pumping units, ~~fabricated~~ assemblies associated with pumping units, metering and delivery stations, other related equipment and any fabricated assemblies ~~therein, and breakout tanks~~.

EM-MD-540a.3. Number of (1) accident releases and (2) non-accident releases ~~(NARs)~~ from rail transport ~~transportation~~

1 An ~~The~~ entity shall disclose (1) the total number of accident releases of hazardous materials ~~material~~ from rail transport ~~transportation~~ activities.

1.1 Hazardous materials are ~~'Hazardous material' is~~ defined as substances ~~a substance or material~~ that the applicable ~~relevant~~ jurisdictional authority has determined pose ~~can pose~~ an unreasonable risk to health, safety and property during transit ~~in commerce~~ (including explosives; radioactive materials; infectious substances; flammable or combustible liquids, solids~~,~~ or gases; toxic, oxidising or corrosive materials; and compressed gases) and that have ~~has~~ been designated as hazardous under an applicable jurisdictional law or regulation. ~~laws or regulations.~~

1.1.1 Hazardous ~~The scope of hazardous~~ materials includes hazardous substances, hazardous waste, ~~wastes,~~ marine pollutants, elevated temperature materials, and materials designated as hazardous by the applicable jurisdictional law or regulation ~~legal and regulatory framework~~ where the materials were ~~are~~ generated.

1.1.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous materials, the ~~The~~ entity shall ~~may~~ use ~~definitions of hazardous waste from~~ the United Nations Environment Programme ~~(UNEP)~~ *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* to define hazardous materials.

1.2 An accident release is defined as a release of hazardous materials required to be reported to applicable jurisdictional legal or regulatory ~~or governmental~~ agencies.

2 The entity shall disclose (2) the total number of non-accident releases (NARs) of hazardous materials ~~material~~ from rail transport ~~transportation~~ activities.

2.1 A NAR is defined as the unintentional release of ~~a~~ hazardous materials ~~material~~ while in transit, including loading and unloading while in railroad possession, ~~that is~~ not caused by a derailment, collision or other rail-related accident. ~~accidents.~~

2.1.1 NARs consist of leaks, splashes and other releases from improperly secured or defective valves, fittings~~,~~ and tank shells.

2.1.2 NARs include venting of non-atmospheric gases from safety relief devices.

2.1.3 NARs exclude normal safety venting of atmospheric gases such as carbon dioxide and nitrogen.

3 If an entity is subject to more than one jurisdictional law or regulation that defines hazardous materials, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity shall disclose the frameworks used to define hazardous material and the number of accident releases defined in accordance with each applicable framework.~~

4 ~~If relevant, the entity should provide a disaggregation of spills and releases by type, such as hydrocarbons and hazardous substances.~~

~~Note to **EM-MD-540a.3**~~

4 ~~1~~ An ~~The~~ entity shall disclose information about the ~~discuss its~~ processes and procedures it uses ~~used~~ to manage non-accident and accident releases.

5 ~~2~~ Processes ~~Relevant processes~~ and procedures include the use of management systems, safety technologies, workforce ~~employee~~ training, implementation of work shift limits and safe-arrival pay incentives.

~~EM-MD-540a.4. Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project lifecycles~~

~~1~~ ~~The entity shall discuss how it integrates a culture of safety and emergency preparedness throughout its value chain and project lifecycles.~~

~~1.1~~ ~~The scope of the discussion shall include joint management by the workforce and leadership, rules and guidelines, and use of technology.~~

~~1.2~~ ~~The entity shall include a description of how emergency preparedness is coordinated amongst business partners (for example, contractors and subcontractors).~~

~~1.3~~ ~~The scope of the midstream oil and gas project lifecycle includes, at a minimum, land acquisition (for example, right-of-way easement negotiations), site surveys, site development, pipeline installation, revegetation, operation, and decommissioning and removal.~~

~~2~~ ~~The discussion may broadly consider the entity's safety and emergency management systems, but it shall specifically address systems used to avoid and manage emergencies, accidents and incidents that could have catastrophic impacts on human health, local communities and the environment.~~

EM-MD-540a.5. Process safety event rates for loss of primary containment (1) events of greater consequence (Tier 1) and (2) events of lesser consequence (Tier 2)

1 An entity shall separately disclose its (1) Tier 1 process safety event (PSE) rate and (2) Tier 2 PSE rate for events involving loss of primary containment (LOPC) of greater and lesser consequence, respectively.

1.1 The entity shall use the terms and definitions from the International Association of Oil & Gas Producers Report 456, *Process safety—recommended practice on key performance indicators*, 2023 (IOGP RP 456).

2 A PSE is defined as an unplanned or uncontrolled LOPC of any material including non-toxic and non-flammable materials from a process, or an undesired event or condition that, under different circumstances, could have resulted in an LOPC.

3 An LOPC is defined as an unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials.

3.1 An unplanned or uncontrolled release is an LOPC irrespective of whether the material is released into the environment, secondary containment or into other primary containment not intended to contain the material released under normal operating conditions.

4 A Tier 1 PSE is defined as an LOPC of the greatest consequence that results in one or more of the adverse consequences defined in IOGP RP 456.

4.1 The Tier 1 PSE rate is calculated as the number of Tier 1 PSEs during the reporting period divided by the total hours worked multiplied by 1,000,000.

5 A Tier 2 PSE is defined as an LOPC of lesser consequence, not disclosed as a Tier 1 PSE, that results in one or more of the adverse consequences defined in IOGP RP 456.

5.1 The Tier 2 PSE rate is calculated as the number of Tier 2 PSEs during the reporting period divided by the total hours worked multiplied by 1,000,000.

6 Total hours worked includes hours worked by both employees and non-employee workers.

EM-MD-540a.6. Description of management systems used to identify and mitigate low-probability, serious accidents

1 An entity shall disclose information about the management systems it uses to identify and mitigate low-probability, serious accidents and emergencies that could have catastrophic effects on human health, local communities and the environment.

1.1 The information disclosed includes context about workforce training, the use of operating procedures, hot work permitting, pre-start-up safety reviews, mechanical integrity programmes, management of change, incident investigation, emergency planning and response, audits and other management systems.

2 An entity shall describe how critical risk management is coordinated among business partners (for example, contractors and subcontractors).

3 The information disclosed includes all phases of a project's life cycle, such as geological and seismic surveys, site surveys, exploratory drilling, appraisal drilling, site development, production and decommissioning.

Oil & Gas – Refining & Marketing

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards.~~ and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

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INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®).~~Sustainable Industry Classification System® (SICS®)~~~~.~~

SASB Standards include:

1. **industry** ~~**Industry**~~ **descriptions**— ~~—~~which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry;~~.~~

2. **disclosure** ~~**Disclosure**~~ **topics**— ~~—~~which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry;~~.~~

3. **metrics**—~~**Metrics**~~ ~~—~~which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic;~~.~~

4. **technical** ~~**Technical**~~ **protocols**— ~~—~~which provide guidance on definitions, scope, implementation and presentation of associated metrics; and~~.~~

5. **activity** ~~**Activity**~~ **metrics**— ~~—~~which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS®. However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

Oil & Gas – ~~–~~ Refining & Marketing (EM-RM) ~~(R&M)~~ entities refine petroleum products, market oil and gas products, or operate fuel ~~gas~~ stations. These activities ~~, all of which~~ comprise the downstream ~~operations of the~~ oil and gas value chain. The ~~types of refinery products and crude oil inputs influence the~~ complexity of the refining process used determines the grades of crude oil that can be used as inputs and the types of refined products that can be produced, with varying capital expenditure profiles and associated ~~varied expenditure needs and intensity of~~ environmental and social impacts.

Note: this SASB Standard is intended for entities engaged in downstream oil and gas activities. Integrated oil and gas entity activities typically include upstream (exploration and production), midstream (transportation, processing and storage) and downstream—and, in some cases, petrochemical and biofuels production. For content related to those other oil and gas value chain segments, refer to the Oil & Gas – Exploration & Production (EM-EP), Oil & Gas – Midstream (EM-MD), Chemicals (RT-CH) and Biofuels (RR-BI) SASB Standards. ~~The topics and metrics below are for 'pure-play' R&M activities or independent R&M entities. Integrated oil & gas entities conduct upstream operations and also are involved in the distribution, refining or marketing of products. Separate standards exist for the Oil & Gas - Exploration & Production (EM-EP) and Midstream (EM-MD) industries. As such, integrated entities also should consider the disclosure topics and metrics from those industries.~~

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	(1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations	~~Quantitative~~	Metric tonnes (t) CO_2-e, Percentage (%)	EM-RM-110a.1
	Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets	~~Discussion and Analysis~~	n/a	EM-RM-110a.2
Air Quality	Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) ~~particulate matter (PM_{10}), (4) H_2S, and (5)~~ volatile organic compounds ~~(VOCs)~~, (4) hazardous air pollutants and (5) particulate matter	~~Quantitative~~	Metric tonnes (t)	EM-RM-120a.1
	Production capacity ~~Number~~ of refineries in or near areas of dense population	~~Quantitative~~	Thousands of barrels per calendar day (MBPD) ~~Number~~	EM-RM-120a.2
Water Management	(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	Megalitres (ML), ~~Thousand cubic metres (m^3),~~ Percentage (%)	EM-RM-140a.1
	~~Number of incidents of non-compliance associated with water quality permits, standards, and regulations~~	~~Quantitative~~	~~Number~~	~~EM-RM-140a.2~~
	Total water discharged by (1) destination and (2) level of treatment		Megalitres (ML)	EM-RM-140a.3
Hazardous Materials Management	(1) Hazardous ~~Amount of hazardous~~ waste generated and ~~,~~ (2) hazardous waste ~~percentage~~ recycled	~~Quantitative~~	Metric tonnes (t)~~, Percentage (%)~~	EM-RM-150a.1
	(1) Number of underground storage tanks and ~~(USTs),~~ (2) number of ~~UST~~ releases requiring clean-up ~~clean up, and (3) percentage in jurisdictions with UST financial assurance funds~~	~~Quantitative~~	Number~~,~~ ~~Percentage (%)~~	EM-RM-150a.2

continued...

...continued

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Workforce Health & Safety	(1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~	~~Quantitative~~	Number, Rate, Hours (h) ~~Rate~~	EM-RM-320a.1
	Description ~~Discussion~~ of management systems used to foster a safe working environment ~~integrate a culture of safety~~	~~Discussion and Analysis~~	n/a	EM-RM-320a.2
Product Specifications & Clean Fuel Blends	Total revenue from ~~addressable market and share of market for~~ advanced biofuels and associated infrastructure	~~Quantitative~~	Presentation currency~~, Percentage (%)~~	EM-RM-410a.2
	(1) Net volume ~~Volumes~~ of renewable fuels produced for fuel blending~~: (1) net amount produced~~, (2) net volume of renewable fuels ~~amount~~ purchased and (3) the cost of compliance	~~Quantitative~~	Megalitres, Presentation currency ~~Barrels of oil equivalent (BOE)~~	EM-RM-410a.3
Pricing Integrity & Transparency	Total amount of expenses incurred from ~~monetary losses as a result of~~ legal proceedings associated with price fixing or price manipulation ~~[21]~~	~~Quantitative~~	Presentation currency	EM-RM-520a.1
Management of the Legal & Regulatory Environment	Description of entity ~~Discussion of corporate~~ positions related to government regulations or policy proposals ~~that address environmental and social factors~~ affecting the industry	~~Discussion and Analysis~~	n/a	EM-RM-530a.1
Critical Incident Risk Management	Process safety event ~~Process Safety Event (PSE)~~ rates for loss of primary containment (1) events ~~Loss of Primary Containment (LOPC)~~ of greater consequence (Tier 1) and (2) events of lesser consequence (Tier 2)	~~Quantitative~~	Rate	EM-RM-540a.1
	~~Challenges to Safety Systems indicator rate (Tier 3)~~	~~Quantitative~~	~~Rate~~	~~EM-RM-540a.2~~
	Measurement ~~Discussion of measurement~~ of Tier 3 and ~~Operating Discipline and Management System Performance through~~ Tier 4 key performance indicators ~~Indicators~~	~~Discussion and Analysis~~	n/a	EM-RM-540a.3

[21] ~~Note to **EM-RM-520a.1** – The entity shall briefly describe the nature, context and any corrective actions taken because of monetary losses.~~

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Refining throughput of crude oil and other feedstocks[22]	~~Quantitative~~	Millions of barrels ~~Barrels~~ of oil equivalent (MMBOE) ~~(BOE)~~	EM-RM-000.A
Total aggregate refinery production (nameplate) ~~Refining operating~~ capacity[23]	~~Quantitative~~	Thousands of barrels ~~Million barrels~~ per calendar day (MBPD)	EM-RM-000.B
Total number of (1) employees and (2) non-employee workers		Number	EM-RM-000.C
Total hours worked disaggregated by (1) employees and (2) non-employee workers		Hours	EM-RM-000.D

[22] Note to **EM-RM-000.A** – The total volume of crude oil and other feedstocks processed in the refinery system during the reporting period.

[23] Note to **EM-RM-000.B** – Nameplate capacity, also known as the rated capacity, nominal capacity, installed capacity, maximum effect or gross capacity, is the intended full-load sustained output of a facility. Nameplate capacity is the ~~Operating (or operable) capacity is the amount of~~ capacity that, at the beginning of the period, is categorised: in operation; not in operation and not under active repair, but capable of being placed in operation within 30 days; or not in operation but under active repair that can be completed within 90 days. ~~Operable capacity is the sum of the operating and idle capacity and is measured in barrels per calendar day.~~

Greenhouse Gas Emissions

Topic Summary

Refining and marketing ~~& Marketing (R&M)~~ operations generate significant ~~direct~~ greenhouse gas ~~(GHG)~~ emissions from a variety of sources. Emissions primarily consist of carbon dioxide and methane from stationary fossil fuel combustion for energy supply. Energy costs are a significant share of refinery operating costs. Greenhouse gases ~~GHGs~~ also are released from process emissions, fugitive emissions resulting from leaks, emissions from venting and flaring, and from non-routine events such as equipment maintenance. The energy intensity of production, and therefore the greenhouse gas ~~GHG~~ emissions intensity, can vary significantly depending on the type of crude oil feedstock used and refined product specifications. Entities that cost-effectively reduce greenhouse gas ~~GHG~~ emissions from their operations can improve ~~may capture~~ operational efficiencies. Such reductions also may mitigate the effects of increased fuel costs from regulations that limit—or put a price on—greenhouse gas ~~GHG~~ emissions.

Metrics

EM-RM-110a.1. (1) Gross ~~global~~ Scope 1 emissions and (2) ~~,~~ percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose its (1) gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e) and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014).~~

~~1.2 Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

~~2 Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 ~~2.1~~ These emissions include Scope 1 greenhouse gas emissions ~~direct emissions of GHGs~~ from stationary or mobile sources that ~~; these sources~~ include equipment at ~~well sites, production facilities,~~ refineries, chemical plants, terminals, petroleum and refined products storage, ~~fixed site drilling rigs,~~ office buildings and retail marketing locations; and vehicles used for product and personnel transport (marine, road and rail). ~~, marine vessels transporting products, tank truck fleets, mobile drilling rigs, and moveable equipment at drilling and production facilities.~~

~~2.2 Acceptable calculation methodologies include those that conform to the GHG Protocol as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.2.1 *GHG Reporting Guidance for the Aerospace Industry* published by the International Aerospace Environmental Group (IAEG)~~

~~2.2.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* published by the U.S. Environmental Protection Agency (EPA)~~

~~2.2.3 India GHG Inventory Program~~

~~2.2.4 ISO 14064-1~~

~~2.2.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.2.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* published by Entreprises pour l'Environnement (EpE)~~

~~2.3 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which is generally aligned with the 'financial control' approach defined by the GHG Protocol as well as:~~

~~2.3.1 The financial approach detailed in Chapter 3 of the Ipieca/API/OGP *Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions*, 2nd Edition, 2011 (hereafter, the 'Ipieca GHG Guidelines')~~

~~2.3.2 The approach provided by the Climate Disclosure Standards Board (CDSB) that is described in REQ-07, 'Organisational boundary,' of the *CDSB Framework for reporting environmental and social information*~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~3.1 Examples of emissions-limiting regulations include:~~

~~3.1.1 California Cap-and-Trade (California Global Warming Solutions Act)~~

~~3.1.2 European Union Emissions Trading Scheme (EU ETS)~~

~~3.1.3 Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

2.1 ~~3.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

2.1.1 ~~3.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

2.2 ~~3.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

~~4 The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

~~5 In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure programme) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

~~6 The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

EM-RM-110a.2. Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall shall disclose: ~~discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1 The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2 Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3 The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4 The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5 The mechanism(s) for achieving the target; and~~

~~2.6 Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively or the target or base year has been reset, which may include energy efficiency efforts, energy source diversification, carbon capture and storage, or the implementation of leak detection and repair processes.~~

3 An ~~The~~ entity shall disclose ~~discuss~~ activities and investments required to achieve its ~~the plans or~~ targets, and any risks or limiting factors that might affect achievement of those ~~the plans or~~ targets.

4 ~~The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~4.1 Categories of emissions sources may include:~~

~~4.1.1 Flared hydrocarbons, including all emissions emitted from flares and which are associated with the management and disposal of unrecoverable natural gas via combustion of hydrocarbon products from routine operations, upsets, or emergencies~~

~~4.1.2 Other combusted emissions, including, but not limited to: (1) emissions from stationary devices, including, but not limited to boilers, heaters, furnaces, reciprocating internal combustion engines and turbines, incinerators, and thermal/catalytic oxidisers, (2) emissions from mobile sources, including, but not limited to barges, ships, railcars, and trucks for material transport; planes/helicopters and other entity vehicles for staff transport; forklifts, all terrain vehicles, construction equipment, and other off-road mobile equipment, and (3) other combusted emissions shall exclude those emissions disclosed as flared hydrocarbons~~

~~4.1.3 Process emissions, including, but not limited to those emissions that are not combusted and are intentional or designed into the process or technology to occur during normal operations and are a result of some form of chemical transformation or processing step. Such emissions include, but are not limited to those from hydrogen plants, amine units, glycol dehydrators, fluid catalytic cracking unit and reformer generation, and flexi-coker coke burn~~

~~4.1.4 Vented emissions, including those emissions that are not combusted and are intentional or designed into the process or technology to occur during normal operations, and which include, but are not limited to: (1) venting from crude oil, condensate, or natural gas product storage tanks, gas-driven pneumatic devices, gas samplers, chemical injection pumps, exploratory drilling, loading/ballasting/transit, and loading racks, (2) venting resulting from maintenance/turn-arounds, including, but not limited to decoking of furnace tubes, well unloading, vessel and gas compressor depressurising, compressor starts, gas sampling, and pipeline blowdowns, and (3) venting from non-routine activities, including but not limited to pressure relief valves, pressure control valves, fuel supply unloading valves, and emergency shut-down devices~~

~~4.1.5 Fugitive emissions, including those emissions which can be individually found and 'fixed' to make emissions 'near zero' and which include, but are not limited to emissions from valves, flanges, connectors, pumps, compressor seal leaks, Cata-Dyne® heaters, and wastewater treatment and surface impoundments~~

~~5 The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

~~6 Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

Air Quality

Topic Summary

Non-greenhouse gas ~~(GHG)~~ air pollutants ~~emissions~~ from refining and marketing ~~Refining & Marketing (R&M)~~ operations ~~include air pollutants, which~~ can create significant and localised environmental or health risks. Specific emissions of concern include sulphur dioxide, nitrogen oxides, hydrogen sulphide, particulate matter and volatile organic compounds~~VOCs~~. Releases occur from stationary combustion sources, equipment maintenance and repair, storage vessels, flares and equipment leaks, and as a result ~~may also occur because~~ of accidents. Human health impacts and financial consequences could ~~may~~ be exacerbated if ~~the closer~~ a facility is close to dense population centres. Active management of the issue—through technological and process improvements—could help Oil & Gas – Refining & Marketing ~~may allow~~ entities reduce regulatory compliance risk ~~to mitigate the effect of regulations~~ and benefit from operational efficiencies that reduce operating ~~could result in reduced~~ costs.

Metrics

EM-RM-120a.1. Air pollutant emissions of ~~the following pollutants~~: (1) NO_x (excluding N_2O), (2) SO_x, (3) ~~particulate matter (PM$_{10}$), (4) H$_2$S, and (5)~~ volatile organic compounds ~~(VOCs)~~, (4) hazardous air pollutants and (5) particulate matter

1 An ~~The~~ entity shall disclose its air pollutant emissions ~~of air pollutants~~, in metric tonnes for each ~~per~~ pollutant, released into the atmosphere.

1.1 The ~~scope of the~~ disclosure includes air pollutants associated with the entity's operational ~~direct air emissions resulting from all the entity's~~ activities and sources of emissions, which ~~may~~ include stationary or mobile sources~~, production facilities, office buildings and transportation fleets~~.

~~2 The entity shall disclose emissions consistent with Ipieca/API/OGP *Sustainability reporting guidance for the oil and gas industry*, as noted below.~~

2 ~~3~~ An ~~The~~ entity shall disclose its emissions of (1) nitrogen oxides ~~of nitrogen~~ (NO_x), reported as NO_x.

2.1 ~~3.1~~ The scope of NO_x includes NO and NO_2 but excludes nitrous oxide, N_2O.

2.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define NO_x emissions, the entity shall instead use the United Nations Economic Commission for Europe (UNECE) Convention, Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes, 1988 definition of NO_x emissions.

3 ~~4~~ An ~~The~~ entity shall disclose its emissions of (2) sulphur oxides ~~of sulphur~~ (SO_x), reported as SO_x.

3.1 ~~4.1~~ The scope of SO_x includes SO_2 and SO_3.

3.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define SO_x emissions, the entity shall instead use the UNECE Convention, Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes, 1985 definition of SO_x emissions.

~~5 The entity shall disclose its emissions of (3) particulate matter 10 micrometres or less in diameter (PM_{10}), reported as PM_{10}.~~

~~5.1 PM_{10} is defined as any airborne finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal 10 micrometres.~~

~~6 The entity shall disclose (4) its emissions of hydrogen sulphide (H_2S).~~

4 ~~7~~ An ~~The~~ entity shall disclose its emissions of (3) ~~(5)~~ non-methane volatile organic compounds (VOCs).

4.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define VOC emissions, the entity shall instead use the UNECE Convention, Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes, 1991 definition of VOC emissions.

~~7.1 VOCs are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and methane, that participates in atmospheric photochemical reactions, except those designated under applicable jurisdictional laws or regulations as having negligible photochemical reactivity.~~

~~7.2 If applicable regulatory definitions of VOCs conflict with this definition, the entity may define VOCs in accordance with the applicable jurisdictional legal or regulatory definition. In this case, the entity shall identify the source of the definition.~~

5 An entity shall disclose its emissions of (4) hazardous air pollutants (HAPs).

5.1 HAPs are defined as pollutants known to cause adverse health or environmental effects.

5.1.1 HAPs include gases such as carbon monoxide, hydrogen chloride, hydrogen sulphide and polycyclic aromatic hydrocarbons or metals such as cadmium, chromium, lead, manganese and mercury.

5.2 For the purposes of this disclosure, HAPs exclude NO_x, SO_x, VOCs and particulate matter.

6 An entity shall separately disclose its emissions of (5) particulate matter (PM), disaggregated as (a) PM_{10} and (b) $PM_{2.5}$.

6.1 PM_{10} is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 10 micrometres.

6.2 $PM_{2.5}$ is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 2.5 micrometres.

7 ~~8~~ An ~~The~~ entity shall disclose ~~may discuss~~ the calculation method for its emissions disclosure, such as whether data is from: ~~continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

7.1 direct measurement of emissions (such as online analysers);

7.2 calculations based on site-specific data;

7.3 calculations based on published emission factors; or

7.4 estimation.

EM-RM-120a.2. Production capacity ~~Number~~ of refineries in or near areas of dense population

1 An ~~The~~ entity shall disclose the total production capacity (aggregate nameplate capacity) ~~total number~~ of its refineries ~~located~~ in or near areas of dense population. Total production capacity is measured in barrels per day of process capacity. ~~, which are defined as urbanised areas in the local jurisdiction.~~

1.1 Areas of dense population are defined as ‘urban centres’ identified in the Statistical Office of the European Union’s Degree of Urbanization (DEGURBA) database, publicly accessible on the Global Human Settlement Layer website.

1.1.1 ~~1.1~~ For areas not covered by DEGURBA, dense population is defined as ~~Generically, urbanised areas include densely~~ developed residential, commercial and other non-residential areas with a population greater than 50,000 in a contiguous region with a density of greater than 1,500 inhabitants per square kilometre. ~~The entity may refer to the United Nations Statistics Division list of the various national definitions for the word ‘urban’ in its *Demographic Yearbook 2005*, Table 6.~~

2 An entity’s refinery is defined as ‘in or near’ an area of dense population if any part of the refinery’s spatial footprint of operations (polygon data defining geospatial information relating to the boundaries of the facility) is in or ~~The scope of the disclosure includes refineries located in a census tract or block considered to be in an urbanised area or those with boundaries~~ within 49 kilometres of an urbanised area identified as an ‘Urban centre (City)’ in the DEGURBA database or identified using the definition set out in paragraph 1.1.1. ~~, which constitutes an exposed population likely to come into contact with a chemical during an accident depending on the exposure pathway.~~

~~3 Entities may use global population density data available from the NASA Socioeconomic Data and Applications Center’s (SEDAC) *Gridded Population of the World* (GPW).~~

Water Management

Topic Summary

Refineries ~~can~~ use large quantities of water. Water ~~depending on their size and refining process complexity. This water~~ use exposes them to the risk of water scarcity, depending on their location, and related treatment and disposal costs. Extraction of water from water-stressed regions or water contamination can ~~also may~~ create tensions with local communities. Refinery operations require wastewater treatment and disposal, often using ~~via~~ on-site wastewater treatment plants. ~~before discharge.~~ Oil & Gas – Refining & Marketing entities that reduce ~~Reducing~~ water use and contamination through recycling and other water management strategies can improve their ~~may permit entities to capture~~ operational efficiencies and reduce operating costs. Such efforts could also ~~They also could~~ minimise the entity's regulatory risk, water supply risk ~~shortages~~ and risk of potential community-related operational disruptions. ~~on operations.~~

Metrics

EM-RM-140a.1. (1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

~~2 The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1 Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2 Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1 ~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. ~~that evaporates during withdrawal, use and discharge~~

~~3.1.2 Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3 Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea~~

~~4 The entity shall analyse all its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

3 ~~5~~ An ~~The~~ entity shall disclose (3a) the volume of water withdrawn, in megalitres, from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 ~~6~~ An ~~The~~ entity shall disclose (3b) the volume of water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

~~EM-RM-140a.2. Number of incidents of non-compliance associated with water quality permits, standards, and regulations~~

~~1 The entity shall disclose the total number of instances of non-compliance, including violations of technology-based standard and exceedances of quality-based standards.~~

~~2 The scope of the disclosure includes incidents governed by applicable jurisdictional statutory permits and regulations, which may include the discharge of a hazardous substance, violation of pre-treatment requirements or total maximum daily load (TMDL) exceedances.~~

~~2.1 Typical parameters of concern include: hydrocarbons (including oil and grease), chemical oxygen demand (COD)/biochemical oxygen demand (BOD), sulphides, ammonia, phenols, total suspended solids (TSS) and total dissolved solids (TDS).~~

~~3 The scope of the disclosure shall only include incidents of non-compliance that resulted in a formal enforcement action(s).~~

~~3.1 Formal enforcement actions are defined as governmental actions that address a violation or threatened violation of water quality laws, regulations, policies or orders, and can result in administrative penalty orders, administrative orders and judicial actions, among others.~~

~~4 Violations shall be disclosed, regardless of their measurement method or frequency. These include violations for:~~

~~4.1 continuous discharges, with limitations, standards and prohibitions that are generally expressed as maximum daily, weekly and monthly averages; and~~

~~4.2 non-continuous discharges, with limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge, and mass or concentration of specified pollutants.~~

EM-RM-140a.3. Total water discharged by (1) destination and (2) level of treatment

1 An entity shall disclose the (1) total volume of water discharged, in megalitres, disaggregated by destination.

1.1 Water discharge is defined as the sum of effluents, used water, and unused water released to surface water, groundwater, seawater or a third party, for which the organisation has no further use.

1.1.1 Surface water is defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams.

1.1.2 Groundwater is defined as water held in and recoverable from an underground formation.

1.1.3 Seawater is defined as water in a sea or ocean.

1.1.4 Third-party water is defined as water discharged by municipal water suppliers and municipal wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

1.2 The scope of disclosure includes water released into a receiving waterbody at either a defined discharge point (point-source discharge) or dispersed over land in an undefined manner (non-point-source discharge).

2 An entity shall disclose (2) the total volume of water discharged, in megalitres, disaggregated by level of treatment.

2.1 Water treatment is defined as the physical, chemical or biological processes that improve water quality by removing solids, pollutants, and organic matter from water and effluents.

2.2 Treatment levels include:

2.2.1 primary treatment, which aims to remove solid substances that settle or float on the water surface;

2.2.2 secondary treatment, which aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it; and

2.2.3 tertiary treatment, which aims to upgrade water to a higher level or quality before it is discharged, for example, removing heavy metals, nitrogen, and phosphorus.

2.3 If the entity discharges water that it determines does not require treatment, it shall disclose the associated volume in megalitres.

2.4 The level of treatment shall be reported for any water or effluents at the point of discharge, whether treated by the entity on-site or sent to a third party for treatment.

2.5 The entity shall disclose how it determines the appropriate level of treatment for water discharges.

Hazardous Materials Management

Topic Summary

Oil & Gas – Refining & Marketing ~~As a by-product of their operations, Refining & Marketing (R&M)~~ entities generate solid and liquid ~~various forms of~~ waste derived from the processing of petroleum products. Many of these substances are hazardous to human health and the environment and are ~~may be~~ subject to regulation. Remediation of ~~inactive or~~ decommissioned sites can ~~may~~ take many years to complete, and entities could ~~may~~ accrue liabilities for past operations. Hazardous substances released ~~substance releases~~ from underground storage tanks ~~(USTs)~~ used by refining facilities and fuel ~~gas~~ stations can affect land redevelopment at ~~for~~ abandoned or closed facilities. Spills and releases during operations can result in groundwater contamination and other negative impacts. Oil & Gas – Refining & Marketing ~~R&M~~ entities that reduce and recycle hazardous waste streams, as well as those that have effective and prompt clean-up and remediation measures in place for normal operations and decommissioned facilities, could ~~may~~ reduce regulatory and litigation risks and associated costs.

Metrics

EM-RM-150a.1. (1) Hazardous ~~Amount of hazardous~~ waste generated and ~~,~~ (2) hazardous waste ~~percentage~~ recycled

1 An ~~The~~ entity shall disclose (1) the total mass ~~weight~~ of hazardous waste that it generated, in metric tonnes.

1.1 Hazardous waste is ~~wastes are~~ defined in accordance with the applicable jurisdictional law or regulation ~~legal or regulatory frameworks~~ where the waste was generated.

1.1.1 Hazardous waste excludes gaseous waste and wastewater.

1.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define hazardous waste, the entity shall use the United Nations Environmental Programme *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (Basel Convention) to define hazardous waste.

2 An ~~The~~ entity shall disclose (2) the mass ~~percentage~~ of hazardous waste recycled as the weight of hazardous waste that has been recycled by being reused, reclaimed or remanufactured. ~~generated that was recycled, divided by the total weight of hazardous waste generated.~~

2.1 The mass of hazardous waste recycled is defined as the mass of hazardous waste reused plus the mass recycled or remanufactured (through treatment or processing) by the entity, plus the mass sent externally for further recycling, such that:

~~Hazardous waste that is reused, reclaimed or remanufactured shall be considered within the scope of recycled.~~

2.1.1 reused materials are defined as those recovered products or components of products used for the same purpose for which they were conceived;

2.1.2 recycled and remanufactured materials are defined as waste reprocessed or treated through production or manufacturing processes and made into a final product or made into a component to be integrated into a product;

2.1.3 recycled and remanufactured products include primary recycled materials, co-products (outputs of equal value to primary recycled materials) and by-products (outputs of lesser value than primary recycled materials);

2.1.4 portions of products and materials discarded in landfills do not qualify as recycled;

2.1.5 recycled waste includes only the portions of products directly used in new products, co-products or by-products; and

2.1.6 materials sent for further recycling include those transferred to a third party for the purpose of reuse, recycling or refurbishment.

~~2.2 Recycled, reused, reclaimed and remanufactured hazardous wastes are defined in accordance with the applicable jurisdictional legal or regulatory frameworks where the waste was generated.~~

2.2 ~~2.3~~ Materials incinerated, including for energy recovery, are excluded from ~~shall not be considered within the scope of~~ recycled materials.

2.2.1 ~~2.3.1~~ Energy recovery is defined as the use of combustible waste to generate energy through direct incineration, with or without other waste, but with recovery of the heat.

~~2.3.2 The entity may separately disclose the percentage of hazardous waste generated that was incinerated.~~

3 If an entity is subject to more than one jurisdictional law or regulation that defines waste, hazardous waste and recycled waste, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~The entity may use the United Nations Environmental Programme (UNEP) *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (Basel Convention) for the purposes of defining hazardous waste or recycled hazardous waste for operations located in jurisdictions that lack applicable legal or regulatory definitions.~~

3.1 If the entity defines and manages its hazardous waste and recycled hazardous waste using the strictest compliance guidelines from applicable legal, regulatory or trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

4 ~~The entity shall disclose the frameworks used to define hazardous waste and recycled hazardous waste, and the quantities and percentages defined in accordance with each applicable framework.~~

EM-RM-150a.2. (1) Number of underground storage tanks and ~~(USTs),~~ (2) number of ~~UST~~ releases requiring clean-up ~~clean up, and (3) percentage in jurisdictions with UST financial assurance funds~~

1 An ~~The~~ entity shall disclose (1) the total number of underground storage tank systems (USTs) that it uses to store ~~for~~ petroleum and other hazardous substances.

1.1 USTs are ~~The scope of the disclosure includes, at a minimum, USTs as~~ defined as any tank or combination of tanks (including connecting underground pipes) used to contain an accumulation of petroleum or other hazardous substances, and the volume of which (including the volume of the connecting underground pipes) is 10% or more beneath the surface of the ground.

1.1.1 The definition of UST excludes ~~does not include:~~ farm or residential tanks smaller than 5,000 litres used for motor fuel for non-commercial purposes; heating oil storage tanks; septic tanks; pipeline facilities including gathering lines; surface impoundments, pits, ponds or lagoons; storm-water or wastewater collection systems; flow-through process tanks; liquid traps or associated gathering lines directly related to oil or gas production; or storage tanks situated in an underground area if the storage tank is situated upon or above the surface of the floor. ~~For the avoidance of doubt,~~ USTs do not include pipes connected to any tank identified in the prior list.

1.2 The ~~scope of the~~ disclosure includes active USTs and those closed during the reporting period.

2 An ~~The~~ entity shall disclose (2) the ~~total~~ number of UST releases (which ~~may~~ include leaks, spills~~,~~ and overfills ~~and corrosion~~) for which the entity had some degree of clean-up responsibilities (including shared cost of remediation).

2.1 The ~~scope of the~~ disclosure includes new incidents that occurred during the reporting period as well as past events (for example, legacy clean-up) for which the entity was notified of its responsibility during the reporting period.

2.2 The ~~scope of the~~ disclosure includes releases ~~release~~ from petroleum ~~USTs~~ and hazardous chemical USTs.

~~3 The entity shall disclose (3) the percentage of UST incidents that occurred in jurisdictions with UST financial assurance funds.~~

~~3.1 The entity shall further include any incidents that were legacy events in jurisdictions that do not provide coverage for past events and any incidents ineligible for coverage under the rules of applicable jurisdictional UST trust funds.~~

~~3.2 The entity shall calculate the percentage as the number of UST incidents that occurred in jurisdictions with UST financial assurance funds divided by the total number of UST incidents that occurred during the reporting period.~~

3~~4~~ The disclosure includes information about how the entity maintains ~~entity may describe its effort to maintain~~ jurisdictional UST regulatory compliance, including preventing ~~its method or process to prevent~~ UST spills, overfills and corrosion.

Workforce Health & Safety

Topic Summary

Hazards associated with the operations of Oil & Gas – Refining & Marketing entities can ~~in the Refining & Marketing (R&M) industry may~~ present significant risks to workforce ~~employee~~ health and safety. Such hazards include the handling and processing of hydrocarbons, frequently at high temperatures and pressures during refining operations. Accidents or inadvertent exposures to chemicals and other hazards such as heat or noise could ~~may~~ result in fatalities, severe injuries or illnesses. ~~Releases of hydrocarbons or other hazardous substances resulting from accidents or leaks also can have negative consequences for neighbouring communities.~~ An entity's ability to protect employee health and safety, and to create a culture of safety and wellbeing ~~well-being~~ among employees at all levels, can help prevent accidents, mitigate costs and operational downtime, and enhance workforce productivity.

Metrics

EM-RM-320a.1. (1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2 ~~1~~ An ~~The~~ entity shall separately disclose (2) ~~(1)~~ its total recordable incident rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 ~~1.1~~ An injury or illness is typically defined as ~~considered~~ a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare ~~health care~~ professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.

2.1.3 ~~1.1.1~~ First aid is typically defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but jurisdictional definitions may vary.

~~1.1.2~~ ~~The entity may use applicable jurisdictional criteria for definitions of a recordable incident and a non-recordable incident such as first aid. The entity shall disclose the legal, regulatory or industry framework used as the source for these criteria and definitions.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2~~ ~~The entity shall disclose (2) its fatality rate for work-related fatalities.~~

~~3~~ ~~The entity shall disclose (3) its near miss frequency rate (NMFR) for work-related near misses.~~

~~3.1~~ ~~A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage or environmental damage, but had the potential to do so in other circumstances.~~

~~3.2~~ ~~The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~4~~ ~~All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~4.1~~ ~~The '200,000' in the rate calculation represents the total number of hours 100 full-time workers working 40 hours per week for 50 weeks per year can provide annually.~~

4 ~~5~~ The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses. ~~includes work-related incidents only.~~

4.1 ~~5.1~~ Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~5.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~5.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~5.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~5.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 An entity shall disclose (3) the average number of training hours provided to its workforce for health, safety and emergency preparedness management training.

5.1 Training includes topics such as the health, safety or emergency preparedness related to the occupational risks or hazards to which the workforce is reasonably likely to be exposed and to specific occupational risks or hazards.

5.1.1 Training includes technical health, safety and emergency management training required by applicable jurisdictional authorities related to occupational risks or hazards.

5.2 The average number of hours of health, safety and emergency response training is calculated as the total qualifying training hours provided to the workforce divided by the total workforce.

5.2.1 The total workforce is defined as the number of individual employees and non-employee workers the entity employs at the reporting date.

6 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~The entity shall disclose the rates for each of these employee categories:~~

~~6.1~~ ~~direct employees, defined as individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees; and~~

~~6.2~~ ~~contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

~~7 The scope of the disclosure includes all employees regardless of employee location or type of employment.~~

EM-RM-320a.2. Description ~~Discussion~~ of management systems used to foster a safe working environment ~~integrate a culture of safety~~

1 An ~~The~~ entity shall discuss information about: ~~its management systems used to integrate a culture of safety.~~

1.1 how it cultivates a safe working environment throughout its operations, avoids accidents and minimises long-term health risks to its workforce;

1.2 how it manages ~~The discussion shall include how the entity integrates a culture of~~ safety and coordinates emergency preparedness throughout its value chain, such as through technology, training, corporate culture, rules and guidelines enforcements, and regulatory compliance; ~~, monitoring and testing, and personal protective equipment.~~

1.3 how it manages long-term health risks associated with operations, such as through use of personal protective equipment, testing and monitoring;

1.4 ~~1.2~~ the ~~The scope of discussion may focus broadly on~~ safety management systems the entity uses ~~, but it shall address specifically the systems used~~ to maintain a safe working environment, including the prevention of ~~preventing~~ incidents, fatalities and illnesses; ~~.~~

1.5 leading indicators the entity has developed to monitor, manage or improve safety performance, such as near-miss reporting, workforce engagement programmes, hazard reduction, emergency drills or safety-related compliance rates; and

1.6 the implementation of these safety management systems including progress towards tracking safety and health performance, and obtaining third-party verification of the systems' efficacy.

2 An ~~The~~ entity shall describe ~~include a description of~~ how workforce safety management and emergency preparedness are ~~is~~ coordinated among business partners (for example, contractors and subcontractors).

Product Specifications & Clean Fuel Blends

Topic Summary

Oil & Gas – Refining & Marketing entities face significant climate-related transition risks as jurisdictions develop regulations related to fuel production to mitigate climate change. For instance, some ~~Some~~ regulatory jurisdictions have introduced new ~~implemented~~ product specifications and renewable fuel blends~~, which pose significant compliance and operational risks for Refining & Marketing (R&M) entities~~. Entities could ~~may~~ face long-term reductions in revenue from fossil fuel-based products and services because of greenhouse gas emissions ~~GHG~~ mitigation policies such as renewable fuel mandates or standards, as well as competition from non-fossil fuel products. To ensure regulatory compliance and position themselves for long-term competitiveness, some entities are investing in clean fuel and advanced biofuels production or buying ~~purchasing~~ ethanol and other renewable biofuels. Oil & Gas – Refining & Marketing entities that improve their climate resilience by pursuing traditional biofuels, advanced biofuels and other fuel technologies ~~Advanced biofuels and fuel technologies have lower lifecycle impacts than traditional biofuels, and they can be used to minimise future regulatory risks and public pressure. Although short-term costs to find commercially viable technologies can be significant, investments in R&D for such technologies~~ could preserve their ~~serve to support R&M entities'~~ long-term profitability and prospects.

Metrics

EM-RM-410a.2. Total revenue from ~~addressable market and share of market for~~ advanced biofuels and associated infrastructure

1 An ~~The~~ entity shall disclose the total revenue that it recognised from the sale of ~~provide an estimation of the total addressable market for~~ advanced biofuels and associated infrastructure.

~~1.1~~ ~~Total addressable market is defined as potential revenue should the entity capture 100% of the market share of the product category (for example, the global market for advanced biofuels and advanced biofuel infrastructure).~~

~~2~~ ~~The entity shall disclose the share of the total addressable market for advanced biofuels or associated infrastructure it currently captures with its products.~~

~~2.1~~ ~~Market share shall be calculated as revenue from these products divided by the size of the total addressable market.~~

2 ~~3~~ Advanced biofuels are defined as low-carbon fuels, derived from renewable, non-food biomass, that have lower greenhouse gas emissions compared to corn-based ethanol and other first-generation biofuels. ~~other than ethanol derived from corn starch (kernels) and having 50% lower lifecycle greenhouse gas emissions relative to gasoline.~~

3 ~~4~~ Revenue related to ~~from~~ advanced biofuel infrastructure includes revenue the entity recognises from its ~~that from the entity's~~ retail operations (fuel stations)~~, joint ventures with primary producers,~~ or licensing technologies that enable advanced biofuels ~~the~~ production ~~of advanced biofuels~~.

~~5~~ ~~If a significant difference exists between the total addressable market and the market the entity can serve through its existing or planned capabilities, sales channels or products (the serviceable available market), then the entity may disclose this information.~~

~~6~~ ~~The entity may provide a projection of growth of this market, where the projected addressable market is represented—based on a reasonable set of assumptions about changes in market conditions— as a percentage of year-on-year growth or as an estimate of the market size after a defined period (the market size in 10 years).~~

~~6.1~~ ~~The entity may disclose its target three-year market share as a measurement of targeted growth, where the target is the percentage of the total addressable market that the entity plans to address over a three-year time horizon.~~

4 ~~7~~ In addition, an entity shall disclose information about its ~~The entity may discuss~~ other non-revenue generating initiatives ~~it has undertaken~~ to commercialise biofuels, such as partnerships (for example, pilot projects, research and development projects) with transport fleet operators (air, ~~ground or~~ marine, road and rail ~~transportation~~), ~~airlines,~~ vehicle manufacturers and governmental agencies.

EM-RM-410a.3. (1) Net volume ~~Volumes~~ of renewable fuels produced for fuel blending~~: (1) net amount produced~~, (2) net volume of renewable fuels ~~amount~~ purchased and (3) the cost of compliance

1 An ~~The~~ entity shall disclose (1) the net volume, in megalitres, ~~volumes in barrels of oil equivalent~~ of renewable fuels produced and (2) renewable fuels purchased, including biofuel, cellulosic biofuel, ethanol, advanced biofuels, and other renewable fuels for use in fuel blending.

~~2~~ ~~The entity shall disclose the net amounts of renewable fuels purchased.~~

1.1 ~~3~~ Net amounts are defined as volumes produced or purchased for use in fuel blending, minus volumes ~~less amounts~~ sold to independent third parties in arms-length transactions during the reporting period, either directly or indirectly.

1.2 The entity shall not count renewable volumes more than once even if permitted by applicable jurisdictional law or regulation.

2 An entity shall disclose (3) its cost of compliance with applicable jurisdictional fuel blending law or regulation. The entity's cost of compliance includes:

2.1 the expenses incurred buying biofuel, cellulosic biofuel, ethanol, advanced biofuels and other renewable fuels for use in fuel blending; and

2.2 the expenses incurred buying credits under fuel blending regulations.

~~4~~ ~~Some jurisdictions permit volume 'double-counting' based on types of advanced renewable fuels used or alternative methods of production. For the purposes of this disclosure, an entity shall not double-count renewable fuel volumes.~~

~~5 The entity shall disclose the conversion factors and assumptions used to convert renewable fuel volumes to barrels of oil equivalent (BOE).~~

3 ~~6~~ The disclosure includes ~~entity may include~~ an analysis of the entity's ~~its~~ biofuel production capacity and total renewable fuel production of: (1) renewable fuel, (2) advanced biofuel, (3) biomass-based diesel and (4) cellulosic biofuel in megalitres. ~~barrels of oil equivalent (BOE).~~

Pricing Integrity & Transparency

Topic Summary

Regulators are responsible for overseeing issues related to pricing integrity and transparency, which include ~~includes~~ the potential for market manipulation by oil and gas entities, including Oil & Gas – Refining & Marketing ~~Refining & Marketing (R&M)~~ entities. Regulatory agencies focusing on refineries ~~may~~ investigate various competitive factors, including capacity utilisation and refinery maintenance decisions, product supply decisions, product margins~~,~~ and capital planning, creating uncertainty regarding future enforcement. The focus of enforcement actions also could ~~may~~ include prices reported to price index publishers, as well as potential price distortions through trading positions in physical transactions, and through swaps, futures and derivatives. Maintaining market integrity and ensuring transparency in product pricing can therefore reduce regulatory risks and liabilities for Oil & Gas – Refining & Marketing ~~R&M~~ entities and protect consumers from unfair pricing.

Metrics

EM-RM-520a.1. Total amount of expenses incurred from ~~monetary losses as a result of~~ legal proceedings associated with price fixing or price manipulation

1 An ~~The~~ entity shall disclose the total amount of expenses ~~monetary losses~~ incurred ~~during the reporting period~~ resulting from legal proceedings associated with price gouging, price fixing or price manipulation.

2 The legal proceedings ~~shall~~ include any adjudicative proceeding involving the entity, whether before a court, a regulator, an arbitrator or otherwise.

3 The expenses incurred ~~losses shall~~ include all amounts due ~~monetary liabilities~~ to the opposing party or to others (whether as the result of settlement, verdict after trial or otherwise), including fines, penalties and other ~~monetary~~ liabilities incurred ~~during the reporting period~~ as a result of civil actions (for example, civil judgments ~~judgements~~ or settlements), regulatory proceedings (for example, penalties, disgorgement or restitution) and criminal actions (for example, criminal judgments ~~judgements~~, penalties or restitution) brought by any other entity (for example, governmental, business or individual).

4 The expenses incurred ~~scope of monetary losses shall~~ exclude legal costs and other fees ~~and expenses incurred by~~ the entity incurs in its defence.

~~5 The scope of the disclosure shall include legal proceedings associated with the enforcement of applicable jurisdictional laws or regulations.~~

~~Note to **EM-RM-520a.1**~~

5 ~~1~~ The entity shall briefly describe the type ~~nature~~ (for example, judgment ~~judgement~~ or order issued after trial, settlement, guilty plea, deferred prosecution agreement or non-prosecution agreement) and context (for example, price fixing or false price reporting) of all expenses incurred ~~monetary losses~~ resulting from legal proceedings.

6 ~~2~~ The entity shall describe any corrective actions implemented in response to the legal proceedings. Such actions ~~This may~~ include specific changes in operations, management, processes, products, business partners, training or technology.

Management of the Legal & Regulatory Environment

Topic Summary

The refining and marketing ~~Refining & Marketing (R&M)~~ industry is subject to a variety of ~~numerous~~ sustainability-related regulations and an often rapidly changing regulatory environment. ~~Changes to the legal and regulatory environment may result in material effects on shareholder value.~~ Entities in the industry regularly participate in the regulatory and legislative process on a wide variety of sustainability-related ~~environmental and societal~~ issues. Such engagement ensures ~~can result from entities seeking to ensure~~ industry views are represented in the development of regulations affecting the industry ~~as well as to represent shareholder interests~~. At the same time, the public perception of such engagement to influence environmental law or regulation could ~~laws and regulations may~~ adversely affect entities' reputations and ultimately affect an entity's social licence to operate. Oil & Gas – Refining & Marketing entities that can balance these tensions will probably be better positioned to respond to new regulatory developments.

Metrics

EM-RM-530a.1. Description of entity ~~Discussion of corporate~~ positions related to government regulations or policy proposals ~~that address environmental and social factors~~ affecting the industry

1 An ~~The~~ entity shall disclose information about its strategy and efforts to influence ~~identify risks and opportunities it faces related to~~ legislation, regulation or rule-making (the legal and regulatory environment) ~~rulemaking (hereafter referenced collectively as the 'legal and regulatory environment')~~ associated with environmental and social factors that could reasonably be expected to affect the entity's prospects. ~~may have significant financial consequences.~~

1.1 The disclosure includes information about current, ~~scope shall include existing,~~ emerging~~,~~ and anticipated law or regulation related to environmental and social factors in the jurisdictions where the entity operates. ~~known future risks and opportunities.~~

~~1.2~~ ~~The scope shall include risks and opportunities that exist domestically and internationally.~~

1.2 ~~1.3~~ Environmental ~~The regulatory environment related to relevant environmental~~ and social factors are defined as matters related to ~~includes those factors related to~~ greenhouse gas emissions, other air emissions, water withdrawals and wastewater, ~~effluents,~~ waste and hazardous materials management, environmental impacts, community impacts, workforce ~~employee~~ health and safety, ~~product specifications,~~ and business ethics. ~~pricing integrity and transparency.~~

1.3 ~~2~~ Risks to the entity include the reputational risk incurred if its stance on legal and regulatory matters contradicts ~~Relevant risks to an entity may include risk of increased compliance costs, risk of policy reversal, risk of loss of financial incentives (for example, reduction or elimination of tax deductions, policies affecting import or export of crude oil or refined products, or policies affecting renewable fuel mandates), risk to reputation because of the entity's stance and actions related to the legal and regulatory environment, risk that long-term strategy might be misaligned with the legal and regulatory environment, and risk of misalignment with~~ the expectations of its customers, investors and other stakeholders.

1.4 ~~3~~ Opportunities for the entity include ~~Relevant opportunities may include improved financial conditions (for example, through policies which incentivise renewable fuel production or blending),~~ improved community relations because of its stance on legal and regulatory matters. ~~the entity's stance and actions related to the legal and regulatory environment, and other benefits resulting from the entity's long-term strategic alignment with the legal and regulatory environment.~~

~~4 The entity shall discuss its efforts to manage risks and opportunities associated with each aspect of the legal and regulatory environment outlined in the SASB Oil & Gas – Refining & Marketing Standard that are relevant to the entity's business and may have significant financial consequences.~~

~~5 The entity shall discuss its strategy to manage risks and opportunities associated with each aspect of the legal and regulatory environment it has identified, such as:~~

~~5.1 any changes it has made or plans to make to its business structure or business model;~~

~~5.2 the development of new technologies or services;~~

~~5.3 any changes it has made or plans to make to its operational processes, controls or organisational structures; and~~

~~5.4 influencing regulatory or legislative processes and outcomes through interactions with regulators, regulatory agencies, legislators, policymakers, and any others involved in the regulatory or legislative process.~~

2 ~~6~~ If an entity's stance on influencing regulatory and legislative processes differs from the official stance of its representative industry organisations, the entity shall explain the ~~The entity may describe whether its stance aligns with or differs from the official stance of its industry organisations and discuss any relevant~~ reasons for ~~alignment or~~ divergence.

Critical Incident Risk Management

Topic Summary

The operations of refining and marketing ~~Refining & Marketing (R&M)~~ entities are potentially hazardous, ~~often characterised by a high number of hazards,~~ including ~~the~~ handling ~~of~~ flammable and~~,~~ volatile substances, using ~~the use of~~ highly reactive chemicals~~,~~ and ~~the~~ processing feedstocks ~~of fluids~~ at high temperature and pressure. Accidental releases of hydrocarbons or other hazardous materials ~~substances~~ can result in adverse ~~have significant~~ consequences for an entity's workforce, local communities and the environment. ~~as well as external social and environmental consequences.~~ In addition to effective process safety management practices, entities frequently prioritise developing a culture of safety to reduce the probability that accidents and other health and safety incidents will occur. If accidents and other emergencies do occur, entities with a strong safety culture often can detect and respond more effectively to such incidents. A culture that engages and empowers an entity's workforce to collaborate closely ~~employees and contractors to work~~ with management to safeguard their own health, safety and wellbeing ~~well-being~~ and prevent accidents could ~~may~~ help entities reduce production downtime, mitigate costs, ensure workforce productivity and maintain their licence to operate.

Metrics

EM-RM-540a.1. Process safety event ~~Process Safety Event (PSE)~~ rates for loss of primary containment (1) events ~~Loss of Primary Containment (LOPC)~~ of greater consequence (Tier 1) and (2) events of lesser consequence (Tier 2)

1 An ~~The~~ entity shall separately disclose its (1) Tier 1 process safety event (PSE) rate ~~rates~~ and (2) Tier 2 PSE rate for events involving ~~PSE rates for instances of~~ loss of primary containment (LOPC) of greater and lesser consequence, respectively.

1.1 The entity shall use ~~refer to~~ the terms and definitions from the American Petroleum Institute (API) ~~ANSI/API~~ *Recommended Practice 754 – Process Safety Performance Indicators for the Refining and Petrochemical Industries* (API RP 754). ~~(hereafter, ANSI/API RP-754).~~

2 A PSE is defined as an unplanned or uncontrolled LOPC of any material including non-toxic and non-flammable materials ~~(for example, steam, hot condensate, nitrogen, compressed CO_2 or compressed air)~~ from a process, or an undesired event or condition that, under ~~slightly~~ different circumstances, could have resulted in an LOPC ~~of a material~~.

3 ~~2.1~~ An LOPC is defined as an unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials. ~~a type of event.~~

3.1 ~~2.2~~ An unplanned or uncontrolled release is an LOPC irrespective of whether the material is released into the environment, ~~or into~~ secondary containment~~,~~ or into other primary containment not intended to contain the material released under normal operating conditions.

4 ~~3~~ A Tier 1 PSE is defined as an LOPC of the greatest consequence, resulting in one or more of the adverse ~~these~~ consequences defined in API RP 754. ~~:~~

4.1 ~~3.1~~ The Tier 1 PSE rate is calculated as the number of Tier 1 PSEs during the reporting period divided by the total hours worked multiplied by 1,000,000.

~~an employee, contractor or subcontractor experiencing a 'days away from work' injury or fatality;~~

~~3.2 a hospital admission or fatality of a third party;~~

~~3.3 an officially declared community evacuation or community shelter-in-place;~~

~~3.4 a fire or explosion resulting in greater than or equal to $100,000 in direct costs to the entity;~~

~~3.5 a pressure relief device (PRD) discharge to the atmosphere, whether directly or via a downstream destructive device that results in one or more of these four consequences:~~

~~3.5.1 liquid carryover;~~

~~3.5.2 discharge to a potentially unsafe location;~~

~~3.5.3 an on-site shelter-in-place; or~~

~~3.5.4 public protective measures (for example, road closure) and a PRD discharge quantity greater than the threshold quantities specified by ANSI/API RP-754 in any one-hour period; or~~

~~3.6 a release of material greater than the threshold quantities specified in Table 1 of ANSI/API RP-754 in any one-hour period.~~

5 4 A Tier 2 PSE is defined as an LOPC of lesser consequence, not disclosed as a Tier 1 PSE, that results ~~and resulting~~ in one or more of the adverse ~~these~~ consequences defined in API RP 754. ~~:~~

5.1 ~~4.1~~ The Tier 2 PSE rate is calculated as the number of Tier 2 PSEs during the reporting period divided by the total hours worked multiplied by 1,000,000.

~~an employee, contractor or subcontractor recordable injury;~~

~~4.2 a fire or explosion resulting in greater than or equal to $2,500 in direct costs to the entity;~~

~~4.3 a PRD discharge to atmosphere, whether directly or via a downstream destructive device that results in one or more of these four consequences:~~

~~4.3.1 liquid carryover;~~

~~4.3.2 discharge to a potentially unsafe location;~~

~~4.3.3 an on-site shelter-in-place; or~~

~~4.3.4 public protective measures (for example, road closure) and a PRD discharge quantity greater than the threshold quantities specified in Table 2 of ANSI/API RP-754 in any one-hour period; or~~

~~4.4 a release of material greater than the threshold quantities specified in Table 2 of ANSI/API RP-754 in any one-hour period.~~

~~5 The Tier 1 PSE rate shall be calculated as: (total Tier 1 PSE count / total hours worked) × 200,000.~~

~~6 The Tier 2 PSE rate shall be calculated as: (total Tier 2 PSE count / total hours worked) × 200,000.~~

6 ~~7~~ Total hours worked includes hours worked by both employees and non-employee workers. ~~contractors.~~

~~EM-RM-540a.2. Challenges to Safety Systems indicator rate (Tier 3)~~

~~1 The entity shall disclose a rate of Tier 3 'challenges to safety systems'.~~

~~1.1 The entity shall refer to the terms, definitions and guidance from the ANSI/API RP-754 (Section 7.2). Tier 3 indicators may alternatively be referenced as 'near miss' events or 'high learning value' events.~~

~~2 A Tier 3 operational situation is defined as a flaw or weakness within internal technical safety systems that led to consequences that fall below the Tier 1 and Tier 2 loss of primary containment (LOPC) impact threshold, such as:~~

~~2.1 demands on safety systems, which are activations (non-manual) of safety systems designed to prevent or mitigate effects from losses of primary containment, such as mechanical shutdown equipment or pressure relief devices;~~

~~2.2 safe operating limit excursions, which are breaches of safe operating limits for processes beyond which manual or automatic systems return the process to a predetermined safe state;~~

~~2.3 primary containment inspections or testing results outside acceptable limits, which occur when inspection or testing shows that safe primary containment operating limits have been exceeded and require repairs, replacement or further testing of equipment; and~~

~~2.4 near miss incidents, which are incidents that had the potential to result in an LOPC, but that were avoided by circumstance.~~

~~3 The disclosure may include situations with no actual consequences but the recognition that, in other circumstances, further barriers could have been breached and a Tier 1 or Tier 2 PSE could have resulted.~~

~~4 The Tier 3 indicator rate shall be calculated as: (total Tier 3 indicator count / total hours worked) × 200,000.~~

~~5 Total hours worked includes hours worked by both employees and contractors.~~

EM-RM-540a.3. Measurement ~~Discussion of measurement~~ of Tier 3 and ~~Operating Discipline and Management System Performance through~~ Tier 4 key performance indicators ~~Indicators~~

1 The entity shall disclose information about how it identifies, measures and manages 'Challenges to safety systems' Tier 3 key performance indicators (KPIs) and ~~describe its approach to identifying, measuring and managing~~ 'Operating Discipline and Management System Performance' ~~or~~ Tier 4 KPIs as defined in the American Petroleum Institute (API) Recommended Practice 754 – Process Safety Performance Indicators for the Refining and Petrochemical Industries (API RP 754). ~~key performance indicators (KPIs).~~

1.1 Tier 3 and Tier 4 KPIs ~~indicators~~ are leading safety indicators, customised to the entity's specific activities or to individual assets or facilities, to proactively measure and improve safety performance. ~~metrics developed by the entity specific to its facilities, operations and safety priorities that measure leading, proactive measures to maintain and improve safety and manage risk.~~

1.2 Entities use Tier 3 KPIs to monitor the performance of the barriers that prevent Tier 1 and Tier 2 loss of primary containment (LOPC) events.

~~Relevant Tier 4 KPIs may be focused on:~~

1.2.1 Events in which the LOPC was below the Tier 2 thresholds, or when no LOPC occurred, are Tier 3 KPIs if one or more essential barriers, or supporting systems, failed or did not function as expected, constituting challenges to safety systems.

~~engineering and inherently safe design;~~

~~1.2.2 equipment maintenance, inspection and testing;~~

~~1.2.3 process hazard and major incident risk assessments;~~

~~1.2.4 quality of, and adherence to, operating procedures;~~

~~1.2.5 contractor capability and management;~~

~~1.2.6 audit improvement actions;~~

~~1.2.7 asset integrity and process safety initiatives;~~

~~1.2.8 workforce and management training and development; and~~

~~1.2.9 technical competence assessment and assurance.~~

1.3 Entities use Tier 4 KPIs to monitor the implementation (operating discipline) and effectiveness (performance) of the management system elements that support the performance of essential barriers that prevent Tier 1 and Tier 2 LOPC events.

~~2 The discussion may include the use of specific Tier 4 KPIs such as those suggested in ANSI/API RP-754. Examples of Tier 4 KPIs are:~~

~~2.1 number of process area retrospective and revalidation hazard evaluations completed on time;~~

~~2.2 percentage or number of past-due process safety actions; and~~

~~2.3 percentage of process safety required training sessions completed with skills verification.~~

2 ~~3~~ For the purposes of this disclosure, ~~The entity may exclude~~ quantitative information ~~data or figures~~ for an entity's Tier 3 and ~~its~~ Tier 4 KPIs is not required. ~~from the scope of the disclosure because they are generally unsuitable for peer-to-peer benchmarking and may not be relevant at a corporate level (they may be refinery-specific). If relevant, however, the entity may discuss:~~

3 The disclosure includes a description of:

3.1 the use of specific Tier 3 and Tier 4 KPIs such as those suggested in API RP 754;

3.2 ~~3.1~~ trends in Tier 3 and Tier 4 KPIs over time and how they correlate ~~are correlated~~ with the frequency of Tier 1 and~~,~~ Tier 2 process safety event (PSE) ~~and Tier 3 indicator~~ rates (for example, that a focus on Tier 4 performance can be correlated with a decrease in the Tier 1 PSE rate); and

3.3 ~~3.2~~ the application and topical focus of Tier 3 and Tier 4 KPIs for various facilities, business units, geographies and employee categories.

Oil & Gas – Services

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards. ~~and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

Table of Contents

INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®).~~Sustainable Industry Classification System® (SICS®)~~~~.~~

SASB Standards include:

1. **industry ~~Industry~~ descriptions**— ~~—~~which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry;~~.~~

2. **disclosure ~~Disclosure~~ topics**— ~~—~~which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry;~~.~~

3. **metrics—~~Metrics~~** ~~—~~which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic;~~.~~

4. **technical ~~Technical~~ protocols**— ~~—~~which provide guidance on definitions, scope, implementation and presentation of associated metrics; and~~.~~

5. **activity ~~Activity~~ metrics**— ~~—~~which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS® . However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

Oil & Gas –– Services (EM-SV) entities drill under contract, manufacture equipment, construct facilities and ~~or~~ provide other oil and gas exploration and production support services. ~~Drilling and drilling-support entities drill for oil and natural gas on-shore and off-shore on a contract basis for Exploration & Production (E&P) entities.~~ Oil & Gas – Services entities often narrowly specialise in specific support services, equipment and activities associated with oil and gas development and production. While 'off-contract' (not working under customers' direction), Oil & Gas – Services entities research and develop the services and technologies necessary to support oil and gas operations;

build manufacturing facilities; and manufacture and maintain the equipment used to extract, store and transport oil and gas. For instance, some entities specialise in manufacturing jack-up rigs, semisubmersible rigs, drill ships and other offshore exploration equipment. While ‘on-contract’, Oil & Gas – Services entities typically follow the plans, designs, licensing, permitting, site determinations, operational decisions and direction of their customers. For instance, drilling and drilling-support entities operate as directed by Oil & Gas – Exploration & Production (EM-EP) entities. Other Oil & Gas – Services entities might provide support services such as seismic surveying, equipment rental, transport, well cementing and well monitoring. Oil & Gas – Services entities provide these services ~~For on-shore exploration and production, entities in the oilfield services segment manufacture equipment used in the extraction, storage and transportation of oil and natural gas. For off-shore, entities in this segment may manufacture jack-up rigs, semisubmersible rigs, drill ships and a range of other exploration equipment. They also provide support services such as seismic surveying, equipment rental, well cementing and well monitoring. These services commonly are provided~~ on a contractual basis, and the customer buys ~~purchases~~ or leases the materials and equipment from the service provider. Some ~~Oil & Gas - Services~~ entities also ~~may~~ provide personnel or subject matter expertise as part of their service offerings. Oil & Gas – Services entities ~~scope of service. The contractual relationship between oil and gas services entities and their customers plays a significant role in determining the material impacts of their sustainability performance. Besides the rates charged, entities~~ compete primarily based on contract rates, ~~their~~ operational and safety performance, technology, types of service ~~and process~~ offerings~~, project management performance,~~ and brand reputation.

Note: this Standard is intended for entities engaged in providing support services to the oil and gas industry. For content related to other oil and gas value chain activities, refer to the Oil & Gas – Exploration & Production (EM-EP), Oil & Gas – Midstream (EM-MD) and Oil & Gas – Refining & Marketing (EM-RM) SASB Standards.

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions ~~Reduction Services & Fuels Management~~	(1) Total fuel consumed and (2) ~~,~~ ~~percentage~~ renewable fuel consumed~~, percentage used in: (1) on-road equipment and vehicles and (2) off-road equipment~~	~~Quantitative~~	Gigajoules (GJ)~~,~~ ~~Percentage (%)~~	EM-SV-110a.1
	Description of services and technologies offered to customers to manage risks and opportunities related to greenhouse gas emissions~~Discussion of strategy or plans to address air emissions-related risks, opportunities and impacts~~	~~Discussion and Analysis~~	n/a	EM-SV-110a.2
	~~Percentage of engines in service that comply with the highest level of emissions standards for non-road diesel engine emissions~~	~~Quantitative~~	~~Percentage (%)~~	~~EM-SV-110a.3~~
	(1) Gross Scope 1 emissions and (2) percentage subject to emissions-limiting regulations		Metric tonnes (t) CO_2-e, Percentage (%)	EM-SV-110a.4
Air Quality	Air pollutant emissions: (1) NO_x (excluding N_2O), (2) SO_x, (3) volatile organic compounds and (4) particulate matter		Metric tonnes (t)	EM-SV-120a.1
Water Management ~~Services~~	~~(1) Total volume of water handled in operations, (2) percentage recycled~~	~~Quantitative~~	~~Thousand cubic metres (m^3), Percentage (%)~~	~~EM-SV-140a.1~~
	Description of services and technologies offered to customers to manage risks and opportunities related to water management~~Discussion of strategy or plans to address water consumption and disposal-related risks, opportunities and impacts~~	~~Discussion and Analysis~~	n/a	EM-SV-140a.2
	(1) Total water withdrawal, by source, (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations		Megalitres (ML)	EM-SV-140a.3
	Total water discharged by (1) destination and (2) level of treatment		Megalitres (ML)	EM-SV-140a.4

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Hazardous Materials ~~Chemicals~~ Management	~~(1) Volume of hydraulic fracturing fluid used, (2) percentage hazardous~~	~~Quantitative~~	~~Thousand cubic metres (m^3), Percentage (%)~~	~~EM-SV-150a.1~~
	Description of services and technologies offered to customers to manage risks and opportunities related to handling hazardous materials~~Discussion of strategy or plans to address chemical-related risks, opportunities, and impacts~~	~~Discussion and Analysis~~	n/a	EM-SV-150a.2
Ecological Impacts ~~Impact Management~~	~~Average disturbed land area per (1) oil and (2) gas well site~~	~~Quantitative~~	~~Hectares (ha)~~	~~EM-SV-160a.1~~
	Description of services and technologies offered to customers to manage ~~Discussion of strategy or plan to address~~ risks and opportunities related to ecological impacts ~~from core activities~~	~~Discussion and Analysis~~	n/a	EM-SV-160a.2
Workforce Health & Safety	(1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training~~ for (a) ~~direct~~ employees, and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~	~~Quantitative~~	Number, Rate, Hours (h) ~~Rate~~	EM-SV-320a.1
	Description of management systems used to foster a safe working environment~~integrate a culture of safety throughout the value chain and project lifecycle~~	~~Discussion and Analysis~~	n/a	EM-SV-320a.2
	Number of vehicle ~~road~~ accidents and incidents	~~Quantitative~~	Number	EM-SV-320a.3
Business Ethics ~~& Payments Transparency~~	Revenue ~~Amount of net revenue~~ in countries that have the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index	~~Quantitative~~	Presentation currency	EM-SV-510a.1
	Description of the management systems ~~system~~ for the prevention of corruption and bribery throughout the value chain	~~Discussion and Analysis~~	n/a	EM-SV-510a.2
Management of the Legal & Regulatory Environment	Description of entity ~~Discussion of corporate~~ positions related to government regulations or policy proposals ~~that address environmental and social factors~~ affecting the industry	~~Discussion and Analysis~~	n/a	EM-SV-530a.1

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Critical Incident Risk Management	Description of management systems used to identify and mitigate low-probability, serious accidents ~~catastrophic and tail-end risks~~	~~Discussion and Analysis~~	n/a	EM-SV-540a.1

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
~~Number of active rig sites~~[24]	~~Quantitative~~	~~Number~~	~~EM-SV-000.A~~
~~Number of active well sites~~[25]	~~Quantitative~~	~~Number~~	~~EM-SV-000.B~~
~~Total amount of drilling performed~~	~~Quantitative~~	~~Metres (m)~~	~~EM-SV-000.C~~
Total number of hours worked disaggregated by (1) employees and (2) non-employee workers ~~by all employees~~	~~Quantitative~~	Hours	EM-SV-000.D
Total number of (1) employees and (2) non-employee workers		Number	EM-SV-000.E
Total kilometres driven by road transport fleet		Kilometres	EM-SV-000.F

[24] ~~Note to **EM-SV-000.A** – Rigs that are on location and involved in drilling, completions, cementing, fracturing, workovers and decommissioning are considered active. Rigs in transit from one location to another, or are otherwise idled, are inactive.~~

[25] ~~Note to **EM-SV-000.B** – The number of well sites for which the entity has provided or is providing (on an ongoing basis) drilling, completion, fracturing, workover or decommissioning services.~~

Greenhouse Gas Emissions~~ Reduction Services & Fuels Management~~

Topic Summary

Many Oil & Gas – Services entities are seeking opportunities to reduce their customers' greenhouse gas emissions, which can be significant. Oil & Gas – Services entities can also generate greenhouse gas emissions off-contract during manufacture, maintenance, construction and transport activities. ~~Although direct greenhouse gas (GHG) emissions and associated regulatory risks are relatively low for Oil & Gas - Services providers relative to other industries, emissions from the operations of their customers—the Exploration & Production (E&P) entities—can be significant. Emissions include GHGs that can contribute to climate change as well as other air pollutants that can have significant localised human health and environmental impacts. Increasing regulation and high costs of fuels associated with these emissions present substantial risk to E&P entities. Entities are seeking ways to lower their emissions, including converting pumps and engines to run on natural gas and electricity instead of diesel fuel.~~ Oil & Gas – ~~–~~Services entities compete ~~for contracts~~ partly based on providing innovative, efficient technologies that ~~can~~ help oil and gas exploration and production ~~E&P~~ entities reduce operating costs and risks and improve process efficiencies. Oil & Gas – Services entities can gain a competitive advantage, grow revenue and secure market share by providing customers with services, technologies and equipment to reduce greenhouse gas, ~~GHG,~~ fugitive and flared emissions. Oil & Gas – Services entities that reduce their off-contract greenhouse gas emissions by improving operational efficiencies can also reduce their own operating costs, increasing their competitiveness in securing new contracts.~~ and fuel consumption.~~

Metrics

EM-SV-110a.1. (1) Total fuel consumed and (2) ~~, percentage~~ renewable fuel consumed~~, percentage used in: (1) on-road equipment and vehicles and (2) off-road equipment~~

1 An ~~The~~ entity shall disclose (1) the total quantity of fuel it consumed from all sources ~~as an aggregate figure,~~ in gigajoules (GJ).

1.1 The calculation method ~~methodology~~ for fuel consumed is ~~shall be~~ based on actual fuel consumed as opposed to design parameters.

1.2 The entity can ~~Acceptable calculation methodologies for~~ calculate fuel consumed by:~~may include methodologies based on:~~

1.2.1 adding ~~Adding~~ fuel purchases made during the reporting period to beginning inventory at the start of the reporting period, and deducting ~~less~~ any fuel inventory at the end of the reporting period;

1.2.2 tracking ~~Tracking~~ fuel consumed by vehicles; or

1.2.3 tracking ~~Tracking~~ fuel expenses.

2 An ~~The~~ entity shall disclose (2) the quantity ~~percentage of the total amount~~ of renewable fuel it consumed (in GJ) included in the quantity disclosed as total fuel consumed.~~from all sources that is renewable.~~

2.1 Renewable fuel ~~generally~~ is defined as fuel derived from biomass.~~that meets all these requirements:~~

~~2.1.1 Produced from renewable biomass~~

~~2.1.2 Used to replace or reduce the quantity of fossil fuel present in a transportation fuel, heating oil or jet fuel~~

~~2.1.3 Achieved net greenhouse gas (GHG) emissions reduction on a lifecycle basis~~

2.2 The entity shall disclose the third-party standard or jurisdictional requirement ~~regulation~~ used to determine if a fuel is renewable for the purposes of this disclosure.

~~2.3 The percentage shall be calculated as the amount of renewable fuel consumed by the entity's fleet vehicles (in GJ) divided by the total amount of fuel consumed by the entity's fleet vehicles (in GJ).~~

~~3 The entity shall disclose the percentage of total fuel consumed by (1) on-road, mobile equipment and vehicles and (2) off-road equipment, including stationary rigs, generators and mounted equipment.~~

3~~4~~ An entity shall include ~~The scope of disclosure includes~~ only fuel consumed by entities it owns or controls.~~owned or controlled by the entity.~~

3.1 In preparing this disclosure, the entity shall determine ownership or control using the same measurement approach that it uses to determine greenhouse gas emissions.

3.2 ~~4.1~~ The entity shall exclude ~~scope excludes~~ non-fuel energy sources such as purchased electricity and purchased steam.

3.3 ~~4.2~~ The entity shall include ~~scope of disclosure includes~~ combustion sources owned or operated by it, ~~the entity,~~ regardless of which entity bears the cost of fuel or considers greenhouse gas ~~(GHG)~~ emissions from these sources to be part of its Scope 1 greenhouse gas emissions.~~inventory.~~

4~~5~~ An ~~In calculating energy consumption from fuels and biofuels, the~~ entity shall use lower ~~higher~~ heating values (LHV), ~~(HHV),~~ also known as net ~~gross~~ calorific values, to calculate energy consumed from fuels and biofuels. The entity shall measure these values directly ~~(GCV), which are directly measured~~ or use the default net calorific values in the 2006 IPCC *Guidelines for National Greenhouse Gas Inventories* (Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1).~~taken from the Intergovernmental Panel on Climate Change (IPCC).~~

4.1 The requirement to use such heating values applies unless the entity is required, in whole or in part, by a jurisdictional authority or an exchange on which it is listed to use different heating values for converting fuels into GJ. In such a case, the entity is permitted to instead use the heating values required by such a jurisdictional authority or exchange for the part of the entity to which that requirement applies, for as long as that requirement applies to that part of the entity.

4.2 If the entity uses heating values other than LHV for converting fuels into GJ, the entity shall disclose information about the heating values used.

~~6 The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel usage (including biofuels).~~

EM-SV-110a.2. Description of services and technologies offered to customers to manage risks and opportunities related to greenhouse gas emissions~~Discussion of strategy or plans to address air emissions-related risks, opportunities and impacts~~

1 An ~~The~~ entity shall disclose information about the services and technologies it offers to customers to manage their greenhouse gas ~~discuss its strategies or plans to address air~~ emissions-related risks and~~,~~ opportunities.~~ and impacts.~~

1.1 The ~~scope of~~ disclosure includes a description of the entity's greenhouse gas emissions-reduction product and service offerings, described separately if they are distinct for particular ~~strategies, plans or emissions-reduction activities, such as how they relate to various~~ business activities, jurisdictions, ~~units, geographies or~~ emissions sources or other factors.

~~1.2 The scope of disclosure includes activities and investments required to achieve the plans, and any risks or limiting factors that might affect achievement of the plans or targets.~~

~~1.3 The scope of disclosure includes the discussion of the demand for specific products, services and technologies that reduce well and field operators' fuel consumption, emissions, or create other efficiencies, and its ability to meet this demand.~~

2 An ~~The~~ entity shall disclose information about its short-, medium- and long-term strategies ~~discuss its short- and long-term plans~~ related to providing services and technologies to their customers to reduce greenhouse gas emissions effectively.~~air quality management, where:~~

2.1 Short-term strategies ~~may~~ include offering customer services and best practices such as fuel substitution ~~(for example, drop-in biodiesel)~~, use of dual fuel equipment, fugitive emissions monitoring technologies, leak detection and repair services, and routine ~~or~~ engine maintenance.

2.2 Long-term strategies ~~may~~ include alternative fuel-powered equipment, process or equipment redesigns, ~~and innovations, and~~ carbon capture and storage and other service offerings or technological innovations.

2.3 The disclosure includes information about the activities and investments required to support those strategies and any limiting factors related to those strategies.

2.4 The disclosure includes information about the entity's progress against plans or towards targets related to those strategies that it has disclosed or set in previous reporting periods.

~~3 The scope of disclosure shall include, at a minimum, emissions from these specific sources:~~

~~3.1 Combustion emissions (for example, fuel use in gas compression, power generation)~~

~~3.2 Flaring of hydrocarbons (for example, in depressurising, start-up/shut-down, well testing and well work-over)~~

~~3.3 Process emissions (for example, vessel loading, tank storage and flushing)~~

~~3.4 Venting of hydrocarbons, defined as the intentional (or designed), controlled release of gas to the atmosphere during normal operations~~

~~3.5 Fugitive emissions of greenhouse gases (including equipment leaks)~~

~~3.6 Other non-routine events (for example, gas releases or equipment maintenance)~~

~~3~~4 An ~~The~~ entity shall describe the risks, opportunities and trade-offs related to providing ~~discuss risks and opportunities relating to its ability to offer customers~~ services, technologies and other business ~~or~~ solutions designed to ~~that enhance energy efficiency and~~ reduce their customers' greenhouse gas emissions and increase their energy efficiency.~~air emissions, including of greenhouse gases.~~

3.1 The disclosure includes information about the resilience of an entity's strategy, business model and plans to respond to the potential uncertainties arising from providing such technologies, services and business solutions.

~~EM-SV-110a.3. Percentage of engines in service that comply with the highest level of emissions standards for non-road diesel engine emissions~~

~~1 The entity shall disclose the percentage of its non-road diesel engines that comply with the highest level of jurisdictional emissions standards.~~

~~1.1 The scope of disclosure shall include new and in-use non-road diesel engines, which may include those used in equipment, pumps, compressors and generators.~~

~~2 The entity shall calculate the percentage as the new and in-use number of non-road diesel engines in full compliance with the highest level of jurisdictional emissions standards during the reporting period, divided by the total number of non-road diesel engines active during the reporting period, where:~~

~~2.1 An engine is considered in compliance with the standards if (1) it belongs to an engine family which has test results showing official emission results and deteriorated emission levels at or below these standards, and (2) the engine family has received confirmation from a relevant certifying or regulatory body indicating alignment with the standard used.~~

~~2.2 Engine families are defined as engine product lines expected to have similar emissions characteristics.~~

~~2.3 The highest level of jurisdictional emissions standards represent the most stringent emissions requirements applicable to the jurisdiction in which its non-road diesel engines operate.~~

~~3 Engines exempt from the jurisdictional standard, such as some marine engines, shall be exempt for the purposes of this disclosure.~~

~~4 The scope of disclosure includes all operations, regardless of jurisdiction.~~

5 ~~The scope of disclosure includes non-road diesel engines manufactured, owned or operated by the entity, regardless of which entity bears the compliance obligation.~~

6 ~~The entity shall disclose the jurisdictional emission standard used in its disclosure, based on the jurisdiction in which its non-road diesel engines operate.~~

EM-SV-110a.4. (1) Gross Scope 1 emissions and (2) percentage subject to emissions-limiting regulations

1 An entity shall disclose (1) its gross Scope 1 greenhouse gas emissions in metric tonnes of carbon dioxide equivalents (CO_2-e).

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

1.2 These emissions include Scope 1 greenhouse gas emissions from stationary or mobile sources that include equipment at operating facilities, manufacturing facilities and office buildings; and vehicles used for heavy equipment and personnel transport (air, marine, road and rail).

2 An entity shall disclose (2) the percentage of its gross Scope 1 greenhouse gas emissions subject to applicable jurisdictional greenhouse gas laws, regulations or programmes intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

2.1 The percentage shall be calculated as the total quantity of gross Scope 1 greenhouse gas emissions subject to greenhouse gas emissions-limiting laws, regulations or programmes divided by the total quantity of gross Scope 1 greenhouse gas emissions.

2.1.1 For emissions subject to more than one emissions-limiting framework, the entity shall not account for those emissions more than once.

2.2 The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes excludes emissions subject to voluntary emissions-limiting frameworks (for example, voluntary trading systems), as well as reporting-based regulations.

Air Quality

Topic Summary

Oil & Gas – Services entities often operate large transport fleets and heavy equipment (both on- and off-road). With such large fleets, some service providers produce significant air emissions other than greenhouse gases, even off-contract. Of particular concern are fleet emissions of sulphur oxides, nitrogen oxides, volatile organic compounds and particulate matter. The financial consequences entities face from air emission compliance vary depending on the specific operational locations and the prevailing jurisdictional air emissions regulations. Amid increasing regulatory and public concerns about air quality, Oil & Gas – Services entities must manage and mitigate the potentially adverse effects of increasingly strict air quality regulations and associated reputational and operational risks, particularly those involving nearby communities, on the entity's prospects.

Metrics

EM-SV-120a.1. Air pollutant emissions: (1) NO_x (excluding N_2O), (2) SO_x, (3) volatile organic compounds and (4) particulate matter

1 An entity shall disclose its air pollutant emissions, in metric tonnes for each pollutant, released into the atmosphere.

1.1 The disclosure includes air pollutants associated with the entity's operational activities and sources of emissions, which include stationary or mobile sources.

1.2 The entity shall define air pollutant emissions according to the applicable jurisdictional law or regulation.

1.3 If the entity is subject to more than one jurisdictional law or regulation that defines air pollutant emissions, the entity shall disclose whether and how variations between these frameworks affect the reported data.

1.4 If the entity defines and manages its air pollutant emissions using the strictest compliance guidelines from applicable legal, regulatory or voluntary trade association frameworks in all jurisdictions in which it operates, it shall disclose that fact, and if so, which framework it uses.

2 An entity shall disclose its emissions of (1) nitrogen oxides (NO_x), reported as NO_x.

2.1 The scope of NO_x includes NO and NO_2 but excludes nitrous oxide, N_2O.

2.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define NO_x emissions, the entity shall instead use the United Nations Economic Commission for Europe (UNECE) Convention, *Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes*, 1988 definition of NO_x emissions.

3 An entity shall disclose its emissions of (2) sulphur oxides (SO_x), reported as SO_x.

3.1 The scope of SO_x includes SO_2 and SO_3.

3.2 If the jurisdiction in which the entity operates has no applicable law or regulation to define SO_x emissions, the entity shall instead use the UNECE Convention, *Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes*, 1985 definition of SO_x emissions.

4 An entity shall disclose its emissions of (3) non-methane volatile organic compounds (VOCs).

4.1 If the jurisdiction in which the entity operates has no applicable law or regulation to define VOC emissions, the entity shall instead use the UNECE Convention, *Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes*, 1991 definition of VOC emissions.

5 An entity shall separately disclose its emissions of (5) particulate matter (PM), disaggregated as (a) PM_{10} and (b) $PM_{2.5}$.

5.1 PM_{10} is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 10 micrometres.

5.2 $PM_{2.5}$ is defined as any airborne fine solid or liquid material with an aerodynamic diameter less than or equal to 2.5 micrometres.

6 An entity shall disclose the calculation method for its emissions disclosure, such as whether data is from:

6.1 direct measurement of emissions (such as online analysers);

6.2 calculations based on site-specific data;

6.3 calculations based on published emission factors; or

6.4 estimation.

Water Management ~~Services~~

Topic Summary

Oil and gas development and production often require ~~requires~~ large quantities of water, exposing the customers of service providers ~~producers~~ to the risks of water scarcity, water use regulations and related cost increases, particularly for onshore oil and gas activities in water-stressed regions. Service providers assist oil and gas operators in managing water and ~~Producers also must manage~~ wastewater disposal risks and costs. Likewise, some Oil & Gas – Service entities must manage their own water use and wastewater effluents disposal when off-contract to support manufacturing, maintenance and other activities. Service providers ~~As such, service entities that~~ develop ~~superior~~ technologies and processes to provide their customers with services and technologies to manage their water and wastewater, such as closed-loop water recycling systems to reduce customers' water consumption and wastewater disposal costs. These services increase Oil & Gas – Service entities' competitiveness, potentially improving their ~~, may gain~~ market share and ~~increase~~ revenue. Likewise, Oil & Gas – Service entities managing their off-contract water use can improve their own operational efficiency and operating costs, increasing their competitiveness in pursuing contracts with customers.~~, because drilling and wastewater management can be a significant competitive factor for their customers.~~

Metrics

~~EM-SV-140a.1. (1) Total volume of water handled in operations, (2) percentage recycled~~

~~1 The entity shall disclose the volume of water, in thousands of cubic metres, handled in operations from all sources.~~

~~1.1 Water sources include surface water (including water from wetlands, rivers, lakes and oceans), groundwater, rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

~~1.2 Handled water is transferred to the entity from a third party as part of an entity's contractual scope of service or is obtained directly and used by the entity in its operations.~~

~~2 The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1 Fresh water may be defined according to the local statutes and regulations where the entity operates. Where no regulatory definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2 Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

~~3 The entity shall disclose the percentage of water recycled as the volume recycled divided by the volume of water handled.~~

4 ~~Recycled water shall include the amount recycled in closed-loop and open-loop systems as well as recycled produced water or flowback.~~

~~4.1 Any volume of water used more than once shall be counted as recycled each time it was recycled and reused.~~

5 ~~Produced water is defined as water (brine) brought up from the hydrocarbon- bearing formation strata during the extraction of oil and gas and can include formation water, injection water, and any chemicals added downhole or during the oil/water separation process.~~

6 ~~Flowback is defined as the process of allowing fluids (including water) and entrained solids to flow from a well following a treatment, either in preparation for a subsequent phase of treatment or in preparation for clean-up and returning the well to production.~~

~~6.1 The term flowback also means the fluids and entrained solids that emerge from a well during the flowback process. The flowback period begins when material introduced into the well during the treatment returns to the surface following hydraulic fracturing or refracturing.~~

~~6.2 The flowback period ends when either the well is shut in and permanently disconnected from the flowback equipment or at production start-up.~~

~~6.3 The flowback period includes the initial flowback stage and the separation flowback stage.~~

7 ~~The scope is limited to operations for which the entity provides hydraulic fracturing, completion, drilling or water management services (for example, water treatment for reuse in drilling or hydraulic fracturing, and reduction of unwanted water in subsurface areas).~~

~~7.1 The scope may include water used in hydraulic fracturing fluids, drilling fluids, dust control and drilling cement production.~~

EM-SV-140a.2. Description of services and technologies offered to customers to manage risks and opportunities related to water management~~Discussion of strategy or plans to address water consumption and disposal-related risks, opportunities and impacts~~

1 An ~~The~~ entity shall disclose information about the services and technologies it offers to customers to manage the ~~discuss its strategy or plans to address water consumption and disposal-related~~ risks and ~~,~~ opportunities related to water use and wastewater disposal.~~and impacts.~~

1.1 The ~~scope of~~ disclosure includes a description of ~~shall include~~ the entity's product and service offerings related to water and wastewater management, described separately if they are distinct for specific ~~strategies, plans or reduction activities, including whether they pertain differently to different~~ business activities, jurisdictions, ~~units, geographies or~~ water sources, geographies or other factors.

~~1.2 The scope of disclosure includes the activities and investments by the entity required to achieve the plans and any risks or limiting factors that might affect achievement of the plans or targets.~~

~~2 The entity shall discuss demand for specific products, services and technologies that offer well and field operators reduced water consumption, water recycling or other water impact reductions, and its ability to meet this demand.~~

2~~3~~ An ~~The~~ entity shall disclose information about its short-, medium- and long-term strategies ~~discuss its short- and long-term plans~~ related to providing services and technologies to its customers to manage water use and wastewater disposal.~~management, where:~~

2.1 ~~3.1~~ Short-term strategies ~~may~~ include offering customer services and ~~adopting~~ best practices related to ~~in~~ water recycling or water efficiency. ~~initiatives.~~

2.2 ~~3.2~~ Long-term strategies ~~may~~ include process redesigns or technological innovations that reduce ~~fresh~~ water withdrawal in water-constrained ~~water constrained~~ regions, reduce excess water production from wells, and provide water treatment or recycling systems.

2.3 The disclosure includes information about the activities and investments required to support those strategies and any limiting factors related to those strategies.

2.4 The disclosure includes information about the entity's progress against plans or towards targets related to those strategies that it has disclosed or set in previous reporting periods.

~~4 The scope of impact reductions may relate to the following specific areas of water consumption or disposal:~~

~~4.1 Hydraulic fracturing fluids~~

~~4.2 Drilling fluids~~

~~4.3 Dust control~~

~~4.4 Cement production~~

~~4.5 Produced water or flowback~~

3~~5~~ An ~~The~~ entity shall describe the risks, opportunities and trade-offs related to offering ~~discuss risks and opportunities relating to: being able to offer customers~~ services, technologies and other business ~~or~~ solutions designed to ~~that~~ enhance water use efficiency, treatment and reuse. Such solutions can ~~, and~~ reduce water withdrawal ~~consumption~~ or wastewater production associated with oil and gas development and production.

EM-SV-140a.3. (1) Total water withdrawal, by source, (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations

1 An entity shall disclose (1) the quantity of water, in megalitres, withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from surface water, groundwater, seawater, produced water, or a third party for any use during the reporting period.

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

2 An entity shall disclose (2) the volume of water, in megalitres, consumed in its direct operations.

2.1 Water consumption is defined as the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period.

3 An entity shall disclose (3a) the volume of water withdrawn, in megalitres, from water-stressed locations as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 An entity shall disclose (3b) the volume of water consumed from water-stressed locations as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

EM-SV-140a.4. Total water discharged by (1) destination and (2) level of treatment

1 An entity shall disclose the (1) total volume of water discharged, in megalitres, disaggregated by destination.

1.1 Water discharge is defined as the sum of effluents, used water, and unused water released to surface water, groundwater, seawater or a third party, for which the organisation has no further use.

1.1.1 Surface water is defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams.

1.1.2 Groundwater is defined as water held in and recoverable from an underground formation.

1.1.3 Seawater is defined as water in a sea or ocean.

1.1.4 Third-party water is defined as water discharged by municipal water suppliers and municipal wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

1.2 The scope of disclosure includes water released into a receiving waterbody at either a defined discharge point (point-source discharge) or dispersed over land in an undefined manner (non-point-source discharge).

2 An entity shall disclose (2) the total volume of water discharged, in megalitres, disaggregated by level of treatment.

2.1 Water treatment is defined as the physical, chemical or biological processes that improve water quality by removing solids, pollutants, and organic matter from water and effluents.

2.2 Treatment levels include:

2.2.1 primary treatment, which aims to remove solid substances that settle or float on the water surface;

2.2.2 secondary treatment, which aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it; and

2.2.3 tertiary treatment, which aims to upgrade water to a higher level or quality before it is discharged, for example, removing heavy metals, nitrogen, and phosphorus.

2.3 If the entity discharges water that it determines does not require treatment, it shall disclose the associated volume in megalitres.

2.4 The level of treatment shall be reported for any water or effluents at the point of discharge, whether treated by the entity on-site or sent to a third party for treatment.

2.5 The entity shall disclose how it determines the appropriate level of treatment for water discharges.

Hazardous Materials ~~Chemicals~~ Management

Topic Summary

Oil & Gas – Services entities produce and manage potentially hazardous materials used to support oil and gas field development and production. ~~oilfield chemicals as well as drilling and hydraulic fracturing fluids based on demand from Exploration & Production (E&P) entities.~~ Although leaks ~~from a properly drilled and completed well~~ are rare, contamination of local soil and water resources can result from contact with hydraulic fracturing fluids and produced water resulting from poor well integrity. ~~Contamination may arise from issues related to poor well integrity.~~ Public concerns about some hazardous materials ~~chemicals~~ used in hydraulic fracturing fluids have, in some regions, resulted in fracturing bans~~, legislative proposals~~ and other regulations to mandate disclosure of the hazardous materials ~~chemicals~~ used. The precise chemical composition of hydraulic fracturing fluids is often proprietary information, and Oil & Gas – Services entities compete to create the most effective formulas. Oil & Gas – Services entities ~~Because of public and regulatory attention to the potential hazards of drilling fluids, entities~~ that effectively help their customers manage petroleum well development and asset integrity issues, properly handle ~~the production and use of~~ non-hazardous fracking fluids, and reduce per-well ~~the per well reduction of~~ drilling fluid volumes with innovative service offerings and technologies could ~~, may~~ increase their market share and ~~,~~ grow their revenues by reducing their customers' risks.~~and reduce the regulatory risk affecting their products.~~

Metrics

~~EM-SV-150a.1. (1) Volume of hydraulic fracturing fluid used, (2) percentage hazardous~~

~~1~~ ~~The entity shall disclose (1) the total volume of hydraulic fracturing fluid, in thousands of cubic metres (m^3), including water and chemical additives used to open and enlarge fractures within the rock formation.~~

~~2~~ ~~The entity shall disclose (2) the percentage hazardous, which is calculated as the volume of hazardous hydraulic fracturing fluid used divided by the total volume of hydraulic fracturing fluid used.~~

~~2.1~~ ~~Hydraulic fracturing fluid shall be considered hazardous if it is subject to hazardous classification in accordance with the United Nations' *Globally Harmonized System of Classification and Labelling of Chemicals for Health and/or Environmental Hazards* (GHS).~~

~~2.2~~ ~~The entity shall reference the GHS Parts 1–4 and Annexes 1–10 for the classification of hydraulic fluids as hazardous or non-hazardous.~~

~~3~~ ~~The scope of the disclosure includes wells for which the entity supplies hydraulic fracturing fluids and proppant, regardless of whether it conducts the hydraulic fracturing.~~

4 ~~The entity may discuss how the implemented fracturing techniques influence the quantity of hydraulic fracturing fluid and hazardous fluids used, as well as factors related to hydraulic fracturing operations that may be outside the entity's control.~~

EM-SV-150a.2. Description of services and technologies offered to customers to manage risks and opportunities related to handling hazardous materials~~Discussion of strategy or plans to address chemical-related risks, opportunities, and impacts~~

1 An ~~The~~ entity shall disclose information about the services and technologies it offers to customers to manage the ~~discuss its strategy or plans to address chemical-related~~ risks and ~~,~~ opportunities related to hazardous materials.~~and impacts.~~

1.1 The ~~scope of the~~ disclosure includes a description of ~~may include~~ the entity's product and service offerings related to hazardous materials, described separately if they are distinct for specific business activities, jurisdictions, types of hazardous materials or other factors.~~strategies, activities or management plans, including whether they vary based on business unit, geography or type of service.~~

~~1.2 The scope of the disclosure may include the entity's use of chemicals in drilling activities, well completion, well stimulation, flow assurance, and production and processing activities.~~

~~1.3 The scope of the disclosure may include the demand from well operators for the entity's products, services and technologies that specifically relate to the amount, type, legal status or hazard profile of chemicals used or sold by the entity, and the entity's ability to meet this demand.~~

2 An ~~The~~ entity shall disclose information about its short-, medium- and long-term strategies ~~discuss its short-term and long-term plans~~ related to providing services and technologies to its customers to manage hazardous materials.~~chemicals management, such that:~~

2.1 Short-term ~~short-term~~ strategies ~~may~~ include offering customer services and ~~adopting~~ best practices for hazardous materials ~~in chemicals~~ reuse, recycling or efficiency initiatives, ensuring compliance with local hazardous materials ~~chemicals~~ regulation, monitoring asset integrity, providing public disclosure of hazardous materials ~~chemicals~~ used and participating in voluntary initiatives such as Responsible Care and the International Council of Chemical Associations' Global Product Strategy~~(GPS)~~.~~; and~~

2.2 Long-term ~~long-term~~ strategies ~~may~~ include process redesigns or technological innovations that reduce or eliminate specific hazardous materials, ~~chemicals,~~ replace specific hazardous materials ~~chemicals~~ with benign alternatives, or implement green chemistry principles in the development of new products and services.

2.2.1 Green chemistry is the design of chemical products and processes to reduce or eliminate the use or generation of hazardous substances.

2.3 The disclosure includes information about the activities and investments required to support those strategies and any limiting factors related to those strategies.

2.4 The disclosure includes information about the entity's progress against plans or towards targets related to those strategies that it has disclosed or set in previous reporting periods.

3 An entity shall describe the risks, opportunities and trade-offs related to offering services, technologies or business solutions to manage the use of hazardous materials associated with oil and gas development and production.

~~The entity shall discuss the activities and investments required to achieve the plans or targets and any risks or factors that may limit its achievement of those plans or targets.~~

3.1 The disclosure includes information about the resilience of an entity's strategy, business model and plans to respond to the potential uncertainties arising from providing such technologies, services and business solutions.

Ecological Impacts ~~Impact Management~~

Topic Summary

The services and business support activities associated with oil and gas development and production ~~Oil and gas exploration and development activities and associated services and support activities~~ can have significant impacts on biodiversity and ecosystems. Oil & Gas – Services' customers ~~Entities~~ operating sites in environmentally sensitive locations ~~ecologically sensitive areas or that are resource-intensive operations~~ must effectively manage the disposal of drilling and associated waste, site ~~wastes, well~~ decommissioning, land use~~,~~ and potential hazardous ~~fuel~~ spills. These customers ~~Producers~~ face regulatory risks and permitting barriers to protect biodiversity and ecosystems from potential issues related to site development, drilling, underground waste injection, site ~~well~~ decommissioning and ~~site~~ remediation. Oil & Gas – Services entities ~~Entities~~ that offer cost-effective, efficient production and site decommissioning services and technologies to customers to ~~that~~ mitigate ecological ~~biodiversity~~ impacts by helping customers reduce ~~reducing~~ land use, drilling waste ~~wastes~~ and the risk of spills can ~~decrease the associated risks for their customers and~~ gain a competitive advantage and reduce the associated risks for their customers.

Metrics

~~EM-SV-160a.1. Average disturbed land area per (1) oil and (2) gas well site~~

~~1~~ ~~The entity shall disclose the area of disturbed land per well site in hectares (ha), disaggregated by (1) oil well sites and (2) gas well sites.~~

~~1.1~~ ~~Land is considered disturbed if it is associated with the scope of service provided by the entity.~~

~~1.2~~ ~~If more than one entity is present at a given well site, the share of disturbed land assigned to a given entity shall be that which is associated with the siting of equipment or facilities owned by or leased directly to the entity as well as associated access roads, impoundments or other supporting infrastructure provided by, and directly associated with, the scope of service provided by the entity.~~

~~2~~ ~~The scope of the disclosure includes land in the exploration, development, production or decommissioning project phases, but the scope is limited to sites where the entity is providing drilling, completion, fracturing, workover or decommissioning services.~~

~~2.1~~ ~~This disclosure shall consider all currently active sites, recently decommissioned sites or sites being restored; it is not limited to land newly disturbed during the reporting period.~~

~~2.2~~ ~~Land shall no longer be considered disturbed once:~~

~~2.2.1~~ ~~the entity's service has been completed and all personnel and equipment owned by or leased to the entity have been removed from the site; and~~

~~2.2.2~~ ~~any post-closure restoration and remediation efforts required by the service contract are substantially complete (even if monitoring is ongoing).~~

~~3 Disturbed land may result from facilities that include well pads, drilling and production facilities, pipelines, access roads, equipment storage, reserve pits, tailings, produced water impoundments, waste management facilities and aggregate pits.~~

EM-SV-160a.2. Description of services and technologies offered to customers to manage ~~Discussion of strategy or plan to address~~ risks and opportunities related to ecological impacts ~~from core activities~~

1 An ~~The~~ entity shall disclose information about the services and technologies it offers to customers to manage the ~~discuss its strategies or plans to address~~ risks and opportunities related to oil and gas development and production in or near environmentally sensitive locations.~~ecological impacts from core activities.~~

1.1 The ~~scope of the~~ disclosure includes a description of the entity's product and services offerings related to operating in or near environmentally sensitive locations, described separately if they are distinct for particular business activities, jurisdictions, ecosystem type or other factors.~~strategies, plans or reduction activities, including whether they vary based on business unit, geography or impact source.~~

~~1.2 The scope of the disclosure includes the activities and investments required by the entity to achieve the plans or targets and any risks or factors that may limit its achievement of those plans or targets.~~

1.2 Environmentally sensitive locations are defined as areas where an entity's assets or activities interface with nature in areas deemed to be ecologically sensitive. Such locations are defined as:

1.2.1 being important for biodiversity;

1.2.2 having high ecosystem integrity;

1.2.3 exhibiting rapidly declining ecosystem integrity; or

1.2.4 being important for ecosystem service provision.

~~2 The scope of core activities and associated impact reductions may relate to specific areas of service provision, including:~~

~~2.1 drilling or completion;~~

~~2.2 hydraulic fracturing;~~

~~2.3 water management;~~

~~2.4 decommissioning; and~~

~~2.5 chemicals management.~~

2~~3~~ An ~~The~~ entity shall disclose information about its short-, medium- and long-term strategies ~~discuss its short-term and long-term plans~~ related to oil and gas development and production in or near to environmentally sensitive locations.~~management of ecological impacts, such that:~~

2.1 ~~3.1~~ Short-term ~~short-term~~ strategies ~~may~~ include offering customer services and best practices related to the efficient use of materials or equipment, using ~~use of~~ multi-well pads~~,~~ and reducing ~~increased production efficiencies that reduce~~ drilling waste and other associated waste.~~wastes; and~~

2.2 ~~3.2~~ Long-term ~~long-term~~ strategies may include process redesigns, innovative ~~new~~ rig and equipment designs, advances in geological engineering, and advances in directional and multilateral drilling that reduce area disturbance, ~~land use,~~ noise, waste generation, natural resource consumption, hazardous material use ~~chemical usage,~~ and ecological ~~and biodiversity~~ impacts.

2.3 The disclosure includes information about the activities and investments required to support those strategies and any limiting factors related to those strategies.

2.4 The disclosure includes information about the entity's progress against plans or towards targets related to those strategies that it has disclosed or set in previous reporting periods.

3 The entity shall describe the risks, opportunities and trade-offs related to offering services, technologies or solutions to manage oil and gas development and production in or near environmentally sensitive areas.

3.1 The disclosure includes information about the resilience of an entity's strategy, business model and plans to respond to the potential uncertainties arising from providing such technologies, services and business solutions.

~~4 The entity may discuss technologies and innovations used to reduce ecological impacts that allow their customers access to sites otherwise inaccessible because of their ecological sensitivity.~~

~~5 The entity may discuss specific plans or strategies to reduce ecological impacts in areas with protected conservation status, endangered species habitat or in areas of unique ecological sensitivity such as the Arctic. Relevant areas in this regard include:~~

~~5.1 International Union for Conservation of Nature (IUCN) Protected Areas (categories I–VI);~~

~~5.2 Ramsar Wetlands of International Importance;~~

~~5.3 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites;~~

~~5.4 Biosphere Reserves recognised within the framework of UNESCO's Man and the Biosphere (MAB) Programme;~~

~~5.5 Natura 2000 sites;~~

~~5.6 sites that meet the IUCN's definition of a protected area: 'A protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values'; or~~

~~5.6.1 These sites may be listed in the World Database of Protected Areas (WDPA) and mapped on Protected Planet.~~

~~5.7 areas where IUCN Red List of Threatened Species classified as Critically Endangered (CR) or Endangered (EN) are extant.~~

~~5.7.1 A species is considered extant in an area if it is a resident, present during breeding or non-breeding season, or if it makes use of the area for passage.~~

~~5.7.2 For the purposes of disclosure, 'passage' is defined as all areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.~~

~~6 The entity shall discuss risks and opportunities related to its ability to offer its customers services, technologies or solutions that decrease ecological impacts, including land use and biodiversity impacts.~~

Workforce Health & Safety

Topic Summary

Workers in the Oil & Gas – Services industry ~~may~~ face significant health and safety risks related to working in ~~the~~ harsh ~~working~~ environments and handling potentially ~~volatile hydrocarbons and~~ hazardous materials and waste. ~~wastes.~~ In addition to acute impacts resulting from accidents, workers could ~~may~~ develop chronic health conditions. ~~, such as those caused by silica or dust inhalation, as well as mental health problems.~~ A significant proportion of the workforce at oil and gas drilling sites consists of contracted non-employee ~~temporary~~ workers from ~~and employees of entities in~~ the Oil & Gas – Services industry and those sub-contracted by the Oil & Gas – Services entities themselves. Health effects ~~impacts~~ on, and the safety performance of, such workers can affect entities directly by reducing ~~adversely affecting worker~~ productivity and increasing operational costs. Entities compete based on their reputation and ability to perform activities consistently, efficiently and safely. Customers evaluate accidents, spills, injuries and fatalities as important factors in awarding contracts to entities.

Metrics

EM-SV-320a.1. (1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training~~ for (a) ~~direct~~ employees, and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity's direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having 'control' of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2~~1~~ An ~~The~~ entity shall separately disclose (2) ~~(1)~~ its total recordable incident rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 ~~1.1~~ An injury or illness is typically defined as ~~considered~~ a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid~~,~~ or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare ~~health care~~ professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.

2.1.3 ~~1.1.1~~ First aid is typically defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but jurisdictional definitions may vary.

~~1.1.2 The entity may use applicable jurisdictional criteria for definitions of a recordable incident and a non-recordable incident such as first aid. The entity shall disclose the legal, regulatory or industry framework used as the source for these criteria and definitions.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2 The entity shall disclose (2) its fatality rate for work-related fatalities.~~

~~3 The entity shall disclose (3) its near miss frequency rate (NMFR) for work-related near misses.~~

~~3.1 A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage or environmental damage, but had the potential to do so in other circumstances.~~

~~3.2 The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~4 All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~4.1 The '200,000' in the rate calculation represents the total number of hours 100 full-time workers working 40 hours per week for 50 weeks per year can provide annually.~~

~~5 The entity shall disclose (4) the average number of training hours it provided to its workforce for health, safety and emergency management training.~~

~~5.1 Training shall relate to topics such as the health, safety, or emergency preparedness of employees with respect to occupational risks or hazards to which employees are reasonably likely to be exposed and specific occupational risks or hazards.~~

~~5.2 The average number of hours of health, safety and emergency response training shall be calculated as: (total qualifying training hours provided by the entity) / (total number of employees).~~

~~5.2.1 The total number of employees is number of the entity's direct and contract employees at the end of the reporting period. If the total number of employees varied widely during the reporting period, the entity should discuss those variations to provide context.~~

4~~6~~ The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses. ~~includes work-related incidents only.~~

4.1 ~~6.1~~ Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~6.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~6.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~6.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~6.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 An entity shall disclose (3) the average number of training hours provided to its workforce for health, safety and emergency preparedness management training.

5.1 Training includes topics such as the health, safety or emergency preparedness related to the occupational risks or hazards to which the workforce is reasonably likely to be exposed and to specific occupational risks or hazards.

5.1.1 Training includes technical health, safety and emergency management training required by applicable jurisdictional authorities related to occupational risks or hazards.

5.2 The average number of hours of health, safety and emergency response training is calculated as the total qualifying training hours provided to the workforce divided by the total workforce.

5.2.1 The total workforce is defined as the number of individual employees and non-employee workers the entity employs at the reporting date.

6 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~7 The entity shall disclose the rates and average hours of training for each of these employee categories:~~

~~7.1 direct employees, defined as individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees; and~~

~~7.2 contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

~~8 The scope includes all employees regardless of employee location or type of employment.~~

EM-SV-320a.2. Description of management systems used to foster a safe working environment~~integrate a culture of safety throughout the value chain and project lifecycle~~

1 An ~~The~~ entity shall disclose information about:~~describe how it integrates a culture of safety throughout the value chain and project lifecycle.~~

1.1 how it cultivates a safe working environment throughout its operations, avoids accidents and minimises long-term health risks to its workforce;

1.2 ~~The discussion shall include~~ how it ~~the entity integrates a culture of safety~~ manages safety and coordinates emergency preparedness throughout its value chain, such as through technology, training, corporate culture, ~~joint management by the workforce and leadership,~~ rules and guidelines enforcement, and regulatory compliance;~~, and technology use.~~

1.3 how it manages long-term health risks associated with operations, such as through use of personal protective equipment, testing and monitoring;

1.4 ~~1.2~~ the ~~The discussion may broadly consider the entity's~~ safety ~~and emergency~~ management systems the entity uses ~~, but it shall specifically address systems used~~ to maintain a safe working environment, including the prevention of incidents, ~~accidents,~~ fatalities and illnesses;~~.~~

1.5 leading indicators the entity has developed to monitor, manage or improve safety performance, such as near-miss reporting, workforce engagement programmes, hazard reduction, emergency drills or safety-related compliance rates; and

1.6 the implementation of these safety management systems including progress towards tracking safety and health performance, and obtaining third-party verification of the systems' efficacy.

2 An ~~The~~ entity shall describe ~~include a description of~~ how workforce safety management and emergency preparedness are ~~is~~ coordinated among business partners (for example, contractors and subcontractors).

~~3 The value chain and project life cycle include geological and seismic surveys, site surveys, exploratory drilling, appraisal drilling, site development, production and decommissioning.~~

EM-SV-320a.3. Number of vehicle ~~road~~ accidents and incidents

1 An ~~The~~ entity shall disclose the total number of vehicle ~~road~~ accidents and incidents involving its ~~direct or contracted~~ employees and non-employee workers during hours of work.~~employment.~~

~~1.1 Direct employees are defined as individuals on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees.~~

~~1.2 Contract employees are defined as individuals who are not on the entity's payroll, but who are supervised by the entity on a regular basis, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

1.1 ~~1.3~~ An accident is defined as an occurrence involving a ~~commercial~~ vehicle operating on-road or off-road ~~on a road~~ and engaging in operational ~~commercial~~ activities for the entity that results in one or more vehicles incurring disabling damage. Such damage requires at least one vehicle ~~because of the accident, requiring the vehicle(s)~~ to be transported away from the scene by a tow truck or another vehicle or to be abandoned.

1.1.1 The disclosure includes accidents and incidents involving all types of vehicles and similar equipment used by the entity such as service, heavy goods and heavy duty vehicles.

1.2 ~~1.4~~ An accident excludes an occurrence that involves only boarding and alighting from a stationary vehicle or only loading or unloading cargo.~~does not include:~~

~~1.4.1 an occurrence involving only boarding and alighting from a stationary vehicle; or~~

~~1.4.2 an occurrence involving only the loading or unloading of cargo.~~

1.3 ~~1.5~~ An incident is defined as any event involving a licensed vehicle while it is engaging in operational activities for the entity ~~on business use~~ resulting in a recordable incident, vehicle damage~~,~~ or other property damage.

1.3.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

1.3.2 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

~~1.5.1 An injury or illness is considered a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed health care professional is considered a recordable incident, even if it does not result in death, days~~

~~away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.~~

~~1.5.2 First aid is defined as emergency care or treatment for an ill or injured person before regular medical aid can be provided.~~

~~1.5.3 The entity may use applicable jurisdictional criteria for definitions of recordable incident and first aid.~~

~~2 The minimum scope of disclosure includes accidents and incidents reported to a relevant jurisdictional authority.~~

Business Ethics~~ & Payments Transparency~~

Topic Summary

Many ~~With operations around the world, entities in the~~ Oil & Gas – Services entities manage global operations and often ~~industry~~ interact with jurisdictional ~~many~~ government ~~and local~~ officials, either directly or through agents, to secure contracts with state-owned oil entities and multinational corporations. Bribery~~, corruption~~ and the transparency of payments to governments could ~~may~~ be significant issues, depending on the quality of the entity's financial management and payment controls ~~the region~~ and the risk of encountering corrupt officials in a specific jurisdiction. Anti-bribery ~~Anti-corruption, anti-bribery,~~ and payments transparency laws and ~~initiatives create~~ regulatory mechanisms ~~to~~ reduce the risk of misconduct. Violations of law or regulation ~~these~~ could result in significant one-time costs and ~~or~~ higher compliance costs. ~~, whereas successful compliance with such regulations could avoid adverse outcomes.~~ Entities are under pressure to ensure they have the necessary governance and internal controls to ~~their governance structures and practices can~~ monitor and manage the risks associated with corruption and either ~~,~~ wilful or unintentional participation in illegal or unethical payments~~, or with gifts~~ to government officials or private individuals.

Metrics

EM-SV-510a.1. Revenue ~~Amount of net revenue~~ in countries that have the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index

1 An ~~The~~ entity shall disclose the revenue recognised from operations and activities ~~its net revenue from activities~~ located in the countries with the 20 lowest rankings in Transparency International's Corruption Perceptions ~~Perception~~ Index (CPI).

1.1 The 20 lowest numerical ranks are ~~shall be~~ used to generate the country rankings. ~~scope of countries.~~ Because more than one country can share a single rank, the rankings can ~~scope may~~ include more than 20 countries.

1.2 Revenue related to operations and activities includes all revenue recognised by the entity from the transfer of promised goods produced or sold or services provided in countries with low CPI rankings.

2 The entity shall use the latest ~~most current~~ version of the CPI at the reporting date.

3 An ~~The~~ entity shall include information about its operations and activities ~~may discuss its operations~~ located in countries in the 20 lowest ~~with low~~ rankings in the CPI ~~index~~ but that present low business ethics risks. The entity shall also include information about ~~; and may provide similar discussion for~~ operations located in countries not in ~~that do not have one of~~ the 20 lowest rankings if the entity determines them to ~~in the index but that~~ present unique or high business ethics risks.

EM-SV-510a.2. Description of the management systems ~~system~~ for the prevention of corruption and bribery throughout the value chain

1 An ~~The~~ entity shall disclose information about ~~describe~~ its management systems ~~system~~ and due diligence practices ~~procedures~~ for assessing and managing corruption and bribery risks within the scope of its own operations and those associated with business partners in its value chain.

1.1 Business partners ~~may~~ include customers, suppliers, contractors, subcontractors and joint arrangement partners.

1.2 Relevant aspects of a management system include~~, if relevant~~:

1.2.1 employee awareness programmes;

1.2.2 internal mechanisms for reporting and following up on suspected violations;

1.2.3 anti-corruption policies; and

1.2.4 application of the Extractive Industry Transparency Initiative ~~(EITI)~~ Standard, including the ~~which may include~~ provisions related to beneficial ownership and politically exposed persons, licences and contracts, social expenditures, project-level payments, subnational payments, data accessibility, and multi-stakeholder engagement.

2 The disclosure includes information about the entity's ~~entity may discuss its~~ implementation of the following organisational guidelines, as applicable:

2.1 Organization for Economic Co-operation and Development ~~(OECD)~~ anti-corruption guidelines;

2.2 International Chamber of Commerce ~~(ICC)~~ *Rules of Conduct and Recommendations to Combat Extortion and Bribery*, 2005;

2.3 Transparency International *Business Principles for Countering Bribery*, 2013;

2.4 United Nations Global Compact 10th Principle;~~ and~~

2.5 World Economic Forum ~~(WEF)~~ Partnering Against Corruption Initiative; and ~~(PACI).~~

2.6 comparable applicable jurisdictional law and regulation related to prevention of corruption and bribery.

3 The disclosure includes information about any applicable jurisdictional law or regulation ~~entity may discuss laws or regulations~~ related to payments transparency to which the entity ~~it~~ is subject.

Management of the Legal & Regulatory Environment

Topic Summary

The Oil & Gas – Services industry is subject to many ~~numerous sustainability-related~~ regulations and a rapidly changing regulatory environment. Entities in the industry regularly participate in the regulatory and legislative process, whether directly or indirectly through industry association representatives, on a wide variety of sustainability-related issues. Oil & Gas – Services entities and their proxies ~~environmental and societal issues, and they may do so directly or through representation by an industry association. Entities may participate in these processes to~~ ensure industry views are represented in the development of industry-related regulations. ~~affecting the industry, as well as to represent shareholder interests.~~ However, such attempts to influence the development of jurisdictional law or regulation without accounting for long-term sustainability-related issues that can affect an entity's prospects can eventually adversely affect ~~environmental laws and regulations may have an adverse effect on~~ entities' reputations ~~with stakeholders~~ and ultimately impair the industry's ~~affect the entity's~~ social licence to operate. Entities that carefully ~~can~~ balance these inherent tensions are well ~~may be better~~ positioned to respond to ~~medium-to-long-term~~ regulatory changes.~~developments.~~

Metrics

EM-SV-530a.1. Description of entity ~~Discussion of corporate~~ positions related to government regulations or policy proposals ~~that address environmental and social factors~~ affecting the industry

1 An ~~The~~ entity shall disclose information about its strategy and efforts to influence ~~identify risks and opportunities related to~~ legislation, regulation or rule-making (the legal and regulatory environment) ~~(hereafter referenced collectively as the 'legal and regulatory environment')~~ associated with environmental and social factors that could reasonably be expected to affect the entity's prospects.~~may have significant financial consequences.~~

1.1 The disclosure includes information about current, ~~scope shall include existing,~~ emerging~~,~~ and anticipated law or regulation related to environmental and social factors in the jurisdictions where the entity operates.~~known future risks and opportunities.~~

~~1.2 The scope shall include risks and opportunities that exist domestically and internationally.~~

1.2 ~~1.3~~ Environmental ~~The regulatory environment related to relevant environmental~~ and social factors are defined as matters related to ~~includes those factors related to~~ greenhouse gas emissions, other air emissions, water withdrawals and wastewater, waste and hazardous materials management, environmental impacts, community impacts, ~~effluents, chemical use, ecological impacts, employee~~ workforce health and safety, ~~natural resource governance,~~ and business ethics ~~and payments transparency~~.

1.3 ~~2~~ Risks to the entity include the reputational risk incurred if its stance on legal and regulatory matters contradicts ~~Relevant risks to an entity may include risk of increased compliance costs, risk of policy reversal, risk of loss of financial incentives (for example, reduction or elimination of tax deductions associated with oil and gas exploration and production), risk to reputation because of the entity's stance and actions related to the legal and regulatory environment, risk that long-term strategy might be~~

~~misaligned with the legal and regulatory environment, and risk of misalignment with~~ the expectations of its customers, investors and other stakeholders.

1.4 ~~3~~ Opportunities for the entity include ~~Relevant opportunities may include improved financial conditions (for example, through policies that incentivise oil and gas exploration and production activities),~~ improved community relations because of its stance on legal and regulatory matters.~~the entity's stance and actions related to the legal and regulatory environment, and other benefits resulting from the entity's long-term strategic alignment with the legal and regulatory environment.~~

~~4 The entity shall discuss its efforts to manage risks and opportunities associated with each aspect of the legal and regulatory environment outlined in the SASB Oil & Gas - Services Standard that are relevant to the entity's business and may have significant financial consequences.~~

~~5 The entity shall discuss its strategy to manage risks and opportunities associated with each aspect of the legal and regulatory environment it has identified, such as:~~

~~5.1 any changes it has made or plans to make to its business structure or business model;~~

~~5.2 the development of new technologies or services;~~

~~5.3 any changes it has made or plans to make to its operational processes, controls or organisational structures; and~~

~~5.4 influencing regulatory or legislative processes and outcomes through interactions with regulators, regulatory agencies, legislators, policymakers and any others involved in the regulatory or legislative process.~~

2~~6~~ If an entity's stance on influencing regulatory and legislative processes differs from the official stance of its representative industry organisations, the entity shall explain the ~~The entity may describe whether its stance aligns with or differs from the official stance of its industry organisations and discuss any relevant~~ reasons for ~~alignment or~~ divergence.

Critical Incident Risk Management

Topic Summary

Oil and gas development and production activities involve ~~Entities in the Oil & Gas – Services industry are subject to~~ significant risks associated with low-probability, high-consequence events. ~~associated with oil and gas exploration, development and production activities.~~ Such events can ~~may~~ result in ~~multiple~~ fatalities, ~~significant~~ property damage or significant adverse effects to ~~on~~ the environment, the workforce or local communities, for which both the service provider and their customers could be held legally liable. Safety ~~. Entities may be affected indirectly through safety~~ incidents or emergencies can adversely affect both the Oil & Gas – Services entity's customers and the entity's own reputation for cultivating a safe work environment. Oil & Gas – Services entities ~~affecting their Exploration & Production (E&P) industry clients. Significant incidents can have wide-ranging negative social and environmental consequences, for which both E&P and Services entities may be held liable. Entities~~ compete based on ~~their reputation and~~ ability to perform various activities related to the development and production of oil and gas ~~on a~~ consistently and safely. ~~safe basis.~~ In addition to effective process safety management practices, many Oil & Gas – Services entities prioritise developing a strong culture of safety to reduce the probability of accidents and other health and safety incidents. If accidents and other emergencies do occur, Oil & Gas – Services entities with a strong safety culture are often able to detect and respond to such incidents ~~more~~ effectively. A culture of safety ~~that~~ engages and empowers both the service provider's employees and non-employee workers ~~contractors~~ to work with customers ~~management and entities in the E&P industry~~ to safeguard their own health, safety and wellbeing. This culture helps ~~well-being, and to~~ prevent accidents and reduces ~~, is likely to help entities reduce~~ risks that might impair the entity's reputation and the entity's prospects.~~to their financial value.~~

Metrics

EM-SV-540a.1. Description of management systems used to identify and mitigate low-probability, serious accidents ~~catastrophic and tail-end risks~~

1 An ~~The~~ entity shall disclose information about the ~~describe its~~ management systems it uses ~~used~~ to identify and mitigate low-probability, serious accidents and emergencies that could have catastrophic effects on human health, local communities and the environment.~~catastrophic and tail-end risks.~~

~~1.1~~ ~~The scope of catastrophic and tail-end risks shall include low-probability, high-impact accidents and emergencies that could have catastrophic effects on human health, local communities and the environment.~~

~~1.2~~ ~~The scope of the disclosure shall include how the entity integrates a culture of safety as well as management systems and technical controls to manage and mitigate catastrophic and tail-end risks.~~

~~1.3~~ ~~The description may include employee training, the use of operating procedures, hot work permitting, pre-start-up safety reviews, mechanical integrity programmes, management of change, incident investigation, emergency planning and response, audits and other management systems.~~

2 An ~~The~~ entity shall describe ~~include a description of~~ how critical incident risk management is coordinated among business partners (for example, contractors and subcontractors).

3 The information disclosed ~~scope of the disclosure~~ includes all phases ~~stages~~ of a project's life cycle, such as ~~lifecycle, which may include~~ geological and seismic surveys, site surveys, exploratory drilling, appraisal drilling, site development, production and decommissioning.

Processed Foods

ABOUT THE SASB STANDARDS

As of August 2022, the International Sustainability Standards Board (ISSB) ~~of the IFRS Foundation~~ assumed responsibility for the SASB Standards. The ISSB has committed to maintain and~~,~~ enhance ~~and evolve~~ the SASB Standards. ~~and encourages preparers and investors to continue to use the SASB Standards.~~

IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* ~~(IFRS S1)~~ requires entities to refer to and consider the applicability of disclosure topics in the SASB Standards when identifying sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Similarly, IFRS S1 requires entities to refer to and consider the applicability of metrics in the SASB Standards when determining what information to disclose regarding sustainability-related risks and opportunities.

In June 2023, the ISSB amended climate-related topics and metrics in the SASB Standards to align them with the industry-based guidance accompanying IFRS S2 *Climate-related Disclosures*. In December 2023, the ISSB amended the non-climate-related topics and metrics as part of ~~in connection with~~ the International Applicability of SASB Standards project.

Effective Date

[This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after XX XXXuary 20XX. Early application is permitted.]

~~This version 2023-12 of the Standard is effective for all entities for annual periods beginning or after January 1, 2025. Early adoption is permitted for all entities.~~

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INTRODUCTION

Overview of SASB Standards

The SASB Standards are a set of 77 industry-specific ~~sustainability accounting~~ standards ('SASB Standards' or 'Industry Standards'), ~~("SASB Standards" or "Industry Standards"),~~ categorised pursuant to the Sustainable Industry Classification System® (SICS®).~~Sustainable Industry Classification System® (SICS®)~~~~.~~

SASB Standards include:

1. **industry** ~~**Industry**~~ **descriptions**— ~~—~~which are intended to help entities identify applicable industry guidance by describing the business models, associated activities and other common features that characterise participation in the industry;~~.~~

2. **disclosure** ~~**Disclosure**~~ **topics**— ~~—~~which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry;~~.~~

3. **metrics**— ~~**Metrics** —~~which accompany disclosure topics and are designed to, either individually or as part of a set, provide useful information regarding an entity's performance for a specific disclosure topic;~~.~~

4. **technical** ~~**Technical**~~ **protocols**— ~~—~~which provide guidance on definitions, scope, implementation and presentation of associated metrics; and~~.~~

5. **activity** ~~**Activity**~~ **metrics**— ~~—~~which quantify the scale of specific activities or operations by an entity and are intended for use in conjunction with the metrics referred to in point 3 to normalise data and facilitate comparison.

~~Entities using the SASB Standards as part of their implementation of ISSB Standards should consider the relevant ISSB application guidance.~~

~~For entities using the SASB Standards independently from ISSB Standards, the *SASB Standards Application Guidance* establishes guidance applicable to the use of all Industry Standards and is considered part of the Standards. Unless otherwise specified in the technical protocols contained in the Industry Standards, the guidance in the SASB Standards Application Guidance applies to the definitions, scope, implementation, compilation and presentation of the metrics in the Industry Standards.~~

~~Historically, the *SASB Conceptual Framework* set out the basic concepts, principles, definitions and objectives that guided the SASB Standards Board in its approach to setting standards for sustainability accounting.~~

Use of the SASB Standards

The SASB Standards serve as a source of guidance ~~are intended to aid~~ for entities to disclose ~~in disclosing~~ information about sustainability-related risks and opportunities that could reasonably be expected to affect an ~~the~~ entity's prospects~~cash flows, its access to finance or cost of capital over the short, medium or long term~~.

Identifying applicable Industry Standards, disclosure topics and metrics

An entity determines which Industry Standard(s) and which disclosure topics are applicable ~~relevant~~ to its business, and which associated metrics to report. ~~In general, an entity should use the SASB Standard specific to its primary industry as identified in SICS® . However,~~ Entities ~~companies~~ with substantial business activities in multiple ~~SICS®~~ industries should refer to and consider the applicability of the disclosure topics and associated metrics in multiple ~~additional~~ SASB Standards.

The disclosure topics and associated metrics ~~contained~~ in this Standard have been identified as those that are likely to be useful to users of general purpose financial reports~~investors~~. Thus the Standards assist entities to prepare sustainability-related financial disclosures that provide material information to users. However, materiality is an entity-specific assessment and the responsibility for determining what matters to provide information about and for assessing what disclosures constitute material information ~~making materiality judgements and determinations~~ rests with the reporting entity.

The ISSB has published educational materials relevant to the application of SASB Standards:

(a) *Sustainability-related risks and opportunities and the disclosure of material information* (2024);

(b) *Using the SASB Standards to meet the requirements in IFRS S1* (2024); and

(c) *Using ISSB industry-based guidance when applying ISSB Standards* (2025).

Using the SASB Standards independently from ISSB Standards

While the SASB Standards serve as a source of guidance for applying IFRS S1, entities that are not applying IFRS Sustainability Disclosure Standards can still use the SASB Standards to disclose material information about their sustainability-related risks and opportunities.

Some metrics in the SASB Standards contain references to IFRS S1 and IFRS S2. Preparers that are not applying these Standards should treat these references as they would treat references to other standards and frameworks.

Industry Description

Entities in the Processed Foods industry ~~entities~~ process and package foods such as baked goods, ~~bread,~~ frozen foods, snack foods, ready-to-eat meals, baby food, pet foods and condiments ~~for retail consumer consumption~~. ~~Typically, these~~ Inputs to these products typically include agriculture and livestock products, seasonings, additives and enhancers. Processing activities include milling, grinding, seasoning, cooking, freezing, fermenting, canning and packaging. The products are made ready to consume on their own or as part of cooking and food preparation. Products ~~, are~~ marketed for retail consumers are generally sold in food retail stores and online ~~and can be found on~~

~~food retailers' shelves~~. The industry also supplies a range of business customers including restaurants, cafeterias, hotels and airlines. The industry is characterised by large and complex ingredient supply chains~~,~~ because many entities operate globally and source ingredients from around the world. ~~Large entities operate globally, and international opportunities are driving growth.~~

Note: this SASB Standard is intended for entities engaged in the final stages of the food processing value chain. Processed Foods entities are sometimes described as part of the 'packaged foods', 'ready-to-eat food manufacturing' or 'fast-moving consumer goods' industries. For content related to producing or processing raw agricultural products, refer to the Agricultural Products (FB-AG) SASB Standard. For content related to raising livestock or processing raw livestock products, refer to the Meat, Poultry & Dairy (FB-MP) SASB Standard. For content related to producing or selling beverages, refer to the Non-Alcoholic Beverages (FB-NB) SASB Standard.

SUSTAINABILITY DISCLOSURE TOPICS & METRICS

Table 1. Sustainability Disclosure Topics & Metrics

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Energy Management	(1) Total energy consumed, (2) purchased electricity consumed ~~percentage grid electricity~~ and (3) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts	~~Quantitative~~	Gigajoules (GJ)~~,~~ ~~Percentage (%)~~	FB-PF-130a.1
Water Management	(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	Megalitres (ML) ~~Thousand cubic metres~~, Percentage (%)	FB-PF-140a.1
	~~Number of incidents of non-compliance associated with water quality permits, standards and regulations~~	~~Quantitative~~	~~Number~~	~~FB-PF-140a.2~~
	Description of water-related ~~management~~ risks and opportunities and ~~discussion of~~ strategies ~~and practices~~ to manage them, including any targets set to monitor progress ~~mitigate those risks~~	~~Discussion and Analysis~~	n/a	FB-PF-140a.3
	Total water discharged by (1) destination and (2) level of treatment		Megalitres (ML)	FB-PF-140a.4

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TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Food Safety	~~Global Food Safety Initiative (GFSI) audit (1) non-conformance rates and (2) associated corrective action rates for (a) major and (b) minor non-conformances~~	~~Quantitative~~	~~Rate~~	~~FB-PF-250a.1~~
	~~Percentage of ingredients sourced from Tier 1 supplier facilities certified to a Global Food Safety Initiative (GFSI) recognised food safety certification programme~~	~~Quantitative~~	~~Percentage (%) by cost~~	~~FB-PF-250a.2~~
	~~(1) Total number of notices of food safety violation received, (2) percentage corrected~~	~~Quantitative~~	~~Number, Percentage (%)~~	~~FB-PF-250a.3~~
	(1) Description of ~~Number of~~ recalls issued for food safety reasons and (2) total weight ~~amount~~ of products ~~food product~~ recalled [26]	~~Quantitative~~	~~Number,~~ Metric tonnes (t)	FB-PF-250a.4
	Percentage of production volume from sites certified to internationally recognised food safety standards for (1) own operations and (2) co-packing operations		Percentage (%)	FB-PF-250a.5
	Processes, controls and procedures to ensure food safety throughout the value chain		n/a	FB-PF-250a.6
Health & Nutrition	~~Revenue from products labelled or marketed to promote health and nutrition attributes~~	~~Quantitative~~	~~Presentation currency~~	~~FB-PF-260a.1~~
	~~Discussion of the process to identify and manage products and ingredients related to nutritional and health concerns among consumers~~	~~Discussion and Analysis~~	~~n/a~~	~~FB-PF-260a.2~~
	Approach and strategy for managing health and nutrition attributes of product portfolio, including any targets set to monitor progress		n/a	FB-PF-260a.3
	Revenue from products classified as healthy by a recognised nutrient profile model		Presentation currency	FB-PF-260a.4
	Revenue from products sold (1) in jurisdictions that require health warning labels and (2) that are required to carry a health warning label		Presentation currency	FB-PF-260a.5

continued...

[26] ~~Note to **FB-PF-250a.4** – The disclosure shall include a description of notable recalls, such as those that affected a significant amount of product or those related to serious illnesses or fatalities.~~

...continued

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Product Labelling & Marketing	~~Percentage of advertising impressions (1) made on children and (2) made on children promoting products that meet dietary guidelines~~ [27]	~~Quantitative~~	~~Percentage (%)~~	~~FB-PF-270a.1~~
	~~Revenue from products labelled as (1) containing genetically modified organisms (GMOs) and (2) non-GMO~~	~~Quantitative~~	~~Presentation currency~~	~~FB-PF-270a.2~~
	Description of ~~Number of~~ incidents of non-compliance with industry or regulatory labelling or marketing codes	~~Quantitative~~	n/a ~~Number~~	FB-PF-270a.3
	~~Total amount of monetary losses as a result of legal proceedings associated with labelling or marketing practices~~ [28]	~~Quantitative~~	~~Presentation currency~~	~~FB-PF-270a.4~~
	Description of marketing policy and related governance and oversight processes		n/a	FB-PF-270a.5
	Revenue from products sold (1) in jurisdictions that restrict the advertising of specific products to children and (2) subject to regulations that restrict the advertising of specific products to children		Presentation currency	FB-PF-270a.6
Packaging ~~Lifecycle~~ Management	(1) Total weight of packaging, (2) percentage made from recycled or renewable materials, and (3) percentage that is designed to be recyclable, reusable~~,~~ or compostable	~~Quantitative~~	Metric tonnes (t), Percentage (%)	FB-PF-410a.1
	Description of strategies to manage ~~Discussion of strategies to reduce~~ the environmental impact of packaging throughout its lifecycle	~~Discussion and Analysis~~	n/a	FB-PF-410a.2
Product Innovation	Use of innovation in food products to address sustainability-related risks and opportunities		n/a	FB-PF-410b.1
~~Environmental & Social Impacts of Ingredient Supply Chain~~	~~Percentage of food ingredients sourced that are certified to third-party environmental or social standards, and percentages by standard~~	~~Quantitative~~	~~Percentage (%) by cost~~	~~FB-PF-430a.1~~
	~~Suppliers' social and environmental responsibility audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor non-conformances~~	~~Quantitative~~	~~Rate~~	~~FB-PF-430a.2~~

continued...

[27] ~~Note to **FB-PF-270a.1** – The disclosure shall include the applicable dietary guidelines and the method used to estimate advertising impressions.~~

[28] ~~Note to **FB-PF-270a.4** – The entity shall briefly describe the nature, context and any corrective actions taken because of monetary losses.~~

...continued

TOPIC	METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Environmental Supply Chain Management	Percentages of sourced commodities determined to be deforestation- or conversion-free, including any targets set to monitor progress		Percentage (%) by cost	FB-PF-430b.1
	Priority commodities and products that are sensitive to environmental risks in the supply chain		n/a	FB-PF-430b.2
	Description of strategies to manage environmental resources and implement sustainable agriculture practices in the supply chain		n/a	FB-PF-430b.3
Social Supply Chain Management	Processes, controls and procedures for managing labour conditions and impacts on local communities in the supply chain, including human rights due diligence		n/a	FB-PF-430c.1
	Percentages of sourced commodities certified to internationally recognised standards that trace the path of products through the supply chain		Percentage (%) by cost	FB-PF-430c.2
	Percentage of high-risk suppliers subject to an independent third-party audit or verification in the previous three years, with description of non-conformances and corrective actions		Percentage	FB-PF-430c.3
~~Ingredient Sourcing~~	~~Percentage of food ingredients sourced from regions with High or Extremely High Baseline Water Stress~~	~~Quantitative~~	~~Percentage (%) by cost~~	~~FB-PF-440a.1~~
	~~List of priority food ingredients and discussion of sourcing risks related to environmental and social considerations~~	~~Discussion and Analysis~~	~~n/a~~	~~FB-PF-440a.2~~

Table 2. Activity Metrics

ACTIVITY METRIC	~~CATEGORY~~	UNIT OF MEASURE	CODE
Weight of products sold	~~Quantitative~~	Metric tonnes (t)	FB-PF-000.A
Number of (1) own and (2) co-packing production facilities	~~Quantitative~~	Number	FB-PF-000.B

Energy Management

Topic Summary

The Processed Foods industry relies ~~is reliant~~ on energy ~~and fuel~~ as a primary input ~~inputs~~ for value creation in manufacturing food products. Entities in this industry depend on the availability and stability of their energy supply ~~Energy is needed~~ to operate large manufacturing facilities for cooking, refrigeration and packaging. Energy-intensive production can have detrimental social and environmental effects, such as increased greenhouse gas emissions, pollution and damage to ecosystem services. ~~Energy production and consumption contributes to significant environmental impacts, including climate change and pollution, which have the potential indirectly, yet materially, to affect processed food entity operations.~~ Entities that seek energy ~~Energy~~ efficiency in production or evaluate the mix of energy sources in their energy portfolios ~~and distribution~~ can mitigate their exposure to high or volatile energy costs and have more reliable energy supplies. ~~and limit an entity's contribution to direct and indirect greenhouse gas (GHG) emissions. Producers may be able to reduce the risk posed by volatile fossil fuel energy costs—particularly natural gas, which the industry uses heavily—by diversifying their energy portfolio across a range of sources. Decisions regarding~~ Decisions in selecting between different energy providers, such as third-party suppliers, grid reliance and self-generation, and different energy sources, such as fossil fuels and renewable energy, can mitigate the volatility of energy costs and increase the reliability of energy supply. ~~alternative fuels use, renewable energy and on-site generation of electricity versus purchasing from the grid, may influence both the costs and reliability of the energy supply.~~

Metrics

FB-PF-130a.1. (1) Total energy consumed, (2) purchased electricity consumed ~~percentage grid electricity~~ and (3) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts

1 An ~~The~~ entity shall disclose (1) the total quantity ~~amount~~ of energy it consumed ~~as an aggregate figure,~~ in gigajoules (GJ).

1.1 Total ~~The scope of~~ energy consumed ~~consumption~~ includes all forms of energy used by the entity, ~~from all sources,~~ including fuel, electricity, heating, cooling and steam. ~~energy purchased from external sources and energy produced by the entity itself (self-generated). For example, direct fuel usage, purchased electricity, and heating, cooling and steam energy all are included within the scope of energy consumption.~~

1.2 Total energy consumed includes purchased or acquired energy and self-generated energy used by the entity.

~~The scope of energy consumption includes only energy directly consumed by the entity during the reporting period.~~

1.2.1 Purchased and acquired energy is energy that is purchased or otherwise brought into the entity's boundary.

1.2.2 Purchased energy includes energy from owned or operated generation facilities where energy attributes, such as certificates, have been sold or transferred.

1.2.3 Self-generated energy is generation owned or operated by the entity that consumes the energy.

1.2.4 In preparing this disclosure, the entity shall determine ownership or control using the same measurement approach that it uses to determine greenhouse gas emissions.

1.2.5 Total energy consumed excludes any energy the entity generates using fuel it has already consumed—that is, self-generated electricity consumed from fuel is counted only once as fuel consumed. For example, if the entity has a co-generator that uses fuel to produce electricity and then consumes the generated electricity, that energy would be counted only once as fuel consumed.

1.2.6 If the entity stores any energy, that energy is counted only once when the entity has consumed the energy and it is no longer stored.

1.3 An ~~In calculating energy consumption from fuels and biofuels, the~~ entity shall use lower ~~higher~~ heating values (LHV), ~~(HHV),~~ also known as net ~~gross~~ calorific values, to calculate energy consumed from fuels and biofuels. The entity shall measure these values directly ~~(GCV), which are measured directly~~ or use the default net calorific values in the 2006 IPCC *Guidelines for National Greenhouse Gas Inventories* (Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1). ~~taken from the Intergovernmental Panel on Climate Change (IPCC).~~

1.3.1 The requirement to use such heating values applies unless the entity is required, in whole or in part, by a jurisdictional authority or an exchange on which it is listed to use different heating values for converting fuels into GJ. In such a case, the entity is permitted to instead use the heating values required by such a jurisdictional authority or exchange for the part of the entity to which that requirement applies, for as long as that requirement applies to that part of the entity.

1.3.2 If the entity uses heating values other than LHV for converting fuels into GJ, the entity shall disclose information about the heating values used.

2 An ~~The~~ entity shall disclose (2) the quantity ~~percentage~~ of purchased or acquired electricity ~~energy~~ it consumed (in GJ) included in the quantity disclosed as total energy consumed. ~~that was supplied from grid electricity.~~

2.1 Purchased electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as purchased grid electricity consumption divided by total energy consumption.~~

3 An ~~The~~ entity shall disclose ~~(3)~~ the quantity of electricity from renewable energy sources it consumed (in GJ), disaggregated between (3a) self-generation and (3b) direct contracts. ~~percentage of energy it consumed that was renewable energy.~~

3.1 Renewable energy sources are ~~is~~ defined as sources capable of being replenished in a short time through ecological cycles or agricultural processes, ~~energy from sources that are replenished at a rate greater than or equal to their rate of depletion,~~ such as geothermal, wind, solar, hydro and biomass.

3.2 Renewable electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as renewable energy consumption divided by total energy consumption.~~

3.3 Renewable electricity from self-generation is limited to that consumed from owned or operated equipment, where the electricity is produced and consumed by the same entity.

~~The scope of renewable energy includes renewable fuel the entity consumed, renewable energy the entity directly produced and renewable energy the entity purchased, if purchased through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs) or Guarantees of Origin (GOs), a Green-e Energy Certified utility or supplier programme, or other green power products that explicitly include RECs or GOs, or for which Green-e Energy Certified RECs are paired with grid electricity.~~

~~3.3.1 For any renewable electricity generated on-site, any RECs and GOs shall be retained (not sold) and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~3.3.2 For renewable PPAs and green power products, the agreement shall explicitly include and convey that RECs and GOs be retained or replaced and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~3.3.3 The renewable portion of the electricity grid mix outside of the control or influence of the entity is excluded from the scope of renewable energy.~~

3.4 For the purposes of this disclosure, renewable electricity from self-generation excludes electricity associated with contractual instruments entered into by the entity if the contractual instrument has been sold by the entity.

3.5 Direct contracts include renewable electricity consumed that comes from a direct line transfer, such as when electricity production is fed directly and exclusively to a single entity. Direct contracts also include renewable electricity consumed related to contracts where the entity has negotiated with a specific electricity generator to supply renewable electricity to the entity with no grid transfers.

3.6 If the entity purchases or acquires renewable electricity through other contractual instruments, the entity shall provide information about any of these instruments that is necessary to inform the understanding of users of general purpose financial reports of the procurement decisions made by the entity regarding various energy sources to manage energy consumption-related risks and opportunities, including those associated with Scope 2 emissions.

3.6.1 If the entity purchases renewable electricity through a contractual instrument, the entity shall apply the Scope 2 Quality Criteria as defined in the Greenhouse Gas Protocol's *GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard* (2015).

3.7 ~~3.4~~ If the entity consumes renewable electricity ~~For the purposes of this disclosure, the scope of renewable energy~~ from biomass sources, it shall disclose the quantity (in GJ) separately. ~~is limited to materials certified to a third-party standard (for example, Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification or American Tree Farm System), materials considered eligible sources of supply according to the *Green-e Framework for Renewable Energy Certification, Version 1.0* (2017) or Green-e regional standards or materials eligible for an applicable jurisdictional renewable portfolio standard.~~

3.7.1 Renewable electricity from biomass sources includes only materials certified to a third-party standard.

3.7.2 An entity shall disclose the third-party standard to which the materials are certified.

4 ~~The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel use (including biofuels) and conversion of kilowatt hours (kWh) to GJ (for energy data including electricity from solar or wind energy).~~

Water Management

Topic Summary

Processed Foods entities rely on a reliable water supply for their direct operations, for example, cooking, processing and cleaning finished goods. Additionally, entities in the industry generate and must manage the wastewater discharge from processing activities. As water scarcity becomes an issue of increasing importance, processed foods entities —operating in water-stressed regions could face~~—may face~~ increasing operational risks. Entities in the industry may also face higher operational costs as well as water shortages affecting critical operational processes because of interruptions to physical water availability or more stringent regulations on water use or quality~~because of the physical availability or more stringent regulations~~. Entities can manage water-related risks and opportunities through capital investments and assessment of facility locations relative to water scarcity risks, improvements to operational efficiency~~,~~ and partnerships with regulators and communities on issues related to water access and effluent.

Metrics

FB-PF-140a.1. (1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity's boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

~~2 The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1 Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2 Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1 ~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. ~~that evaporates during withdrawal, use and discharge~~

~~3.1.2 Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3 Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea~~

~~4 The entity shall analyse all its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

3 ~~5~~ An ~~The~~ entity shall disclose (3a) the volume of ~~its~~ water withdrawn, in megalitres, from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 ~~6~~ An ~~The~~ entity shall disclose (3b) the volume of water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

~~FB-PF-140a.2. Number of incidents of non-compliance associated with water quality permits, standards and regulations~~

~~1 The entity shall disclose the total number of incidents of non-compliance, including violations of a technology-based standard and exceedances of quantity or quality-based standards.~~

~~2 The scope of disclosure includes incidents governed by applicable jurisdictional statutory permits and regulations, which include the discharge of a hazardous substance, violation of pre-treatment requirements or total maximum daily load (TMDL) exceedances.~~

~~3 The scope of disclosure shall only include incidents of non-compliance that resulted in a formal enforcement action(s).~~

~~3.1 Formal enforcement actions are defined as governmental recognised actions that address a violation or threatened violation of water quantity or quality laws, regulations, policies or orders, and can result in administrative penalty orders, administrative orders and judicial actions, among others.~~

~~4 Violations shall be disclosed, regardless of their measurement methodology or frequency. These include violations for:~~

~~4.1 Continuous discharges, limitations, standards and prohibitions that are generally expressed as maximum daily, weekly and monthly averages; and~~

~~4.2 Non-continuous discharges or limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge and mass or concentration of specified pollutants.~~

FB-PF-140a.3. Description of water-related ~~management~~ risks and opportunities and ~~discussion of~~ strategies ~~and practices~~ to manage them, including any targets set to monitor progress ~~mitigate those risks~~

1 An ~~The~~ entity shall describe its ~~water management~~ risks associated with water withdrawals, water consumption and discharge of water or wastewater.

1.1 Risks associated with water withdrawals and water consumption include risks to the availability and quality of ~~adequate, clean~~ water resources, which include:

1.1.1 environmental ~~Environmental~~ constraints—such as operating in water-stressed regions, drought, floods, concerns of aquatic impingement or entrainment, interannual or seasonal variability, water quality that requires additional treatment at the point of input, and risks from the impact of climate change; and

1.1.2 regulatory ~~Regulatory~~ and financial constraints—such as water price volatility ~~in water costs~~, stakeholder perceptions and concerns related to water withdrawals (for example, those involving ~~from~~ local communities, non-governmental organisations and regulatory agencies), direct competition with ~~and impact from the actions of~~ other users (for example, commercial and municipal users), restrictions to withdrawals because of regulations, and constraints on the entity's ability to obtain and retain water rights or permits.

1.2 Risks associated with discharged ~~the discharge of~~ water or wastewater include the ability to obtain or retain rights or permits related to discharges, regulatory compliance related to discharges, restrictions on ~~to~~ discharges, ~~the ability to maintain control over the~~ temperature control of ~~water~~ discharges and risks stemming from impacts on local ecosystems and communities. ~~, liabilities, reputational risks and increased operating costs because of regulation, stakeholder perceptions and concerns related to water discharges (for example, those from local communities, non-governmental organisations and regulatory agencies).~~

2 An ~~The~~ entity shall ~~may~~ describe how its water-related ~~management~~ risks vary by: ~~in the context of:~~

2.1 ~~How risks may vary by~~ withdrawal source; ~~, including surface water (including water from wetlands, rivers, lakes and oceans), groundwater, rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities; and~~

2.2 ~~How risks may vary by~~ discharge destinations, including surface water, groundwater, seawater or wastewater utilities; ~~.~~

2.3 local regulations, including emerging regulations; and

2.4 location of operating facilities.

3 An entity shall disclose the locations of operating facilities where water-related risks are concentrated.

~~The entity may discuss the potential effects that water management risks may have on its operations and the time line over which such risks are expected to manifest.~~

~~3.1 Effects include those associated with costs, revenue, liabilities, continuity of operations and reputation.~~

4 An entity shall disclose quantitative and qualitative information about how water-related risks and opportunities have affected, and are anticipated to affect, the entity's financial position, financial performance and cash flows both for the reporting period and over the short, medium and long term.

~~The entity shall discuss its short- and long-term strategies or plans to mitigate water management risks, which include:~~

~~4.1 The scope of its strategy, plans, goals or targets, such as how they relate to various business units, geographies or water-consuming operational processes.~~

~~4.2 Any water management goals or targets it has prioritised, and an analysis of performance against those goals or targets.~~

~~4.2.1 Goals and targets include those associated with reducing water withdrawals, reducing water consumption, reducing water discharges, reducing aquatic impingements, improving the quality of water discharges and regulatory compliance.~~

~~4.3 The activities and investments required to achieve the plans, goals or targets, and any risks or limiting factors that might affect achievement of the plans or targets.~~

~~4.4 Disclosure of strategies, plans, goals or targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

5 The entity shall disclose any targets it has set, and any targets it is required to meet by law or regulation, to mitigate or adapt to water-related risks or take advantage of water-related opportunities.

5.1 In preparing this disclosure, the entity shall apply the requirements in paragraphs 51–53 of IFRS S1 that are applicable to the entity's water-related targets.

6 The entity shall disclose its strategies for managing water-related risks and opportunities, and achieving water-related targets, including:

~~5 For water management targets, the entity shall additionally disclose:~~

~~5.1 Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target.~~

~~5.2 The time lines for the water management activities, including the start year, the target year and the base year.~~

~~5.3 The mechanism(s) for achieving the target, including:~~

6.1 ~~5.3.1~~ efficiency ~~Efficiency~~ efforts (for example, using ~~, such as the use of~~ water recycling or closed-loop systems);

6.2 ~~5.3.2~~ product ~~Product~~ innovations (for example, ~~, such as~~ redesigning products or services to require less water);

6.3 ~~5.3.3~~ process ~~Process~~ and equipment innovations~~, such as those that enable the reduction of~~ (for example, reducing aquatic impingements or entrainments);

6.4 ~~5.3.4~~ use ~~Use~~ of tools and technologies (for example, the World Wildlife Fund Water Risk Filter~~, the Global Water Tool and Water Footprint Network Footprint Assessment Tool~~) to analyse water use, risks and opportunities; and

6.5 ~~5.3.5~~ collaborations ~~Collaborations~~ or programmes with communities ~~in place with the community~~ or other organisations.

~~5.4 The percentage reduction or improvement from the base year, in which the base year is the first year against which water management targets are evaluated towards the achievement of the target.~~

7 ~~6~~ An ~~The~~ entity shall disclose ~~discuss~~ whether its water management practices resulted ~~result~~ in any ~~additional~~ lifecycle impacts or trade-offs in its organisation, including trade-offs in land use, energy production and greenhouse gas (GHG) emissions, and why the entity chose these practices despite such ~~lifecycle~~ trade-offs.

FB-PF-140a.4. Total water discharged by (1) destination and (2) level of treatment

1 An entity shall disclose the (1) total volume of water discharged, in megalitres, disaggregated by destination.

1.1 Water discharge is defined as the sum of effluents, used water, and unused water released to surface water, groundwater, seawater or a third party, for which the organisation has no further use.

1.1.1 Surface water is defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams.

1.1.2 Groundwater is defined as water held in and recoverable from an underground formation.

1.1.3 Seawater is defined as water in a sea or ocean.

1.1.4 Third-party water is defined as water discharged by municipal water suppliers and municipal wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

1.2 The scope of disclosure includes water released into a receiving waterbody at either a defined discharge point (point-source discharge) or dispersed over land in an undefined manner (non-point-source discharge).

2 An entity shall disclose (2) the total volume of water discharged, in megalitres, disaggregated by level of treatment.

2.1 Water treatment is defined as the physical, chemical or biological processes that improve water quality by removing solids, pollutants, and organic matter from water and effluents.

2.2 Treatment levels include:

2.2.1 primary treatment, which aims to remove solid substances that settle or float on the water surface;

2.2.2 secondary treatment, which aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it; and

2.2.3 tertiary treatment, which aims to upgrade water to a higher level or quality before it is discharged, for example, removing heavy metals, nitrogen, and phosphorus.

2.3 If the entity discharges water that it determines does not require treatment, it shall disclose the associated volume in megalitres.

2.4 The level of treatment shall be reported for any water or effluents at the point of discharge, whether treated by the entity on-site or sent to a third party for treatment.

2.5 The entity shall disclose how it determines the appropriate level of treatment for water discharges.

Food Safety

Topic Summary

As it relates to production quality, spoilage, contamination, supply chain traceability and allergy labelling, food safety can significantly affect entities in the Processed Foods industry. Food safety recalls can happen for many ~~numerous~~ reasons, including packaging defects, food contamination, spoilage and mislabelling. Food safety issues that arise within an entity's value ~~supply~~ chain can ~~often~~ result in recalls of final products~~, with consequences on the brand reputation, operations and revenue of entities~~. Supply chain traceability as it relates to food safety issues is a major concern for entities in the industry. Poor management of food quality and safety may impair brand value, reduce revenues and increase costs associated with recalls, fines, lost inventory or litigation. Obtaining food safety certifications and ensuring suppliers and distributors meet food safety guidelines can ~~may~~ help entities in the industry safeguard product safety and communicate the quality of their products to retailers and consumers.

Metrics

~~FB-PF-250a.1. Global Food Safety Initiative (GFSI) audit (1) non-conformance rates and (2) associated corrective action rates for (a) major and (b) minor non-conformances~~

~~1 The entity shall disclose (1) its facilities' non-conformance rates with Global Food Safety Initiative (GFSI) recognised food safety certification programmes for (a) major non-conformances, and separately, (b) minor non-conformances.~~

~~1.1 A major non-conformance is defined by the relevant GFSI-recognised certification programme and includes the highest severity of non-conformances requiring escalation by auditors. Major non-conformances may arise from significant risks to food safety, non-compliance with relevant regulatory requirements or failure to correct minor non-conformances. Major non-conformances must be corrected in accordance with the relevant GFSI-recognised certification programme under audit.~~

~~1.2 A minor non-conformance is defined by the relevant GFSI-recognised certification programme and by itself does not confirm a systemic problem.~~

~~1.3 The entity shall calculate the non-conformance rates as the total number of non-conformances (in each respective category) identified among its facilities divided by the number of facilities audited.~~

~~1.4 The scope of the disclosure includes audit results from facilities owned or operated by the entity.~~

~~2 The entity shall disclose (2) the corrective action rates associated with its facilities' (a) major non-conformances, and separately, (b) minor non-conformances.~~

~~2.1 A corrective action is defined as the completion of an action (generally identified in a corrective action plan), within the time line defined by the GFSI-recognised certification programme, designed to eliminate the cause of a detected non-conformance, including implementing practices or systems to eliminate any non-conformance and ensure no reoccurrence of the non-conformance, as well as verifying the action taken.~~

~~2.2 The entity shall calculate the corrective action rates as the number of corrective actions that address non-conformances (in each respective category) divided by the total number of non-conformances identified (for each respective category).~~

~~3 The entity shall disclose the GFSI-recognised certification programme used to audit its facilities.~~

~~FB-PF-250a.2. Percentage of ingredients sourced from Tier 1 supplier facilities certified to a Global Food Safety Initiative (GFSI) recognised food safety certification programme~~

~~1 The entity shall disclose the percentage of food ingredients sourced from Tier 1 supplier facilities certified to a Global Food Safety Initiative (GFSI) recognised food safety certification programme.~~

~~1.1 Tier 1 suppliers are defined as suppliers that transact directly with the entity.~~

~~1.2 The percentage shall be calculated as the cost of food ingredients sourced from Tier 1 suppliers certified to an applicable GFSI-recognised certification programme divided by the total cost of food ingredients sourced from all Tier 1 suppliers.~~

~~2 The scope of the disclosure excludes packaging materials or other goods and inputs that are not food or ingredients.~~

~~3 The entity shall disclose the relevant GFSI-recognised certification programme used to audit its suppliers.~~

~~FB-PF-250a.3. (1) Total number of notices of food safety violation received, (2) percentage corrected~~

~~1 The entity shall disclose (1) the total number of notices of violation received that substantiate a violation of advisory and administrative codes, statutes or other requirements related to food safety.~~

~~1.1 A notice of violation is defined as an advisory and administrative violation for any food-safety-related issue, which may include issues related to facilities' hygienic practices, product allergen labelling, product contamination, food and colour additive violations and other food safety issues covered by applicable jurisdictional laws or regulations.~~

~~2 The entity shall disclose (2) the percentage of notices of violation received related to food safety that were corrected.~~

~~2.1 A notice of violation is considered corrected if an entity takes corrective actions before the regulatory agency initiates an enforcement action, where enforcement actions may include:~~

~~2.1.1 civil actions such as seizures, injunctions and false claims acts; and~~

~~2.1.2 criminal actions such as conviction and pre-trial diversion.~~

~~2.2 A notice of violation shall not be considered corrected if the entity failed to take correction action and no enforcement action was initiated.~~

~~2.3 The percentage shall be calculated as the number of notices of violation corrected, divided by the total notices of violation received.~~

FB-PF-250a.4. (1) Description of ~~Number of~~ recalls issued for food safety reasons and (2) total weight ~~amount~~ of products ~~food product~~ recalled

1 An ~~The~~ entity shall ~~disclose~~ (1) describe each of the ~~total number of~~ food safety-related recalls it issued during the reporting period, including voluntary and involuntary recalls.

1.1 A food safety-related recall is defined as the removal of a marketed product that occurs if a food may reasonably be believed to cause harm to consumers ~~consumers to become ill~~.

1.2 The description of each recall shall include the cause of the recall issue and whether the recall was voluntary or mandatory.

1.2.1 ~~1.2~~ Mandatory ~~Involuntary~~ recalls are those requested ~~or mandated~~ by applicable jurisdictional legal or regulatory authorities, and they are issued when a product does not comply with regulatory food safety standards, when a food safety-related defect in a product is identified or during instances of import refusal.

1.2.2 ~~1.3~~ Voluntary recalls are those initiated by the entity to remove products from the market for food safety-related concerns.

1.3 The entity shall disclose information about any corrective actions initiated as a result of each recall.

1.4 The entity shall disclose information about any other significant outcomes from the recall (for example, legal proceedings or fatalities).

1.5 The entity shall provide a digital link to the recall notice.

2 An ~~The~~ entity shall disclose (2) the total weight, in metric tonnes, of food product recalled. ~~subject to recalls.~~

~~3 The entity may disclose the percentage of recalls that were (a) voluntary and (b) involuntary.~~

~~Note to **FB-PF-250a.4**~~

~~1 The entity shall provide a discussion of notable recalls, such as those that affected a significant number of products or those related to potential or actual serious illnesses or fatalities.~~

~~1.1 A recall may be considered notable if it is mentioned in periodic jurisdictional recall reports.~~

~~2 For such recalls, the entity may provide:~~

~~2.1 description and cause of the recall issue;~~

~~2.2 total weight of food products recalled;~~

~~2.3 cost to remedy the issue;~~

2.4 ~~whether the recall was voluntary or involuntary;~~

2.5 ~~corrective actions; and~~

2.6 ~~any other significant outcomes (for example, legal proceedings or fatalities).~~

FB-PF-250a.5. Percentage of production volume from sites certified to internationally recognised food safety standards for (1) own operations and (2) co-packing operations

1 An entity shall disclose the percentage of its production volume, by cost of ingredients, from facilities certified to an internationally recognised food safety certification standard for (1) its own operations and (2) co-packing operations.

1.1 Relevant standards include the Global Food Safety Initiative (GFSI) and standards benchmarked by the GFSI, such as FSSC 22000 and the BRCGS Global Standard Food Safety.

1.2 The entity shall disclose the standard or standards used.

2 The scope of the disclosure excludes packaging materials or other goods and inputs that are not food or ingredients.

3 If the entity certifies sites using food safety standards that are not benchmarked by the GFSI, it shall disclose information about its use of these standards.

FB-PF-250a.6. Processes, controls and procedures to ensure food safety throughout the value chain

1 An entity shall describe the processes, controls and procedures it uses to monitor, manage and oversee food safety throughout its value chain.

2 An entity shall describe its approach to evaluating food safety in the operations of its Tier 1 suppliers, including disclosing:

2.1 whether it conducts audits or verifications on its Tier 1 suppliers;

2.2 whether its Tier 1 suppliers are certified to an internationally recognised food safety standard (GFSI or equivalent), and whether they are contractually required to have such a certification by the entity; and

2.3 whether it conducts engagement or training programmes with its Tier 1 suppliers.

2.4 Tier 1 suppliers are defined as suppliers that transact directly with the entity.

3 An entity shall disclose whether it has an approach to evaluating food safety in the operations of its suppliers beyond Tier 1 or in the operations of its distributors and, if so, describe these approaches.

Health & Nutrition

Topic Summary

Nutritional and health concerns such as obesity, ingredient safety and nutritional value are important factors in how processed foods entities compete with one another. The health and nutritional characteristics of products and ingredients are of growing concern to both consumers and regulators, increasing the potential for these issues to affect an entity's reputation and social licence to operate. New regulations, including taxes on processed foods and mandatory warning labels on foods with potentially unhealthy ingredients, nutrients or calorie content, may affect industry profitability and pose long-term risks in the form of reduced demand for the industry's products. Entities that adapt to changing consumer preferences to promote healthier, more nutritious offerings may be able to address consumer demand in emerging market segments and avoid risks associated with potential regulation.

Metrics

~~FB-PF-260a.1. Revenue from products labelled or marketed to promote health and nutrition attributes~~

~~1 The entity shall disclose the total revenue from the sales of its products labelled or marketed to promote health and nutrition attributes.~~

~~1.1 Products labelled to promote health and nutrition attributes contain labels and other written, printed or graphic matter on the article itself, on any containers and wrappers, or otherwise accompanying the article that promotes health and nutrition attributes.~~

~~1.2 Products are considered to be marketed to promote health and nutrition attributes if the entity communicates, delivers and exchanges offerings that promote the product's health and nutrition attributes.~~

~~2 The scope of products labelled or marketed to promote health and nutrition attributes includes products that contain one or more of these labels or marketing claims:~~

~~2.1 that a product has no additives (for example, artificial sweeteners, colours, preservatives and industrially produced trans fats);~~

~~2.2 that a product's fat, saturated fat, sodium or salt, and cholesterol are less than or equal to the requirements for the use of the term 'healthy' and related terms under applicable jurisdictional laws or regulations for health or nutrition claims, where:~~

~~2.2.1 health or nutrition claims may include labelling products as 'low', 'non' and 'diet';~~

~~2.3 that a product contains beneficial nutrients (for example, vitamins A and C, calcium, iron, protein and fibre) that meet or exceed the requirements for the use of the term 'healthy' and related terms under applicable jurisdictional laws or regulations for health or nutrition claims where:~~

~~2.3.1 health or nutritional claims may include labelling products as 'good source of', 'high' or 'rich in';~~

~~2.4 that a relative claim, such as 'light', 'reduced', or 'less' can be made regarding a product's added sugar content, consistent with applicable jurisdictional laws or regulations for health or nutrition claims.~~

~~3 The scope of products labelled or marketed to promote health and nutrition attributes excludes products labelled organic, free of genetically modified organism (GMO) ingredients and gluten-free.~~

~~FB-PF-260a.2. Discussion of the process to identify and manage products and ingredients related to nutritional and health concerns among consumers~~

~~1 The entity shall discuss its process to identify and manage products and ingredients related to nutritional and health concerns among consumers such as how it identifies concerns, the products and ingredients related to those concerns, and the resulting risks and opportunities.~~

~~1.1 Relevant efforts to discuss include risk assessments, organisation of long-term health or toxicology studies, and procedures for receiving and reviewing consumer concerns.~~

~~2 The entity shall discuss how identified concerns and risks are managed and communicated.~~

~~2.1 Relevant efforts to discuss include labelling transparency; phasing out, substituting or using more sustainable ingredients; updating product portions and product mix; improving the nutritional content of its products; or taking other measures to address consumer concerns, trends and preferences.~~

~~2.2 The entity may discuss implementation of relevant food ingredient and additive standards, such as the Food and Agriculture Organization of the United Nations' (FAO) and World Health Organisation's (WHO) *Codex Alimentarius,* as a strategy to manage products and ingredients related to nutritional and health concerns among consumers.~~

~~2.3 The entity may discuss whether strategies are related to or associated with a formal health and nutrition initiative or strategy (for example, the WHO Global Strategy on Diet, Physical Activity and Health), including regional, national, international and industry-specific programmes.~~

~~3 The entity shall discuss its use of certification programmes that address consumer concerns and preferences regarding ingredients, additives, and potential allergens.~~

~~3.1 Certifications may include:~~

~~3.1.1 organic;~~

~~3.1.2 non-GMO Project Verified; and~~

~~3.1.3 Certified Gluten-Free.~~

~~4 The entity shall discuss any significant complaints, such as those resulting in significant lawsuits, relating to nutritional and health concerns associated with products or ingredients, and efforts to mitigate any related future risks.~~

FB-PF-260a.3. Approach and strategy for managing health and nutrition attributes of product portfolio, including any targets set to monitor progress

1 An entity shall describe its process to assess and manage products and ingredients associated with nutritional and health concerns such as how it identifies concerns, the products and ingredients related to those concerns, and the resulting risks and opportunities.

1.1 Relevant processes include risk assessments, organisation of long-term health or toxicology studies, and procedures for receiving and reviewing consumer concerns.

2 An entity shall disclose how identified concerns and risks are managed and communicated to consumers.

2.1 Disclosure includes labelling transparency; phasing out, substituting or using alternative ingredients; updating product portions and product mixtures; improving the nutritional content of its products; and introducing new products.

2.2 The entity shall disclose whether its efforts align with the implementation of relevant food ingredient and additive standards, such as the Food and Agriculture Organization of the United Nations' (FAO) and World Health Organisation's (WHO) *Codex Alimentarius* or with other health and nutrition initiatives, including regional, national, international and industry-specific programmes.

3 An entity shall describe its response to significant complaints or litigation relating to nutritional and health concerns associated with its products.

4 An entity shall disclose information about its strategy for pursuing opportunities related to health and nutrition.

4.1 The entity shall describe its strategies related to the health- and nutrition-focused products or product categories of its product portfolio.

4.2 The entity shall describe the primary activities and investments involved in its strategies (for example, research and development, acquisitions, business development or marketing efforts).

5 An entity shall disclose the major products or product categories associated with its approach and strategy for managing the health and nutrition attributes of its product portfolio.

6 An entity shall disclose information about any targets it has set related to the health and nutrition attributes of its products.

6.1 In preparing this disclosure, the entity shall apply the requirements in paragraphs 51–53 of IFRS S1 that are applicable to the entity's health and nutrition targets.

FB-PF-260a.4. Revenue from products classified as healthy by a recognised nutrient profile model

1 An entity shall disclose the total revenue from its sales of healthy products.

1.1 Healthy products are defined as those that have been evaluated as healthy using a national or internationally recognised nutrient profile model (NPM) to classify food products according to their nutritional composition.

1.1.1 If products are evaluated using the Health Star Rating NPM, healthy products are defined as those with a score of 3.5 and above.

1.1.2 If products are evaluated using the Nutri-score NPM, healthy products are defined as those with an A, B or C label.

1.1.3 For other NPMs, healthy products are defined as those classified as healthy according to the model's methodology.

1.1.4 The entity shall disclose the NPM it uses to evaluate its products, and how a healthy product is defined according to that NPM (for example, the quantitative or qualitative rating, score or label used to determine which products are considered healthy).

2 An entity shall disclose revenue from products or product categories that are not classified as healthy according to a national or internationally recognised NPM but have other potential health benefits.

2.1 Examples include:

2.1.1 seasoning and ingredient products that are not generally consumed on their own and are often combined with other products to create healthy meals or snacks;

2.1.2 products that are healthier than alternatives or substitutes;

2.1.3 products that are intended to meet specific nutritional needs, such as active lifestyle nutrition or medical nutrition; and

2.1.4 products that improve upon the health- or nutrition-related attributes of the same product, such as lower-sodium or lower-sugar versions.

2.2 The entity shall describe the other health- and nutrition-related attributes of products or product categories included in this disclosure.

FB-PF-260a.5. Revenue from products sold (1) in jurisdictions that require health warning labels and (2) that are required to carry a health warning label

1 An entity shall disclose its revenue from products sold (1) in jurisdictions that require health warning labels on specific food products based on their health or nutritional attributes.

1.1 Health warning labels are defined as mandatory product labels that warn consumers about unhealthy products, including those that are high in calories, sugar, sodium, saturated fat or other health-related attributes.

1.1.1 This definition excludes warning labels relating to allergens.

1.1.2 This definition excludes warning labels directed at groups with specific health sensibilities, such as pregnant women.

2 An entity shall disclose its revenue from products sold (2) that are required to carry a health warning label in jurisdictions that mandate such labels.

3 An entity shall disclose the jurisdictions with regulations that require health warning labels where its products are sold and the products or product categories that are affected by such regulations.

3.1 If the entity concludes that its products or product categories may not be unhealthy for some or all consumers despite carrying a health warning label, then the entity shall disclose its reasons for reaching this conclusion.

Product Labelling & Marketing

Topic Summary

Communication with consumers through product labelling and marketing is an important facet of the Processed Foods industry. Food labelling information must be accurate and detailed to ensure transparency of ingredients and inform consumers about the nutritional content of products. The accuracy and depth of information presented in food labelling is important to consumers and regulators. Labelling regulations require specific and detailed product information to ensure food safety and inform consumers of the nutritional content of products. To inform purchasing decisions, consumers may seek additional information about product ingredients~~, such as the presence of genetically modified organism (GMO) content,~~ or about the methods used in product manufacturing. Consumers are also concerned about the ~~The~~ marketing practices of entities ~~are another area of public concern~~, especially those targeting children, including whether they promote healthy products, diets or lifestyles and whether they present accurate or ~~presenting~~ potentially ~~false or~~ misleading nutritional information. These practices are frequently covered by regulation, and entities may face fines or litigation related to advertising practices. Many entities institute responsible marketing policies that limit the channels and audiences they target with advertisements. Voluntary restrictions and control processes on marketing and labelling practices can lead to increased operating costs and negatively impact sales in the short term, but can improve an entity's brand value and ~~Product labelling and marketing issues can affect competition among entities, since entities may be subject to litigation or criticism resulting from misleading statements or failing to adapt to consumer demand for increased labelling transparency. Additionally, adherence to product labelling and marketing regulations may introduce near-term costs and may~~ reduce the risk of penalties or litigation. This can lead to increased revenue growth for companies who are perceived as more responsible in their labelling and marketing practices. ~~All these factors can impact an entity's brand value, operating costs and revenue growth.~~

Metrics

~~FB-PF-270a.1. Percentage of advertising impressions (1) made on children and (2) made on children promoting products that meet dietary guidelines~~

~~1 The entity shall disclose (1) the percentage of advertising impressions made on children.~~

~~1.1 An advertising impression is a measure of the number of times an advertisement is seen, heard, watched or read.~~

~~1.1.1 Advertising impressions may include those made through media such as television, radio, print, the internet (entity-owned and third-party websites), mobile apps, interactive games (including advergames), video games, computer games, DVDs and other video formats, and through word of mouth, licensed characters, celebrity endorsements and film tie-ins.~~

~~1.2 For the purposes of this disclosure, the definition of children shall be based on applicable jurisdictional laws and regulations.~~

~~1.2.1 If an entity's jurisdiction has no definition of children, then children are defined as age 12 and under.~~

~~1.2.2 The entity shall disclose the applicable jurisdictional laws or regulations used.~~

~~1.3 The percentage is calculated as the number of advertising impressions made on children divided by the total number of advertising impressions made.~~

~~1.3.1 The number of advertising impressions made on children is calculated as the expected share of children in the audience (viewers, listeners, readers or visitors) at the time of the media buy multiplied by the expected total number of advertising impressions made, regardless of whether the advertising is primarily directed at children.~~

~~1.3.2 The number of advertising impressions made on children shall be calculated regardless of whether the expected share of children in the audience is above or below any quantitative thresholds used to determine whether the advertising is primarily directed at children based on applicable jurisdictional laws or regulations.~~

~~2 The entity shall disclose (2) the percentage of advertising impressions made on children that promote products that meet international, national, regional, or industry dietary guidelines for children.~~

~~2.1 Dietary guidelines for children are defined as international, national, regional, or industry guidelines or criteria developed to promote healthy diets among children. Dietary guidelines must be publicly available and contain, at a minimum, quantitative thresholds for the health attributes of applicable products or product categories.~~

~~2.2 The percentage is calculated as the number of advertising impressions made on children that promote products that meet applicable dietary guidelines for children, divided by the total number of advertising impressions made on children.~~

~~Note to **FB-PF-270a.1**~~

~~1 The entity shall disclose the specific dietary guidelines for children used to calculate the percentage of advertising impressions made on children that promote products that meet such guidelines.~~

~~2 The entity shall disclose its method for collecting data and estimating the number of advertising impressions made on children. Data collection may include:~~

~~2.1 gross rating points and target ratios for television, radio and print advertising;~~

~~2.2 average visits per month, average page visits per month and targeted index by age for entity-owned websites; or~~

~~2.3 total number of advertising impressions viewed and child audience share for third-party websites, mobile apps, interactive games (including advergames), video games and computer games.~~

~~FB-PF-270a.2. Revenue from products labelled as (1) containing genetically modified organisms (GMOs) and (2) non-GMO~~

~~1 The entity shall disclose its revenue from products sold during the reporting period labelled as (1) containing genetically modified organisms (GMOs), and separately, (2) not containing GMOs (non-GMOs).~~

1.1 ~~GMOs are defined as organisms, except for human beings, in which genetic material has been altered in a way that does not occur naturally by mating or natural recombination.~~

~~2 The entity may disclose the revenue from its products that are labelled as (1) containing GMOs and (2) non-GMOs in jurisdictions subject to GMO labelling regulation.~~

~~3 For the purposes of this disclosure, products that are third-party certified to standards for which non-GMO is inherent to the certification shall be considered to be labelled 'non-GMO'.~~

FB-PF-270a.3. Description of ~~Number of~~ incidents of non-compliance with industry or regulatory labelling or marketing codes

1 An ~~The~~ entity shall disclose ~~its total number of substantiated~~ incidents of non-compliance with labelling- or marketing-related regulatory codes, statutes or other requirements.

1.1 Labelling- or marketing-related non-compliance incidents include those for products with labels that are misbranded or use deceptive advertising.

1.2 The scope of labelling- or marketing-related non-compliance incidents include warning letters, cease-and-desist orders, civil penalties and corrective advertising remedies.

2 An entity shall describe the nature and context (for example, nutrient content claims, health claims or misbranded labelling) of each incident of non-compliance.

~~The entity may disclose other incidents of non-compliance or violations with voluntary third-party, industry or internal codes related to labelling or marketing, such as the International Council for Advertising Self-Regulation (ICAS).~~

3 An entity shall disclose the total amount of fines and other expenses incurred because of these incidents.

4 An entity shall describe any corrective actions implemented in response to these incidents, including specific changes in operations, management, processes, products, business partners, training or technology.

~~FB-PF-270a.4. Total amount of monetary losses as a result of legal proceedings associated with labelling or marketing practices~~

~~1 The entity shall disclose the total amount of monetary losses incurred during the reporting period resulting from legal proceedings associated with marketing or labelling practices, such as those related to enforcement of applicable jurisdictional laws or regulations on nutrient content claims, health claims, other unfair or deceptive claims, or misbranded labelling.~~

~~2 The legal proceedings shall include any adjudicative proceeding involving the entity, whether before a court, a regulator, an arbitrator or otherwise.~~

3 ~~The losses shall include all monetary liabilities to the opposing party or to others (whether as the result of settlement, verdict after trial or otherwise), including fines and other monetary liabilities incurred during the reporting period as a result of civil actions (for example, civil judgements or settlements), regulatory proceedings (for example, penalties, disgorgement or restitution) and criminal actions (for example, criminal judgement, penalties or restitution) brought by any entity (for example, governmental, business or individual).~~

4 ~~The scope of monetary losses shall exclude legal and other fees and expenses incurred by the entity in its defence.~~

5 ~~The scope of the disclosure shall include legal proceedings associated with the enforcement of applicable jurisdictional laws or regulations.~~

~~Note to **FB-PF-270a.4**~~

1 ~~The entity shall briefly describe the nature (for example, judgement or order issued after trial, settlement, guilty plea, deferred prosecution agreement or non-prosecution agreement) and context (for example, nutrient content claims, health claims or misbranded labelling) of all monetary losses resulting from legal proceedings.~~

2 ~~The entity shall describe any corrective actions implemented in response to the legal proceedings. This may include specific changes in operations, management, processes, products, business partners, training or technology.~~

FB-PF-270a.5. Description of marketing policy and related governance and oversight processes

1 An entity shall disclose whether it has a marketing policy that guides or limits the contents of its advertisements or the channels or audiences it targets for reasons related to public health, the welfare of children, transparency of product characteristics or other ethical considerations.

2 An entity shall disclose whether its policy is publicly available, and if so, provide a link to the policy.

3 An entity shall describe its policy and identify any elements of its policy that differentiate its approach from approaches or policies employed by other entities in its industry.

4 An entity shall disclose information about the governance processes, controls and procedures it uses to monitor, manage and oversee its marketing policy.

4.1 The entity shall disclose how the policy is enforced when contracting third-party marketing agencies.

4.2 In preparing this disclosure, the entity shall avoid unnecessary duplication with other disclosures prepared in accordance with paragraph 27 of IFRS S1.

FB-PF-270a.6. Revenue from products sold (1) in jurisdictions that restrict the advertising of specific products to children and (2) subject to regulations that restrict the advertising of specific products to children

1 An entity shall disclose (1) its revenue from products sold in jurisdictions with regulation restricting the advertising of specific products to children.

1.1 Relevant regulations include those that seek to restrict, limit or ban advertising specific food products or food product categories to children based on their health and nutrition characteristics.

1.1.1 Relevant regulations include advertising that targets children, advertising on television channels for which children make up a specific portion of the audience, or advertising during specific times of the day.

1.1.2 For the purpose of this disclosure, an entity shall exclude regulation that restricts, limits or bans all advertising or all food advertising to children (an example of excluded regulation would be a restriction that applies to all food products advertised to children, regardless of the health characteristics of those products).

2 An entity shall disclose (2) its revenue from products that are subject to regulations restricting their advertising to children.

2.1 Products include those for which advertising the product to children would be restricted, limited or banned by regulation in the jurisdiction in which the product is sold.

3 An entity shall disclose the jurisdictions which restrict advertising of the entity's products to children and the products or major product lines that are affected by such regulations.

Packaging ~~Lifecycle~~ Management

Topic Summary

Packaging materials represent a major business cost and contribute to the environmental footprint of entities in the Processed Foods industry. Each stage of a package's lifecycle, including design, transportation and disposal, presents unique ~~environmental~~ challenges and opportunities. Entities are also affected by legislation and regulations regarding allowable packaging materials and ~~or~~ packaging end-of-life management. Entities can work with packaging manufacturers on packaging design to reduce costs, improve brand reputation and reduce the environmental impact of packaging. Innovations such as developing lightweight materials may also result in reduced ~~goods~~ transportation costs. Other innovations can improve end-of-life management of products, such as using recyclable or compostable materials, which can ~~may~~ mitigate potential risks related to costs and compliance.

Metrics

FB-PF-410a.1. (1) Total weight of packaging, (2) percentage made from recycled or renewable materials, and (3) percentage that is designed to be recyclable, reusable~~,~~ or compostable

1 An ~~The~~ entity shall disclose (1) the total weight of packaging purchased by the entity, in metric tonnes.

1.1 The scope of the disclosure includes primary packaging and secondary packaging but excludes tertiary packaging.

1.1.1 Primary packaging is defined as the packaging designed to come into direct contact with the product.

1.1.2 Secondary packaging is defined as the packaging designed to contain one or more primary packages together with any protective materials, if required.

1.1.3 The scope excludes tertiary packaging designed to contain one or more articles or packages, or bulk material, for the purposes of transport, handling or distribution. Tertiary packaging is known also as 'distribution' or 'transport' packaging.

2 An ~~The~~ entity shall disclose (2) the percentage of packaging, by weight, made from recycled or renewable materials.

2.1 Recycled content is defined, consistent with definitions in ISO 14021, ~~*Environmental labels and declarations—Self-declared environmental claims (Type II environmental labelling)*,~~ as the proportion, by weight ~~mass~~, of recycled or recovered material in ~~a product or~~ packaging, for which only pre-consumer and post-consumer materials shall be considered ~~as~~ recycled content.

2.1.1 Recycled material is defined as material reprocessed from recovered (or reclaimed) material through a manufacturing process and made into a final product or a component to be integrated into a product.

2.1.2 Recovered material is defined as material that would have otherwise been discarded as waste or used for energy recovery, but which has instead been collected and recovered (or reclaimed) as a material input, in lieu of new primary material, for a recycling or manufacturing process.

2.1.3 Pre-consumer material is defined as material diverted from the waste stream during a manufacturing process. This definition excludes materials such as rework, regrind or scrap that are generated in a process and capable of being reclaimed within the same process in which they were generated.

2.1.4 Post-consumer material is defined as material generated by households or by commercial, industrial and institutional facilities in their role as end-users of a product that can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

2.2 Renewable materials are defined, consistent with The Consumer Goods Forum’s *Global Protocol on Packaging Sustainability 2.0*, as those composed of biomass from a living source and replenished at a rate greater than or equal to the rate of depletion, such that:

2.2.1 biomass is defined as a material of biological origin, excluding peat and materials embedded in geological formations or fossilised, but including organic material (both living and dead) from above and below ground, such as trees, crops, grasses, tree litter, algae, animals and waste of biological origin (for example, manure), consistent with the *Global Protocol on Packaging Sustainability 2.0*.

2.3 The entity shall calculate the percentage as the weight of packaging made from recycled or renewable materials divided by the total weight of all packaging purchased ~~used~~ by the entity.

2.3.1 For packaging materials that contain both recycled and virgin parts or are made from both renewable and non-renewable resources, the entity shall classify a portion of the material as recycled or renewable based on an estimate of the weight of each portion.

3 An ~~The~~ entity shall disclose (3) the percentage of packaging, by weight, that is designed to be recyclable, reusable or compostable.

3.1 Packaging is designed to be ~~A product or packaging is defined as ‘~~recyclable~~’~~ if it can be diverted from the waste stream through available processes and programmes and can be collected, processed and returned to use in the form of raw materials or products, consistent with definitions in ISO 14021.

3.2 Packaging is designed to be ~~A product or packaging is defined as ‘~~reusable~~’~~ if it is conceived and designed to accomplish, within its lifecycle, a specific number of trips, rotations or uses for the same purpose for which it was conceived. ~~No product or packaging shall be claimed to be reusable unless the product or packaging can be reused for its original purpose.~~ The claim shall only be made if:

3.2.1 ~~(a)~~ a programme exists for collecting the used product or packaging and reusing it; or

3.2.2 ~~(b)~~ facilities or products exist that allow the purchaser to reuse the product or package. This definition is derived from ISO 14021.

3.3 Packaging is designed to be ~~A material is defined as~~ 'compostable' if it undergoes degradation by biological processes during composting to yield CO_2, water, inorganic compounds and biomass at a rate consistent with other known compostable materials and that leaves no visible, distinguishable or toxic residue. ~~Compostable plastics are defined further by ASTM D6400, *Standard Specification for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities*.~~

3.4 If the entity uses criteria or a design guide to enhance the recyclability, reusability, or compostability of its packaging—for example, the Consumer Goods Forum's *Golden Design Rules*, the Association of Plastic Recycler's *APR Design Guide*, or criteria developed internally—it shall disclose the guide or criteria used and describe how it has been applied to the design of its packaging.

3.5 ~~3.4~~ The entity shall calculate the percentage as the weight of packaging designed to be recyclable, reusable or compostable ~~packaging~~ divided by the total weight of all packaging purchased ~~used~~ by the entity.

3.5.1 If packaging materials meet more than one of these characteristics—for example, if packaging is both recyclable and reusable—the entity shall count such materials once.

4 ~~The entity may disaggregate the disclosure requested above by major packaging substrate (for example, wood fibre, glass, metal and petroleum-based).~~

FB-PF-410a.2. Description of strategies to manage ~~Discussion of strategies to reduce~~ the environmental impact of packaging throughout its lifecycle

1 An ~~The~~ entity shall disclose information about ~~discuss~~ its strategies to manage ~~reduce~~ the environmental impact of ~~the~~ packaging ~~of its products~~ throughout its lifecycle, including: ~~such as~~

1.1 reducing the quantity of packaging and virgin materials used by optimising packaging weight and volume or using packaging made from ~~for a given application or using alternative materials, including those that are~~ recycled, ~~recyclable,~~ reusable or~~,~~ compostable materials; ~~or degradable.~~

1.2 reducing the use of packaging that contains, or manufacturing that requires, hazardous chemicals that pose a risk to human health or the environment;

1.3 increasing the quantity of packaging that is reused, collected, recycled or composted by including disposal instructions on packaging, incentivising recycling, investing in infrastructure and systems to collect and sort (and then recycle or compost) packaging, or partnering with industry groups, regulatory agencies or non-governmental organisations; and

1.4 increasing the recyclability of packaging by implementing a design guide—for example, the Association of Plastic Recycler's *APR Design Guide*.

2 An entity shall disclose quantitative and qualitative information about how risks and opportunities associated with the environmental impact of packaging have affected or are expected to affect its financial position, financial performance and cash flows, both for the reporting period and over the short, medium and long term.

~~The entity shall describe its use of recycled and renewable packaging, including supply availability, consumer preferences and packaging durability requirements.~~

2.1 These risks and opportunities include cost savings from using reduced packaging or alternative packaging materials, impacts on the brand and consumer perception of the entity's brand or consumer perception of the entity or its products, impacts of current or anticipated regulations, and relationships with the entity's business partners in its value chain.

3 An entity shall disclose any targets it has set, and any targets it is required to meet by law or regulation, to manage risks and opportunities associated with the environmental impact of its packaging.

~~The entity shall describe its use of recyclable and compostable packaging, including regulations, packaging end-of-life commitments, consumer demand and packaging durability.~~

3.1 In preparing this disclosure, the entity shall apply the requirements in paragraphs 51–53 of IFRS S1 that are applicable to the entity's packaging-related targets.

3.2 The entity shall disclose the activities and investments made to achieve packaging-related targets, and any risks or limiting factors that might affect achievement of the targets.

4 An entity shall disclose whether its strategies to manage the environmental impact of packaging result in any lifecycle effects or trade-offs, including trade-offs in greenhouse gas emissions, product quality or safety, and why the entity chose these practices despite such trade-offs.

~~Relevant disclosures may include discussion of the:~~

~~4.1 implementation of ISO 18602, *Packaging and the environment—Optimization of the packaging system*, which includes criteria for minimisation of packaging weight and optimisation to the amount needed for safety, hygiene and consumer acceptance of the packed product;~~

~~4.2 implementation of ISO 18604, *Packaging and the environment—Material recycling*, which includes criteria for recyclable packaging;~~

~~4.3 implementation of ISO 14855-1, *Determination of the ultimate aerobic biodegradability of plastic materials under controlled composting conditions—Method by analysis of evolved carbon dioxide—Part 1: General method*; ASTM D6400, *Standard Specification for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities*; or ASTM D6868, *Standard Specification for Labeling of End Items that Incorporate Plastics and Polymers as Coatings or Additives with Paper and Other Substrates Designed to be Aerobically Composted in Municipal or Industrial Facilities;* which include criteria for packaging recoverable through biodegradation and composting;~~

~~4.4 implementation of ISO 14021, *Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling)*, which includes criteria for renewable and recycled material content claims; or~~

~~4.5 performance on The Consumer Goods Forum's *Global Protocol on Packaging Sustainability 2.0* metrics for 'Packaging Weight and Optimization or Assessment' and 'Minimization of Substances Hazardous to the Environment'.~~

5 ~~The entity may, if relevant, discuss any packaging-related targets and performance against those targets. Examples of such targets may include:~~

~~5.1~~ ~~reducing packaging footprints;~~

~~5.2~~ ~~reducing packaging weight either in total or on a per-unit basis; and~~

~~5.3~~ ~~increasing recycled, recyclable, reusable, renewable, compostable or degradable content.~~

6 ~~The entity may discuss its use of Life Cycle Assessment (LCA) analysis to reduce environmental impacts and maximise product efficiency, including weight reduction and transportation efficiency.~~

~~6.1~~ ~~Improvements to the environmental efficiency of packaging products may be discussed in terms of LCA functional unit service parameters (time, extent and quality of function).~~

Product Innovation

Topic Summary

Consumers in many markets are focusing more on the environmental and social impacts of the foods they eat, and are changing their diets based on concerns related to issues such as greenhouse gas emissions and animal welfare. Environmental and social externalities created by processed foods, especially ones that are resource-intensive to produce or that are found to be associated with harmful practices, can expose entities to reputational risks or regulation. Entities that develop more sustainable products can minimise risks arising from resource scarcity, climate change, price volatility and supply disruptions. Growing markets in food innovation present opportunities for entities to increase revenue, gain market share and improve brand reputation. Developing or acquiring the intellectual property to create new products can create further opportunities for entities to increase revenue or protect market share.

Metrics

FB-PF-410b.1. Use of innovation in food products to address sustainability-related risks and opportunities

1 An entity shall disclose information about its strategies to use innovation in food products to address sustainability-related risks and opportunities.

1.1 Innovation in food products includes innovation in raw materials, ingredients or in food processing.

1.2 Relevant risks or opportunities might arise from consumer preferences, pricing and supply of ingredients or regulation related to issues like greenhouse gas emissions, animal welfare, resource scarcity, food waste and environmental and social issues in the supply chain.

1.3 Using innovation in food products to address sustainability-related risks and opportunities includes:

1.3.1 the introduction or promotion of innovative products such as plant-, cultivation-, fermentation- or insect-based protein products; or

1.3.2 the reformulation of existing products, including phasing them out, substituting them or using alternative ingredients in their production.

2 Relevant aspects of strategy could include:

2.1 investments in research and development for new raw materials, ingredients, or food processing approaches;

2.2 acquisitions or partnerships to expand the entity's sustainable product offerings;

2.3 investing in the design phase or in research and development to identify substitutable or alternative ingredients; or

2.4 partnerships with peers or other organisations, such as public interest organisations or academic institutions.

3 An entity shall disclose the activities and investments required to implement its strategy.

~~Environmental & Social Impacts of Ingredient Supply Chain~~

~~Topic Summary~~

~~Entities in the Processed Foods industry manage global supply chains to source a wide range of ingredient inputs. How entities screen, monitor and engage with suppliers on environmental and social topics affects the ability of entities to maintain steady supplies and manage price fluctuations. Supply chain management issues related to labour and environmental practices, ethics or corruption also may result in regulatory fines or increased long-term operational costs for entities. The consumer-facing nature of the industry increases the reputational risks associated with supplier performance. Entities can engage with important suppliers to manage environmental and social risks to improve supply chain resiliency, mitigate reputational risks, potentially increase consumer demand, or capture new market opportunities.~~

Metrics

~~FB-PF-430a.1. Percentage of food ingredients sourced that are certified to third-party environmental or social standards, and percentages by standard~~

~~1 The entity shall disclose the percentage of food ingredients sourced that are certified to a third-party environmental or social standard.~~

~~1.1 Environmental standards are defined as standards that address environmental impacts related to the production of food ingredients, such as protection of primary forests, maintenance of surface water and groundwater quality, and implementation of integrated pest management solutions or an Organic System Plan.~~

~~1.2 Social standards are defined as standards that address social impacts related to the production of food ingredients, such as compensation of workforce, training and continual monitoring of health and safety risks associated with the application of agrochemicals and child-labour practices.~~

~~1.3 The percentage shall be calculated as the cost of food ingredients purchased from Tier 1 suppliers certified to a third-party environmental or social standard divided by the total cost of food ingredients purchased from Tier 1 suppliers.~~

~~1.4 Examples of certifications to third-party environmental and social standards include:~~

~~1.4.1 Bonsucro~~

~~1.4.2 Fairtrade International~~

~~1.4.3 Fair Trade USA~~

~~1.4.4 Roundtable on Sustainable Palm Oil (RSPO)~~

~~1.4.5 Roundtable on Responsible Soy (RTRS)~~

~~1.4.6 Rainforest Alliance~~

~~1.4.7 SA8000~~

~~1.4.8 U.S. Department of Agriculture (USDA) Organic~~

~~1.4.9 UTZ Certified~~

~~2 The entity shall disclose the percentage of food ingredients it sourced that are certified to a third-party environmental or social standard, by standard.~~

~~2.1 The entity shall calculate the percentage as the cost of food ingredients purchased from Tier 1 suppliers certified to each respective third-party environmental or social standard divided by the total cost of agricultural products purchased from Tier 1 suppliers.~~

~~2.1.1 For Bonsucro certification, the entity shall disclose whether the food ingredients are certified to the Bonsucro Production Standard or the Bonsucro Chain of Custody Standard.~~

~~2.1.2 For Fairtrade International and Fair Trade USA, the entity shall disclose whether the food ingredients are certified to the standards for small producer organisations, hired labour, contract production, traders, independent small holders or capture fisheries.~~

~~2.1.3 For RSPO certification, the entity shall disclose which of the RSPO supply chain models the food ingredients are certified to: Identity Preserved (IP); Segregated (SG); Mass Balance (MB); or Book & Claim (B&C).~~

~~2.1.4 For RTRS certification, the entity shall disclose whether the food ingredients are certified to the RTRS Production standard or the RTRS Chain of Custody Standard and whether traceability in the chain of custody standard is kept through segregation or mass balance.~~

~~2.1.5 For other third-party certifications, the entity may specify the type of certification if there is more than one type.~~

~~2.2 The entity may aggregate the percentages of numerous third-party certifications into one aggregate percentage, if the certifications are for the same food ingredient and deliver similar environmental or social criteria.~~

~~3 The disclosure scope includes food ingredients purchased from Tier 1 suppliers.~~

~~3.1 Tier 1 suppliers are defined as suppliers that transact directly with the entity for food ingredients.~~

~~FB-PF-430a.2. Suppliers' social and environmental responsibility audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor non-conformances~~

~~1 The entity shall disclose its supplier facilities' (1) non-conformance rate with external social and environmental audit standard(s) or internally developed supplier code(s) of conduct for (a) major non-conformances, and separately, (b) minor non-conformances.~~

~~1.1~~ ~~A major non-conformance is defined as the highest severity of non-conformance and requires escalation by auditors. Major non-conformances confirm the presence of underage child workers (below the legal age for work or apprenticeship), forced labour, health and safety issues that can cause immediate danger to life or serious injury, or environmental practices that can cause serious and immediate harm to the community. Major non-conformance includes material breach or systemic breaking of code requirement or law. Major non-conformances may also be referred to as critical or priority non-conformances.~~

~~1.2~~ ~~A minor non-conformance is defined as a non-conformance that, by itself, is not indicative of a systemic problem with the management system. Minor non-conformances are typically isolated or random incidents and represent a low risk to workers or the environment.~~

~~1.3~~ ~~The entity shall calculate the non-conformance rates as the total number of non-conformances identified (in each respective category) among its supplier facilities divided by the number of supplier facilities audited.~~

~~2~~ ~~The entity shall disclose the (2) corrective action rates associated with its supplier facilities' (a) major non-conformances, and separately, (b) minor non-conformances.~~

~~2.1~~ ~~A corrective action is defined as the completion of an action (generally identified in a corrective action plan) within 90 days, designed to eliminate the cause of a detected non-conformance, including the implementation of practices or systems to eliminate any non-conformance and ensure no reoccurrence of the non-conformance, as well as verification that the action has taken place.~~

~~2.2~~ ~~The entity shall calculate the corrective action rates as the number of corrective actions that address non-conformances (in each respective category) divided by the total number of non-conformances identified (in each respective category).~~

~~3~~ ~~The entity shall disclose the standards or code(s) of conduct to which it has measured social and environmental responsibility audit compliance.~~

~~3.1~~ ~~For internally developed supplier code(s) of conduct, the entity shall disclose the public location where such code(s) can be viewed.~~

Environmental Supply Chain Management

Topic Summary

Entities in the Processed Foods industry source a wide range of ingredients, largely agricultural inputs, from global suppliers. The industry's ability to source ingredients at specific price points changes with supply availability, which may in turn be affected by environmental factors like climate change, water scarcity, soil quality, biodiversity, ecosystems and ecosystem services. Some of these environmental factors exist independently of an entity's supply chain operations and may be global or regional in nature, while others are more closely linked to the effects of supply chain operations in specific locations. Negative environmental impacts, especially those related to high profile issues like deforestation, can lead to regulation or affect a company's reputation and social licence to operate. Broader environmental risks can lead to volatility of ingredient supply and pricing, affecting profitability. There are further long-term risks to an entity's ability to source essential materials and ingredients, as more resource-intensive or environmentally sensitive ingredients might be subject to continuous price volatility and supply disruptions in the future. Conversely, entities that work with suppliers, or with local communities such as Indigenous Peoples, to improve the sustainability of their agriculture practices in their supply chain can become more adaptable to such risks.

Metrics

FB-PF-430b.1. Percentages of sourced commodities determined to be deforestation- or conversion-free, including any targets set to monitor progress

1 An entity shall disclose the percentages of the commodities sourced that it has determined to be deforestation- or conversion-free, by cost.

1.1 Deforestation is defined as the temporary or permanent human-induced conversion of forested land to non-forested land.

1.2 Conversion is defined as changing a natural ecosystem to another use or a profound change in a natural ecosystem's species composition, structure or function.

1.3 The entity shall disaggregate the information by commodity.

1.4 Disclosure is limited to commodities that have been found to contribute to deforestation or conversion and constitute the largest food ingredient expenses or are essential to the entity's products. Relevant commodities might include timber products, palm oil, soy, coffee, cocoa and cattle products.

2 An entity shall describe the assessment methods used to determine that a commodity is deforestation- or conversion-free. Assessment methods include monitoring, certification, sourcing from low-risk jurisdictions with no or negligible recent conversion, and sourcing from verified suppliers.

2.1 The entity shall disclose its reason for choosing the assessment method(s) and identify limitations in its methodology.

3 An entity shall disclose information about any targets it has set to monitor progress towards achieving its strategic goals related to deforestation or conversion, and any targets it is required to meet by law or regulation.

3.1 In preparing this disclosure, the entity shall apply the requirements in paragraphs 51-53 of IFRS S1 that are applicable to the entity's deforestation or conversion targets.

3.2 The entity shall disclose information about any changes in its sourcing or assessment practices that are required to meet its targets.

FB-PF-430b.2. Priority commodities and products that are sensitive to environmental risks in the supply chain

1 An entity shall disclose its priority commodities that are sensitive to environmental risks, and describe how its sourcing of these commodities could reasonably be affected by such risks.

1.1 Priority commodities are defined as commodities that constitute the largest food ingredient expense or those commodities identified by the entity as essential to its products.

1.2 Commodities are sensitive to environmental risks if those risks could reasonably be expected to affect the entity's ability to source the commodities at desired price points or in desired quantities over the short, medium or long term.

1.3 Relevant environmental risks might include climate change, extreme weather, droughts, floods, water stress, storms, degradation of soil health, ecosystem change or biodiversity loss.

2 For each environmental risk, the entity shall specify the time horizon—short, medium or long term—over which the effects of the environmental risk could reasonably be expected to occur.

2.1 The entity shall explain how it defines 'short term', 'medium term' and 'long term' and how these definitions are linked to the planning horizons it uses for strategic decision-making.

3 An entity shall disclose its products or product categories that are reliant on the priority commodities vulnerable to environmental risks.

4 An entity shall describe the resilience of its strategy, business model and supply chain to environmental-related changes, developments and uncertainties, taking into consideration the entity's identified environmental risks.

5 An entity shall describe the strategies it uses to mitigate environmental risks, which might include diversifying its suppliers, investing in research and development for alternative and substitute crops, and developing alternative products or product formulas.

FB-PF-430b.3. Description of strategies to manage environmental resources and implement sustainable agriculture practices in the supply chain

1 An entity shall disclose information about its strategies to manage environmental resources and implement sustainable agriculture practices in its supply chain.

1.1 Environmental resources include land, soil, water, biodiversity, ecosystems and ecosystem services.

1.2 Sustainable agriculture practices include regenerative agriculture, precision agriculture, agroecology and similar efforts focused on areas such as greenhouse gas emissions; soil health; management of the use of fertilisers, pesticides and other chemicals; maintenance of surface water and groundwater quality; water conservation; land use efficiency; and conservation of biodiversity, ecosystems and ecosystem services.

2 An entity shall disclose information about its activities and investments related to sustainable agriculture practices, such as grants, programmes and partnerships with farmers, co-investment and partnerships with other companies, and engagements with local communities such as Indigenous Peoples.

2.1 The entity shall disclose the amount that it has invested in its important actions and initiatives related to sustainable agriculture practices.

3 An entity shall disclose the amount and percentage of assets or business activities sensitive to the risks it aims to manage through its promotion of sustainable agriculture practices among its suppliers.

4 An entity shall disclose the amount and percentage of assets or business activities aligned with opportunities related to its promotion of sustainable agriculture practices among its suppliers.

5 An entity shall disclose information about trade-offs between risks and opportunities related to managing environmental resources and implementing sustainable agriculture practices in the supply chain that it has considered.

6 Relevant risks and opportunities might relate to supplier relationships, supply chain resilience, reputation management, price volatility, consumer demand, market capture, management of legal and regulatory risks, threats to the entity's social licence to operate, and goodwill of local communities.

Social Supply Chain Management

Topic Summary

Entities in the Processed Foods industry manage global supply chains to source a wide range of ingredient inputs. How entities screen, monitor and engage with suppliers on social topics affects the ability of entities to maintain steady supplies and manage price fluctuations. Supply chain management issues related to labour conditions, ethics, corruption, or impacts on Indigenous Peoples or other local communities may affect a company's licence to operate and result in regulatory fines or increased long-term operational costs for entities, even if they occur far upstream in the value chain. Some social risks are widespread across regions or associated with the production of specific ingredients, while others are highly location-specific. Local regulations and enforcement vary widely by jurisdiction, creating additional governance challenges for entities and their suppliers. Because of the complexity of food supply chains, entities often engage in traceability efforts to better identify and assess these issues. The consumer-facing nature of the industry increases the reputational risks associated with supplier performance. Entities can engage with suppliers to manage risks to improve supply chain resiliency, mitigate reputational risks, increase consumer demand, or capture new market opportunities.

Metrics

FB-PF-430c.1. Processes, controls and procedures for managing labour conditions and impacts on local communities in the supply chain, including human rights due diligence

1 An entity shall disclose information about the processes, controls and procedures it uses, such as human rights and environmental due diligence, to monitor, manage and oversee issues in the supply chain related to:

- 1.1 labour conditions, workplace safety, labour rights, forced labour, modern slavery and child labour;
- 1.2 negative impacts on local communities, including Indigenous Peoples – such as pollution, displacement and resource deprivation or depletion;
- 1.3 corruption and compliance with applicable jurisdictional laws or regulations; and
- 1.4 rights and norms set forth in internationally recognised frameworks.

2 Processes, controls and procedures to monitor, manage and oversee labour conditions and impacts on local communities in the supply chain include those that:

- 2.1 embed responsible business conduct and respect for internationally recognised rights and norms into policies and management systems;
- 2.2 identify and assess adverse impacts to workers, stakeholders and local communities stemming from supply chain operations and business relationships;
- 2.3 cease, prevent or mitigate potential or actual adverse impacts on workers and communities in the supply chain;

2.4 track implementation and results;

2.5 communicate how impacts are being addressed;

2.6 provide for or cooperate in remediation when appropriate; and

2.7 promote the use of free, prior and informed consent (or consultation) processes when engaging with Indigenous Peoples.

3 An entity shall disclose whether suppliers are incentivised and rewarded for the prevention, mitigation, and remediation of potential or actual adverse impacts on workers and communities in the supply chain.

4 An entity shall disclose whether it has a policy forbidding the payment of recruitment fees by workers in the supply chain and, if so, describe the mechanisms by which that policy is enforced.

5 An entity shall identify (a) the governance body(s) or individual(s) responsible for oversight over labour conditions and impacts on local communities in the supply chain and (b) management's role in the governance processes, controls and procedures, including information about whether the role is delegated to a specific management-level position or management-level committee and how oversight is exercised.

FB-PF-430c.2. Percentages of sourced commodities certified to internationally recognised standards that trace the path of products through the supply chain

1 An entity shall disclose the percentages of its sourced commodities, by cost, certified to an internationally recognised standard that traces the path of the commodity through the supply chain.

1.1 In each case, the entity shall identify the standard used and the type of certification if there is more than one type related to that standard.

1.2 The entity shall disaggregate the information by commodity.

2 An entity shall explain its rationale for selecting the certification standards it uses.

3 Examples of internationally recognised standards include:

3.1 Bonsucro;

3.2 Fairtrade International;

3.3 Roundtable on Sustainable Palm Oil (RSPO);

3.4 Roundtable on Responsible Soy (RTRS);

3.5 Rainforest Alliance; and

3.6 SA8000.

4 An entity shall describe improvement projects to get suppliers certified to internationally recognised standards that trace the path of products through the supply chain.

FB-PF-430c.3. Percentage of high-risk suppliers subject to an independent third-party audit or verification in the previous three years, with description of non-conformances and corrective actions

1 An entity shall disclose the percentage of its high-risk suppliers that have been subject to an independent third-party audit or verification at least once in the previous three years.

1.1 High-risk suppliers are defined as suppliers throughout the value chain where the entity has determined a heightened level of risk of forced labour or modern slavery, child labour, other violations of internationally recognised rights and norms, negative impacts on local communities including Indigenous Peoples or serious violations of local law or the entity's supplier code of conduct.

1.1.1 The entity shall disclose information about how it identifies high-risk suppliers.

1.2 An independent third-party audit or verification is defined as a visit to a supplier's facility and review of records conducted by an independent external organisation to determine that the supplier facility complies with relevant principles, policies and regulations.

2 An entity shall disclose its audit or verification methodology and criteria (for example, management system investigation, worker interviews, management interviews, document review and visual observations).

3 An entity shall disclose the standards or codes of conduct to which it has measured audit or verification compliance.

4 An entity shall disclose information regarding non-conformances and corrective actions, which might include description of the levels in the supply chain in which the non-conformances occurred (Tier 1, Tier 2 or other, or by region), timelines to resolve priority non-conformances, assessment of whether corrective actions were successful and efforts to increase supply chain transparency and build supplier capacity.

4.1 A priority non-conformance is defined as the highest severity of non-conformance and requires escalation by auditors or investigators. Priority non-conformances confirm the presence of underage workers, forced labour or modern slavery, health and safety issues that can cause immediate danger to life or serious injury, or environmental practices that can cause serious and immediate harm to the community. Priority non-conformance includes material breach or systemic breaking of code requirement or law.

~~Ingredient Sourcing~~

~~Topic Summary~~

~~Entities in the Processed Foods industry source a wide range of ingredients, largely agricultural inputs, from global suppliers. The industry's ability to source ingredients, and at some price points, fluctuates with supply availability, which may be affected by climate change, water scarcity, land management and other resource scarcity considerations. This exposure may cause price volatility which may affect entity profitability. Climate change, water scarcity and land-use restrictions present risks to an entity's long-term ability to source essential materials and ingredients. Entities that source ingredients which are more productive and less resource-intensive, or coordinate with suppliers to increase their adaptability to climate change and other resource scarcity risks, may reduce price volatility and supply disruptions.~~

Metrics

~~FB-PF-440a.1. Percentage of food ingredients sourced from regions with High or Extremely High Baseline Water Stress~~

~~1 The entity shall disclose the percentage of food ingredients sourced from regions with High or Extremely High Baseline Water Stress.~~

~~2 The percentage shall be calculated as the cost of food ingredients purchased from Tier 1 suppliers that withdraw and consume water in regions with High or Extremely High Baseline Water Stress to produce the agricultural products, divided by the total cost of food ingredients purchased from Tier 1 suppliers.~~

~~2.1 Tier 1 suppliers are defined as suppliers that transact directly with the entity for food ingredients.~~

~~2.2 The entity shall identify Tier 1 suppliers that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

~~3 If the entity is unable to identify or collect data pertaining to all Tier 1 suppliers, the entity shall disclose the percentage of agricultural products for which the source region and water risks are unknown.~~

~~FB-PF-440a.2. List of priority food ingredients and discussion of sourcing risks related to environmental and social considerations~~

~~1 The entity shall identify the highest priority food ingredients to its business.~~

~~1.1 Priority food ingredients are defined as ingredients (excluding water) that constitute the largest food ingredient expense, or those ingredients identified by the entity as essential to its products or as having significant environmental or social risks.~~

~~1.2 The scope of disclosure includes priority food ingredients sourced by the entity, which may include those sourced directly from contract growers and from producer supply agreements.~~

2 ~~The entity shall discuss its strategic approach to managing the environmental and social risks that arise from its highest priority food ingredients.~~

2.1 ~~Environmental risks may include effects of drought and climate change on ingredient prices, reputational damage because of deforestation and other risks resulting from the environmental impacts associated with the entity's supply chain.~~

2.2 ~~Social risks may include the effects of workers' rights on productivity, reputational damage because of human rights issues and other risks resulting from the social impacts associated with the entity's supply chain.~~

3 ~~The entity may identify which food ingredients present risks to its operations, the risks represented and the strategies the entity uses to mitigate such risks.~~

3.1 ~~For environmental risks, relevant strategies to discuss may include the diversification of suppliers, supplier training programmes on environmental best management practices, expenditures on research and development for alternative and substitute crops, and audits or certifications of suppliers' environmental practices.~~

3.2 ~~For social risks, relevant strategies to discuss may include supplier training programmes on agrochemical application, engagement with suppliers on labour and human rights issues and maintenance of a supply chain code of conduct.~~

Proposed Targeted Amendments to other SASB Standards

The ISSB proposes applying the following effective date for the proposed targeted amendments to other SASB Standards listed in this section.

Effective Date

This version 20XX–XX of the Standard is effective for all entities for reporting periods beginning or after [DATE]. Early application is permitted.

PROPOSED AMENDMENTS TO METRICS ON GREENHOUSE GAS EMISSIONS

Metrics titled ‘Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations’

The ISSB proposes making targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out quantitative disclosures relating to Scope 1 greenhouse gas emissions, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section describes proposed amendments to metrics titled *Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations*.

The ISSB proposes making the following amendments to the metrics listed in Table A1, making them each consistent with one another by eliminating any existing minor variations between the metrics.

(1) Gross ~~global~~ Scope 1 emissions~~,~~ and (2) percentage subject to ~~covered under~~ emissions-limiting regulations

1 An ~~The~~ entity shall disclose (1) its gross ~~global~~ Scope 1 greenhouse gas ~~(GHG)~~ emissions in metric tonnes of carbon dioxide equivalents (CO_2-e). ~~to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

1.1 In preparing this disclosure, the entity shall apply the measurement and disclosure requirements in paragraph 29(a) of IFRS S2 that are applicable to Scope 1 greenhouse gas emissions.

~~Emissions of all GHGs shall be consolidated and disclosed in metric tonnes of carbon dioxide equivalent (CO_2-e) and calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP values is the Intergovernmental Panel on Climate Change (IPCC) *Fifth Assessment Report* (2014).~~

~~1.2 Gross emissions are GHGs emitted into the atmosphere before accounting for offsets, credits or other similar mechanisms that have reduced or compensated for emissions.~~

2 ~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

~~2.1 Acceptable calculation methodologies include those that conform to the GHG Protocol as the base reference, but provide additional guidance, such as industry- or region-specific guidance. Examples include:~~

~~2.1.1 *GHG Reporting Guidance for the Aerospace Industry* published by the International Aerospace Environmental Group (IAEG)~~

~~2.1.2 *Greenhouse Gas Inventory Guidance: Direct Emissions from Stationary Combustion Sources* published by the U.S. Environmental Protection Agency (EPA)~~

~~2.1.3 India GHG Inventory Program~~

~~2.1.4 ISO 14064-1~~

~~2.1.5 *Petroleum Industry Guidelines for reporting GHG emissions*, 2nd edition, 2011, published by Ipieca~~

~~2.1.6 *Protocol for the quantification of greenhouse gas emissions from waste management activities* published by Entreprises pour l'Environnement (EpE)~~

~~2.2 GHG emission data shall be consolidated according to the approach with which the entity consolidates its financial reporting data, which is generally aligned with the 'financial control' approach defined by the GHG Protocol and the approach provided by the Climate Disclosure Standards Board (CDSB) that is described in REQ-07, 'Organisational boundary,' of the *CDSB Framework for reporting environmental and social information.*~~

~~3~~ An ~~The~~ entity shall disclose (2) the percentage of its gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to applicable jurisdictional greenhouse gas ~~covered under an emissions-limiting~~ laws, regulations or programmes ~~regulation or programme~~ intended to limit or reduce greenhouse gas emissions directly, such as cap-and-trade schemes, carbon tax or fee ~~tax/fee~~ systems, and other emissions control (for example, command-and-control approach) and permit-based mechanisms.

~~3.1 Examples of emissions-limiting regulations include:~~

~~3.1.1 California Cap-and-Trade (California Global Warming Solutions Act)~~

~~3.1.2 European Union Emissions Trading Scheme (EU ETS)~~

~~3.1.3 Quebec Cap-and-Trade (Quebec Environment Quality Act)~~

2.1 ~~3.2~~ The percentage shall be calculated as the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions subject to greenhouse gas ~~(CO_2-e) covered under~~ emissions-limiting laws, regulations or programmes ~~regulations~~ divided by the total quantity ~~amount~~ of gross ~~global~~ Scope 1 greenhouse gas ~~GHG~~ emissions ~~(CO_2-e)~~.

2.1.1 ~~3.2.1~~ For emissions subject to more than one emissions-limiting framework, ~~regulation,~~ the entity shall not account for those emissions more than once.

2.2 ~~3.3~~ The scope of applicable jurisdictional greenhouse gas emissions-limiting laws, regulations or programmes ~~regulations~~ excludes emissions subject to ~~covered under~~ voluntary emissions-limiting frameworks ~~regulations~~ (for example, voluntary trading systems), as well as reporting-based regulations.

4 ~~The entity may discuss any change in its emissions from the previous reporting period, including whether the change was because of emissions reductions, divestment, acquisition, mergers, changes in output or changes in calculation methodology.~~

5 ~~In the case that current reporting of GHG emissions to the CDP or other entity (for example, a national regulatory disclosure programme) differs in terms of the scope and consolidation approach used, the entity may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.~~

6 ~~The entity may discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations or mass balance calculations.~~

Table A1—Targeted amendments to metrics titled 'Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations'

SASB STANDARD	METRIC CODE	METRIC TITLE
Chemicals	RT-CH-110a.1	*Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations*
Containers & Packaging	RT-CP-110a.1	*Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations*

Metrics titled ‘Gross global Scope 1 emissions’

This section describes proposed amendments to metrics titled ‘*Gross global Scope 1 emissions*’.

The ISSB proposes making targeted amendments to the metrics listed in Table A2 to add a new sub-metric ‘percentage [of emissions] subject to emissions-limiting regulations’ consistent with the proposed amendments to the metrics detailed above in Table A1.

Table A2—Targeted amendments to metrics titled ‘Gross global Scope 1 emissions’

SASB STANDARD	METRIC CODE	METRIC TITLE
Pulp & Paper Products	RR-PP-110a.1	*Gross global Scope 1 emissions*
Air Freight & Logistics	TR-AF-110a.1	*Gross global Scope 1 emissions*
Airlines	TR-AL-110a.1	*Gross global Scope 1 emissions*
Cruise Lines	TR-CL-110a.1	*Gross global Scope 1 emissions*
Marine Transportation	TR-MT-110a.1	*Gross global Scope 1 emissions*
Rail Transportation	TR-RA-110a.1	*Gross global Scope 1 emissions*
Road Transportation	TR-RO-110a.1	*Gross global Scope 1 emissions*

Targeted amendments to other quantitative greenhouse gas emissions metrics

The ISSB also proposes making targeted amendments to metrics that are similar to those listed in Table A1, but that have greater variation to those metrics and, by extension, the metrics on greenhouse gas emissions that are being amended in the nine priority industries. Table A3 lists these metrics and details the proposed amendments.

Table A3—Targeted amendments to other quantitative metrics on greenhouse gas emissions

SASB STANDARD	METRIC CODE	METRIC TITLE	NOTES
Food Retailers & Distributors	FB-FR-110b.1	*Gross global Scope 1 emissions from refrigerants*	Amendments to change metric title to *Gross Scope 1 emissions from refrigerants* and align technical protocols related to measuring emissions with those made to metrics in Table A1. No amendments are proposed to the technical protocols specific to greenhouse gas emissions from refrigerants. The ISSB does not propose adding a sub-metric regarding the percentage of emissions subject to emissions-limiting regulations.
Waste Management	IF-WM-110a.1	*(1) Gross global Scope 1 emissions, percentage covered under (2) emissions-limiting regulations and (3) emissions-reporting regulations*	Amendments to align with those made to metrics as detailed in Table A1. No amendments are proposed to sub-metric (3) regarding emissions reporting regulations.
Semiconductors	TC-SC-110a.1	*(1) Gross global Scope 1 emissions and (2) amount of total emissions from perfluorinated compounds*	Amendments to change metric title to *(1) Gross Scope 1 emissions, (2) percentage subject to emission-limiting regulations and (3) amount of total emissions from perfluorinated compounds* and align technical protocols related to measuring emissions with those made to metrics in Table A1. No amendments are proposed to the technical protocols specific to perfluorinated compounds.

Metrics titled 'Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets'

The ISSB proposes making further targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out narrative disclosures relating to greenhouse gas emissions, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section describes proposed amendments to metrics titled *Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*.

The ISSB proposes making the following amendments to all metrics listed in Table A4, making them each consistent with one another by eliminating any existing minor variations between the metrics.

Description of Scope 1 greenhouse gas emissions targets ~~Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets,~~ and ~~an~~ analysis of performance against those targets

1 An ~~The~~ entity shall disclose: ~~discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.~~

1.1 the qualitative and quantitative Scope 1 greenhouse gas emissions targets it has set for itself, and any targets it is required to meet by law or regulation;

~~Scope 1 emissions are defined and shall be calculated according to the methodology contained in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (GHG Protocol), Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD).~~

1.2 information about its approach to setting and reviewing each target and how it monitors progress towards them; and

1.3 information about its performance towards each target and an analysis of trends or changes in the entity's performance.

~~The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).~~

2 In preparing this disclosure, the entity shall apply the requirements in paragraphs 33–36 of IFRS S2 which relate to Scope 1 greenhouse gas emissions.

~~The entity shall discuss its emission reduction target(s) and analyse its performance against the target(s), including, if relevant:~~

~~2.1 The scope of the emission reduction target (for example, the percentage of total emissions to which the target is applicable);~~

~~2.2 Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target;~~

~~2.3 The percentage reduction against the base year, with the base year representing the first year against which emissions are evaluated towards the achievement of the target;~~

~~2.4 The time lines for the reduction activity, including the start year, the target year and the base year;~~

~~2.5 The mechanism(s) for achieving the target; and~~

~~2.6 Any circumstances in which the target or base year emissions have been, or may be, recalculated retrospectively or the target or base year has been reset.~~

3 An ~~The~~ entity shall disclose ~~discuss~~ the activities and investments required to achieve its ~~the plans or~~ targets, and any risks or limiting factors that might affect achievement of those ~~the plans or~~ targets.

~~4 The entity shall discuss the scope of its strategies, plans or reduction targets, such as whether they pertain differently to different business units, geographies or emissions sources.~~

~~5 The entity shall discuss whether its strategies, plans, or reduction targets are related to, or associated with, emissions limiting or emissions reporting-based programmes or regulations (for example, the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programmes.~~

~~6 Disclosure of strategies, plans or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

Table A4—Targeted amendments to narrative metrics on greenhouse gas emissions

SASB STANDARD	METRIC CODE	METRIC TITLE
Waste Management	IF-WM-110a.3	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Pulp & Paper Products	RR-PP-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Chemicals	RT-CH-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*

continued...

...continued

SASB STANDARD	METRIC CODE	METRIC TITLE
Containers & Packaging	RT-CP-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets and an analysis of performance against those targets*
Semiconductors	TC-SC-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Air Freight & Logistics	TR-AF-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Airlines	TR-AL-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Cruise Lines	TR-CL-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Marine Transportation	TR-MT-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Rail Transportation	TR-RA-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*
Road Transportation	TR-RO-110a.2	*Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets*

PROPOSED AMENDMENTS TO METRICS ON ENERGY MANAGEMENT

Metrics titled ‘(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable’

The ISSB proposes making targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out disclosures relating to energy management, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section describes proposed amendments to metrics titled *(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*.

The ISSB proposes making the following amendments to all metrics listed in Table A5, making them each consistent with one another by eliminating any existing minor variations between the metrics.

(1) Total energy consumed, (2) purchased electricity consumed ~~percentage grid electricity~~ and (3) ~~percentage~~ renewable electricity consumed from (a) self-generation and (b) direct contracts

1 An ~~The~~ entity shall disclose (1) the total quantity ~~amount~~ of energy it consumed ~~as an aggregate figure,~~ in gigajoules (GJ).

1.1 Total ~~The scope of~~ energy consumed ~~consumption~~ includes all forms of energy used by the entity, ~~from all sources,~~ including fuel, electricity, heating, cooling and steam. ~~energy purchased from external sources and energy produced by the entity itself (self-generated). For example, direct fuel usage, purchased electricity, and heating, cooling and steam energy all are included within the scope of energy consumption.~~

1.2 Total energy consumed includes purchased or acquired energy and self-generated energy used by the entity. ~~The scope of energy consumption includes only energy directly consumed by the entity during the reporting period.~~

1.2.1 Purchased and acquired energy is energy that is purchased or otherwise brought into the entity’s boundary.

1.2.2 Purchased energy includes energy from owned or operated generation facilities where energy attributes, such as certificates, have been sold or transferred.

1.2.3 Self-generated energy is generation owned or operated by the entity that consumes the energy.

1.2.4 In preparing this disclosure, the entity shall determine ownership or control using the same measurement approach that it uses to determine greenhouse gas emissions.

1.2.5 Total energy consumed excludes any energy the entity generates using fuel it has already consumed—that is, self-generated electricity consumed from fuel is counted only once as fuel consumed. For example, if the entity has a co-generator that uses fuel to produce electricity and then consumes the generated electricity, that energy would be counted only once as fuel consumed.

1.2.6 If the entity stores any energy, that energy is counted only once when the entity has consumed the energy and it is no longer stored.

1.3 An ~~In calculating energy consumption from fuels and biofuels, the~~ entity shall use lower ~~higher~~ heating values (LHV), ~~(HHV),~~ also known as net ~~gross~~ calorific values, to calculate energy consumed from fuels and biofuels. The entity shall measure these values directly ~~(GCV) which are measured directly~~ or use the default net calorific values in the 2006 IPCC *Guidelines for National Greenhouse Gas Inventories* (Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limit of the 95% Confidence Intervals, Volume 2: Energy, Chapter 1). ~~taken from the Intergovernmental Panel on Climate Change (IPCC).~~

1.3.1 The requirement to use such heating values applies unless the entity is required, in whole or in part, by a jurisdictional authority or an exchange on which it is listed to use different heating values for converting fuels into GJ. In such a case, the entity is permitted to instead use the heating values required by such a jurisdictional authority or exchange for the part of the entity to which that requirement applies, for as long as that requirement applies to that part of the entity.

1.3.2 If the entity uses heating values other than LHV for converting fuels into GJ, the entity shall disclose information about the heating values used.

2 An ~~The~~ entity shall disclose (2) the quantity ~~percentage~~ of purchased or acquired electricity ~~energy~~ it consumed (in GJ) included in the quantity disclosed as total energy consumed. ~~that was supplied from grid electricity.~~

2.1 Purchased electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as purchased grid electricity consumption divided by total energy consumption.~~

3 An ~~The~~ entity shall disclose ~~(3)~~ the quantity of electricity from renewable energy sources it consumed (in GJ), disaggregated between (3a) self-generation and (3b) direct contracts. ~~percentage of energy it consumed that was renewable energy.~~

3.1 Renewable energy sources are ~~is~~ defined as sources capable of being replenished in a short time through ecological cycles or agricultural processes, ~~energy from sources that are replenished at a rate greater than or equal to their rate of depletion,~~ such as geothermal, wind, solar, hydro and biomass.

3.2 Renewable electricity includes electricity, heating, cooling or steam. ~~The percentage shall be calculated as renewable energy consumption divided by total energy consumption.~~

3.3 Renewable electricity from self-generation is limited to that consumed from owned or operated equipment, where the electricity is produced and consumed by the same entity.

~~The scope of renewable energy includes renewable fuel the entity consumed, renewable energy the entity directly produced and renewable energy the entity purchased, if purchased through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs) or Guarantees of Origin (GOs), a Green-e Energy Certified utility or supplier programme, or other green power products that explicitly include RECs or GOs, or for which Green-e Energy Certified RECs are paired with grid electricity.~~

~~3.3.1~~ ~~For any renewable electricity generated on-site, any RECs and GOs shall be retained (not sold) and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~3.3.2 For renewable PPAs and green power products, the agreement shall explicitly include and convey that RECs and GOs be retained or replaced and retired or cancelled on behalf of the entity for the entity to claim them as renewable energy.~~

~~3.3.3 The renewable portion of the electricity grid mix outside of the control or influence of the entity is excluded from the scope of renewable energy.~~

3.4 For the purposes of this disclosure, renewable electricity from self-generation excludes electricity associated with contractual instruments entered into by the entity if the contractual instrument has been sold by the entity.

3.5 Direct contracts include renewable electricity consumed that comes from a direct line transfer, such as when electricity production is fed directly and exclusively to a single entity. Direct contracts also include renewable electricity consumed related to contracts where the entity has negotiated with a specific electricity generator to supply renewable electricity to the entity with no grid transfers.

3.6 If the entity purchases or acquires renewable electricity through other contractual instruments, the entity shall provide information about any of these instruments that is necessary to inform the understanding of users of general purpose financial reports of the procurement decisions made by the entity regarding various energy sources to manage energy consumption-related risks and opportunities, including those associated with Scope 2 emissions.

3.6.1 If the entity purchases renewable electricity through a contractual instrument, the entity shall apply the Scope 2 Quality Criteria as defined in the Greenhouse Gas Protocol's *GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard* (2015).

3.7 ~~3.4~~ If the entity consumes renewable electricity ~~For the purposes of this disclosure, the scope of renewable energy~~ from biomass sources, it shall disclose the quantity (in GJ) separately. ~~is limited to materials certified to a third-party standard (for example, Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification or American Tree Farm System), materials considered eligible sources of supply according to the *Green-e Framework for Renewable Energy Certification, Version 1.0* (2017) or Green-e regional standards; or materials eligible for an applicable jurisdictional renewable portfolio standard.~~

3.7.1 Renewable electricity from biomass sources includes only materials certified to a third-party standard.

3.7.2 An entity shall disclose the third-party standard to which the materials are certified.

4 ~~The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel use (including biofuels) and conversion of kilowatt hours (kWh) to GJ (for energy data including electricity from solar or wind energy).~~

Table A5—Metrics titled ‘(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable’ subject to targeted amendments

SASB STANDARD	METRIC CODE	METRIC TITLE
Building Products & Furnishings	CG-BF-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
E-Commerce	CG-EC-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Multiline and Specialty Retailers & Distributors	CG-MR-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Alcoholic Beverages	FB-AB-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Restaurants	FB-RN-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Drug Retailers	HC-DR-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Health Care Delivery	HC-DY-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Water Utilities & Services	IF-WU-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Fuel Cells & Industrial Batteries	RR-FC-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Solar Technology & Project Developers	RR-ST-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Aerospace & Defence	RT-AE-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Electrical & Electronic Equipment	RT-EE-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Industrial Machinery & Goods	RT-IG-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Casinos & Gaming	SV-CA-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Hotels & Lodging	SV-HL-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Leisure Facilities	SV-LF-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Internet Media & Services	TC-IM-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Semiconductors	TC-SC-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Software & IT Services	TC-SI-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*

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SASB STANDARD	METRIC CODE	METRIC TITLE
Telecommunication Services	TC-TL-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*
Auto Parts	TR-AP-130a.1	*(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable*

PROPOSED AMENDMENTS TO METRICS ON WATER MANAGEMENT

Metrics titled ‘(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress’

The ISSB proposes making targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out quantitative disclosures relating to water withdrawal and consumption, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section describes proposed amendments to metrics titled *(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*.

The ISSB proposes making the following amendments to all metrics listed in Table A6, making them each consistent with one another by eliminating any existing minor variations between the metrics.

(1) Total water withdrawal, by source, ~~withdrawn,~~ (2) total water consumed; (3) percentages of water (a) withdrawn and (b) consumed from water-stressed locations ~~percentage of each in regions with High or Extremely High Baseline Water Stress~~

1 An ~~The~~ entity shall disclose (1) the quantity ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ withdrawn from all sources, disaggregated by source.

1.1 Water withdrawal is defined as the sum of all water drawn from ~~Water sources include~~ surface water ~~(including water from wetlands, rivers, lakes and oceans)~~, groundwater, seawater, produced water, or a third party for any use during the reporting period. ~~rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities.~~

1.2 Water sources include:

1.2.1 surface water, defined as water that occurs naturally on the Earth’s surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams;

1.2.2 groundwater, defined as water held in and recoverable from an underground formation;

1.2.3 seawater, defined as water in a sea or ocean;

1.2.4 produced water, defined as water that enters an entity’s boundary by extraction (for example, crude oil), processing (for example, sugar cane processing), or by use of any raw material, and which must be managed by the entity; and

1.2.5 third-party water, defined as water supplied by municipal water suppliers, wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

~~2 The entity may disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources.~~

~~2.1 Fresh water may be defined according to the local laws and regulations where the entity operates. If no legal definition exists, fresh water shall be considered to be water that has less than 1,000 parts per million of dissolved solids.~~

~~2.2 Water obtained from a water utility in compliance with jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.~~

2 ~~3~~ An ~~The~~ entity shall disclose (2) the volume ~~amount~~ of water, in megalitres, ~~thousands of cubic metres,~~ consumed in its direct operations.

2.1 ~~3.1~~ Water consumption is defined as~~:~~ the sum of all water withdrawn and integrated into products, used in the production of crops or generated as waste, that has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is not discharged back to surface water, groundwater, seawater or a third party.

2.1.1 ~~3.1.1~~ Water consumption includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period. ~~that evaporates during withdrawal, use and discharge~~

~~3.1.2 Water that is directly or indirectly incorporated into the entity's product or service~~

~~3.1.3 Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea~~

~~4 The entity shall analyse all its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.~~

3 ~~5~~ An ~~The~~ entity shall disclose (3a) the volume of ~~its~~ water withdrawn, in megalitres, from water-stressed ~~in~~ locations with High or Extremely High Baseline Water Stress as a percentage of the total water withdrawn.

3.1 Water stress is defined as the ability, or lack thereof, to meet human or ecological demand for water and can refer to the availability, quality or accessibility of water.

3.2 The entity shall disclose how it identifies water-stressed locations, for example:

3.2.1 using the World Resources Institute's *Aqueduct Water Risk Atlas* to evaluate whether the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40–80%) or extremely high (more than 80%); or

3.2.2 using the World Wildlife Fund's *Water Risk Filter* to evaluate whether the ratio of water consumption to water availability (water depletion) is moderate (dry-year depletion, where for at least 10% of the time, the monthly depletion ratio is more than 75%), high (seasonal depletion, where for at least an average of one month of the year, the depletion ratio is more than 75%), or very high (ongoing depletion, where the depletion ratio on average is more than 75%).

3.3 The entity shall disclose information about the internal assessments it uses to identify water-stressed locations, for example, whether the entity considers more granular local-level data.

4 ~~6~~ An ~~The~~ entity shall disclose (3b) the volume of water consumed from water-stressed ~~in~~ locations ~~with High or Extremely High Baseline Water Stress~~ as a percentage of the total water consumed.

5 If information for this disclosure is estimated or modelled, rather than sourced from direct measurements, the entity shall explain its estimation methods.

Table A6—Metrics titled '(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress' subject to targeted amendments

SASB STANDARD	METRIC CODE	METRIC TITLE
E-Commerce	CG-EC-130a.2	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Household & Personal Products	CG-HP-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Alcoholic Beverages	FB-AB-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Non-alcoholic Beverages	FB-NB-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Restaurants	FB-RN-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Biofuels	RR-BI-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Pulp & Paper Products	RR-PP-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Solar Technology & Project Developers	RR-ST-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Chemicals	RT-CH-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Containers & Packaging	RT-CP-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Hotels & Lodging	SV-HL-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Electronic Manufacturing Services & Original Design Manufacturing	TC-ES-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*

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SASB STANDARD	METRIC CODE	METRIC TITLE
Internet Media & Services	TC-IM-130a.2	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Semiconductors	TC-SC-140a.1	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*
Software & IT Services	TC-SI-130a.2	*(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress*

Amendments to water metrics in the Real Estate SASB Standard

The ISSB also proposes making targeted amendments to two metrics in the *Real Estate* SASB Standard that are similar to those listed in Table A5, but that contain industry-specific variations. Table A7 lists these metrics and details the proposed amendments.

Table A7—Targeted amendments to water metrics in the *Real Estate* SASB Standard

SASB STANDARD	METRIC CODE	METRIC TITLE	NOTES
Real Estate	IF-RE-140a.1	*Water withdrawal data coverage as a percentage of (1) total floor area and (2) floor area in regions with High or Extremely High Baseline Water Stress, by property sector*	Amendments to revise the definition and supporting guidance regarding 'regions with High or Extremely High Baseline Water Stress' in technical protocols 2 and 3 to 'water-stressed locations', consistent with the proposed amendments related to the definition and supporting guidance for the metrics listed in Table A5.
Real Estate	IF-RE-140a.2	*Total water withdrawn by portfolio area with data coverage and (2) percentage in regions with High or Extremely High Baseline Water Stress, by property sector*	Amendments to revise the definition and supporting guidance regarding 'regions with High or Extremely High Baseline Water Stress' in technical protocols 2 and 4 to 'water-stressed locations', consistent with the proposed amendments related to the definition and supporting guidance for the metrics listed in Table A5.

Metrics titled ‘Number of incidents of non-compliance associated with water quality permits, standards and regulations’

The ISSB proposes making targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out disclosures relating to water quality, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section describes proposed amendments to metrics titled *Number of incidents of non-compliance associated with water quality permits, standards and regulations*.

The ISSB proposes removing all metrics listed in Table A8, replacing them with a new metric titled *Total water discharged by (1) destination and (2) level of treatment*.

~~Number of incidents of non-compliance associated with water quality permits, standards and regulations~~

~~1~~ ~~The entity shall disclose the total number of incidents of non-compliance, including violations of a technology-based standard and exceedances of quantity or quality-based standards.~~

~~2~~ ~~The scope of disclosure includes incidents governed by applicable jurisdictional statutory permits and regulations, which include the discharge of a hazardous substance, violation of pre-treatment requirements or total maximum daily load (TMDL) exceedances.~~

~~3~~ ~~The scope of disclosure shall only include incidents of non-compliance that resulted in a formal enforcement action(s).~~

~~3.1~~ ~~Formal enforcement actions are defined as governmental recognised actions that address a violation or threatened violation of water quantity or quality laws, regulations, policies or orders, and can result in administrative penalty orders, administrative orders and judicial actions, among others.~~

~~4~~ ~~Violations shall be disclosed, regardless of their measurement methodology or frequency. These include violations for:~~

~~4.1~~ ~~Continuous discharges, limitations, standards and prohibitions that are generally expressed as maximum daily, weekly and monthly averages; and~~

~~4.2~~ ~~Non-continuous discharges or limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge and mass or concentration of specified pollutants.~~

Total water discharged by (1) destination and (2) level of treatment

1 An entity shall disclose the (1) total volume of water discharged, in megalitres, disaggregated by destination.

1.1 Water discharge is defined as the sum of effluents, used water, and unused water released to surface water, groundwater, seawater or a third party, for which the organisation has no further use.

1.1.1 Surface water is defined as water that occurs naturally on the Earth's surface in ice sheets, ice caps, glaciers, bogs, ponds, lakes, rivers and streams.

1.1.2 Groundwater is defined as water held in and recoverable from an underground formation.

1.1.3 Seawater is defined as water in a sea or ocean.

1.1.4 Third-party water is defined as water discharged by municipal water suppliers and municipal wastewater treatment plants, public or private utilities, and other organisations involved in the provision, transport, treatment, disposal, or use of water and effluent.

1.2 The scope of disclosure includes water released into a receiving waterbody at either a defined discharge point (point-source discharge) or dispersed over land in an undefined manner (non-point-source discharge).

2 An entity shall disclose (2) the total volume of water discharged, in megalitres, disaggregated by level of treatment.

2.1 Water treatment is defined as the physical, chemical or biological processes that improve water quality by removing solids, pollutants, and organic matter from water and effluents.

2.2 Treatment levels include:

2.2.1 primary treatment, which aims to remove solid substances that settle or float on the water surface;

2.2.2 secondary treatment, which aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it; and

2.2.3 tertiary treatment, which aims to upgrade water to a higher level or quality before it is discharged, for example, removing heavy metals, nitrogen, and phosphorus.

2.3 If the entity discharges water that it determines does not require treatment, it shall disclose the associated volume in megalitres.

2.4 The level of treatment shall be reported for any water or effluents at the point of discharge, whether treated by the entity on-site or sent to a third party for treatment.

2.5 The entity shall disclose how it determines the appropriate level of treatment for water discharges.

Table A8—Targeted amendments to metrics titled 'Number of incidents of non-compliance associated with water quality permits, standards and regulations'

SASB STANDARD	METRIC CODE	METRIC TITLE
Biofuels	RR-BI-140a.3	*Number of incidents of non-compliance associated with water quality permits, standards and regulations*

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SASB STANDARD	**METRIC CODE**	**METRIC TITLE**
Chemicals	RT-CH-140a.2	*Number of incidents of non-compliance associated with water quality permits, standards and regulations*
Containers & Packaging	RT-CP-140a.3	*Number of incidents of non-compliance associated with water quality permits, standards and regulations*

Metrics titled 'Description of water management risks and discussion of strategies and practices to mitigate those risks'

The ISSB proposes making targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out narrative disclosures relating to water management risks, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section discusses amendments to metrics titled *Description of water management risks and discussion of strategies and practices to mitigate those risks*.

The ISSB proposes making the following amendments to all metrics listed in Table A9, making them each consistent with one another by eliminating any existing minor variations between the metrics.

Description of water-related ~~management~~ risks and opportunities and ~~discussion of~~ strategies ~~and practices~~ to manage them, including any targets set to monitor progress ~~mitigate those risks~~

1 An ~~The~~ entity shall describe its ~~water management~~ risks associated with water withdrawals, water consumption and discharge of water or wastewater.

1.1 Risks associated with water withdrawals and water consumption include risks to the availability and quality of ~~adequate, clean~~ water resources, which include:

1.1.1 environmental ~~Environmental~~ constraints—such as operating in water-stressed regions, drought, floods, concerns of aquatic impingement or entrainment, interannual or seasonal variability, water quality that requires additional treatment at the point of input, and risks from the impact of climate change; and

1.1.2 regulatory ~~Regulatory~~ and financial constraints—such as water price volatility ~~in water costs~~, stakeholder perceptions and concerns related to water withdrawals (for example, those involving ~~from~~ local communities, non-governmental organisations and regulatory agencies), direct competition with and ~~impact from the actions of~~ other users (for example, commercial and municipal users), restrictions to withdrawals because of regulations, and constraints on the entity's ability to obtain or retain water rights or permits.

1.2 Risks associated with discharged ~~the discharge of~~ water or wastewater include the ability to obtain or retain rights or permits related to discharges, regulatory compliance related to discharges, restrictions on ~~to~~ discharges, ~~the ability to maintain control over the~~ temperature control of ~~water~~ discharges and risks stemming from impacts on local ecosystems and communities. ~~liabilities, reputational risks and increased operating costs because of regulation, stakeholder perceptions and concerns related to water discharges (for example, those from local communities, non-governmental organisations and regulatory agencies).~~

2 An ~~The~~ entity shall ~~may~~ describe how its water-related ~~management~~ risks vary by: ~~in the context of:~~

2.1 ~~How risks may vary by~~ withdrawal source; ~~, including surface water (including water from wetlands, rivers, lakes and oceans), groundwater, rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities or other entities; and~~

2.2 ~~How risks may vary by~~ discharge destinations, including surface water, groundwater, seawater or wastewater utilities; ~~.~~

2.3 local regulations, including emerging regulations; and

2.4 location of operating facilities.

3 An entity shall disclose the locations of operating facilities where water-related risks are concentrated.

4 An entity shall disclose quantitative and qualitative information about how water-related risks and opportunities have affected, and are anticipated to affect, the entity's financial position, financial performance and cash flows both for the reporting period and over the short, medium and long term.

~~3 The entity may discuss the potential effects that water management risks may have on its operations and the time line over which such risks are expected to manifest.~~

~~3.1 Effects include those associated with costs, revenue, liabilities, continuity of operations and reputation.~~

~~4 The entity may discuss its short- and long-term strategies or plans to mitigate water management risks, which include:~~

~~4.1 The scope of its strategy, plans, goals or targets, such as how they relate to various business units, geographies or water-consuming operational processes.~~

~~4.2 Any water management goals or targets it has prioritised, and an analysis of performance against those goals or targets.~~

~~4.2.1 Goals and targets include those associated with reducing water withdrawals, reducing water consumption, reducing water discharges, reducing aquatic impingements, improving the quality of water discharges and regulatory compliance.~~

~~4.3 The activities and investments required to achieve the plans, goals or targets, and any risks or limiting factors that might affect achievement of the plans or targets.~~

~~4.4 Disclosure of strategies, plans, goals or targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.~~

5 The entity shall disclose any targets it has set, and any targets it is required to meet by law or regulation, to mitigate or adapt to water-related risks or take advantage of water-related opportunities.

5.1 In preparing disclosure on water-related targets, the entity shall apply the requirements in paragraphs 51–53 of IFRS S1.

6 The entity shall disclose its strategies for managing water-related risks and opportunities, and achieving water-related targets, including:

~~5 For water management targets, the entity shall additionally disclose:~~

~~5.1~~ ~~Whether the target is absolute or intensity-based, and the metric denominator if it is an intensity-based target.~~

~~5.2~~ ~~The time lines for the water management activities, including the start year, the target year and the base year.~~

~~5.3~~ ~~The mechanism(s) for achieving the target, including:~~

6.1 ~~5.3.1~~ ~~Efficiency~~ efficiency efforts~~, such as the use of~~ (for example, using water recycling or closed-loop systems);

6.2 ~~5.3.2~~ ~~Product~~ product innovations~~, such as~~ (for example, redesigning products or services to require less water);

6.3 ~~5.3.3~~ ~~Process~~ process and equipment innovations~~, such as those that enable the reduction of~~ (for example, reducing aquatic impingements or entrainments);

6.4 ~~5.3.4~~ ~~Use~~ use of tools and technologies (for example, the World Wildlife Fund *Water Risk Filter*~~, the Global Water Tool and Water Footprint Network Footprint Assessment Tool~~) to analyse water use, risks and opportunities; and

6.5 ~~5.3.5~~ ~~Collaborations~~ collaborations or programmes with communities ~~in place with the community~~ or other organisations.

~~5.4~~ ~~The percentage reduction or improvement from the base year, in which the base year is the first year against which water management targets are evaluated towards the achievement of the target.~~

7 ~~6~~ An ~~The~~ entity shall disclose ~~discuss~~ whether its water management practices resulted ~~result~~ in any ~~additional~~ lifecycle impacts or trade-offs in its organisation, including trade-offs in land use, energy production and greenhouse gas emissions, and why the entity chose these practices despite such ~~lifecycle~~ trade-offs.

Table A9—Targeted amendments to metrics titled 'Description of water management risks and discussion of strategies and practices to mitigate those risks'

SASB STANDARD	METRIC CODE	METRIC TITLE
Household & Personal Products	CG-HP-140a.2	*Description of water management risks and discussion of strategies and practices to mitigate those risks*
Alcoholic Beverages	FB-AB-140a.2	*Description of water management risks and discussion of strategies and practices to mitigate those risks*
Non-Alcoholic Beverages	FB-NB-140a.2	*Description of water management risks and discussion of strategies and practices to mitigate those risks*
Real Estate	IF-RE-140a.4	*Description of water management risks and discussion of strategies and practices to mitigate those risks*

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SASB STANDARD	METRIC CODE	METRIC TITLE
Biofuels	RR-BI-140a.2	*Description of water management risks and discussion of strategies and practices to mitigate those risks*
Pulp & Paper Products	RR-PP-140a.2	*Description of water management risks and discussion of strategies and practices to mitigate those risks*
Solar Technology & Project Developers	RR-ST-140a.2	*Description of water management risks and discussion of strategies and practices to mitigate those risks*
Chemicals	RT-CH-140a.3	*Description of water management risks and discussion of strategies and practices to mitigate those risks*
Containers & Packaging	RT-CP-140a.2	*Description of water management risks and discussion of strategies and practices to mitigate those risks*

PROPOSED AMENDMENTS TO METRICS ON LABOUR PRACTICES

Metrics titled 'Percentage of active workforce employed under collective agreements'

The ISSB proposes making targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out disclosures relating to labour practices, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section describes proposed amendments to metrics titled *Percentage of active workforce employed under collective agreements*.

The ISSB proposes making the following amendments to all metrics listed in Table A10, making them each consistent with one another by eliminating any existing minor variations between the metrics.

Percentage of employees covered by ~~active workforce employed under~~ collective agreements

1 An ~~The~~ entity shall disclose the percentage of its total employees covered by ~~in the active workforce employed under~~ collective agreements at the reporting date. ~~during any part of the reporting period.~~

1.1 ~~The number of employees in the active workforce of an entity is calculated as the maximum number of unique employees it employed at any time during the reporting period.~~

~~1.2~~ Collective agreements are defined as agreements between an entity and an employees' organisation on behalf of some or all ~~employees~~ of the entity's employees ~~entity~~ concerning working conditions and terms of employment. ~~the engagement of employees, termination of employment, terms of employment, labour relations, and the rights and obligations of the organisations which are parties to the agreement.~~

1.2 ~~1.3~~ Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using various indicators such as economic dependency. ~~on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant, or hourly employees. Employees excludes contract workers.~~

1.2.1 ~~1.3.1~~ Employees include permanent employees, temporary employees, non-guaranteed hours employees, full-time employees and part-time employees.

~~Contract workers are defined as individuals who are not on the entity's payroll, but whom the entity supervises and manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

2 The percentage is ~~shall be~~ calculated as the number of employees working ~~in the active workforce who were employed~~ under collective agreements ~~during any part of the reporting period~~ divided by the total ~~average~~ number of employees ~~workers~~ employed. ~~during the reporting period.~~

~~3~~ ~~The scope of the disclosure includes all employees employed by the entity, including full-time, part-time and temporary employees.~~

Table A10—Metrics titled 'Percentage of active workforce employed under collective agreements' subject to targeted amendments

SASB STANDARD	METRIC CODE	METRIC TITLE
Food Retailers & Distributors	FB-FR-310a.2	*Percentage of active workforce employed under collective agreements*
Waste Management	IF-WM-310a.1	*Percentage of active workforce employed under collective agreements*
Airlines	TR-AL-310a.1	*Percentage of active workforce employed under collective agreements*
Automobiles	TR-AU-310a.1	*Percentage of active workforce employed under collective agreements*

PROPOSED AMENDMENTS TO METRICS ON WORKFORCE HEALTH AND SAFETY

Metrics titled ‘(1) Total recordable incident rate (TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training for (a) direct employees and (b) contract employees’ and similar metrics

The ISSB proposes making targeted amendments to the metrics in the SASB Standards whose primary purpose is setting out quantitative disclosures relating to workforce health and safety, based on similar proposed amendments in the nine priority industries contained in this Exposure Draft. This section describes proposed amendments to metrics titled *(1) Total recordable incident rate (TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training for (a) direct employees and (b) contract employees* and similar metrics which do not have all these datapoints. For example, some of the metrics in other SASB Standards do not contain sub-metrics regarding the average hours of health, safety and emergency response training.

The ISSB proposes making targeted amendments to metrics that are similar to the metric below and eliminating any existing minor variations between the metrics. The ISSB is not proposing to add new sub-metrics to existing metrics. Table A11 lists these metrics and details the proposed amendments.

(1) Number of fatalities and (2) total ~~Total~~ recordable incident rate ~~(TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training~~ for (a) ~~direct~~ employees and (b) non-employee workers; (3) average hours of health, safety and emergency response training ~~contract employees~~

1 An entity shall separately disclose (1) the number of fatalities resulting from work-related injuries and work-related illnesses for (a) employees and (b) non-employee workers.

1.1 Employees are defined as individuals who render personal services to the entity and are regarded as employees for legal or tax purposes. They are in an employment relationship with the entity according to applicable jurisdictional law or regulation using indicators such as economic dependency.

1.1.1 Employees include full-time employees, permanent employees, temporary employees, non-guaranteed hours employees and part-time employees.

1.2 Non-employee workers are defined as individuals who render personal services to the entity and work under the entity’s direction in the same way as individuals who are regarded as employees for legal or tax purposes. They perform work controlled by the entity but are not in an employment relationship with the entity according to applicable jurisdictional law or regulation.

1.2.1 The entity is defined as having ‘control’ of work performed by non-employee workers if it directs the work, controls the means or methods of doing the work or controls the workplace where the work is performed. The type of contractual relationship between the entity and the worker (for example, an employment agency or contractor) does not necessarily determine whether the entity controls the work.

1.2.2 Non-employee workers whose work is controlled by the organisation include agency workers, apprentices, contractors, interns, self-employed persons, subcontractors and volunteers.

1.3 Together, employees and non-employee workers are defined as the entity's 'workforce' or 'workers'.

2 ~~1~~ An ~~The~~ entity shall separately disclose (2) ~~(1)~~ its total recordable incident rate (TRIR) for work-related injuries and illnesses for (a) employees and (b) non-employee workers.

2.1 The entity shall use applicable jurisdictional criteria to define recordable and non-recordable incidents.

2.1.1 If the entity is subject to more than one jurisdictional law or regulation that defines recordable and non-recordable incidents, the entity shall disclose whether and how variations between these frameworks affect the reported data.

2.1.2 ~~1.1~~ An injury or illness is typically defined as ~~considered~~ a recordable incident if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid~~,~~ or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed healthcare ~~health care~~ professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid or loss of consciousness.

2.1.3 ~~1.1.1~~ First aid is typically defined as emergency care or treatment for an ill or injured person before regular medical treatment ~~aid~~ can be provided, but jurisdictional definitions may vary.

~~1.1.2~~ ~~The entity may use applicable jurisdictional criteria for definitions of a recordable incident and a non-recordable incident, such as first aid. The entity shall disclose the legal, regulatory or industry framework used as the source for these criteria and definitions.~~

2.2 The TRIR is defined as: (number of recordable incidents × 1,000,000) / total number of hours worked.

2.2.1 If the entity cannot directly calculate the number of hours worked, it shall estimate this information using normal or standard hours of work and accounting for entitlements to periods of paid leave of absence from work (paid vacations, paid sick leave, public holidays) and explain this method in the disclosure.

2.2.2 If the entity cannot directly calculate or estimate the number of hours worked, it shall disclose the reason.

3 The disclosure includes all workers regardless of their location or type of employment.

~~2~~ ~~The entity shall disclose (2) its fatality rate for work-related fatalities.~~

~~3~~ ~~The entity shall disclose (3) its near miss frequency rate (NMFR) for work-related near misses.~~

~~3.1~~ ~~A near miss is defined as an unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness, physical damage or environmental damage, but had the potential to do so in other circumstances.~~

~~3.2 The entity may disclose its process for classifying, identifying and reporting near misses.~~

~~4 All disclosed rates shall be calculated as: (statistic count × 200,000) / total number of hours worked by all employees in the year reported.~~

~~5 The entity shall disclose (4) the average number of training hours it provided to its workforce for health, safety and emergency management training.~~

~~5.1 Training shall relate to topics such as the health, safety, or emergency preparedness of employees with respect to occupational risks or hazards to which employees are reasonably likely to be exposed and specific occupational risks or hazards.~~

~~6 The average number of hours of health, safety and emergency response training shall be calculated as: (total qualifying training hours provided by the entity) / (total number of employees).~~

~~6.1 The total number of employees is number of the entity's direct and contract employees at the end of the reporting period. If the total number of employees varied widely during the reporting period, the entity should discuss those variations to provide context.~~

4 ~~7~~ The ~~scope of the~~ disclosure is limited to fatalities, work-related incidents and work-related illnesses. ~~includes work-related incidents only.~~

4.1 ~~7.1~~ Work-related incidents are defined as workforce injuries and illnesses resulting from events or exposures in the work environment.

4.1.1 ~~7.2~~ The work environment is the establishment and other locations where one or more workers ~~employees~~ are working or are present as a condition of their employment.

4.1.2 ~~7.3~~ The work environment includes not only physical locations, but also the equipment or materials used ~~by the employee~~ during ~~the course of~~ work.

4.2 ~~7.4~~ Incidents that occur while a worker ~~an employee~~ is travelling are work-related if, at the time of the injury or illness, the worker ~~employee~~ was engaged in work activities in the interest of the employer.

4.3 ~~7.5~~ A work-related incident must be a new case, not a previously recorded injury or illness being updated.

5 An entity shall disclose (3) the average number of training hours provided to its workforce for health, safety and emergency preparedness management training.

5.1 Training includes topics such as the health, safety, or emergency preparedness related to the occupational risks or hazards to which the workforce is reasonably likely to be exposed and to specific occupational risks or hazards.

5.1.1 Training includes technical health, safety and emergency management training required by applicable jurisdictional authorities related to occupational risks or hazards.

5.2 The average number of hours of health, safety and emergency response training is calculated as the total qualifying training hours provided to the workforce divided by the total workforce.

5.2.1 The total workforce is defined as the number of individual employees and non-employee workers the entity employs at the reporting date.

6 If the total workforce varied significantly during the reporting period, an entity shall explain those variations.

~~8 The entity shall disclose the rates and average hours of training for each of these employee categories:~~

~~8.1 direct employees, defined as individuals who are in an employment relationship with the entity according to applicable jurisdictional law or practice on the entity's payroll, whether they are full-time, short service, part-time, executive, labour, salary, seasonal, migrant or hourly employees; and~~

~~8.2 contract employees, defined as individuals who are not on the entity's payroll, but whom the entity supervises or manages, including independent contractors and those employed by third parties (for example, temp agencies and labour brokers).~~

~~9 The scope of the disclosure includes all employees regardless of employee location or type of employment.~~

Table A11—Metrics on workforce health and safety subject to targeted amendments

SASB STANDARD	METRIC CODE	METRIC TITLE	NOTES
Health Care Delivery	HC-DY-320a.1	*Total recordable incident rate (TRIR) for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR and worker with those made to the metric above.
Engineering & Construction Services	IF-EN-320a.1	*(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.
Home Builders	IF-HB-320a.1	*(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.
Waste Management	IF-WM-320a.1	*(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities, 'NMFR' and worker with those made to the metric above.
Fuel Cells & Industrial Batteries	RR-FC-320a.1	*(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.

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SASB STANDARD	METRIC CODE	METRIC TITLE	NOTES
Wind Technology & Project Developers	RR-WT-320a.1	*(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.
Chemicals	RT-CH-320a.1	*(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.
Industrial Machinery & Goods	RT-IG-320a.1	*(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities, 'NMFR' and worker with those made to the metric above.
Leisure Facilities	SV-LF-320a.1	*(1) Total recordable incident rate (TRIR) and (2) near miss frequency rate (NMFR) for (a) direct employ-ees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.
Electronic Manufacturing Services & Original Design Manufacturing	TC-ES-320a.1	*(1) Total recordable incident rate (TRIR) and (2) near miss frequency rate (NMFR) for (a) direct employ-ees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities, 'NMFR' and worker with those made to the metric above.
Air Freight & Logistics	TR-AF-320a.1	*(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.
Rail Transportation	TR-RA-320a.1	*(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities, 'NMFR' and worker with those made to the metric above.
Road Transportation	TR-RO-320a.1	*(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees*	Amendments to align disclosures regarding the definitions of TRIR, fatalities and worker with those made to the metric above.

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