SASB STANDARDS

Now part of IFRS Foundation

Oil & Gas – Midstream

Sustainability Accounting Standard

EXTRACTIVES & MINERALS PROCESSING SECTOR

Sustainable Industry Classification System® (SICS®) EM-MD

Under Stewardship of the International Sustainability Standards Board

INDUSTRY STANDARD | VERSION 2023-12

IFRS Sustainability

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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, 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 in connection with the International Applicability of SASB Standards project.

Effective Date

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"), categorised pursuant to the Sustainable Industry Classification System® (SICS®).

SASB Standards include:

1. **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 topics** – which describe specific sustainability-related risks or opportunities associated with the activities conducted by entities within a particular industry.

3. **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 protocols** – which provide guidance on definitions, scope, implementation and presentation of associated metrics.

5. **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 Standards

SASB Standards are intended to aid entities in disclosing information about sustainability-related risks and opportunities that could reasonably be expected to affect the entity's cash flows, its access to finance or cost of capital over the short, medium or long term. An entity determines which Industry Standard(s) and which disclosure topics are 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, companies with substantial business in multiple SICS® industries should refer to and consider the applicability of the disclosure topics and associated metrics in 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 investors. However, the responsibility for making materiality judgements and determinations rests with the reporting entity.

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, 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: 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	Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	Quantitative	Metric tonnes (t) CO_2-e, Percentage (%)	EM-MD-110a.1
	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
Air Quality	Air 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 active operations	Discussion and Analysis	n/a	EM-MD-160a.1
	Percentage of 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) Terrestrial land area disturbed, (2) percentage of impacted area restored	Quantitative	Hectares (ha), Percentage (%)	EM-MD-160a.3
	(1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in Arctic, (4) volume in sites with high biodiversity significance, and (5) volume recovered	Quantitative	Number, Barrels (bbls)	EM-MD-160a.4
Competitive Behaviour	Total amount of monetary losses as a result of legal proceedings associated with pipeline and storage regulations [1]	Quantitative	Presentation currency	EM-MD-520a.1

continued...

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

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TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE
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 transportation [2]	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

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[3]	Quantitative	Metric tonne (t) kilometres	EM-MD-000.A

[2] Note to **EM-MD-540a.3** – The disclosure shall include a discussion of processes, procedures, and strategies to manage non-accident and accident releases.

[3] Note to **EM-MD-000.A** – Relevant modes of transport include pipeline, tanker, barge, rail car, and truck.

Greenhouse Gas Emissions

Topic Summary

The 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. GHG emissions contribute to climate change and create incremental regulatory compliance costs and risks for 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 or capital expenditures and regulatory or legal penalties. Entities that capture and monetise emissions, or cost-effectively reduce emissions by implementing innovative monitoring and mitigation efforts and fuel efficiency measures, may enjoy substantial financial benefits. Entities can reduce regulatory risks and realise operational efficiencies as regulatory and public concerns about air quality and climate change increase.

Metrics

EM-MD-110a.1. Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations

1 The entity shall disclose its gross global Scope 1 greenhouse gas (GHG) emissions 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 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 These emissions include direct emissions of GHGs from stationary or mobile sources; these sources include: equipment at well sites, production facilities, refineries, chemical plants, terminals, fixed site drilling rigs, office buildings, 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*

3 The entity shall disclose the percentage of gross global Scope 1 emissions from methane emissions.

3.1 The percentage of gross global Scope 1 GHG emissions from methane emissions shall be calculated as the methane emissions in metric tonnes of carbon dioxide equivalents (CO_2-e) divided by the gross global Scope 1 GHG emissions in metric tons of carbon dioxide equivalents (CO_2-e).

4 The entity shall disclose the percentage of its gross global Scope 1 GHG emissions covered under an emissions-limiting regulation or programme intended to limit or reduce emissions directly, such as cap-and-trade schemes, carbon 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)

4.2 The percentage shall be calculated as the total amount of gross global Scope 1 GHG emissions (CO_2-e) covered under emissions-limiting regulations divided by the total amount of gross global Scope 1 GHG emissions (CO_2-e).

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

4.3 The scope of emissions-limiting regulations excludes emissions covered under voluntary emissions-limiting 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. 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 The entity shall discuss its long- and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.

1.1 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 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 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 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.

Air Quality

Topic Summary

Air emissions from Oil & Gas – Midstream entities include air pollutants, 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 could benefit from operational efficiencies that may result in a lower cost structure over time.

Metrics

EM-MD-120a.1. Air 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 The entity shall disclose its emissions of air pollutants, in metric tonnes per pollutant, released into the atmosphere.

1.1 The scope of the disclosure includes air pollutants associated with the entity's 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.

3 The entity shall disclose its emissions of (1) oxides of nitrogen (NO_X), reported as NO_X.

3.1 The scope of NO_X includes NO and NO_2 but excludes N_2O.

4 The entity shall disclose its emissions of (2) oxides of sulphur (SO_X), reported as SO_X.

4.1 The scope of SO_X includes SO_2 and SO_3.

5 The entity shall disclose its emissions of (3) non-methane volatile organic compounds (VOCs).

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.

6 The entity shall disclose its emissions of (4) particulate matter 10 micrometres or less in diameter (PM_{10}), reported as PM_{10}.

6.1 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.

7 The entity 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.

Ecological Impacts

Topic Summary

The storage and transport of crude oil, natural gas and related products 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 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 may require development and decommissioning plans that mitigate or remediate potential ecological impacts prior to project 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 areas under new laws or the enforcement of existing laws. Entities that effectively manage ecological impacts may avoid project delays, remediation 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 active operations

1 The entity shall describe its environmental management plans implemented at active operations, including, if relevant:

1.1 the lifecycle stages to which the plans apply, such as: land acquisition and surveying, development and pipeline construction, revegetation, pipeline operations, closure, decommissioning, removal, and restoration;

1.2 the 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 the underlying references for its plans, including whether they are codes, guidelines, standards or regulations; and

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.

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.

4 If environmental management policies and practices differ significantly by activity, 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.

6 If the management policies and practices do not apply to all the entity's sites or operations, it shall include the percentage of sites to which they were applied.

7 The entity shall disclose the degree to which its policies and practices are aligned with the IFC Performance Standards on Environmental and Social Sustainability, 2012, including:

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

7.2 Performance Standard 3, *Resource Efficiency and Pollution Prevention*;

7.3 Performance Standard 4, *Community Health, Safety, and Security*; and

7.4 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 land owned, leased, or operated within areas of protected conservation status or endangered species habitat

1 The entity shall 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 divided by the entity's total land area (owned, leased or operated).

2 Land is considered to be located in areas of protected conservation status if it is located within:

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.'[4]

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.

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) Terrestrial land area disturbed, (2) percentage of impacted area restored

1 The entity shall disclose (1) the total area of disturbed land in hectares (ha). The scope of the disclosure includes land that is owned, leased or operated (for example, rights-of-way, easements and land concessions).

[4] IUCN, *Guidelines for Applying Protected Areas Management Categories*, 2008, pp.8–9.

1.1 This disclosure shall be a cumulative total of all currently active sites, recently decommissioned sites, 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).

2 The entity shall disclose (2) the percentage of land area affected by operations that was restored 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 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*.

EM-MD-160a.4. (1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in Arctic, (4) volume in sites with high biodiversity significance, and (5) volume recovered

1 The entity shall disclose (1) the total number and (2) volume (in barrels) of hydrocarbon spills.

1.1 The entity shall disclose all 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 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 amount spilled that reached the environment and that figure will not be reduced by the amount of such hydrocarbon subsequently recovered, evaporated or otherwise lost.

3 Consistent with Ipieca Guidance, the scope of releases from operations and events 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 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.

5 The entity shall disclose (3) the volume of spills (in bbls) that occurred in the Arctic, defined as the area north of the Arctic Circle at approximately 66° 33' north latitude.

6 The entity shall disclose (4) the volume of spills (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.

7 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 removed from the environment through short-term spill response activities, excluding:

7.1 amounts recovered during longer-term remediation at spill sites; and

7.2 amounts evaporated, burned or dispersed.

Competitive Behaviour

Topic Summary

Entities that own natural gas pipelines and storage facilities face 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 enjoy natural monopolies, and regulations ensure that entities 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 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 monetary losses as a result of legal proceedings associated with pipeline and storage regulations

1 The entity shall disclose the total amount of monetary losses incurred during the reporting period resulting from legal proceedings associated with pipeline and storage regulations related to competitive behaviour, which include 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 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 judgements, 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 **EM-MD-520a.1**

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, price fixing or pipeline access) 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.

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 may implement new safety regulations related to pipeline and rail operations. Significant events may result in large one-time costs from fines and corrective actions, and contingent liabilities for remediation or legal damages. These factors also could impair an entity's social licence to operate. As demonstrated by investigations of past incidents, an entity that develops a strong safety culture and establishes a thorough and systematic approach to safety and risk management may minimise such risks. This includes emergency preparedness and response and operational integrity within the entity and in its external relationships with contractors.

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 The entity shall disclose the percentage of (1) natural gas and (2) hazardous liquid pipelines inspected.

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 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 demonstrates can provide an equivalent understanding of the condition of the line pipe.

1.4 The entity shall disclose the technologies used to conduct these inspections.

2 The entity shall disclose the percentage separately by natural gas pipelines and hazardous liquid pipelines.

2.1 A natural 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.

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 and fabricated assemblies therein, and breakout tanks.

EM-MD-540a.3. Number of (1) accident releases and (2) non-accident releases (NARs) from rail transportation

1 The entity shall disclose (1) the total number of accident releases of hazardous material from rail transportation activities.

1.1 'Hazardous material' is defined as a substance or material that the relevant jurisdictional authority has determined 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 has been designated as hazardous under applicable jurisdictional laws or regulations.

1.1.1 The scope of hazardous materials includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, and materials designated as hazardous by the applicable jurisdictional legal and regulatory framework where the materials are generated.

1.1.2 The entity 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*.

1.2 An accident release is defined as a release of hazardous materials required to be reported to applicable jurisdictional regulatory or governmental agencies.

2 The entity shall disclose (2) the total number of non-accident releases (NARs) of hazardous material from rail transportation activities.

2.1 A NAR is defined as the unintentional release of a hazardous material while in transit, including loading and unloading while in railroad possession, that is not caused by a derailment, collision or other rail-related 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 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**

1 The entity shall discuss its processes and procedures used to manage non-accident and accident releases.

2 Relevant processes and procedures include the use of management systems, safety technologies, 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.

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