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Exposure Draft

IFRS[®] Sustainability Disclosure Standard

[Draft] IFRS S2 Climate-related Disclosures Appendix B Industry-based disclosure requirements

Volume B13—Oil & Gas—Refining & Marketing

Comments to be received by 29 July 2022



This industry from Appendix B Industry-based disclosure requirements accompanies the Exposure Draft ED/2022/S2 *Climate-related Disclosures* (published March 2022; see separate booklet). It is published by the International Sustainability Standards Board (ISSB) for comment only. Comments need to be received by 29 July 2022 and should be submitted by email to commentletters@ifrs.org or online at <https://www.ifrs.org/projects/open-for-comment/>.

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Introduction

This volume is part of Appendix B of [draft] IFRS S2 Climate-related Disclosures and is an integral part of that [draft] Standard. It has the same authority as the other parts of that [draft] Standard.

This volume sets out the requirements for identifying, measuring and disclosing information related to an entity's significant climate-related risks and opportunities that are associated with specific business models, economic activities and other common features that characterise participation in this industry.

The industry-based disclosure requirements are derived from SASB Standards (see paragraphs B10–B12 of [Draft] IFRS S2 *Climate-related Disclosures*). Amendments to the SASB Standards, described in paragraph B11, are marked up for ease of reference. New text is underlined and deleted text is struck through. The metric codes used in SASB Standards have also been included, where applicable, for ease of reference. For additional context regarding the industry-based disclosure requirements contained in this volume, including structure and terminology, application and illustrative examples, refer to Appendix B paragraphs B3–B17.

Oil & Gas – Refining & Marketing

Industry Description

Oil & Gas - Refining & Marketing (R&M) companies refine petroleum products, market oil and gas products, and/ or operate gas stations and convenience stores, 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, with different expenditure needs and intensity of environmental and social impacts.

Note: The standards discussed below are for “pure-play” R&M activities, or independent R&M companies. Integrated oil and gas companies conduct upstream operations and are also involved in the distribution and/or refining or marketing of products. SASB has separate standards for the Oil and Gas Exploration & Production (EM-EP), and Midstream (EM-MD) industries. As such, integrated companies should also 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 covered under emissions-limiting regulations	Quantitative	Metric tons (t) CO ₂ -e, Percentage (%)	EM-RM-110a.1
	Discussion of long-term 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
Water Management	(1) Total fresh water withdrawn, (2) percentage recycled, (3) percentage in regions with High or Extremely High Baseline Water Stress	Quantitative	Thousand cubic meters (m ³), Percentage (%)	EM-RM-140a.1
Product Specifications & Clean Fuel Blends	Total addressable market and share of market for advanced biofuels and associated infrastructure	Quantitative	Reporting currency, Percentage (%)	EM-RM-410a.2

Table 2. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Refining throughput of crude oil and other feedstocks ¹⁵	Quantitative	Barrels of oil equivalent (BOE)	EM-RM-000.A

continued...

¹⁵ Note to EM-RM-000.A – The total volume of crude oil and other feedstocks processed in the refinery system during the reporting period.

APPENDIX B OF [DRAFT] IFRS S2 CLIMATE-RELATED DISCLOSURES

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ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Refining operating capacity ¹⁶	Quantitative	Million barrels per calendar day (MBPD)	EM-RM-000.B

¹⁶ Note to EM-RM-000.B – Per the U.S. Energy Information Administration, operating (or operable) capacity is: the amount of capacity that, at the beginning of the period, is 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

Oil and Gas R&M operations generate significant direct greenhouse gas (GHG) emissions, from a variety of sources. Emissions primarily consist of carbon dioxide and methane from the stationary combustion of fossil fuels for energy consumption. Energy costs are a significant share of refinery operating costs. Greenhouse gases are also 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 GHG emissions intensity, can vary significantly depending on the type of crude oil feedstock used and refined product specifications. Companies that cost-effectively reduce GHG emissions from their operations can create operational efficiencies. Such reduction can also mitigate the impact on value of increased fuel costs from regulations that seek to limit—or put a price on—GHG emissions.

Metrics

EM-RM-110a.1. Gross global Scope 1 emissions, 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 (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).
 - 1.1 Emissions of all GHGs shall be consolidated and disclosed in metric tons of carbon dioxide equivalents (CO₂-e), calculated in accordance with published 100-year time horizon global warming potential (GWP) values. To date, the preferred source for GWP factors 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 but are not limited to: 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.

APPENDIX B OF [DRAFT] IFRS S2 CLIMATE-RELATED DISCLOSURES

- 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, but are not limited to:
 - 2.2.1 *GHG Reporting Guidance for the Aerospace Industry* published by 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 emissions 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*, Second 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 information, natural capital and associated business impacts* (April 2018)
- 3 The entity shall disclose the percentage of its gross global Scope 1 GHG emissions that are covered under an emissions-limiting regulation or program that is intended to directly limit or reduce emissions, such as cap-and-trade schemes, carbon tax/fee systems, and other emissions control (e.g., command-and-control approach) and permit-based mechanisms.
 - 3.1 Examples of emissions-limiting regulations include, but are not limited to:
 - 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 (Draft Bill 42 of 2009)
 - 3.2 The percentage shall be calculated as the total amount of gross global Scope 1 GHG emissions (CO₂-e) that are covered under emissions-limiting regulations divided by the total amount of gross global Scope 1 GHG emissions (CO₂-e).

- 3.2.1 For emissions that are subject to multiple emissions-limiting regulations, the entity shall not account for those emissions more than once.
 - 3.3 The scope of emissions-limiting regulations excludes emissions covered under voluntary emissions-limiting regulations (e.g., voluntary trading systems), as well as disclosure-based regulations—~~[e.g., the U.S. Environmental Protection Agency (EPA) GHG Reporting Program]~~.
- 4 The entity may discuss any change in its emissions from the previous reporting period, including whether the change was due to emissions reductions, divestment, acquisition, mergers, changes in output, and/or changes in calculation methodology.
- 5 In the case that current reporting of GHG emissions to the CDP or other entity (e.g., 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-RM-110a.2. Discussion of long-term 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-term and short-term strategy or plan to manage its Scope 1 greenhouse gas (GHG) emissions.
 - 1.1 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 The scope of GHG emissions includes the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).
- 2 The entity shall discuss its emission reduction target(s) and analyze its performance against the target(s), including the following, where relevant:
 - 2.1 The scope of the emission reduction target (e.g., 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 timelines for the reduction activity, including the start year, the target year, and the base year;

APPENDIX B OF [DRAFT] IFRS S2 CLIMATE-RELATED DISCLOSURES

- 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, but are not limited to energy efficiency efforts, energy source diversification, carbon capture and storage, or the implementation of leak detection and repair processes.
- 3 The entity shall discuss activities and investments required to achieve the plans and/or targets, and any risks or limiting factors that might affect achievement of the plans and/or targets.
- 4 The entity shall discuss the scope of its strategies, plans, and/or reduction targets, such as whether they pertain differently to different business units, geographies, or emissions sources.
- 4.1 ~~Categories of emissions sources generally correspond to those defined in the API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry (2009), and 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 oxidizers, (2) emissions from mobile sources, including, but not limited to barges, ships, railcars, and trucks for material transport; planes/helicopters and other company vehicles for personnel 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 depressurizing, 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, catadyne heaters, and wastewater treatment and surface impoundments
- 5 The entity shall discuss whether its strategies, plans, and/or reduction targets are related to, or associated with, emissions limiting and/or emissions reporting-based programs or regulations (e.g., the EU Emissions Trading Scheme, Quebec Cap-and-Trade System, California Cap-and-Trade Program), including regional, national, international or sectoral programs.
- 6 Disclosure of strategies, plans, and/or reduction targets shall be limited to activities that were ongoing (active) or reached completion during the reporting period.

Water Management

Topic Summary

Refineries can use relatively large quantities of water depending on their size and the complexity of the refining process. This exposes them to the risk of reduced water availability, depending on their location, and related costs. Extraction of water from water-stressed regions or water contamination may also create tensions with local communities. Refinery operations often require wastewater treatment and disposal, often via on-site wastewater treatment plants before discharge. Reducing water use and contamination through recycling and other water management strategies may result in operational efficiencies for companies and lower their operating costs. They could also minimize the impacts of regulations, water supply shortages, and community-related disruptions on operations.

Metrics

EM-RM-140a.1. (1) Total fresh water withdrawn, (2) percentage recycled, (3) percentage in regions with High or Extremely High Baseline Water Stress

- 1 The entity shall disclose the amount of water, in thousands of cubic meters, that was withdrawn from freshwater sources:
 - 1.1 Fresh water may be defined according to the local statutes and regulations where the entity operates. Where there is no regulatory definition, fresh water shall be considered to be water that has less than 1000 parts per million of dissolved solids ~~per the U.S. Geological Survey.~~
 - 1.2 Water obtained from a water utility in compliance with ~~U.S. National Primary Drinking Water Regulations~~ jurisdictional drinking water regulations can be assumed to meet the definition of fresh water.
- 2 The entity shall disclose the percentage of water recycled as the volume, in thousands of cubic meters, recycled divided by the volume of water withdrawn.
 - 2.1 Any volume of water reused multiple times shall be counted as recycled each time it is recycled and reused.
- 3 The entity shall analyze 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.
- 4 The entity shall disclose its water withdrawn in locations with High or Extremely High Baseline Water Stress as a percentage of the total water withdrawn.
- 5 The entity shall disclose its water consumed in locations with High or Extremely High Baseline Water Stress as a percentage of the total water consumed.

Product Specifications & Clean Fuel Blends

Topic Summary

Human health risks and broad environmental risks such as those associated with climate change have raised concerns about the end use of products such as gasoline from the Refining & Marketing (R&M) industry. In response, some regulatory jurisdictions have implemented product specifications and renewable fuel blends, which pose significant compliance and operational risks for R&M companies. Companies may face long-term reductions in revenue from fossil fuel-based products and services due to GHG mitigation policies such as the renewable fuel mandates or standards, as well as competition from non-fossil fuel products. Companies that purchase credits known as renewable identification numbers (RINs) to meet regulatory requirements for renewable fuels in the U.S. can face regulatory and cost risks. In order to ensure regulatory compliance and position themselves for long-term competitiveness, some companies are investing in or purchasing ethanol and other renewable biofuels. Advanced biofuels and fuel technologies have lower lifecycle impacts than traditional biofuels, and can be used to minimize 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 serve to advance R&M companies' long-term profitability.

Metrics

EM-RM-410a.2. Total addressable market and share of market for advanced biofuels and associated infrastructure

- 1 The entity shall 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 percent of the market share of the product category (e.g., 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 and/or associated infrastructure that it currently captures with its products.
 - 2.1 Market share shall be calculated as revenues from these products divided by the size of the total addressable market.
- 3 ~~Advanced biofuels are defined according to Section 201 of the Energy Independence and Security Act of 2007 (EISA) as biofuels other than ethanol derived from corn starch (kernels) and having 50% lower lifecycle greenhouse gas emissions relative to gasoline.~~
- 4 Revenue from advanced biofuel infrastructure includes that from the entity's retail operations (i.e., fuel stations), joint ventures with primary producers, or technologies that enable the production of advanced biofuels.
- 5 If there is a significant difference between the total addressable market and the market that the entity can serve through its existing or planned capabilities, sales channels, or products (i.e., the serviceable available market) then the entity may disclose this information.

APPENDIX B OF [DRAFT] IFRS S2 CLIMATE-RELATED DISCLOSURES

- 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 (i.e., 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.
- 7 The entity may discuss other non-revenue generating initiatives it has undertaken to commercialize biofuels, such as partnerships (e.g., pilot projects, research and development projects) with fleet operators (air, ground, or marine transportation), airlines, vehicle manufacturers, and governmental agencies (e.g., U.S. Department of Agriculture, U.S. Department of Energy, or armed forces).