



**SASB  
STANDARDS**

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# Biofuels

## Sustainability Accounting Standard

RENEWABLE RESOURCES & ALTERNATIVE ENERGY SECTOR

### **Sustainable Industry Classification System® (SICS®) RR-BI**

Under Stewardship of the International Sustainability Standards Board

**INDUSTRY STANDARD | VERSION 2023-12**



**IFRS®**  
Sustainability

[sasb.org](https://sasb.org)

## 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<sup>®</sup>](#). However, companies with substantial business in multiple SICS<sup>®</sup> 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

Biofuels industry entities produce biofuels and process raw materials for production. Using organic feedstocks, entities manufacture biofuels that are used primarily in transportation. Entities typically source feedstocks, which include food, oil crops and animal products, from agricultural product distributors. Ethanol and biodiesel are the most widely produced biofuels, while other types include biogas, biohydrogen and synthetic biofuels, produced from a variety of organic feedstocks. Biofuels entities' customers are chiefly fuel-blending and fuel-supply entities, including major integrated oil entities. Government regulations related to the use of renewable fuel are a significant demand driver in the industry.

# SUSTAINABILITY DISCLOSURE TOPICS & METRICS

**Table 1. Sustainability Disclosure Topics & Metrics**

TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE
Air Quality	Air emissions of the following pollutants: (1) NO <sub>x</sub> (excluding N <sub>2</sub> O), (2) SO <sub>x</sub> , (3) volatile organic compounds (VOCs), (4) particulate matter (PM <sub>10</sub> ), and (5) hazardous air pollutants (HAPs)	Quantitative	Metric tonnes (t)	RR-BI-120a.1
	Number of incidents of non-compliance associated with air quality permits, standards, and regulations	Quantitative	Number	RR-BI-120a.2
Water Management in Manufacturing	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	Quantitative	Thousand cubic metres (m <sup>3</sup> ), Percentage (%)	RR-BI-140a.1
	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	n/a	RR-BI-140a.2
	Number of incidents of non-compliance associated with water quality permits, standards and regulations	Quantitative	Number	RR-BI-140a.3
Lifecycle Emissions Balance	Lifecycle greenhouse gas (GHG) emissions, by biofuel type	Quantitative	Grammes of CO <sub>2</sub> -e per megajoule (MJ)	RR-BI-410a.1
Sourcing & Environmental Impacts of Feedstock Production	Discussion of strategy to manage risks associated with environmental impacts of feedstock production	Discussion and Analysis	n/a	RR-BI-430a.1
	Percentage of biofuel production third-party certified to an environmental sustainability standard	Quantitative	Percentage (%) of litres	RR-BI-430a.2
Management of the Legal & Regulatory Environment	Amount of subsidies received through government programmes	Quantitative	Presentation currency	RR-BI-530a.1
	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	RR-BI-530a.2
Operational Safety, Emergency Preparedness & Response	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR) <sup>1</sup>	Quantitative	Number, Rate	RR-BI-540a.1

<sup>1</sup> Note to **RR-BI-540a.1** – The entity shall describe incidents with a severity rating of 1 or 2, including their root cause, outcomes, and corrective actions implemented in response (for example, technology improvements or operator training).

**Table 2. Activity Metrics**

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Biofuel production capacity	Quantitative	Millions of litres (ML)	RR-BI-000.A
Production of: (1) renewable fuel, (2) advanced biofuel, (3) biodiesel, and (4) cellulosic biofuel	Quantitative	Millions of litres (ML)	RR-BI-000.B
Amount of feedstock consumed in production <sup>2</sup>	Quantitative	Metric tonnes (t)	RR-BI-000.C

<sup>2</sup> Note to **RR-BI-000.C** – The amount of feedstock consumed in production is defined as feedstock purchases adjusted for changes in inventory throughout the reporting period.

# Air Quality

## Topic Summary

Biofuel refineries generate air emissions that may include air pollutants and volatile organic compounds. Grain-handling equipment, boilers, wastewater treatment, and cooling, drying, distillation and fermentation units generate emissions. In most regions, such emissions typically are subject to jurisdictional regulations that limit emissions below specific thresholds. As a result, air emissions often are subject to emissions permits and abatement that may result in incremental operating and compliance costs or capital expenditures. Entities also may face regulatory penalties, as well as permit restrictions or delays from jurisdictional legal or regulatory authorities for non-compliance.

## Metrics

### **RR-BI-120a.1. Air emissions of the following pollutants: (1) NO<sub>x</sub> (excluding N<sub>2</sub>O), (2) SO<sub>x</sub>, (3) volatile organic compounds (VOCs), (4) particulate matter (PM<sub>10</sub>), and (5) hazardous air pollutants (HAPs)**

- 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 its emissions of (1) oxides of nitrogen (NO<sub>x</sub>), reported as NO<sub>x</sub>.
  - 2.1 The scope of NO<sub>x</sub> includes NO and NO<sub>2</sub> but excludes N<sub>2</sub>O.
- 3 The entity shall disclose its emissions of (2) oxides of sulphur (SO<sub>x</sub>), reported as SO<sub>x</sub>.
  - 3.1 The scope of SO<sub>x</sub> includes SO<sub>2</sub> and SO<sub>3</sub>.
- 4 The entity shall disclose its emissions of (3) non-methane volatile organic compounds (VOCs).
  - 4.1 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.
  - 4.2 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 The entity shall disclose its emissions of (4) particulate matter (PM<sub>10</sub>), reported as PM<sub>10</sub>.



- 5.1 PM<sub>10</sub> 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) hazardous air pollutants (HAPs).
  - 6.1 HAPs are defined as those pollutants known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.
- 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.

## **RR-BI-120a.2. Number of incidents of non-compliance associated with air quality permits, standards, and regulations**

- 1 The entity shall disclose the total number of instances of air emissions non-compliance, including violations of a technology-based standard and exceedances of a quality-based standard.
- 2 The scope of the disclosure includes incidents governed by jurisdictional air emissions statutory permits and regulations including applicable jurisdictional air quality laws or regulations.
- 3 An incident of non-compliance shall be disclosed regardless of whether it resulted in an enforcement action (for example, a fine or warning letter).
- 4 All violations regardless of their measurement method or frequency, shall be disclosed. These include violations for:
  - 4.1 continuous emissions, with limitations, standards and prohibitions that are generally expressed as maximum daily, weekly and monthly averages;
  - 4.2 non-continuous emissions, with limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge and mass or concentrations of specified pollutants;
  - 4.3 false or inaccurate reporting; and
  - 4.4 failure to obtain permits.

# Water Management in Manufacturing

## Topic Summary

Biofuel refining is water-intensive. Biorefineries require water for feedstock processing, fermentation, distillation and cooling. Although water use at biorefineries is modest relative to the quantities consumed during feedstock crop production, it is concentrated, and thus may affect local water resources. Facilities also may generate wastewater containing salts, organic compounds, dissolved solids, phosphorus and other substances, requiring wastewater treatment. Biofuel refineries also may face reduced water availability, related cost increases or operational disruptions. Water extraction from particular areas for refining, as well as contamination of water supplies because of refining operations, also could create regulatory risk and tensions with local communities. Water efficiency in operations and the proper treatment of effluents are therefore important for biofuels entities.

## Metrics

### **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**

- 1 The entity shall disclose the amount of water, in thousands of cubic metres, withdrawn 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.
- 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.
- 3 The entity shall disclose the amount of water, in thousands of cubic metres, consumed in its operations.
  - 3.1 Water consumption is defined as:
    - 3.1.1 Water that evaporates during withdrawal, use and discharge
    - 3.1.2 Water that is directly or indirectly incorporated into the 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.
- 5 The entity shall disclose water withdrawn in locations with High or Extremely High Baseline Water Stress as a percentage of the total water withdrawn.
- 6 The entity shall disclose water consumed in locations with High or Extremely High Baseline Water Stress as a percentage of the total water consumed.

## **RR-BI-140a.2. Description of water management risks and discussion of strategies and practices to mitigate those risks**

- 1 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 of adequate, clean water resources, which include:
    - 1.1.1 Environmental constraints—such as operating in water-stressed regions, drought, concerns of aquatic impingement or entrainment, interannual or seasonal variability, and risks from the impact of climate change
    - 1.1.2 Regulatory and financial constraints—such as volatility in water costs, stakeholder perceptions and concerns related to water withdrawals (for example, those 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 the discharge of water or wastewater include the ability to obtain rights or permits related to discharges, regulatory compliance related to discharges, restrictions to discharges, the ability to maintain control over the temperature of water discharges, 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 The entity may describe water management risks 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 or wastewater utilities.
- 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 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 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:
    - 5.3.1 Efficiency efforts, such as the use of water recycling or closed-loop systems;
    - 5.3.2 Product innovations, such as redesigning products or services to require less water;
    - 5.3.3 Process and equipment innovations, such as those that enable the reduction of aquatic impingements or entrainments;
    - 5.3.4 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
    - 5.3.5 Collaborations or programmes 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.

- 6 The entity shall discuss whether its water management practices 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 lifecycle trade-offs.

### **RR-BI-140a.3. 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, limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge and mass or concentration of specified pollutants.

# Lifecycle Emissions Balance

## Topic Summary

The rapid growth in global biofuels production has been encouraged by government energy policies that seek to reduce net GHG emissions from transportation fuels and dependence on fossil fuels. Most major renewable-fuel policies worldwide require that biofuels achieve lifecycle GHG emissions reductions relative to a fossil-fuel baseline to qualify for renewable fuel-mandate thresholds. The biofuel lifecycle emission calculation may include indirect and direct emissions from feedstock crop production and land use, fuel refining, fuel and feedstock transport, and vehicle exhaust emissions. Biofuel producers may influence net emissions directly during the refining process through energy management (fuel use), process innovations and by using feedstocks with lower emissions profiles. Fuel products that achieve a reduction in net emissions may qualify as advanced biofuels, which could increase future demand. Biofuel entities that cost-effectively reduce product net carbon emissions may gain a competitive product advantage, spur revenue growth and increase market share.

## Metrics

### RR-BI-410a.1. Lifecycle greenhouse gas (GHG) emissions, by biofuel type

- 1 The entity shall disclose its lifecycle GHG emissions (in grammes of CO<sub>2</sub>-e per megajoule) for each biofuel category produced.
  - 1.1 Lifecycle GHG emissions are defined as the aggregate quantity of GHG emissions (including direct emissions and significant indirect emissions, such as significant emissions from land-use changes) related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery of the finished fuel, to the ultimate consumer and fuel use, in which the mass values for all GHGs are adjusted to account for their relative global warming potential.
  - 1.2 The entity shall disclose its lifecycle GHG emissions for each of the following biofuel types produced: (1) renewable fuel, (2) advanced biofuel, (3) biodiesel and (4) cellulosic biofuel.
    - 1.2.1 Renewable fuel is defined as fuel derived from biomass.
    - 1.2.2 Advanced biofuel is defined as fuel derived from algae, animal manure, corn cobs, grape marcs and wine lees, nut shells, husk wastes and residues from forestry and forest-based industries, used cooking oil, etc.
    - 1.2.3 Biodiesel is defined as fuel derived from oils such as rapeseeds, sunflowers, soybeans, palm oil and waste cooking oil, and used in place of diesel fuel.
    - 1.2.4 Cellulosic biofuel is defined as fuel derived from material composed of lignin, cellulose, hemicellulose such as biomass sourced from forests, woody energy crops, straw, stover, husks, grasses and cover crops.
- 2 The entity shall disclose the applicable jurisdictional laws or regulations used for calculation.

# Sourcing & Environmental Impacts of Feedstock Production

## Topic Summary

The Biofuels industry uses a variety of plant-based feedstocks for production. Most entities purchase feedstocks from agricultural producers and distributors. A growing proportion of the world's arable land now is occupied by biofuel crops. Unsustainable cultivation practices can have negative environmental externalities, including deforestation and biodiversity loss, soil degradation, and water pollution. These factors may affect feedstock crop yields adversely over the short- and long-term. This, in turn, may influence the price and availability of feedstocks for biofuels producers. Consequently, vetting the sustainability of supply chains, such as through certifications or engagement with suppliers, is an important consideration for biofuels producers.

## Metrics

### **RR-BI-430a.1. Discussion of strategy to manage risks associated with environmental impacts of feedstock production**

- 1 The entity shall discuss its strategy to manage the environmental impacts and regulatory risks associated with feedstock production, where risks may include:
  - 1.1 Risks to feedstock supply and pricing created by climate change impacts such as the increased likelihood of extreme weather events, decreased availability of clean water resources, increased competition for arable land, and decreased crop yields because of temperature increases.
  - 1.2 Long-term risks to feedstock supply associated with suppliers' impacts on environmental health including those on biodiversity and soil health that may be because of monoculture practices or fertiliser and pesticide use.
  - 1.3 Constraints created by regulation such as compliance with sustainability criteria in renewable fuel mandates; potential regulatory limits on the types of land where feedstock can be grown; potential limits on what qualifies as renewable biomass; potential for reduction or loss of public or political support for biofuel mandates because of the environmental impacts of feedstock production; and resistance to the use of genetically modified organisms (GMOs).
- 2 The disclosure scope excludes risks associated with the lifecycle GHG emissions, which are addressed in RR-BI-410a.1, respectively.
- 3 If the entity identifies the availability of clean water resources as a risk to feedstock supply or pricing, it shall discuss the vulnerability to feedstock growing regions with water stress and how it manages price variability risk because of sourcing feedstock from these regions.
  - 3.1 The entity should identify its known sources of feedstock from growing regions with High (40–80%) or Extremely High (>80%) Baseline Water Stress using the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct.

- 4 The entity shall describe how it manages risks or opportunities associated with feedstock production, including constraints created by regulation, and limits on availability and price.

- 4.1 Relevant strategies to discuss include sourcing from feedstock producers that are third-party certified to environmental sustainability standards, diversification of suppliers, using feedstock procurement criteria to choose suppliers for varied feedstocks with fewer environmental impacts or greater adaptability to the effects of environmental externalities (for example, drought-tolerant or disease-resistant feedstocks), supplier audits, sourcing from regions where the entity has greater control over feedstock sources, and expenditures on research and development (R&D) for alternative and substitute feedstocks that are less susceptible to environmental externalities.

- 4.2 The entity should disclose the sustainability criteria it uses to assess its feedstock suppliers.

## **RR-BI-430a.2. Percentage of biofuel production third-party certified to an environmental sustainability standard**

- 1 The entity shall calculate the percentage as the volume of biofuel produced that is third-party certified to an environmental sustainability standard divided by the total volume of biofuel produced.

- 2 Environmental sustainability standards include Bonsucro, the Council on Sustainable Biomass Production (CSBP), International Sustainability & Carbon Certification, Roundtable on Sustainable Biomaterials (RSB), and Roundtable on Responsible Soy (RTRS), as well as other standards with equivalent criteria.

- 2.1 At a minimum, standards should include the following environmental sustainability topics:

- 2.1.1 GHG and other air emissions, water consumption and quality, soil health, fertiliser and pesticide use, land-use change, biodiversity and waste management.

- 3 The entity should disclose the certification schemes to which its biofuel is certified and the percentage of production certified to each scheme.



# Management of the Legal & Regulatory Environment

## Topic Summary

The Biofuels industry is dependent on government policies and regulations that create market demand and incentivise supply with tax breaks and other support for feedstock production. The Biofuels industry supports some regulations and policies related to renewable fuel policy, production tax credits and feedstock production. While regulatory support can result in positive short-term gains by supporting the biofuels market, the potential long-term adverse environmental impacts from feedstock and biofuels production may result in a reversal of beneficial policies, leading to a more uncertain regulatory environment. Consequently, biofuels entities may benefit from developing clear strategies for engaging regulators that are aligned with long-term sustainable business outcomes and that account for environmental externalities.

## Metrics

### **RR-BI-530a.1. Amount of subsidies received through government programmes**

- 1 The entity shall disclose the amount of subsidies received through government programmes during the reporting year. Subsidies include tax credits such as blending and production tax credits, funding for projects such as research and development, import tariffs, direct payments, capital grants, loans and loan guarantees and any other monetary support received from government departments or programmes.
- 2 Government programmes include those worldwide at all jurisdictional levels.
- 3 The entity may disclose the type of biofuel subsidies received and the amount of each. Types of biofuel subsidies may include blending and production tax credits, capital grants, direct payments, loans and loan guarantees, surcharges or tariffs on competing products, and funding for projects such as research and development.
- 4 The entity shall disclose the amount of subsidies as an aggregate amount that was recognised during the reporting year, regardless of the accounting method (for example, deferral method, flow-through method or other GAAP methods for investment tax credits).

### **RR-BI-530a.2. Discussion of corporate positions related to government regulations or policy proposals that address environmental and social factors affecting the industry**

- 1 The entity shall identify risks and opportunities it faces related to laws, regulations or rulemaking, (hereafter referred to collectively as 'legal and regulatory environment') related to environmental and social factors that may have a significant financial impact.
  - 1.1 The scope shall include existing, emerging and known future risks and opportunities.
  - 1.2 The scope shall include risks and opportunities that may exist domestically and globally.

- 1.3 The regulatory environment related to material environmental and social factors includes those related to non-greenhouse gas air emissions, greenhouse gas emissions, water withdrawals and effluents, feedstock sourcing, and process and employee safety.
- 2 Relevant risks may include increased compliance costs, policy reversal (for example, changes to existing environmental regulations), loss of financial incentives (for example, reduction or elimination of tax deductions), reputation (for example, the entity's stance and actions related to the legal and regulatory environment), legal and regulatory environment misalignment with long-term strategy, and misalignment with the expectations of customers, investors and other stakeholders.
- 3 Relevant opportunities may include improved financial conditions (for example, through policies that incentivise biofuel manufacturing activities), improved community relations (for example, the entity's stance and actions related to the legal and regulatory environment), and other benefits the entity realises from the alignment of the legal and regulatory environment with long-term strategy.
- 4 The entity shall discuss its efforts to manage risks and opportunities associated with each aspect of the legal and regulatory environment associated with the topics included in this Standard that are relevant to the entity's business and may have a significant financial impact.
- 5 In addition to efforts to influence the legal and regulatory environment, the entity shall discuss its overall strategy to manage identified risks and opportunities associated with each aspect of the legal and regulatory environment.
- 5.1 Any changes it has made or plans to make to its business structure or model
- 5.2 The development of new technologies or services
- 5.3 Any changes made or plans to make to operational processes, control or organisational structures

# Operational Safety, Emergency Preparedness & Response

## Topic Summary

Biofuel production presents operational safety hazards because of the presence of flammable and explosive substances, high temperatures, and pressurised equipment. Process safety incidents can damage facilities, injure workers, and affect the local environment and communities. Although the frequency of accidents in the industry is relatively low, when they do take place, the outcomes may be severe, with significant effects on financial performance. Damaged facilities may be inoperable for extended periods, resulting in lost revenues and large capital expenditures for repairs. Entities perceived to be at a greater risk of process safety incidents may have a higher cost of capital, while workforce injuries could result in regulatory penalties and litigation. Conversely, entities with a strong safety culture and operational safety oversight may detect and respond more effectively to such incidents, mitigating potential financial risks and improving operational efficiency.

## Metrics

### **RR-BI-540a.1. Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)**

- 1 The entity shall disclose its process safety performance using these indicators, consistent with the American National Standards Institute and American Petroleum Institute's *Process Safety Performance Indicators for the Refining and Petrochemical Industries* Recommended Practice 754 methodology (ANSI/API RP 754):
  - 1.1 Process Safety Incidents Count (PSIC), defined as the total (annual) count of all incidents that meet the definition of a Tier-1 Process Safety Event (PSE) per ANSI/API RP 754.
  - 1.2 Process Safety Total Incident Rate (PSTIR), defined as the cumulative (annual) count of incidents normalised by man-hours and calculated as the PSIC multiplied by 200,000 and divided by the total annual hours worked by employees, contractors and subcontractors.
  - 1.3 Process Safety Incident Severity Rate (PSISR), defined as the cumulative (annual) severity-weighted rate of PSIs and calculated as the Total Severity Score for all Tier 1 PSEs multiplied by 200,000 and divided by the total annual hours worked by employees, contractors and subcontractors.
- 2 The scope of the disclosure includes PSEs occurring at entity-owned or operated facilities.
- 3 The entity may disclose separately equivalent PSIC and PSTIR metrics for Tier-2 PSEs as defined by ANSI/API RP 754.

#### Note to **RR-BI-540a.1**

- 1 The entity shall describe incidents with a severity rating of Tier 1 or Tier 2, including the root cause, outcomes and corrective actions implemented in response (for example, technology improvements and operator training).



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