SASB STANDARDS
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RESOURCE TRANSFORMATION SECTOR

INDUSTRIAL MACHINERY & GOODS

Sustainability Accounting Standard

Sustainable Industry Classification System® (SICS®) RT-IG

Prepared by the
Sustainability Accounting Standards Board

October 2018

INDUSTRY STANDARD | VERSION 2018-10

INDUSTRIAL MACHINERY & GOODS

Sustainability Accounting Standard

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 build on the industry-based SASB Standards and leverage SASB's industry-based approach to standards development. The ISSB encourages preparers and investors to continue to provide full support for and to use the SASB Standards until IFRS Sustainability Disclosure Standards replace SASB Standards.

Historical Information About the SASB Foundation

These materials were developed under the auspices of the SASB Foundation. The SASB Foundation was founded in 2011 as a not-for-profit, independent standards-setting organization. The SASB Foundation's mission was to establish and maintain industry-specific standards that assist companies in disclosing financially material, decision-useful sustainability information to investors. The SASB Foundation operated in a governance structure similar to the structure adopted by other internationally recognized bodies that set standards for disclosure to investors, including the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB). This structure included a board of directors ("the Foundation Board") and a standards-setting board ("the Standards Board" or "the SASB"). The Standards Board developed, issued, and maintained the SASB Standards. The Foundation Board oversaw the strategy, finances, and operations of the entire organization, and appointed the members of the Standards Board. The Foundation Board was not involved in setting standards, but was responsible for overseeing the Standards Board's compliance with the organization's due process requirements. As set out in the SASB Rules of Procedure, the SASB's standards-setting activities were transparent and followed careful due process, including extensive consultation with companies, investors, and relevant experts. The SASB Foundation was funded by a range of sources, including contributions from philanthropies, companies, and individuals, as well as through the sale and licensing of publications, educational materials, and other products.

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INTRODUCTION

Purpose of SASB Standards

The SASB's use of the term "sustainability" refers to corporate activities that maintain or enhance the ability of the company to create value over the long term. Sustainability accounting reflects the governance and management of a company's environmental and social impacts arising from production of goods and services, as well as its governance and management of the environmental and social capitals necessary to create long-term value. The SASB also refers to sustainability as "ESG" (environmental, social, and governance), though traditional corporate governance issues such as board composition are not included within the scope of the SASB's standards-setting activities.

SASB standards are designed to identify a minimum set of sustainability issues most likely to impact the operating performance or financial condition of the typical company in an industry, regardless of location. SASB standards are designed to enable communications on corporate performance on industry-level sustainability issues in a cost-effective and decision-useful manner using existing disclosure and reporting mechanisms.

Businesses can use the SASB standards to better identify, manage, and communicate to investors sustainability information that is financially material. Use of the standards can benefit businesses by improving transparency, risk management, and performance. SASB standards can help investors by encouraging reporting that is comparable, consistent, and financially material, thereby enabling investors to make better investment and voting decisions.

Overview of SASB Standards

The SASB has developed a set of 77 industry-specific sustainability accounting standards ("SASB standards" or "industry standards"), categorized pursuant to SASB's Sustainable Industry Classification System® (SICS®). Each SASB standard describes the industry that is the subject of the standard, including any assumptions about the predominant business model and industry segments that are included. SASB standards include:

1. **Disclosure topics** – A minimum set of industry-specific disclosure topics reasonably likely to constitute material information, and a brief description of how management or mismanagement of each topic may affect value creation.

2. **Accounting metrics** – A set of quantitative and/or qualitative accounting metrics intended to measure performance on each topic.

3. **Technical protocols** – Each accounting metric is accompanied by a technical protocol that provides guidance on definitions, scope, implementation, compilation, and presentation, all of which are intended to constitute suitable criteria for third-party assurance.

4. **Activity metrics** – A set of metrics that quantify the scale of a company's business and are intended for use in conjunction with accounting metrics to normalize data and facilitate comparison.

Furthermore, 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.

The *SASB Conceptual Framework* sets out the basic concepts, principles, definitions, and objectives that guide the Standards Board in its approach to setting standards for sustainability accounting. The *SASB Rules of Procedure* is focused on the governance processes and practices for standards setting.

Use of the Standards

SASB standards are intended for use in communications to investors regarding sustainability issues that are likely to impact corporate ability to create value over the long term. Use of SASB standards is voluntary. A company determines which standard(s) is relevant to the company, which disclosure topics are financially material to its business, and which associated metrics to report, taking relevant legal requirements into account[1]. In general, a company would use the SASB standard specific to its primary industry as identified in SICS® . However, companies with substantial business in multiple SICS® industries can consider reporting on these additional SASB industry standards.

It is up to a company to determine the means by which it reports SASB information to investors. One benefit of using SASB standards may be achieving regulatory compliance in some markets. Other investor communications using SASB information could be sustainability reports, integrated reports, websites, or annual reports to shareholders. There is no guarantee that SASB standards address all financially material sustainability risks or opportunities unique to a company's business model.

Industry Description

The Industrial Machinery & Goods industry manufactures equipment for a variety of industries including construction, agriculture, energy, utility, mining, manufacturing, automotive, and transportation. Products include engines, earth-moving equipment, trucks, tractors, ships, industrial pumps, locomotives, and turbines. Machinery manufacturers utilize large amounts of raw materials for production, including steel, plastics, rubber, paints, and glass. Manufacturers may also perform the machining and casting of parts before final assembly. Demand in the industry is closely tied to industrial production, while government emissions standards and customer demand are driving innovations to improve energy efficiency and limit air emissions during product use.

[1] **Legal Note**: SASB standards are not intended to, and indeed cannot, replace any legal or regulatory requirements that may be applicable to a reporting entity's operations.

SUSTAINABILITY DISCLOSURE TOPICS & ACCOUNTING METRICS

Table 1. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	RT-IG-130a.1
Employee Health & Safety	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)	Quantitative	Rate	RT-IG-320a.1
Fuel Economy & Emissions in Use-phase	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	Quantitative	Gallons per 1,000 ton-miles	RT-IG-410a.1
	Sales-weighted fuel efficiency for non-road equipment	Quantitative	Gallons per hour	RT-IG-410a.2
	Sales-weighted fuel efficiency for stationary generators	Quantitative	Watts per gallon	RT-IG-410a.3
	Sales-weighted emissions of: (1) nitrogen oxides (NO_x) and (2) particulate matter (PM) for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines, and (d) other non-road diesel engines[2]	Quantitative	Grams per kilowatt-hour	RT-IG-410a.4
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	n/a	RT-IG-440a.1
Remanufacturing Design & Services	Revenue from remanufactured products and remanufacturing services[3]	Quantitative	Reporting currency	RT-IG-440b.1

Table 2. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Number of units produced by product category[4]	Quantitative	Number	RT-IG-000.A
Number of employees	Quantitative	Number	RT-IG-000.B

[2] Note to **RT-IG-410a.4** – The entity shall discuss its strategies and approach to managing fleet fuel economy and emissions risks and opportunities.

[3] Note to **RT-IG-440b.1** – Disclosure shall include a discussion of efforts to obtain end-of-life products and parts for remanufacture.

[4] Note to **RT-IG-000.A** – At a minimum, the entity should indicate the number of units produced for the following product categories: (1) vehicles and agricultural and construction equipment, (2) engines and power generation equipment, and (3) parts and components.

Energy Management

Topic Summary

Energy is a critical input in industrial machinery manufacturing. Purchased electricity represents the largest share of energy expenditures in the industry, followed by purchased fuels. The type of energy used, magnitude of consumption, and energy management strategies depends on the type of products manufactured. A company's energy mix, including the use of electricity generated on-site, grid-sourced electricity, and the use of alternative energy, can play an important role in influencing the cost and reliability of energy supply, and ultimately affect the company's cost structure and regulatory risk.

Accounting Metrics

RT-IG-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable

1 The entity shall disclose (1) the total amount of energy it consumed as an aggregate figure, in gigajoules (GJ).

1.1 The scope of energy consumption includes energy from all sources, including energy purchased from sources external to the entity and energy produced by the entity itself (self-generated). For example, direct fuel usage, purchased electricity, and heating, cooling, and steam energy are all included within the scope of energy consumption.

1.2 The scope of energy consumption includes only energy directly consumed by the entity during the reporting period.

1.3 In calculating energy consumption from fuels and biofuels, the entity shall use higher heating values (HHV), also known as gross calorific values (GCV), which are directly measured or taken from the Intergovernmental Panel on Climate Change (IPCC), the U.S. Department of Energy (DOE), or the U.S. Energy Information Administration (EIA).

2 The entity shall disclose (2) the percentage of energy it consumed that was supplied from grid electricity.

2.1 The percentage shall be calculated as purchased grid electricity consumption divided by total energy consumption.

3 The entity shall disclose (3) the percentage of energy it consumed that is renewable energy.

3.1 Renewable energy is defined as energy from sources that are replenished at a rate greater than or equal to their rate of depletion, such as geothermal, wind, solar, hydro, and biomass.

3.2 The percentage shall be calculated as renewable energy consumption divided by total energy consumption.

3.3 The scope of renewable energy includes renewable fuel the entity consumed, renewable energy the entity directly produced, and renewable energy the entity purchased, if purchased through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs) or Guarantees of Origin (GOs), a Green-e Energy Certified utility or supplier program, or other green power products that explicitly include RECs or GOs, or for which Green-e Energy Certified RECs are paired with grid electricity.

3.3.1 For any renewable electricity generated on-site, any RECs and GOs must be retained (i.e., not sold) and retired or cancelled on behalf of the entity in order for the entity to claim them as renewable energy.

3.3.2 For renewable PPAs and green power products, the agreement must explicitly include and convey that RECs and GOs be retained or replaced and retired or cancelled on behalf of the entity in order for the entity to claim them as renewable energy.

3.3.3 The renewable portion of the electricity grid mix that is outside of the control or influence of the entity is excluded from the scope of renewable energy.

3.4 For the purposes of this disclosure, the scope of renewable energy from hydro and biomass sources is limited to the following:

3.4.1 Energy from hydro sources is limited to those that are certified by the Low Impact Hydropower Institute or that are eligible for a state Renewable Portfolio Standard;

3.4.2 Energy from biomass sources is limited to materials certified to a third-party standard (e.g., Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification, or American Tree Farm System), materials considered eligible sources of supply according to the *Green-e Framework for Renewable Energy Certification, Version 1.0* (2017) or Green-e regional standards, and/or materials that are eligible for an applicable state renewable portfolio standard.

4 The entity shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel usage (including biofuels) and conversion of kilowatt hours (kWh) to GJ (for energy data including electricity from solar or wind energy).

Employee Health & Safety

Topic Summary

Employees in industrial machinery manufacturing facilities face health and safety risks from exposure to heavy machinery, moving equipment, and electrical hazards, among others. Creating an effective safety culture is critical to proactively mitigate safety incidents, which could result in higher healthcare costs, litigation, and work disruption. By implementing strong safety protocols, including incident reporting and investigation, and promoting a culture of safety, companies can minimize safety-related expenses and potentially improve productivity in the long term.

Accounting Metrics

RT-IG-320a.1. (1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)

1 The entity shall disclose its total recordable incident rate (TRIR) for work-related injuries and illnesses.

1.1 An injury or illness is considered a recordable incident if it results in any of the following: death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. Additionally, a significant injury or illness diagnosed by a physician or other licensed health care professional is considered a recordable incident, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness. This definition is derived from U.S. 29 CFR 1904.7.

1.2 The U.S. Occupational Safety and Health Administration (OSHA) provides additional resources for determining if injuries or illnesses are considered recordable incidents in its guidance for OSHA Forms 300, 300A, and 301.

2 The entity shall disclose its fatality rate for work-related fatalities.

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

3.1 A near miss is defined as an unplanned incident in which no property or environmental damage or personal injury occurred, but where damage or personal injury easily could have occurred but for a slight circumstantial shift.

3.2 The U.S. National Safety Council (NSC) provides guidance on implementing near miss reporting, including in, "Near Miss Reporting Systems."

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

4 Rates shall be calculated as: (statistic count x 200,000) / hours worked

4.1 The U.S. Bureau of Labor Statistics (BLS) provides additional guidance for the calculation of rates in, "How to Compute a Firm's Incidence Rate for Safety Management" and "Incidence Rate Calculator and Comparison Tool."

5 The scope of disclosure includes work-related incidents only.

5.1 OSHA guidance for Forms 300, 300A, and 301 provides guidance on determining whether an incident is work-related, as well as definitions for exemptions for incidents that occur in the work environment but are not work-related.

6 The scope of disclosure includes all employees regardless of employee location and type of employment, such as full-time, part-time, direct, contract, executive, labor, salary, hourly, and seasonal employees.

Fuel Economy & Emissions in Use-phase

Topic Summary

Many of the Industrial Machinery & Goods industry's products are powered by fossil fuels and therefore release greenhouse gases (GHGs) and other air emissions during use. Customer preferences for improved fuel economy combined with regulations addressing emissions are increasing the demand for energy-efficient and lower-emission products in the industry. As such, companies that develop products with these characteristics may be well-positioned to capture expanding market share, reduce regulatory risk, and improve brand value.

Accounting Metrics

RT-IG-410a.1. Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles

1 The entity shall disclose its sales-weighted average fleet fuel efficiency for medium- and heavy-duty vehicles, where:

1.1 Fleet fuel efficiency is defined as the average fuel economy of its medium- and heavy-duty commercial vehicles, weighted by the number of each sold during the reporting period and measured in gallons per 1,000 ton-miles.

1.2 The scope of disclosure includes vehicles in the fleet that weigh 8,500 pounds or more, and which are covered under the U.S. Heavy Duty (HD) National Program, including combination tractors (commonly known as semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles.

1.3 Where fleet averages are calculated by model year for regulatory purposes, the entity shall use these performance data.

1.4 In the absence of regulatory guidance on calculating a fleet average, the entity shall calculate performance based on the fuel economy of vehicles sold during the reporting period, weighted by sales volume.

2 The entity shall disclose the sales-weighted fuel efficiency requirement for its medium- and heavy-duty vehicles, pursuant to U.S. HD National Program Fuel Consumption Standards, as issued and regulated by the U.S. National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (EPA).

RT-IG-410a.2. Sales-weighted fuel efficiency for non-road equipment

1 The entity shall disclose its sales-weighted average fuel efficiency for its non-road equipment and vehicles, where:

1.1 Fuel efficiency is defined as the average fuel economy of its non-road equipment, weighted by the number of each unit sold during the reporting period and measured in gallons of fuel consumed per hour of operation (gallons per hour).

1.1.1 In calculating gallons per hour, the entity shall use the model-rated fuel efficiency value for each piece of equipment where available.

1.1.2 Where model-rated fuel efficiency values are not available, the entity shall calculate a gallons-per-hour operational efficiency for the equipment, assuming normal, reasonable operating conditions (e.g., for load factor, speed, and environmental conditions).

1.2 Non-road equipment includes, but is not limited to, excavators and other construction equipment, farm tractors and other agricultural equipment, heavy forklifts, airport ground service equipment, and utility equipment such as generators, pumps, and compressors.

RT-IG-410a.3. Sales-weighted fuel efficiency for stationary generators

1 The entity shall disclose the sales-weighted average fuel efficiency of its stationary generators, where:

1.1 Sales-weighted fuel efficiency is the average fuel efficiency of stationary generators sold during the reporting period, measured in watts per gallon.

2 Sales-weighted fuel efficiency is calculated as the harmonic mean of design fuel efficiency in watts per gallon, where:

2.1 The harmonic mean captures the average amount of fuel needed by each generator to produce a given amount of power.

2.2 The harmonic mean is the reciprocal of the average of the reciprocal values.

RT-IG-410a.4. Sales-weighted emissions of: (1) nitrogen oxides (NO_x) and (2) particulate matter (PM) for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines, and (d) other non-road diesel engines

1 The entity shall disclose the sales-weighted average emissions of (1) nitrogen oxides (NO_x) and (2) particulate matter (PM) for each of the following product categories: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road heavy-duty engines, and (d) other non-road diesel engines, where:

1.1 Emissions are calculated as the average emissions of (1) NO_x and (2) PM for engines, weighted by the number of each sold during the reporting period and measured in grams per kilowatt hour.

1.2 Marine diesel engines are defined as those that are addressed within the scope of U.S. 40 CFR Part 1042, 40 CFR Part 94, 40 CFR Part 89, or non-U.S. equivalent.

1.3 Locomotive diesel engines are defined as those that are addressed within the scope of U.S. 40 CFR Part 1033, or non-U.S. equivalent.

1.4 On-road heavy-duty engines are defined as those that are addressed within the scope of U.S. 40 CFR Chapter 1 Subchapter C Part 86, or non-U.S. equivalent.

1.5 Other non-road diesel engines are defined as those that are addressed within the scope of U.S. 40 CFR Part 1039, or non-U.S. equivalent, and typically include excavators and other construction equipment, farm tractors and other agricultural equipment, heavy forklifts, airport ground service equipment, and utility equipment such as generators, pumps, and compressors.

1.6 Emissions shall be calculated according to the test method described in U.S. 40 CFR Part 1065, or non-U.S. equivalent.

1.7 The entity may disclose if any products do not meet current emission standards established in the above-referenced U.S. 40 CFR Part 1042, 40 CFR Part 94, and 40 CFR Part 89 for marine diesel engines; 40 CFR Part 1033 for locomotive diesel engines; 40 CFR Part 86 Subpart A for heavy-duty on-road engines; 40 CFR Part 1039 for other non-road diesel engines, or non-U.S. equivalents.

2 The entity may discuss its progress toward, and readiness for, future U.S. federal- and state-level, or non-U.S. equivalent, emissions standards that could affect its products.

Note to **RT-IG-410a.4**

1 The entity shall discuss its strategies and approach to managing fleet fuel economy and emissions risks and opportunities.

2 Relevant aspects of the approach and strategy to discuss include improvements to existing products and technologies, the introduction of new technologies, research and development efforts into advanced technologies, and partnerships with peers, academic institutions, and/or customers (including governmental customers).

Materials Sourcing

Topic Summary

Industrial machinery companies are exposed to supply chain risks when critical materials are used in products. Companies in the industry manufacture products using critical materials with few or no available substitutes, many of which are sourced from deposits concentrated in only a few countries, which are subject to geopolitical uncertainty. Companies in this industry also face competition due to increasing global demand for these materials from other sectors, which can result in price increases and supply risks. Companies that are able to limit the use of critical materials through use of alternatives, as well as secure their supply, can mitigate the potential for financial impacts stemming from supply disruptions and volatile input prices.

Accounting Metrics

RT-IG-440a.1. Description of the management of risks associated with the use of critical materials

1 The entity shall describe its strategic approach to managing its risks associated with the use of critical materials in its products, including physical limits on availability and access, changes in price, and regulatory and reputational risks, where:

1.1 A critical material is defined as a material that is both essential in use and subject to the risk of supply restriction. This definition is derived from the U.S. National Research Council of the National Academies' *Minerals, Critical Minerals, and the U.S. Economy* .

1.2 Examples of critical materials include, but are not limited to, the following as defined by the National Research Council:

1.2.1 Antimony, cobalt, fluorspar, gallium, germanium, graphite, indium, magnesium, niobium, tantalum, and tungsten;

1.2.2 Platinum group metals (platinum, palladium, iridium, rhodium, ruthenium, and osmium); and

1.2.3 Rare earth elements, which include yttrium, scandium, lanthanum, and the lanthanides (cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium).

2 The entity shall identify the critical materials that present a significant risk to its operations, the type of risk(s) they represent, and the strategies the entity uses to mitigate the risk(s).

2.1 Relevant strategies may include diversification of suppliers, stockpiling of materials, development or procurement of alternative and substitute materials, and investments in recycling technology for critical materials.

3 All disclosure shall be sufficient such that it is specific to the risks the entity faces but disclosure itself would not compromise the entity's ability to maintain confidential information.

3.1 For example, if an entity determines not to identify a specific critical material that presents a significant risk to its operations due to competitive harm that could result from the disclosure, the entity shall disclose the existence of such risk(s), the type of risk(s), and the strategies used to mitigate the risk(s), but is not required to disclose the relevant critical material.

Remanufacturing Design & Services

Topic Summary

Industrial machinery and goods manufacturing uses large quantities of steel, iron, aluminum, glass, plastics, and other materials. Remanufacturing of industrial machinery systems (called "cores") is an opportunity for industrial machinery companies to limit the amount of raw materials needed to produce new machinery, as well as the time and other resources required to produce finished goods. Remanufactured products can also create value from products otherwise destined for disposal or recycling. Industrial machinery companies can achieve cost savings by reusing end-of-life parts to build remanufactured machines, which may be resold to customers. Thus, remanufacturing in process and design can reduce demand for raw materials, reduce manufacturing costs, and create new sales channels.

Accounting Metrics

RT-IG-440b.1. Revenue from remanufactured products and remanufacturing services

1 The entity shall disclose the amount of revenue from products that are remanufactured and services associated with remanufacturing goods, where:

1.1 A remanufactured product is defined as an end-of-life product or component (i.e., one that was previously sold, worn, or non-functional) that has undergone an industrial process to be returned to original working condition (i.e., is considered "like new").

1.2 Remanufacturing services are defined as providing the service of repairing, restoring, and/or remanufacturing end-of-life goods to original working condition.

2 The scope of disclosure excludes servicing of products that are in-warranty and have been collected for repairs.

Note to **RT-IG-440b.1**

1 The entity shall discuss its initiatives employed to obtain end-of-life products and parts for remanufacturing, including product take-back programs.

2 Relevant disclosures include customer and supplier engagement efforts, equipment servicing or exchange programs, and other incentives to encourage end-of-life parts remanufacturing, such as dealer deposits that are refunded when used parts or products (also referred to as "cores") are returned to the manufacturer within the specified timeframe.

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