



Sustainability Accounting Standards

PROPOSED CHANGES TO PROVISIONAL STANDARDS

EXPOSURE DRAFTS

REDLINE OF STANDARDS FOR PUBLIC COMMENT

RESOURCE TRANSFORMATION SECTOR

Chemicals
Aerospace & Defense
Electrical & Electronic Equipment
Industrial Machinery & Goods
Containers & Packaging

Prepared by the
Sustainability Accounting Standards Board®

RESOURCE TRANSFORMATION SECTOR

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CHEMICALS*

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October 2017

* Sustainable Industry Classification System™ (SICS™) #RT0101

CHEMICALS

Sustainability Accounting Standard

About the SASB

The Sustainability Accounting Standards Board (SASB) was founded in 2011 as an independent standard-setting organization. The SASB issues and maintains sustainability accounting standards for 79 industries, focusing on the subset of industry-specific sustainability factors that are reasonably likely to have material financial impacts on companies within that industry. Companies can use the standards to disclose material information to investors in SEC filings, including Forms 10-K, 20-F, and 8-K, as well as S-1 and S-3, in a cost-effective and decision-useful manner. The standards are designed to help companies better comply with existing disclosure obligations, working within the framework of existing U.S. securities laws.

The SASB Standards Board is responsible for developing and issuing the standards, maintaining technical agendas, proposing updates to the standards, and executing the standard-setting process. The SASB staff is responsible for performing research and engaging in consultation on the standards, supporting the work of the Standards Board.

The SASB Foundation, an independent 501(c)3 non-profit, is responsible for the funding and oversight of the SASB, including safeguarding the SASB's independence and integrity through due process oversight and inquiry resolution. The SASB Foundation Board of Directors appoints members of the SASB.

About this Standard

This Standard is an exposure draft presented for public review and comment. **This version is not intended for implementation.**

The public comment period lasts for 90 days, beginning on October 2, 2017, and ending on December 31, 2017. The Standard is subject to change thereafter. SASB Standards are scheduled to be ratified by the SASB in early 2018.

For instructions on providing comments to SASB, please click [here](https://www.sasb.org/public-comment) (<https://www.sasb.org/public-comment>).

SUSTAINABILITY ACCOUNTING STANDARDS BOARD

1045 Sansome Street, Suite 450
San Francisco, CA 94111

www.sasb.org

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Chemicals industry.

SASB Sustainability Accounting Standards comprise **(1) disclosure guidance and (2) accounting standards or metrics** for use by U.S. and foreign public companies in their disclosures to investors, such as in annual reports and filings with the U.S. Securities and Exchange Commission (SEC), including Forms 10-K, 20-F, 40-F, 10-Q, 8-K and S-1 and S-3. The Standards facilitate the meaningful disclosure of sustainability information that is useful to investors in making decisions on investments and corporate suffrage.¹ The Standards reflect the fact that certain sustainability information is important for assessing the future financial performance of an issuer, particularly over the long term.

SASB Standards identify sustainability topics that are reasonably likely to constitute material information for a company within a particular industry. Company management is responsible for determining whether those identified topics reflect information that is material to investors and should be disclosed in filings, based on that company's specific circumstances. For further details regarding the use of the SASB Standards, in particular guidance on determinations of materiality, please see SASB's Implementation Guide.²

SASB Standards provide companies with sustainability metrics designed to communicate performance on industry-level sustainability topics in a concise, comparable format using existing reporting mechanisms. Companies can use the Standards to help ensure that disclosure is reliable, decision-useful for investors, and cost-effective for issuers.

SASB Standards are intended to constitute "suitable criteria" for purposes of an attestation engagement as defined by Paragraph .A42 of AT-C section 105³ and referenced in AT-C section 395.⁴ "Suitable criteria" have the following attributes:

- *Relevance*—Criteria are relevant to the subject matter.
- *Objectivity*—Criteria are free from bias.
- *Measurability*—Criteria permit reasonably consistent measurements, qualitative or quantitative, of subject matter.
- *Completeness*—Criteria are complete when subject matter prepared in accordance with them does not omit relevant factors that could reasonably be expected to affect decisions of the intended users made on the basis of that subject matter.

Industry Description

Companies in the Chemicals industry transform organic and inorganic feedstocks into more than 70,000 diverse products with a range of industrial, pharmaceutical, agricultural, housing, automotive, and consumer applications. ~~The~~ among others. Chemical companies manufacture ~~industry manufactures~~ and ~~sells~~ sell products globally, and ~~the~~ industry is commonly segmented into basic (commodity) chemicals, agricultural chemicals, and specialty chemicals.

¹ The AICPA defines sustainability information in its Guide, [Attestation Engagements on Sustainability Information \(Including Greenhouse Gas Emissions Information\)](#) (Issued July 2017), as follows: "information about sustainability matters (such as economic, environmental, social and governance performance)." It further explains that "sustainability metrics and sustainability indicators are components of sustainability information. Sustainability information may be nonquantitative (narrative), historical, or forward-looking."

² <https://library.sasb.org/implementation-guide>

³ <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AT-C-00105.pdf>

⁴ <http://pcaobus.org/Standards/Attestation/Pages/AT701.aspx>

Basic chemicals, the largest segment, ~~includes by volume, include~~ bulk polymers, petrochemicals, inorganic chemicals, and other industrial chemicals. Agricultural chemicals include fertilizers, crop chemicals, and agricultural biotechnology. Specialty chemicals include paints and coatings, agrochemicals, sealants, adhesives, dyes, industrial gases, resins, and catalysts.

Users of the SASB Standards

The SASB Standards are intended for use by public companies and by investors to inform investment decisions. The standards facilitate disclosure of financially material sustainability-related information in a concise, comparable, cost-effective, decision-useful format.

The SASB Standards are designed for integration into existing reporting mechanisms, such as SEC filings. This keeps the administrative and cost burden to a minimum. SEC filings include Form 10-K for U.S. companies, Form 20-F for foreign issuers, Form 40-F for Canadian issuers, quarterly reports on Form 10-Q, current reports on Form 8-K, and registration statements on Forms S-1 and S-3. The SASB Standards are also recognized by the European Commission as a suitable framework for companies to provide information to investors pursuant to EU Directive 2014/95/EU. See “Guidelines on non-financial reporting (methodology for reporting non-financial information).”⁵ Thus, SASB standards are a cost-effective way to satisfy both U.S. and European reporting requirements.

SASB evaluates the materiality of sustainability-related topics by using the high threshold of financial materiality that is established under the U.S. securities laws.⁶ Although designed to meet the rigorous disclosure requirements of the U.S. capital markets (thereby producing a high-quality set of evidence-based standards focused on material investor-focused topics), the standards represent a best practice that can be used by companies of all types (public and private) to describe their material sustainability-related risks and opportunities.

Guidance for Disclosure of Sustainability Topics in SEC Filings

1. Industry-Level Sustainability Topics

For the Chemicals industry, the SASB has identified the following sustainability disclosure topics:

- Greenhouse Gas Emissions
- Air Quality
- Energy ~~& Feedstock~~ Management
- Water Management
- Hazardous Waste Management
- Safety & Environmental Stewardship of Chemicals ~~& Genetically Modified Organisms~~
- Genetically Modified Organisms
- Product Design for Use-phase Efficiency
- ~~Political Spending~~
- Management of the Legal & Regulatory Environment
- Health, Safety, and Emergency Management

2. Determination of Materiality

⁵ https://ec.europa.eu/info/publications/170626-non-financial-reporting-guidelines_en

⁶ https://library.sasb.org/materiality_bulletin/

In the U.S., sustainability disclosures are governed by the same laws and regulations that generally govern disclosures by securities issuers. According to the U.S. Supreme Court, a fact is material if, in the event such fact is omitted from a particular disclosure, there is a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of the information made available.⁷

Through a rigorous process of research, review of evidence, and public input, the SASB has identified sustainability topics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within each Sustainable Industry Classification System™ (SICS™) industry.⁸ **However, the issuer must determine what information is (or is reasonably likely to be) material to the reasonable investor.** For further information regarding a process that corporations can use to assess the financial materiality of the sustainability-related topics in SASB standards, please see SASB’s Implementation Guide.⁹

3. SEC Requirements Relating to Disclosure of Material Sustainability Information

If a public company determines that certain sustainability information is reasonably likely to be material, it must then determine whether disclosure of some or all of the information under applicable SASB Standards is required under the U.S. federal securities laws. Several provisions of those laws are relevant to sustainability disclosures.

Regulation S-K sets forth certain disclosure requirements associated with Form 10-K and other SEC filings. Item 303 of Regulation S-K requires companies to, among other things, describe in the Management’s Discussion and Analysis of Financial Condition and Results of Operations (MD&A) section of Form 10-K “any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed.”¹⁰

Furthermore, the instructions to Item 303 state that the MD&A “shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition.”¹¹

The SEC has provided guidance for companies to use in determining whether a trend or uncertainty should be disclosed. The two-part assessment prescribed by the SEC can be applied to the topics included within this Standard:

- First, a company is not required to make disclosure about a known trend or uncertainty if its management determines that such trend or uncertainty is not reasonably likely to occur.

⁷ *TSC Industries v. Northway, Inc.*, 426 U.S. 438 (1976).

⁸ https://library.sasb.org/materiality_bulletin/

⁹ <https://library.sasb.org/implementation-guide>

¹⁰ C.F.R. 229.303(Item 303)(a)(3)(ii).

¹¹ SEC [Release Nos. 33-8056; 34-45321; FR-61] Commission Statement about Management’s Discussion and Analysis of Financial Condition and Results of Operations: “We also want to remind registrants that disclosure must be both useful and understandable. That is, management should provide the most relevant information and provide it using language and formats that investors can be expected to understand. Registrants should be aware also that investors will often find information relating to a particular matter more meaningful if it is disclosed in a single location, rather than presented in a fragmented manner throughout the filing.”

- Second, if a company's management cannot make a reasonable determination of the likelihood of an event or uncertainty, then disclosure is required "unless management determines that a material effect on the registrant's financial condition or results of operation is not reasonably likely to occur."

Companies should also consider the applicability of other Regulation S-K requirements. Specifically, Item 101 ("Description of Business") requires a company to provide a description of its business and its subsidiaries. Item 103 ("Legal Proceedings") requires a company to describe briefly any material pending or contemplated legal proceedings; instructions to Item 103 provide specific disclosure requirements for administrative or judicial proceedings arising from laws and regulations that target discharge of materials into the environment, or that are primarily for the purpose of protecting the environment. Item 503(c) ("Risk Factors") requires a company to provide discussion of the most significant factors that make an investment in the registrant speculative or risky, clearly stating the risk and specifying how it affects the company.

Finally, as a general matter, Securities Act Rule 408 and Exchange Act Rule 12b-20 require a registrant to disclose, in addition to the information expressly required by law or regulation, "such further material information, if any, as may be necessary to make the required statements, in light of the circumstances under which they are made, not misleading."

4. Where Disclosures Should Be Made in SEC Filings

In using the definition of materiality established under the U.S. federal securities laws, the SASB has identified and developed industry-specific sustainability topics and metrics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within a particular industry. As a general matter, the SASB believes that investors are best served when disclosure of such information is made in SEC filings. An issuer might, for example, make the disclosure in a sub-section of MD&A with a caption, "**Sustainability-Related Information**," with a section that includes the material topics, performance metrics, and management's view with respect to corporate positioning. See SASB's "Mock 10-Ks" for examples of preparing an MD&A using the SASB Standards.¹² Issuers are not precluded from using the Standards elsewhere, such as in stand-alone communications to investors or in sustainability reports (sometimes referred to as corporate social responsibility reports or environmental, social, and governance reports), company websites, or elsewhere. Corporate communication on material topics, including sustainability-related material topics, should be consistent across communication channels. As discussed above, SEC regulations may compel inclusion of material sustainability information in an SEC filing where it is deemed financially material.

The SASB recognizes that sustainability topics are relatively new areas of investor interest, and it may be difficult to determine whether particular sustainability information is material in certain situations. Accordingly, issuers might also consider using the SASB Standards in filings using Form 8-K, Item 8.01 ("Other Events"). This provision states that "The registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not otherwise called for by this form, that the registrant deems of importance to security holders." Making a disclosure under Item 8.01 would not require the issuer to make a decision regarding materiality, and might also provide the company with more time to make the disclosure than is permitted under filing rules applicable to Form 10-K, thereby facilitating the completeness and accuracy of the disclosed information.

¹² <http://using.sasb.org/mock-10-k-library/>

When using the Standards, issuers should cite or refer to the relevant SASB Standard.

More detailed guidance on preparing disclosures of material information related to sustainability topics and making topic-level materiality determinations can be found in the **SASB Conceptual Framework**, available for download via <http://www.sasb.org/approach/conceptual-framework/>, and the **SASB Implementation Guide for Companies**, available for download via <https://library.sasb.org/implementation-guide/>.

Guidance on Accounting for Sustainability Topics

The SASB has identified accounting metrics for each sustainability topic included in this Standard. The SASB recommends that companies within this industry consider using these sustainability accounting metrics when preparing disclosures on the sustainability topics identified herein.

When disclosing information related to a sustainability topic identified by this Standard, companies should consider including a narrative description of any material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description might in certain circumstances include a discussion of the following:¹³

- The registrant's **governance** around the risks and opportunities related to the topic, including board oversight of and management's role in assessing and managing such risks and opportunities.
- The registrant's **strategic approach** regarding actual and potential impacts of topic-related risks and opportunities on the organization's **businesses, strategy, and financial planning**, over the **short, medium, and long term**.
- The registrant's process to **identify, assess, and manage** topic-related risks, and how these risks are integrated into the registrant's overall risk management process.
- The registrant's **use of metrics or targets** to assess and manage topic-related risks and opportunities.
- Data for the registrant's **last three completed fiscal years** (when available).

The SASB recommends that registrants use SASB Standards specific to their primary industry as identified in SICSTM. If a registrant generates significant revenue from multiple industries, the SASB recommends that it also consider sustainability topics that the SASB has identified for those industries, and disclose the associated SASB accounting metrics.

Further, the SASB recommends that companies design, implement, and maintain adequate systems of internal control over sustainability performance information to provide reasonable confidence regarding the achievement of related reporting objectives, such as those relating to the reliability of disclosed information.¹⁴

¹³ These areas for possible additional narrative description are generally aligned with the [Recommendations of the Task Force on Climate-related Financial Disclosures](#), which contains a more extensive discussion of such disclosure matters.

¹⁴ In this regard, companies are referred to the report of a group of experts in this area. Robert H. Herz, Brad J. Monterio, Jeffrey C. Thomson, Leveraging the COSO Internal Control – Integrated Framework to Improve confidence in Sustainability Performance Data (August 2017).

The SASB takes no position as to whether third-party attestation is necessary to enhance the credibility of the disclosed sustainability information, but as a matter of good governance, the SASB suggests that such assurance be considered.¹⁵

Scope of Disclosure

Unless otherwise specified, the SASB recommends:

- That a registrant disclose information on sustainability topics and metrics for itself and for entities that are consolidated for financial reporting purposes, as defined by accounting principles generally accepted in the United States (“US GAAP”), for consistency with other accompanying information within SEC filings;¹⁶
- That for consolidated entities, disclosures be made, and accounting metrics calculated, for the whole entity, regardless of the size of the minority interest; and
- That information from unconsolidated entities not be included in the computation of SASB accounting metrics. However, the registrant should disclose information about unconsolidated entities to the extent that the registrant considers the information necessary for investors to understand the effect of sustainability topics on the company’s financial condition or operating performance. (Typically, this disclosure would be limited to risks and opportunities associated with these entities.)

Reporting Format

Use of Financial Data

In instances where accounting metrics, activity metrics, and technical protocols in this Standard incorporate financial data (e.g., revenues, cost of sales, expenses recorded and disclosed for fines, etc.), such financial data shall be prepared in accordance with US GAAP, and be consistent with the corresponding financial data reported in the registrant’s SEC filings. Should accounting metrics, activity metrics, and technical protocols in this Standard incorporate disclosure of financial data that is not prepared in accordance with US GAAP, the registrant shall disclose such information in accordance with SEC Regulation G.¹⁷

Activity Metrics and Normalization

The SASB recognizes that normalizing accounting metrics is important for the analysis of SASB disclosures.

The SASB recommends that a registrant disclose any basic business data that may assist in the accurate evaluation and comparability of disclosure, to the extent that they are not already disclosed in Form 10-K (e.g., revenue, EBITDA, etc.).

¹⁵ The AICPA’s Guide (see supra note 1) provides guidance to assist accounting practitioners in performing attestation engagements on sustainability information.

¹⁶ See US GAAP consolidation rules (Section 810).

¹⁷ <https://www.sec.gov/rules/final/33-8176.htm>

Such data—termed “activity metrics”—may include high-level business data, including total number of employees, quantity of products produced or services provided, number of facilities, or number of customers. It may also include industry-specific data such as plant capacity utilization (e.g., for specialty chemical companies), number of transactions (e.g., for Internet media and services companies), hospital bed days (e.g., for health care delivery companies), or proven and probable reserves (e.g., for oil and gas exploration and production companies).

Activity metrics disclosed should:

- Convey contextual information that would not otherwise be apparent from SASB accounting metrics.
- Be deemed generally useful for investors relying on SASB accounting metrics to perform their own calculations and create their own ratios.
- Be explained and consistently disclosed from period to period to the extent that they continue to be relevant. However, a decision to make a voluntary disclosure in one period does not obligate a continuation of that disclosure if it is no longer relevant, or if a better metric becomes available.¹⁸

Where relevant, the SASB recommends specific activity metrics that—at a minimum—should accompany SASB accounting metric disclosures.

Table 1. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Production by reportable segment ¹⁹	Quantitative	Cubic meters (m ³) and/or metric tons (t)	RT0101-A

Units of Measure

Unless specified, disclosures should be reported in International System of Units (SI units).

Uncertainty

The SASB recognizes that there may be inherent uncertainty when measuring or disclosing certain sustainability data and information. This uncertainty may be related to variables such as the reliance on data from third-party reporting systems and technologies, or the unpredictable nature of climate events. Where uncertainty around a particular disclosure exists, the SASB recommends that the registrant should consider discussing its nature and likelihood.²⁰

¹⁸ Improving Business Reporting: Insights into Enhancing Voluntary Disclosures, FASB Business Reporting Research Project, January 29, 2001.

¹⁹ Note to **RT0101-A**—Production should be disclosed for each of the registrant’s reportable segments, where products and service segments are determined according to FASB ASC 280-10 and production is reported as weight for solid products and volume for liquid and gas products.

²⁰ The AICPA’s Guide (see supra note 1) provides guidance related to measurement uncertainty.

Estimates

The SASB recognizes that scientifically-based estimates, such as the reliance on certain conversion factors or the exclusion of *de minimis* values, may occur for certain quantitative disclosures. Where appropriate, the SASB does not discourage the use of estimates or ranges. When using an estimate for a particular disclosure, the SASB expects that the registrant discuss its nature and substantiate its basis.

Timing

Unless otherwise specified, disclosure shall be for the registrant's fiscal year.

Limitations

There is no guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry, or company; therefore, a company must determine for itself the topics that warrant discussion in its SEC filings.

Use of the SASB Standards is voluntary. The Standards are not intended to replace any legal or regulatory requirements that may be applicable to a company's operations. When such laws or regulations address legal or regulatory topics, disclosure under SASB Standards is not meant to supersede those requirements.

Use of the SASB Standards is not required or endorsed by the SEC or various entities governing financial reporting, including the Financial Accounting Standards Board, the Government Accounting Standards Board, or the International Accounting Standards Board.

Forward-Looking Statements

Disclosures on sustainability topics can, in some circumstances, involve discussion of future trends and uncertainties related to the registrant's operations and financial condition, including those influenced by external variables (e.g., environmental, social, regulatory, and political). Companies making these disclosures in SEC filings should familiarize themselves with the safe harbor provisions of Section 27A of the Securities Act, and Section 21E of the Exchange Act, which preclude civil liability for material misstatements or omissions in such statements if the registrant takes certain steps. These include, among other things, identifying the disclosure as "forward-looking," and accompanying such disclosure with "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statements."

Notes on the Sustainability Accounting Standards

The following sections contain the disclosure guidance associated with each accounting metric, including guidance on definitions, scope, accounting, compilation, and presentation.

The term "shall" is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms "should" and "may" are used to indicate guidance, which, although not required, provides a recommended means of disclosure.

Table 2. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage covered under a regulatory program	Quantitative	Metric tons CO ₂ -e, Percentage (%)	RT0101-01
	Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emission-reduction targets and an analysis of performance against those targets	Discussion and Analysis	n/a	RT0101-02
Air Quality	Air emissions for the following pollutants: NO _x (excluding N ₂ O), SO _x , volatile organic compounds (VOCs), and hazardous air pollutants (HAPs)	Quantitative	Metric tons (t)	RT0101-03
	Number of production facilities in or near areas of dense population	Quantitative	Number	RT0101-04
Energy & Feedstock Management	Total energy consumed, <u>total self-generated energy</u> , percentage grid electricity, percentage renewable ²¹	Quantitative	Gigajoules (GJ), Percentage (%)	RT0101-05 <u>TA07-03-01</u>
	Percentage of raw materials from renewable resources	Quantitative	Percentage (%) by metric tons	RT0101-06
Water Management	(1) Total water withdrawn, percentage in regions with High or Extremely High Baseline Water Stress and (2) percentage recycled water usage	Quantitative	Cubic Meters (m ³), Percentage (%)	RT0101-07
	Number of incidents of non-compliance with water quality permits, standards, and regulations	Quantitative	Number	RT0101-08 <u>TA07-04-01</u>
Hazardous Waste Management	Amount of hazardous waste, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	RT0101-09 <u>TA07-05-01</u>
<u>Community Relations</u>	<u>Discussion of approach to managing risks and opportunities associated with community rights and interests</u>	<u>Discussion and Analysis</u>	<u>n/a</u>	<u>TA07-06-01</u>
Safety & Environmental Stewardship of Chemicals & Genetically Modified Organisms	Percentage of products that contain Registration, Evaluation, Authorisation and Restriction of Chemical (REACH) substances of very high concern (SVHC)	Quantitative	Percentage (%) by revenue	RT0101-10
	Percentage of products that contain Class I World Health Organization (WHO) Acute Toxicity Hazard Categories pesticides	Quantitative	Percentage (%) by revenue	RT0101-11

²¹ Note to **RT0101-05**—The registrant shall discuss its efforts to reduce energy consumption and/or improve energy efficiency throughout the production processes.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
	Discussion of strategy to (a) manage chemicals of concern and (b) develop alternatives with reduced human and/or environmental impact	Discussion and Analysis	n/a	RT0101-12
	Percentage of products by revenue that contain genetically modified organisms (GMOs)	Quantitative	Percentage (%) by revenue	RT0101-13
Genetically Modified Organisms	<u>Percentage of products by revenue that contain genetically modified organisms (GMOs)</u>	<u>Quantitative</u>	<u>Percentage (%) by revenue</u>	<u>RT0101-13</u>
Product Design for Use-phase Efficiency	Revenue from products designed for use-phase resource efficiency	Quantitative	U.S. Dollars (\$)	RT0101-14
Management of the Legal & Regulatory Environment	<u>Discussion of positions on the regulatory and political environment related to environmental and social factors and description of efforts to manage risks and opportunities presented</u>	<u>Discussion and Analysis</u>	<u>n/a</u>	<u>TA07-09-01</u>
Political Spending	Amount of political campaign spending, lobbying expenditures, and contributions to tax-exempt groups, including trade associations	Quantitative	U.S. Dollars (\$)	RT0101-15
	Five largest political, lobbying, or tax-exempt group expenditures	Quantitative	U.S. Dollars (\$), by recipient	RT0101-16
Health, Safety, and Emergency Management	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR) ²²	Quantitative	Number, Rate	RT0101-17
	Number of transport incidents ²³	Quantitative	Number	RT0101-18
	Challenges to the Safety Systems indicator rate (Tier 3)	Quantitative	Rate	RT0101-19
	(1) Total recordable injury rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	Quantitative	Rate	RT0101-20
	Discussion of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	Discussion and Analysis	n/a	RT0101-21

²² Note to **RT0101-17**— The registrant shall describe incidents with a severity rating of 1 or 2, including their root cause, outcomes, and corrective actions implemented in response.

²³ Note to **RT0101-18**—The registrant shall describe significant transport incidents, including their root cause, outcomes, and corrective actions implemented in response.

Greenhouse Gas Emissions

Description

Chemical manufacturing generates ~~significant~~ direct (Scope 1) GHG emissions from the combustion of fossil fuels in manufacturing and cogeneration processes, as well as process emissions from the chemical transformation of feedstocks. GHG emissions ~~contribute to climate change and can~~ create regulatory compliance costs and operating risks for chemicals companies due to climate change mitigation policies. Financial impacts on companies will vary depending on the ~~specific location~~ magnitude of operationsemissions and the prevailing emissions regulations. Companies that cost-effectively ~~reduce~~ manage GHG emissions ~~in their operations~~ through greater energy efficiency, the use of ~~cleaner~~ alternative fuels, or manufacturing process improvements ~~can garner financial benefits in the form of lower costs and could benefit from improved~~ operating ~~risks or additional revenues from the sale of carbon allowances~~ efficiency and reduced regulatory risk.

Accounting Metrics

RT0101-01. Gross global Scope 1 emissions, percentage covered under a regulatory program

- .01 The registrant shall disclose gross global Scope 1 greenhouse gas (GHG) emissions to the atmosphere of the six GHGs covered under the Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).
- Emissions of all gases shall be disclosed in metric tons of carbon dioxide equivalents (CO₂-e), calculated in accordance with published global warming potential (GWP) factors. To date, the preferred source for GWP factors is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2013).
 - Gross emissions are GHGs emitted to the atmosphere before accounting for any GHG reduction activities, offsets, or other adjustments for activities in the reporting period that have reduced or compensated for emissions.
 - Disclosure corresponds to section CC8.2 of the Carbon Disclosure Project (CDP) Questionnaire (2015) and REQ-11 of the Climate Disclosure Standards Board (CDSB) *Climate Change Reporting Framework* (CCRF) (2015).
- .02 Scope 1 emissions are defined by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD) in [The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard](#), Revised Edition, March 2004 (hereafter, the "GHG Protocol").
- These emissions include direct emissions of GHGs from stationary or mobile sources that include, but are not limited to, equipment, production facilities, office buildings, and transportation (i.e., marine, road, or rail).
- .03 GHG emission data shall be consolidated according to the approach with which the registrant consolidates its financial reporting data, which is generally aligned with:

- The Financial Control approach defined by the GHG Protocol and referenced by the [CDP Guidance for companies reporting on climate change on behalf of investors & supply chain members 2013](#) (hereafter, the “CDP Guidance”).²⁴
- The approach detailed in REQ-1, “Organizational boundary setting for GHG emissions reporting,” of the CDSB CCRF (2015).²⁵

.04 The underlying technical approach to data collection, analysis, and disclosure shall be consistent with the CDP Guidance.

- The registrant shall consider the CDP Guidance as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

.05 The registrant shall disclose the percentage of its emissions that are covered under a regulatory program, such as the European Union Emissions Trading Scheme (EU ETS), Western Climate Initiative (WCI), California Cap-and-Trade (California Global Warming Solutions Act), or other regulatory programs.

- Regulatory programs include cap-and-trade schemes and carbon tax/fee systems.
- Disclosure shall exclude emissions covered under voluntary trading systems and disclosure-based regulations (e.g., the U.S. Environmental Protection Agency (EPA) mandatory reporting rule).

.06 The registrant should discuss any change in its emissions from the previous fiscal year, such as if the change was due to emissions reductions, divestment, acquisition, mergers, changes in output, and/or changes in calculation methodology.

.07 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 registrant may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.

.08 The registrant should discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations, mass balance calculations, etc.

.09 The registrant should consult the most recent version of each document referenced in this standard at the time disclosure occurs.

²⁴ “An organization has financial control over an operation if it has the ability to direct the financial and operating policies of the operation with a view to gaining economic benefits from its activities. Generally an organization has financial control over an operation for GHG accounting purposes if the operation is treated as a group company or subsidiary for the purposes of financial consolidation.” *Guidance for companies reporting on climate change on behalf of investors & supply chain members 2013*, p. 95.

²⁵ This is based on the requirements of International Accounting Standards/International Financial Reporting Standards (IAS/IFRS) on consolidation and equity accounting and is consistent with how information relating to entities within a group or interest in joint ventures/associates would be included on consolidated financial statements, as further detailed in *CDSB Proposals for Boundary Setting in Mainstream Reports*.

RT0101-02. Description of long-term and short-term strategy or plan to manage Scope 1 emissions, including emission-reduction targets and an analysis of performance against those targets

.10 The registrant shall discuss the following, where relevant:

- The scope, such as whether strategies, plans, and/or reduction targets pertain differently to different business units, geographies, or emissions sources;
- Whether strategies, plans, and/or reduction targets are related to or associated with an emissions disclosure (reporting) or reduction program (e.g., EU ETS, RGGI, WCI, etc.), including regional, national, international, or sectoral programs; and
- The activities and investments required to achieve the plans, and any risks or limiting factors that might affect achievement of the plans and/or targets.

.11 For emission-reduction targets, the registrant shall disclose:

- The percentage of emissions within the scope of the reduction plan;
- The percentage reduction from the base year;
 - The base year is the first year against which emissions are evaluated towards the achievement of the target.
- Whether the target is absolute or intensity based, and the metric denominator if it is an intensity-based target;
- The timelines for the reduction activity, including the start year, the target year, and the base year. Disclosure shall be limited to activities that were ongoing (active) or reached completion during the fiscal year; and
- The mechanism(s) for achieving the target, such as energy efficiency efforts, energy source diversification, carbon capture and storage, etc.

.12 Where necessary, the registrant shall discuss any circumstances in which the target base year emissions have been, or may be, recalculated retrospectively or where the target base year has been reset.

.13 Disclosure corresponds with:

- CDSB CCRF (2015) REQ-9, "Management actions."
- CDP questionnaire (2015) CC3, "Targets and Initiatives."

Additional References

[Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain WBCSD](#)
[Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain](#)

Air Quality

Description

Apart from GHGs, ~~which have global impacts, other air emissions from~~ chemical manufacturing ~~can have significant, localized human health produces other air emissions including sulfur dioxides (SO_x), nitrogen oxides (NO_x), and environmental impacts.~~ Hazardous Air Pollutants (HAPs). As with GHGs, ~~these~~ emissions ~~of air pollutants in the Chemicals industry~~ typically stem from the combustion of fuels and the processing of ~~raw materials.~~ Air pollutants ~~include sulfur dioxide (SO₂) and nitrogen oxides (NO_x), which can contribute to acid rain and smog.~~ feedstocks. Relative to other industries, the Chemicals industry is a substantial source of some of these ~~pollutants.~~ Financial impacts ~~on companies will~~ emissions. Companies may face operating costs and capital expenditures related to emissions ~~mitigation, while financial impacts~~ vary depending on the ~~specific location~~ magnitude of ~~operation~~ emissions and the prevailing ~~air emissions~~ regulations. Active management of the issue —through technological and process improvements —can mitigate ~~the~~ these impacts ~~of increasingly stringent global air quality regulations.~~ Companies, ~~and companies~~ can also benefit from operational efficiencies and a lower cost structure over time. ~~Human health impacts and financial consequences of poor air quality management by chemical companies are likely to be exacerbated by the proximity of manufacturing to communities.~~

Accounting Metrics

RT0101-03. Air emissions for the following pollutants: NO_x (excluding N₂O), SO_x, volatile organic compounds (VOCs), and hazardous air pollutants (HAPs)

- .14 The registrant shall disclose its emissions of air pollutants (in metric tons) that are released to the atmosphere as a result of its activities:
- Direct air emissions from stationary or mobile sources that include, but are not limited to, production facilities, office buildings, marine vessels transporting products, and truck fleets.
- .15 The registrant shall disclose emissions released to the atmosphere by emissions type. Substances include:
- Oxides of nitrogen (including NO and NO₂ and excluding N₂O) reported as NO_x.
 - Oxides of sulfur (SO₂ and SO₃) reported as SO_x.
 - Nonmethane volatile organic compounds (VOCs), 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 by the U.S. Environmental Protection Agency (EPA) as having negligible photochemical reactivity.
 - Where regional and national definitions supersede EPA regulations, such as EC Directive 1999/13/EC and Schedule 1 of the Canadian Environmental Protection Act 1999, the registrant may refer to the relevant regulations on VOCs.

- [Hazardous air pollutants](#) (HAPs) are defined by the EPA as those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects, ~~and are listed [here](#).~~

.16 This scope does not include CO₂, CH₄, and N₂O, which are disclosed in RT0101-01 as Scope 1 GHG emissions.

.17 Air emissions data shall be consolidated according to the approach with which the registrant consolidates its financial reporting data, which is aligned with the consolidation approach used for RT0101-01.

.18 The registrant should discuss the calculation methodology for its emissions disclosure, such as whether data are from continuous emissions monitoring systems (CEMS), engineering calculations, mass balance calculations, etc.

~~RT0101-04. Number of production facilities in or near areas of dense population~~

~~.19 The registrant shall disclose the number of its production facilities that are located in or near areas of dense population, which are defined as urbanized areas according to U.S. Census Bureau definitions contained in (August 24, 2011).~~

- ~~• Generically, these include urbanized areas with populations greater than 50,000.~~
- ~~• A list of urbanized areas based on census results from 2010 is available.~~

~~.20 The scope of disclosure includes production facilities that are located in a census tract or block considered to be in an urbanized area or are within 49 kilometers of an urbanized area.~~

~~.21 For production facilities located outside of the U.S., the registrant shall use available census data to determine whether the facility is located in an urbanized area, as defined by the U.S. Census Bureau:~~

- ~~• In the absence of available or accurate census data, the registrant should use international population density data available from the Columbia University/NASA Socioeconomic Data and Applications Center's (SEDAC) Gridded Population of the World (GPW), v3.~~

~~.22 Notes~~

~~The 49 kilometer radius is based on the definition of "exposed population" from the U.S. EPA's Office of Pollution Prevention and Toxics User's Manual for RSEI, Version 2.3.2., July 2013: "The exposed population is the population that is likely to come in contact with a chemical. The population differs depending on the exposure pathway modeled. For instance, the population exposed to chemicals released to air is the population in a circle with a radius of 49 km surrounding the facility."~~

Energy & Feedstock Management

Description

Chemical companies are highly reliant on electrical energy and hydrocarbon feedstocks as inputs for value creation, which account for manufacturing is typically energy-intensive, and energy can represent a significant proportionshare of total production costs. Approximately one-third of the industry's total GHG emissions (direct and indirect) are from purchased electricity, while natural gas and oil-derived materials represent the vast majority of feedstocks. Since electricity consumption can indirectly contribute to climate change and air pollution through combustion of fossil fuels at the utility level, the cost of grid electricity may increase as utilities face higher regulatory compliance costs. Similarly, the extraction, production, and use of fossil hydrocarbon feedstocks contribute to GHG emissions. With manufacturing plants located worldwide, the likelihood and impact of climate change regulations will vary depending on the location of facilities. A company's energy mix, including the use of electricityenergy generated onsite rather than, purchased grid-sourced electricity and fossil fuels, and the use of alternative energy, can play an important role in influencing both the cost and reliability of energy supply. In addition, the use of alternative, renewable feedstocks could similarly address supply risks and rising costs in the long run. The manner in which a company manages its overall energy and feedstock efficiencyuse and intensity, its reliance on different energy and feedstock typesources, and its ability to access alternative sources of energy and feedstocks can influence its profitability and risk profile.

Accounting Metrics

RT0101-05TA07-03-01. Total energy consumed, total self-generated energy, percentage grid electricity, percentage renewable

-23.19 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or their multiples.

- The scope includes energy purchased from sources external to the organization or produced by the organization itself (self-generated~~);~~
- The scope includes only energy consumed by entities owned or controlled by the organization;
- The scope includes energy from all sources, including direct fuel usage, purchased electricity, and heating, cooling, and steam energy;

-24.20 In calculating energy consumption from fuels and biofuels, the registrant 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).

.21 The registrant shall disclose the amount of energy self-generated by the registrant as an aggregate figure in gigajoules or their multiples.

- The registrant may disclose the amount of energy that it sells to an electric utility or end-use customer in excess of what it generates.

~~25.22~~ The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.

~~26.23~~ The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.

~~27.24~~ The scope of renewable energy includes renewable fuel the registrant consumes and renewable energy the registrant directly produces, purchases through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs), purchases through a Green-e Energy Certified utility or supplier program, or for which Green-e Energy Certified RECs are paired with grid electricity.

- For any renewable electricity generated on-site, any RECs must be retained (i.e., not sold) and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- For renewable PPAs, the agreement must explicitly include and convey that RECs be retained and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- The renewable portion of the electricity grid mix that is outside of the control or influence of the registrant is excluded from disclosure.²⁶
- Renewable energy is defined as energy from sources that are replenished at a rate greater than or equal to their rate of depletion, consistent with EPA U.S. Environmental Protection Agency (EPA) definitions, such as geothermal, wind, solar, hydro, and biomass.

~~28.25~~ For the purposes of this disclosure, the scope of renewable energy from hydro and biomass sources is limited to the following:

- Energy from hydro sources that are certified by the Low Impact Hydropower Institute or that are eligible for a state Renewable Portfolio Standard-
- 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 renewables" according to the Green-e Energy National Standard Version 2.5 (2014), ~~and/or~~ materials that are eligible for a state Renewable Portfolio Standard-

~~29.26~~ The registrant 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 kWh to gigajoules (for energy data including electricity from solar or wind energy).

Note to TA07-03-01RT0101-05

²⁶ SASB recognizes that RECs reflect the environmental attributes of renewable energy that have been introduced to the grid, and that a premium has been paid by the purchaser of the REC to enable generation of renewable energy beyond any renewable energy already in the grid mix, absent the market for RECs.

~~30.27~~ The registrant shall discuss its efforts to reduce energy consumption and/or improve energy efficiency throughout the ~~design, manufacturing, and production~~ processes.

~~31.28~~ The registrant shall discuss implementation of Green Chemistry Principle 6, "[Design for Energy Efficiency](#)," including, where relevant, efforts such as conducting reactions at ambient temperature and pressure, reducing key materials that require energy-intensive processing (e.g., distillation and drying), using excess steam and heat to generate energy, improving catalytic processes, and other process improvements that result in gains in energy efficiency.

- Relevant strategies to discuss include the use of incremental improvement, the implementation of best practice technology, the use of emerging technologies, and the development of "game changers," consistent with the [International Council of Chemical Associations' \(ICCA\) Technology Road Map](#).

~~32.29~~ The registrant may choose to disclose the aggregate energy savings (in gigajoules) achieved through such efforts and processes.

RT0101-06. Percentage of raw materials from renewable resources

~~33~~ The registrant shall disclose the percentage of the raw materials (by metric tons) it consumed in production of products that were derived from renewable resources, where:

- Renewable resources are defined as those that are replenished at a rate greater than or equal to their rate of depletion, such that they can provide yields over an infinite time horizon, which is aligned with EPA.

~~34~~ Examples of raw materials from renewable resources include, but are not limited to, carbohydrates, oils, and/or proteins extracted from common crop sources, such as corn, soy, wheat, and sugar beets, among others. percentage is calculated as the total weight of raw materials from renewable resources divided by the total weight of all raw materials for products.

- The scope of raw materials in the denominator of the percentage calculation includes all inputs that are processed to be sold as a finished good, including renewable feedstocks, hydrocarbon feedstocks, and monomers, among others, prior to any loss, shrinkage, or waste.
- The weight of raw materials and renewable raw materials should be calculated as the amount of materials in inventory at the beginning of the reporting period, plus any purchase of materials made during the reporting period, less any materials in raw materials inventory on hand at the end of the reporting period.

Water Management

Description

Water is a critical input in chemicals production, used primarily for cooling, steam generation, and chemical processing. Water is becoming an increasingly scarce resource worldwide due to population growth, ~~rapid~~ urbanization, and climate change. Water scarcity can result in ~~higher supply costs and~~ higher risk of ~~shortages~~operational disruption for companies with water-intensive operations. ~~Chemical plants use relatively large quantities of water, primarily for cooling, steam generation, and chemical processing.~~ Furthermore, chemical ~~processing~~manufacturing can generate process wastewater, ~~which may that must~~ be ~~contaminated with metals, suspended solids, extreme pH levels, and hazardous substances.~~treated before disposal. Reducing water use and ~~contamination~~consumption through ~~recycling~~increased efficiency and other water management strategies can lead to operational efficiency and lower operating costs, and can minimize the impacts of regulations, water supply shortages, and community-related disruptions of operations. Likewise, effective management of water treatment and disposal processes can mitigate regulatory risk and water treatment costs.

Accounting Metrics

RT0101-07. (1) Total water withdrawn, percentage in regions with High or Extremely High Baseline Water Stress and (2) percentage recycled water usage

~~35.30~~ The registrant shall disclose the amount of water (in thousands of cubic meters) that was withdrawn from fresh water sources for use in operations.

- Fresh water may be defined according to the local statutes and regulations where the registrant operates. Where there is no regulatory definition, fresh water shall be considered to be water that has a solids (TDS) concentration of less than 1000 mg/l per the Water Quality Association [definition](#).
- Water obtained from a water utility can be assumed to meet the definition of fresh water.

~~36.31~~ Using the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct (publicly available online [here](#)), the registrant shall analyze all of its operations for water risks and identify activities that are in a location with High (40–80%) or Extremely High (>80%) Baseline Water Stress. Water withdrawn in locations with High or Extremely High Baseline Water Stress shall be indicated as a percentage of the total water withdrawn.

~~37.32~~ The registrant shall disclose the percentage of its total water usage that was met from recycled water usage during the fiscal year, where:

- Total water usage includes all fresh water withdrawals, non-fresh water withdrawals, and all usage of recycled water (which, if reused multiple times, shall be counted as usage each time it is reused).
- Recycled water usage includes any volume of water that is recycled and reused, and water reused multiple times shall be counted as recycled each time it is recycled and reused.
- Recycled water includes water that is reused in closed-loop and open-loop systems.
- Recycled water includes grey water, water treated prior to reuse, and water not treated prior to reuse.

- The percentage shall be calculated as the total recycled water usage divided by total water usage.

RT0101-08TA07-04-01. Number of incidents of non-compliance with water quality permits, standards, and regulations

~~38.33~~ The registrant shall disclose the total number of instances of non-compliance, including violations of a technology-based standard and exceedances of a quality-based standard.

~~39.34~~ The scope of disclosure includes incidents governed by federal, state, and local statutory permits and regulations, including, but not limited to, the discharge of a hazardous substance, violation of pretreatment requirements, or total maximum daily load (TMDL) exceedances.

~~40.35~~ ~~An incident~~ ~~The scope of disclosure shall only include incidents~~ of non-compliance ~~shall be disclosed regardless of whether it~~ ~~that~~ resulted in ~~an~~ formal enforcement action ~~(e.g., fine, warning letter, etc.)~~ ~~(s)~~.

- Formal enforcement actions are defined as statutorily recognized actions that address a violation or threatened violation of water quality laws, regulations, policy or orders, and include administrative penalty orders, administrative orders, and judicial actions, among others. For example, the U.S. EPA provides guidance on the scope of formal enforcement actions in, [Informal and Formal Actions, Summary Guidance and Portrayal on EPA Websites.](#)

~~41.36~~ Violations, regardless of their measurement methodology or frequency, shall be disclosed. These include:

- ~~For continuous~~ Continuous discharges, limitations, standards, and prohibitions that are generally expressed as maximum daily, weekly average, and monthly averages-
- ~~For non~~ Non-continuous discharges, limitations that are generally expressed in terms of frequency, total mass, maximum rate of discharge, and mass or ~~concentrations~~ concentration of specified pollutants-

Hazardous Waste Management

Description

Chemical manufacturing can generate hazardous process waste, including but not limited to heavy metals, spent acids, catalysts, and wastewater treatment sludge. Companies face regulatory and operational challenges in managing their process/manufacturing waste, as many of these substances can be hazardous to human health and the environment. Chemical manufacturing generates some wastes that are subject to regulations within the U.S. and internationally, such as the Resource Conservation and Recovery Act (RCRA), which regulates the generation, regulate their transport, treatment, storage, and disposal of hazardous and solid waste. Hazardous wastes generated by chemical plants include heavy metals, spent acids, caustics, solid catalysts, and wastewater treatment sludge. Proper processing. Waste management strategies include reduced generation, effective treatment and disposal of hazardous waste materials are essential to limiting, and recycling, which can improve operating efficiencies and mitigate the risk of remediation liabilities, fines, and litigation. In addition, companies that are able to limit the waste of input materials and recycle the waste generated may achieve significant cost savings and improve profitability, or regulatory penalties.

Accounting Metrics

RT0401-09TA07-05-01. Amount of hazardous waste, percentage recycled

37 The registrant shall calculate and disclose the amount of hazardous waste shall be calculated-generated (in metric tons).

- Hazardous wastes are defined per the legal or regulatory frameworks applicable within the jurisdictions where the waste is generated.
 - Hazardous wasteThe registrant shall include both hazardous secondary materials, defined according to 40 CFR 260.10, and materials that meet the definition ofdefine hazardous waste under Subtitle C for the five largest source jurisdictions of hazardous waste generation, as well as the percentage of total hazardous waste generated in each of these jurisdictions.
 - The registrant should consider the use of the U.S. Environmental Protection Agency's (EPA) ResourceConservation and Recovery Act (RCRA), according to 40 CFR 261.3) or European Commission Directives on Hazardous Waste for the purposes of defining hazardous waste for operations which are located in jurisdictions other than those to which these frameworks apply.
- Disclosure corresponds with Global Reporting Initiative Effluents and Waste 2016 Disclosure 306-2 a. Hazardous wastes include those that display the following characteristics: ignitability, corrosivity, reactivity, or toxicity.

38 The percentage recycled shall be calculated as the weight (in metric tons) of hazardous waste material that was reused or reclaimed, plus the weight recycled or remanufactured (through treatment or processing) by the registrant, plus the amount sent externally for further recycling, divided by the total weight of hazardous waste material,(in metric tons).

- Recycled hazardous wastes shall be categorized per laws applicable within the jurisdictions where the waste is recycled.
- Disclosure corresponds with Global Reporting Initiative [Effluents and Waste 2016](#) Disclosure 306-2 a. ii.
- ~~• A hazardous waste is recycled if it is used, reused, or reclaimed.~~
- ~~• Reclaimed materials are defined as those processed to recover or regenerate a usable product, in accordance with . Common hazardous waste reclamation activities involve recovery of spent solvents (e.g., recovery of acetone) or metals (e.g., recovery of lead).~~
- ~~• Reused materials are defined as those recovered products or components of products that are used for the same purpose for which they were conceived.~~
- ~~• Recycled and remanufactured materials are defined as waste materials that have been reprocessed or treated by means of production or manufacturing processes and made into a final product or a component for incorporation into a product.~~
- ~~• Materials sent for further recycling include those materials that are transferred to a third party for the express purpose of reuse, recycling, or refurbishment.~~
- ~~• The scope of recycled and remanufactured products includes primary recycled materials, co-products (outputs of equal value to primary recycled materials), and by products (outputs of lesser value than primary recycled materials).~~
- ~~• Portions of products and materials that are disposed of in landfills are not considered recycled; only the portions of products that are directly incorporated into new products, co-products, or by products shall be included in the percentage recycled.~~
- ~~• Materials incinerated, including for energy recovery, are not considered reused, recycled, or reclaimed. Energy recovery is defined as the use of combustible waste as a means to generate energy through direct incineration, with or without other waste, but with recovery of the heat.~~

Additional References

For guidance on the “legitimate recycling” of hazardous waste, see 40 CFR 260.43

Community Relations

Description

Chemical facilities typically generate air emissions, water effluents, and waste. Such localized environmental impacts may affect community rights and interests, such as health and shared environmental resources, potentially resulting in regulatory, operational, and reputational effects. Additionally, process safety incidents can affect nearby populations. In some regions, regulators have published guidance addressing certain aspects of community impacts in existing regulations, such as those affecting permitting. Consequently, chemicals companies can benefit from building strong working relationships with communities, which serve to mitigate potential operating risks and ensure a strong social license to operate. To this end, companies can adopt various community engagement strategies in their global operations, such as developing engagement plans, establishing codes and guidelines to ensure alignment of the organization's interests with those of their surrounding communities, or conducting impact assessments to evaluate projects and mitigate potential negative impacts.

Accounting Metrics

TA07-06-01. Discussion of approach to managing risks and opportunities associated with community rights and interests

.39 The registrant shall describe its processes, procedures, and practices to manage risks and opportunities associated with community rights and interests in communities in areas where it conducts business, where such rights and interests may include, but are not limited to:

- The right to clean air emissions and water, safe management and disposal of waste, and mitigating issues related to facility process safety and transport incidents.

.40 The registrant may disclose the following as relevant:

- The community rights or impacts specifically addressed by disclosure
- The underlying references for the registrant's processes and procedures, including whether they are codes, guidelines, standards, or regulations and whether they were developed by the registrant, an industry organization, a third-party organization (e.g., a non-governmental organization), a governmental agency, or some combination of these groups

.41 Risks and opportunities include, but are not limited to non-technical delays, challenges associated with regulatory permitting, and availability and access to adequate local infrastructure and natural resources.

.42 The discussion may include how practices apply to business partners such as contractors, sub-contractors, suppliers, and joint venture partners to the extent permissible under the terms of any contractual agreements, and without revealing confidential, proprietary or sensitive information.

.43 The registrant may describe its efforts to eliminate or mitigate community-related risks, address community concerns, and any initiatives that succeed in creating mutual value for chemicals manufacturers and the communities in which they operate.

- The use of environmental impacts assessment (EIA) and social impact assessment (SIA) that evaluates, manages, and mitigates risks
- Efforts to engage with stakeholders, build consensus, and collaborate with communities, with the potential for mutual value generation
- “Shared” or “blended” value projects that provide quantifiable benefits to the community and the registrant
- Disclosure aligns with elements 3.5 and 3.7 of the Responsible Care® Management System

.44 The registrant may report the share of operations with environmental or social impact assessments.

.45 The registrant may describe its efforts to address environmental justice concerns in communities in areas where the registrant operates and potential operating impacts from regulatory or community action to address environmental justice.

- Environmental Justice is defined per the [U.S. Environmental Protection Agency’s Technical Guidance for Assessing Environmental Justice in Regulatory Analysis](#).

Safety & Environmental Stewardship of Chemicals

Description

Product safety and stewardship is an important aspect of the Chemicals industry. As scientific understanding of the long-term effects of ~~many certain~~ chemical substances ~~and genetically modified organisms (GMOs)~~ improves, it is likely that regulations governing product stewardship will ~~become more stringent~~. The industry therefore stands to benefit by developing innovative approaches to ~~reduce~~ manage the ~~negative environmental and health~~ potential impacts of ~~existing~~ products ~~during the use-phase~~. Product attributes including reduced ~~human~~ toxicity, minimized impacts on the environment, and sustainable end-of-life disposal will likely be key to satisfying customer and regulatory requirements. The development of products with such characteristics could contribute to shareholder value through improved competitive positioning, greater market share, reduced regulatory risks, and higher brand value.

Accounting Metrics

RT0101-10. Percentage of products that contain Registration, Evaluation, Authorisation and Restriction of Chemical (REACH) substances of very high concern (SVHC)

~~42.46~~ The registrant shall disclose the percentage of its products, by revenue, that contain Registration, Evaluation, Authorisation and Restriction of Chemical (REACH) substances of very high concern (SVHC), where:

- The [REACH SVHC](#) list is published in accordance with Article 59(10) of the REACH Regulation, ~~and is found here.~~
- The percentage is calculated as the revenue from products that contain substances included on the list of REACH SVHC divided by total revenue from all products.

~~43.47~~ The scope of this disclosure shall include all products and materials, regardless of whether such materials are subject to regulation under REACH.

RT0101-11. Percentage of products that contain Class I World Health Organization (WHO) Acute Toxicity Hazard Categories pesticides

~~44.48~~ The registrant shall disclose the percentage of its products, by revenue, that contain Class I World Health Organization (WHO) Acute Toxicity Hazard Categories pesticides, where:

- The WHO Acute Toxicity Hazard Categories list is published in alignment with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).
- The scope of this disclosure includes products that contain pesticides classified in the WHO categories of I(a) extremely hazardous or I(b) highly hazardous, which are aligned with Category 1 and Category 2 chemicals, respectively, in the GHS classification.
- The percentage is calculated as the revenue from products that contain pesticides included on the list of Class I WHO Acute Toxicity Hazard Categories divided by revenue from all products.

- The term “pesticide” is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, in accordance with 40 CFR 152.3.

RT0101-12. Discussion of strategy to (a) manage chemicals of concern and (b) develop alternatives with reduced human and/or environmental impact

~~45.49~~ The registrant shall (a) discuss its strategy and approach to managing the production of materials, chemicals, and substances that may be of human health and/or environmental concern to consumers, customers (e.g., retailers and commercial buyers), regulators, and/or others (e.g., non-governmental organizations, scientific researchers, etc.).

- “Materials, chemicals, and substances” includes individual compounds, classes of chemicals, and categories of chemicals.

~~46.50~~ At a minimum, the registrant shall discuss how it assesses materials and chemicals for hazard characteristics and risk traits, including the operational processes it employs for these assessments and other actions it takes to manage hazards and risks.

~~47.51~~ Relevant operational processes may include, but are not limited to, product formulation and design, product safety testing, risk characterization, prioritization of product risks, product labeling, product declarations (e.g., material safety data sheets), sharing of information on product risks, and management of new information on product risks.

~~48.52~~ Relevant actions to discuss may include the exclusion of substances (e.g., use of banned substances lists), use of material substitution assessments, use of tools and management practices, or any other methods that consider the usage of materials, chemicals, and substances of concern.

- Actions to discuss may include, but are not limited to, efforts to implement the [EPA: TSCA Work Plan](#), the [American Chemistry Council: Responsible Care® Product Safety Code](#), and the [United Nations Environment Programme: Strategic Approach to International Chemicals Management](#)

~~49.53~~ The registrant shall discuss its production and use of chemicals listed under REACH SVHC, EPA Toxic Substances Control Act Section (TSCA) 5(B)(4), WHO categories of I(a) extremely hazardous or I(b) highly hazardous, the United Nations’ (UN) List of Chemicals of International Concern, and Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and Category 2.

~~50.54~~ The registrant shall discuss its production and use of chemicals that appear on California’s Proposition 65 list of carcinogens and reproductive toxicants, Washington State’s List of Chemicals of High Concern to Children, and/or other equivalent state and country regulations on chemicals of concern.

~~51.55~~ The registrant shall discuss the production and use of chemicals of consumer concern including those listed in the “Safer Consumer Products DRAFT Priority Product Work Plan, Three Year Work Plan, September 2014” and other chemicals, for which the registrant has received pressure from consumers or advocacy groups.

~~52.56~~ The registrant shall (b) discuss its strategy and approach to developing alternative processes and chemicals that reduce or avoid substances that may be of human health and/or environmental concern to consumers,

customers (e.g., retailers and commercial buyers), regulators, and/or others (e.g., non-governmental organizations, scientific researchers, etc.).

~~53.57~~ At a minimum, the registrant shall discuss how it addresses relevant aspects of the [12 Principles of Green Chemistry](#), including how it reduces hazardous chemical synthesis (Principle 3), designs safer chemicals (Principle 4), uses safer solvents and auxiliaries (Principle 5), reduces derivatives (Principle 8), and designs for degradation (Principle 10).

- Where relevant, the registrant shall discuss specific production processes and products that have incorporated these principles.

~~54.58~~ Relevant actions to discuss may include the use of chemicals listed as safer alternatives (e.g., EPA Safer Chemical Ingredients List), use of alternative assessments (e.g., GreenScreen® For Safer Chemicals), and other tools or methods that inform the registrant's development of alternative processes and chemical

Additional References

[Guidance on Information Requirements and Chemical Safety Assessment Chapter R.11: PBT/vPvB assessment
CMR Substances: A first screening – Report 2012](#)

[International Code of Conduct on the Distribution and Use of Pesticides](#)

Genetically Modified Organisms

Description

Some chemical companies produce crop seeds developed using genetically modified organism (GMO) technology. GMO technology has dramatically improved the yields of crops such as corn and soy by altering the crop's resistance to pesticides and herbicides and improving drought tolerance, among other benefits. The adoption of GMO crop technology is significant in the U.S. In other regions, such as some countries in the European Union and China, regulators have implemented bans or quotas on GMO-based crops. Additionally, some consumers have expressed concern over the use of GMO technology in food crops. Thus, companies that produce such technology face both market opportunities and risks from its use, driven by increasing demand for crop technology and regulatory and public perception of GMOs.

RT0101-13. Percentage of products by revenue that contain genetically modified organisms (GMOs)

-55.59 The registrant shall disclose the percentage of its products by revenue that contain genetically modified organisms (GMOs), where:

- GMOs are defined as organisms, with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination, consistent with E.U. Directive 2001/18/EC.

-56.60 The scope of disclosure includes GMOs that are defined by, or subject to, the following:

- E.U. Directive 2001/18/EC;
- Regulation EC 1829/2003;
- Maine HP 0490 LD 718;
- Vermont H. 112 Act 0120;
- Connecticut House Bill 6527; or
- Other U.S. state or federal regulation, as enacted.

-57.61 The percentage is calculated as the revenue from products that contain GMOs divided by total revenue from all products.

Product Design for Use-phase Efficiency

Description

As increasing resource scarcity, climate change, and ~~more stringent~~ regulations drive the need for greater resource efficiency and reduced GHG emissions throughout society, the Chemicals industry stands to benefit from developing products that ~~reduce environmental impacts in the use phase~~ enhance customer efficiency across a multitude of applications. From improving automobile fuel efficiency and reducing emissions through ~~material~~ lightweighting materials optimization to improving the performance of building insulation, chemical processes can facilitate the development of a more efficient, environmentally conscious society. Regulatory requirements ~~of the industry's customers~~ are likely to increase the demand for such products in the medium to long term. Companies that develop cost-effective solutions to address customers' needs for improved efficiency can thus benefit from increased revenues and market share, stronger competitive positioning, and enhanced brand value.

Accounting Metrics

RT0101-14. Revenue from products designed for use-phase resource efficiency

~~58.62~~ The registrant shall disclose its total revenue from products that are designed to increase resource efficiency during their use-phase, where:

- Products designed to increase resource efficiency are defined as those that – through their use – can be shown to improve energy efficiency, eliminate or lower greenhouse gas (GHG) emissions, reduce raw materials consumption, increase product longevity, and/or reduce water consumption.
- The use-phase is defined as the course over which the registrant's product is used by a customer or consumer as a final product and/or the course over which the registrant's product is used by a customer or consumer to generate a final product (e.g., in a manufacturing or production process).

~~59.63~~ A product shall be considered to have been designed to increase use-phase resource efficiency if documentation shows that the registrant has tested, modeled, or otherwise established the increase to resource efficiency its product delivers during its use-phase.

- The scope of disclosure includes products that eliminate emissions during the use-phase, the need for a raw material, or the need for a process component like water.
- The scope of disclosure includes products that impart an incremental improvement to resource efficiency, insofar as the registrant can demonstrate that the improvement is meaningful, such as through alignment with the milestones set forth in Section 5, "Key Sectors" of the European Commission's [Road Map to a Resource Efficient Europe](#) and/or with EU Directive 2012/27/EU.
- The scope of disclosure excludes products that impart improved resource efficiency in an ancillary, indirect, or minimal way (e.g., a conventional product that is slightly lighter than the previous generation of the product).

~~60.64~~ Examples of products that increase resource efficiency include, but are not limited to, insulation materials, high-albedo paints and coating, fuel additives that result in more efficient combustion, energy-efficient lighting

materials, additives or materials that extend the useful-life of use-phase products, materials that enable vehicle lightweighting (e.g., polymers to replace metals), biofuels, solar films, solar shingles, and other renewable energy materials.

Political Spending

Description

Corporate lobbying by chemicals companies can influence environmental or human health laws and regulations that pertain to the manufacture, use, and disposal of chemical substances. The interaction of chemical companies with the legal and regulatory environment can have material impacts on shareholder value, because companies spend significant amounts on lobbying and political contributions, and changes in laws or policies can impact companies' business. Given the increasing consumer interest in product transparency and health concerns related to chemical toxicity and GMOs, efforts to delay associated policy or legislative changes may prove counterproductive to the industry in the long term by creating regulatory uncertainty, and therefore investment uncertainty, or by resulting in higher costs in the future if legislation is reversed. Efforts to influence environmental laws and regulations may also affect companies' reputations and social license to operate. Companies with a well-articulated strategy for engaging with policymakers and regulators—one that is aligned with their goals and activities for long-term sustainable outcomes and accounts for societal externalities—can benefit from a stronger long-term license to operate. Such companies will likely be better prepared for medium- to long-term regulatory adjustments that deal with high-impact global issues.

Accounting Metrics

RT0101-15. Amount of political campaign spending, lobbying expenditures, and contributions to tax-exempt groups, including trade associations

.61 The registrant shall disclose its total monetary contributions (in U.S. dollars) to political campaigns, lobbyists or lobbying organizations, and tax-exempt groups, including trade associations, that aim to influence political campaigns or participate in political lobbying.

.62 The scope of disclosure includes the following:

- Political spending, which includes any direct or indirect contributions or expenditures in support of, or opposition to, a candidate for public office or a ballot measure.
- Any payments made to trade associations or tax-exempt entities that are used to influence a political campaign (including advocacy organizations, commonly classified as social welfare organizations under Section 501(c)(4) of the Internal Revenue Code, or business leagues, chambers of commerce, boards of trade, and similar organizations classified under Section 501(c)(6) of the Internal Revenue Code).
- Any direct or indirect political expenditure (one-time or recurring) that must be reported to the Federal Election Commission, the Internal Revenue Service, or a state disclosure agency.
- Any direct or indirect contributions to registered lobbyists or lobbying organizations, including contributions made to trade organizations that contribute to political lobbying efforts.

RT0101-16. Five largest political, lobbying, or tax-exempt group expenditures

- ~~.63~~ The registrant shall disclose the recipients of its five largest contributions disclosed in RT0101-15, defined as the five largest amounts in aggregate during the fiscal year that were contributed to an individual candidate, organization, ballot measure, or lobbying issue topic.
- ~~.64~~ The registrant shall disclose the amount (in U.S. dollars) contributed to each individual, organization, ballot measure, or lobbying issue topic.
- ~~.65~~ The registrant shall consider lobbying issue topics, at a minimum, to be general lobbying issue codes defined by The Lobbying Disclosure Act of 1995, but should include specific lobbying issues where available.

RT0101-16. Five largest political, lobbying, or tax-exempt group expenditures

- ~~.65~~ The registrant shall disclose the recipients of its five largest contributions disclosed in RT0101-15, defined as the five largest amounts in aggregate during the fiscal year that were contributed to an individual candidate, organization, ballot measure, or lobbying issue topic.
- ~~.66~~ The registrant shall disclose the amount (in U.S. dollars) contributed to each individual, organization, ballot measure, or lobbying issue topic.
- ~~.67~~ The registrant shall consider lobbying issue topics, at a minimum, to be general lobbying issue codes defined by The Lobbying Disclosure Act of 1995, but should include specific lobbying issues where available.

Management of the Legal & Regulatory Environment

Description

The interaction of chemical companies with the legal and regulatory environment can have material impacts on shareholder value because changes in laws or policies can impact companies' business. Given the increasing consumer interest in product transparency and health related to chemicals, efforts to delay associated policy or legislative changes may prove counterproductive to the industry in the long term by creating regulatory uncertainty, and therefore investment uncertainty, or by resulting in higher costs in the future if legislation is reversed. Efforts to influence environmental laws and regulations may also affect companies' reputations and social license to operate. Companies with a well-articulated strategy for engaging with policymakers and regulators—one that is aligned with their goals and activities for long-term sustainable outcomes and accounts for societal externalities—can benefit from a stronger license to operate. Such companies will likely be better prepared for medium- to long-term regulatory adjustments that address high-impact global issues.

Accounting Metrics

TA07-09-01. Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry

.66 The registrant shall identify risks and opportunities it faces related to legislation, regulation, and/or rulemaking, (hereafter referred to collectively as "legal and regulatory environment") related to environmental and social factors which may have a significant financial impact. _____

- The scope shall include existing, emerging, and known future risks and opportunities.
- The scope shall include risks and opportunities that may exist domestically and internationally at the local, state, and federal level.
- The regulatory environment related to environmental and social factors includes, but is not limited to, those related to non-greenhouse gas emissions, greenhouse gas emissions, water withdrawals and effluents, hazardous waste, community impacts, and product lifecycle management and safety, and process and employee safety.

.67 Relevant risks include, but are not limited to, risk of increased compliance costs, risk of policy reversal (e.g., risks associated with changes to existing environmental regulations), risk of loss of financial incentives (e.g., reduction or elimination of tax deductions), risk to reputation due to registrant's stance and actions related to the legal and regulatory environment, risk that the legal and regulatory environment may not be aligned with long-term strategy, and risk of misalignment with the expectations of customers, investors, and other stakeholders.

.68 Relevant opportunities include, but are not limited to, improved financial conditions (e.g., through policies which incentivize Chemical manufacturing activities, etc.), improved community relations due to the registrant's stance and actions related to the legal and regulatory environment, and other benefits due to alignment of the legal and regulatory environment with the registrant's long-term strategy.

.69 The registrant 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 the SASB Chemicals standard that are relevant to the registrant’s business and may have a significant financial impact

.70 In addition to its efforts to influence the legal and regulatory environment, the registrant shall discuss its overall strategy to manage risks and opportunities associated with each aspect of the legal and regulatory environment it has identified.

.71 Any changes it has made or plans to make to its business structure or model;

- The development of new technologies or services; and
- Any changes it has made or plans to make to its operational process, control, or organizational structures.

Health, Safety, and Emergency Management

Description

Technical failure, human error, or external factors such as weather can lead to accidental releases of chemical substances into the environment at processing facilities or during storage and transportation. Furthermore, the combustible nature of chemical substances, combined with high operating temperatures and pressures ~~at chemical facilities involved in manufacturing~~, elevates the risk of explosions, spills, or other emergency situations. These events can harm employees in chemical facilities or people in nearby communities through the release of harmful air emissions or chemical substances, and can cause ~~wide-ranging~~ environmental consequences. Furthermore, the long-term exposure of employees to hazardous chemical substances in the workplace can result in chronic health conditions, ~~including cancer. Companies with poor accident and safety management performance. Companies~~ may face operational disruptions, damage to facilities, and increased compliance and remediation costs in the event of a process incident. ~~Chronic~~ Meanwhile, chronic health conditions amongst workers can result in increased healthcare costs, ~~and litigation, and significant monetary settlements.~~ A company culture that encourages accident prevention and ~~proper accident~~ response and worker health is likely to help ~~companies~~ reduce operational downtime, mitigate costs, ensure workforce productivity, and maintain their license to operate.

Accounting Metrics

RT0101-17. Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)

~~.68.72~~ The registrant shall disclose its process safety performance using the following indicators, consistent with the process safety reporting element of the American Chemistry Council's (ACC) Responsible Care program, further defined in the Center for Chemical Process Safety's "[Process Safety Leading and Lagging Metrics](#)":

- Process Safety Incidents Count (PSIC), which is defined as the total (annual) count of all incidents that meet the definition of a Tier 1 PSI per ANSI/API RP 754.
- Process Safety Total Incident Rate (PSTIR), which is defined as the cumulative (annual) count of incidents normalized by man hours and is calculated as the PSIC multiplied by 200,000 and divided by the total annual hours worked by employees, contractors, and subcontractors.
- Process Safety Incident Severity Rate (PSISR), which is defined as the cumulative (annual) severity-weighted rate of process safety incidents and is calculated as the Total Severity Score for all Process Safety Incidents multiplied by 200,000 and divided by the total annual hours worked by employees, contractors, and subcontractors.

~~.69.73~~ The scope of disclosure includes Process Safety Incidents occurring at company-owned or -operated facilities.

~~70.74~~ The registrant may choose to separately disclose the same incident rates for Tier 2 Process Safety Events, as defined by ANSI/API RP 754 and Center for Chemical Process Safety's "Process Safety Leading and Lagging Metrics."

Note to **RT0101-17**

~~74.75~~ The registrant shall describe incidents with a severity rating of 1 or 2, including their root cause, outcomes, and corrective actions implemented in response (e.g., technology improvements, operator training, etc.).

RT0101-18. Number of transport incidents

~~72.76~~ The registrant shall disclose the total number of transport incidents, where transport incidents are defined consistent with national regulations:

- For operations in the U.S., transport incidents are those that require a [U.S. Department of Transportation 5800 report](#);
- For operations in the E.U., transport incidents are those that require a report based on the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) criteria; or
- For operations in other jurisdictions, transport incidents are defined in accordance with the nationally recognized definition, consistent with the International Council of Chemical Association's (ICCA) Guidance for Reporting Performance.

~~73.77~~ Where a national definition does not exist, a reportable transport incident is defined, irrespective of the chemical products contribution, as an incident when one of the following has occurred, consistent with the ICCA Guidance for Reporting Performance:

- A death or injury leading to intensive medical treatment, a stay in hospital of at least one day, or an absence from work of more than three days.
- Any release of more than 50 kg/L of dangerous goods or more than 1,000 kg/L of non-dangerous goods.
- Any damage of more than 50,000 Euro (including environmental cleanup) resulting from a transport incident.
- An incident leading to direct involvement of authorities and/or emergency services, evacuation of people, or closure of public traffic routes for at least three hours.

~~74.78~~ The registrant shall report distribution incidents for all modes of product transport (e.g., road, rail, ship, etc.).

~~75.79~~ The scope of disclosure includes all distributions for which the registrant has direct oversight as well as those contracted by the registrant to a third party (i.e., Tier 1 contracts).

Note to **RT0101-18**

~~.76.80~~ The registrant shall describe significant transport incidents, including their root cause, outcomes, and corrective actions implemented in response (e.g., technology improvements, driver training, etc.), where:

- Significant transport incidents are considered those that require immediate notice of a hazardous materials incident to a governmental authority, consistent with 49 CFR 171.15.

RT0101-19. Challenges to the Safety Systems indicator rate (Tier 3)

~~.77~~ The registrant shall disclose its rate of Tier 3 “challenges to safety systems” using terms, definitions, and guidance from the ANSI/API RP 754 (Section 7.2).

~~.78~~ Tier 3 indicators may alternatively be referred to as “near miss” events or “high learning value” events.

~~.79~~ A Tier 3 operational situation is defined as a flaw or weakness within internal technical safety systems that led to consequences that fall below the Tier 1 and Tier 2 LOPC impact threshold, such as:

- Demands on safety systems, which are activations (non-manual) of safety systems designed to prevent or mitigate impacts from losses of primary containment, such as mechanical shutdown equipment or pressure relief devices.
- Safe operating limit excursions, which are breaches of safe operating limits for processes beyond which manual or automatic systems return the process to a predetermined safe state.
- Primary containment inspections or testing results outside acceptable limits, which occur when inspection or testing shows that safe primary containment operating limits have been exceeded and require repairs, replacement, or further testing of equipment.
- Near miss incidents, which are incidents that had the potential to result in an LOPC, but that were avoided by circumstance.

~~.80~~ The scope of disclosure includes situations with no actual consequences but recognition that, in other circumstances, further barriers could have been breached and resulted in a Tier 1 or Tier 2 PSE.

~~.81~~ The Tier 3 indicator rate shall be calculated as: $(\text{Total Tier 3 Indicator Count} / \text{Total Hours Worked}) * 200,000$.

~~.82~~ Total hours worked includes employees and contractors.

RT0101-20. (1) Total recordable injury rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees

~~.83.81~~ For registrants whose workforce is entirely U.S.-based, the registrant shall disclose its total recordable injury rate (TRIR) and fatality rate, as calculated and reported in Occupational Safety and Health Administration (OSHA) Form 300.

- OSHA guidelines provide details for the determination of whether an event is a recordable occupational incident as well as definitions for exemptions for incidents that occur in the work environment, but are not occupational.

~~84.82~~ For registrants whose workforce includes non-U.S.-based employees, the registrant shall calculate its TRIR according to the U.S. Bureau of Labor Statistics guidance and/or using the U.S. Bureau of Labor Statistics calculator.

~~85.83~~ The registrant shall disclose its TRIR separately for its direct employees and for contract employees, where:

- Direct employees are all those employees on the registrant's payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers.
- Contract employees are those who are not on the registrant's payroll, but who are supervised by the registrant on a day-to-day basis, including independent contractors and those employed by third parties (e.g., temp agencies, labor brokers, etc.).

~~86.84~~ The scope includes all employees, domestic and foreign.

~~87.85~~ Rates shall be calculated as: (statistic count / total hours worked) * 200,000.

RT0101-21. Discussion of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks

~~88.86~~ The registrant shall discuss its approach to assess, monitor, and reduce exposure of its workforce to long-term (i.e., chronic) human health hazards including, but not limited to, corrosives, sensitizers, hepatotoxins, nephrotoxins, and neurotoxins, as well as known or suspected carcinogens, teratogens, mutagens, and reprotoxins, consistent with the definition of health hazards described by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).

- The workforce includes any personnel conducting company business on behalf of the registrant, including all direct employees and contractors.
- The scope of disclosure shall focus on employees working in production facilities, but should include all employees and contractors, as relevant.

~~89.87~~ Relevant efforts to discuss include, but are not limited to, risk assessments, participation in long-term health studies, completion of occupational exposure limit reviews, implementation of technology to control worker exposure, worker use of personal protective equipment, automation of processes, and phasing out, substituting, or using alternative materials.

~~90.88~~ The registrant may choose to discuss its implementation of relevant safety management systems, including, but not limited to, the measurement of safety and health performance through metrics and obtaining third-party verification of compliance with relevant safety standards (e.g., ANSI Z400.1/Z129.1-2010 - Hazardous Workplace Chemicals - Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation and Responsible Care 14001 Responsible Care Management System).

~~.91.89~~ Additional References

[OSHA Hazard Communication Standard](#) (29 CFR 1910.1200):



RESOURCE TRANSFORMATION SECTOR

AEROSPACE & DEFENSE*

Sustainability Accounting Standard

PROPOSED CHANGES TO PROVISIONAL STANDARDS

EXPOSURE DRAFT

REDLINE OF STANDARD FOR PUBLIC COMMENT

Prepared by the
Sustainability Accounting Standards Board®

October 2017

* Sustainable Industry Classification System™ (SICS™) #RT0201

AEROSPACE & DEFENSE

Sustainability Accounting Standard

About the SASB

The Sustainability Accounting Standards Board (SASB) was founded in 2011 as an independent standard-setting organization. The SASB issues and maintains sustainability accounting standards for 79 industries, focusing on the subset of industry-specific sustainability factors that are reasonably likely to have material financial impacts on companies within that industry. Companies can use the standards to disclose material information to investors in SEC filings, including Forms 10-K, 20-F, and 8-K, as well as S-1 and S-3, in a cost-effective and decision-useful manner. The standards are designed to help companies better comply with existing disclosure obligations, working within the framework of existing U.S. securities laws.

The SASB Standards Board is responsible for developing and issuing the standards, maintaining technical agendas, proposing updates to the standards, and executing the standard-setting process. The SASB staff is responsible for performing research and engaging in consultation on the standards, supporting the work of the Standards Board.

The SASB Foundation, an independent 501(c)3 non-profit, is responsible for the funding and oversight of the SASB, including safeguarding the SASB's independence and integrity through due process oversight and inquiry resolution. The SASB Foundation Board of Directors appoints members of the SASB.

About this Standard

This Standard is an exposure draft presented for public review and comment. **This version is not intended for implementation.**

The public comment period lasts for 90 days, beginning on October 2, 2017, and ending on December 31, 2017. The Standard is subject to change thereafter. SASB Standards are scheduled to be ratified by the SASB in early 2018.

For instructions on providing comments to SASB, please click [here](https://www.sasb.org/public-comment) (<https://www.sasb.org/public-comment>).

SUSTAINABILITY ACCOUNTING STANDARDS BOARD

1045 Sansome Street, Suite 450
San Francisco, CA 94111

www.sasb.org

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Aerospace & Defense industry.

SASB Sustainability Accounting Standards comprise **(1) disclosure guidance and (2) accounting standards or metrics** for use by U.S. and foreign public companies in their disclosures to investors, such as in annual reports and filings with the U.S. Securities and Exchange Commission (SEC), including Forms 10-K, 20-F, 40-F, 10-Q, 8-K and S-1 and S-3. The Standards facilitate the meaningful disclosure of sustainability information that is useful to investors in making decisions on investments and corporate suffrage.¹ The Standards reflect the fact that certain sustainability information is important for assessing the future financial performance of an issuer, particularly over the long term.

SASB Standards identify sustainability topics that are reasonably likely to constitute material information for a company within a particular industry. Company management is responsible for determining whether those identified topics reflect information that is material to investors and should be disclosed in filings, based on that company's specific circumstances. For further details regarding the use of the SASB Standards, in particular guidance on determinations of materiality, please see SASB's Implementation Guide.²

SASB Standards provide companies with sustainability metrics designed to communicate performance on industry-level sustainability topics in a concise, comparable format using existing reporting mechanisms. Companies can use the Standards to help ensure that disclosure is reliable, decision-useful for investors, and cost-effective for issuers.

SASB Standards are intended to constitute "suitable criteria" for purposes of an attestation engagement as defined by Paragraph .A42 of AT-C section 105³ and referenced in AT-C section 395.⁴ "Suitable criteria" have the following attributes:

- *Relevance*—Criteria are relevant to the subject matter.
- *Objectivity*—Criteria are free from bias.
- *Measurability*—Criteria permit reasonably consistent measurements, qualitative or quantitative, of subject matter.
- *Completeness*—Criteria are complete when subject matter prepared in accordance with them does not omit relevant factors that could reasonably be expected to affect decisions of the intended users made on the basis of that subject matter.

Industry Description

Companies in the Aerospace & Defense industry ~~can be divided into three main categories: (1) include~~ commercial aircraft ~~and parts~~ manufacturing, ~~(2) and aircraft parts~~, aerospace and defense parts manufacturing, and ~~(3) defense primes~~ prime contractors. Commercial aircraft manufacturers represent approximately one quarter of industry revenues

¹ The AICPA defines sustainability information in its Guide, [Attestation Engagements on Sustainability Information \(Including Greenhouse Gas Emissions Information\)](#) (Issued July 2017), as follows: "information about sustainability matters (such as economic, environmental, social and governance performance)." It further explains that "sustainability metrics and sustainability indicators are components of sustainability information. Sustainability information may be nonquantitative (narrative), historical, or forward-looking."

² <https://library.sasb.org/implementation-guide>

³ <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AT-C-00105.pdf>

⁴ <http://pcaobus.org/Standards/Attestation/Pages/AT701.aspx>

and sell mainly to commercial airlines, as well as U.S. and foreign governments. Aerospace and defense parts manufacturers represent the largest segment of the industry ~~segment~~ by total revenue and have a similar customer base, but ~~sell~~ their balance shifts the other way, selling mainly to governments. ~~Aerospace and defense operations.~~ Both aerospace and defense companies operate globally and serve both international and domestic customers. Defense primes represent approximately one quarter of total industry revenues and manufacture products including military aircraft, space vehicles, missile systems, ammunition, small arms, naval ships, and other commercial and military vehicles. Their customers consist of various agencies of the U.S. government and related businesses with ~~global~~ operations- around the world. The defense ~~primes~~ prime category also includes firearms manufacturers, ~~which~~ that sell to law enforcement agencies, businesses, distributors, retailers, and consumers.

Users of the SASB Standards

The SASB Standards are intended for use by public companies and by investors to inform investment decisions. The standards facilitate disclosure of financially material sustainability-related information in a concise, comparable, cost-effective, decision-useful format.

The SASB Standards are designed for integration into existing reporting mechanisms, such as SEC filings. This keeps the administrative and cost burden to a minimum. SEC filings include Form 10-K for U.S. companies, Form 20-F for foreign issuers, Form 40-F for Canadian issuers, quarterly reports on Form 10-Q, current reports on Form 8-K, and registration statements on Forms S-1 and S-3. The SASB Standards are also recognized by the European Commission as a suitable framework for companies to provide information to investors pursuant to EU Directive 2014/95/EU. See “Guidelines on non-financial reporting (methodology for reporting non-financial information).”⁵ Thus, SASB standards are a cost-effective way to satisfy both U.S. and European reporting requirements.

SASB evaluates the materiality of sustainability-related topics by using the high threshold of financial materiality that is established under the U.S. securities laws.⁶ Although designed to meet the rigorous disclosure requirements of the U.S. capital markets (thereby producing a high-quality set of evidence-based standards focused on material investor-focused topics), the standards represent a best practice that can be used by companies of all types (public and private) to describe their material sustainability-related risks and opportunities.

Guidance for Disclosure of Sustainability Topics in SEC Filings

1. Industry-Level Sustainability Topics

For the Aerospace & Defense industry, the SASB has identified the following sustainability disclosure topics:

⁵ https://ec.europa.eu/info/publications/170626-non-financial-reporting-guidelines_en

⁶ https://library.sasb.org/materiality_bulletin/

- Energy Management
- Hazardous Waste Management
- Data Security
- Product Safety
- Fuel Economy & Emissions in Use-phase
- Business Ethics
- Supply Chain Management ~~& Materials~~
Sourcing

2. Determination of Materiality

In the U.S., sustainability disclosures are governed by the same laws and regulations that generally govern disclosures by securities issuers. According to the U.S. Supreme Court, a fact is material if, in the event such fact is omitted from a particular disclosure, there is a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of the information made available.⁷

Through a rigorous process of research, review of evidence, and public input, the SASB has identified sustainability topics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within each Sustainable Industry Classification System™ (SICS™) industry.⁸ **However, the issuer must determine what information is (or is reasonably likely to be) material to the reasonable investor.** For further information regarding a process that corporations can use to assess the financial materiality of the sustainability-related topics in SASB standards, please see SASB's Implementation Guide.⁹

3. SEC Requirements Relating to Disclosure of Material Sustainability Information

If a public company determines that certain sustainability information is reasonably likely to be material, it must then determine whether disclosure of some or all of the information under applicable SASB Standards is required under the U.S. federal securities laws. Several provisions of those laws are relevant to sustainability disclosures.

Regulation S-K sets forth certain disclosure requirements associated with Form 10-K and other SEC filings. Item 303 of Regulation S-K requires companies to, among other things, describe in the Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) section of Form 10-K "any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed."¹⁰

Furthermore, the instructions to Item 303 state that the MD&A "shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition."¹¹

⁷ *TSC Industries v. Northway, Inc.*, 426 U.S. 438 (1976).

⁸ https://library.sasb.org/materiality_bulletin/

⁹ <https://library.sasb.org/implementation-guide>

¹⁰ C.F.R. 229.303(Item 303)(a)(3)(ii).

¹¹ SEC [Release Nos. 33-8056; 34-45321; FR-61] Commission Statement about Management's Discussion and Analysis of Financial Condition and Results of Operations: "We also want to remind registrants that disclosure must be both useful and understandable. That is, management should provide the most relevant information and provide it using language and formats that investors can be expected to understand. Registrants should be aware also that investors will often find information relating to a particular matter more meaningful if it is disclosed in a single location, rather than presented in a fragmented manner throughout the filing."

The SEC has provided guidance for companies to use in determining whether a trend or uncertainty should be disclosed. The two-part assessment prescribed by the SEC can be applied to the topics included within this Standard:

- First, a company is not required to make disclosure about a known trend or uncertainty if its management determines that such trend or uncertainty is not reasonably likely to occur.
- Second, if a company's management cannot make a reasonable determination of the likelihood of an event or uncertainty, then disclosure is required "unless management determines that a material effect on the registrant's financial condition or results of operation is not reasonably likely to occur."

Companies should also consider the applicability of other Regulation S-K requirements. Specifically, Item 101 ("Description of Business") requires a company to provide a description of its business and its subsidiaries. Item 103 ("Legal Proceedings") requires a company to describe briefly any material pending or contemplated legal proceedings; instructions to Item 103 provide specific disclosure requirements for administrative or judicial proceedings arising from laws and regulations that target discharge of materials into the environment, or that are primarily for the purpose of protecting the environment. Item 503(c) ("Risk Factors") requires a company to provide discussion of the most significant factors that make an investment in the registrant speculative or risky, clearly stating the risk and specifying how it affects the company.

Finally, as a general matter, Securities Act Rule 408 and Exchange Act Rule 12b-20 require a registrant to disclose, in addition to the information expressly required by law or regulation, "such further material information, if any, as may be necessary to make the required statements, in light of the circumstances under which they are made, not misleading."

4. Where Disclosures Should Be Made in SEC Filings

In using the definition of materiality established under the U.S. federal securities laws, the SASB has identified and developed industry-specific sustainability topics and metrics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within a particular industry. As a general matter, the SASB believes that investors are best served when disclosure of such information is made in SEC filings. An issuer might, for example, make the disclosure in a sub-section of MD&A with a caption, "**Sustainability-Related Information**," with a section that includes the material topics, performance metrics, and management's view with respect to corporate positioning. See SASB's "Mock 10-Ks" for examples of preparing an MD&A using the SASB Standards.¹² Issuers are not precluded from using the Standards elsewhere, such as in stand-alone communications to investors or in sustainability reports (sometimes referred to as corporate social responsibility reports or environmental, social, and governance reports), company websites, or elsewhere. Corporate communication on material topics, including sustainability-related material topics, should be consistent across communication channels. As discussed above, SEC regulations may compel inclusion of material sustainability information in an SEC filing where it is deemed financially material.

The SASB recognizes that sustainability topics are relatively new areas of investor interest, and it may be difficult to determine whether particular sustainability information is material in certain situations. Accordingly, issuers might also consider using the SASB Standards in filings using Form 8-K, Item 8.01 ("Other Events"). This provision states that "The registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not

¹² <http://using.sasb.org/mock-10-k-library/>

otherwise called for by this form, that the registrant deems of importance to security holders.” Making a disclosure under Item 8.01 would not require the issuer to make a decision regarding materiality, and might also provide the company with more time to make the disclosure than is permitted under filing rules applicable to Form 10-K, thereby facilitating the completeness and accuracy of the disclosed information.

When using the Standards, issuers should cite or refer to the relevant SASB Standard.

More detailed guidance on preparing disclosures of material information related to sustainability topics and making topic-level materiality determinations can be found in the **SASB Conceptual Framework**, available for download via <http://www.sasb.org/approach/conceptual-framework/>, and the **SASB Implementation Guide for Companies**, available for download via <https://library.sasb.org/implementation-guide/>.

Guidance on Accounting for Sustainability Topics

The SASB has identified accounting metrics for each sustainability topic included in this Standard. The SASB recommends that companies within this industry consider using these sustainability accounting metrics when preparing disclosures on the sustainability topics identified herein.

When disclosing information related to a sustainability topic identified by this Standard, companies should consider including a narrative description of any material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description might in certain circumstances include a discussion of the following:¹³

- The registrant’s **governance** around the risks and opportunities related to the topic, including board oversight of and management’s role in assessing and managing such risks and opportunities.
- The registrant’s **strategic approach** regarding actual and potential impacts of topic-related risks and opportunities on the organization’s **businesses, strategy, and financial planning**, over the **short, medium, and long term**.
- The registrant’s process to **identify, assess, and manage** topic-related risks, and how these risks are integrated into the registrant’s overall risk management process.
- The registrant’s **use of metrics or targets** to assess and manage topic-related risks and opportunities.
- Data for the registrant’s **last three completed fiscal years** (when available).

The SASB recommends that registrants use SASB Standards specific to their primary industry as identified in SICSTM. If a registrant generates significant revenue from multiple industries, the SASB recommends that it also consider sustainability topics that the SASB has identified for those industries, and disclose the associated SASB accounting metrics.

¹³ These areas for possible additional narrative description are generally aligned with the [Recommendations of the Task Force on Climate-related Financial Disclosures](#), which contains a more extensive discussion of such disclosure matters.

Further, the SASB recommends that companies design, implement, and maintain adequate systems of internal control over sustainability performance information to provide reasonable confidence regarding the achievement of related reporting objectives, such as those relating to the reliability of disclosed information.¹⁴

The SASB takes no position as to whether third-party attestation is necessary to enhance the credibility of the disclosed sustainability information, but as a matter of good governance, the SASB suggests that such assurance be considered.¹⁵

Scope of Disclosure

Unless otherwise specified, the SASB recommends:

- That a registrant disclose information on sustainability topics and metrics for itself and for entities that are consolidated for financial reporting purposes, as defined by accounting principles generally accepted in the United States (“US GAAP”), for consistency with other accompanying information within SEC filings;¹⁶
- That for consolidated entities, disclosures be made, and accounting metrics calculated, for the whole entity, regardless of the size of the minority interest; and
- That information from unconsolidated entities not be included in the computation of SASB accounting metrics. However, the registrant should disclose information about unconsolidated entities to the extent that the registrant considers the information necessary for investors to understand the effect of sustainability topics on the company’s financial condition or operating performance. (Typically, this disclosure would be limited to risks and opportunities associated with these entities.)

Reporting Format

Use of Financial Data

In instances where accounting metrics, activity metrics, and technical protocols in this Standard incorporate financial data (e.g., revenues, cost of sales, expenses recorded and disclosed for fines, etc.), such financial data shall be prepared in accordance with US GAAP, and be consistent with the corresponding financial data reported in the registrant’s SEC filings. Should accounting metrics, activity metrics, and technical protocols in this Standard incorporate disclosure of financial data that is not prepared in accordance with US GAAP, the registrant shall disclose such information in accordance with SEC Regulation G.¹⁷

¹⁴ In this regard, companies are referred to the report of a group of experts in this area. Robert H. Herz, Brad J. Monterio, Jeffrey C. Thomson, Leveraging the COSO Internal Control – Integrated Framework to Improve confidence in Sustainability Performance Data (August 2017).

¹⁵ The AICPA’s Guide (see supra note 1) provides guidance to assist accounting practitioners in performing attestation engagements on sustainability information.

¹⁶ See US GAAP consolidation rules (Section 810).

¹⁷ <https://www.sec.gov/rules/final/33-8176.htm>

Activity Metrics and Normalization

The SASB recognizes that normalizing accounting metrics is important for the analysis of SASB disclosures.

The SASB recommends that a registrant disclose any basic business data that may assist in the accurate evaluation and comparability of disclosure, to the extent that they are not already disclosed in Form 10-K (e.g., revenue, EBITDA, etc.).

Such data—termed “activity metrics”—may include high-level business data, including total number of employees, quantity of products produced or services provided, number of facilities, or number of customers. It may also include industry-specific data such as plant capacity utilization (e.g., for specialty chemical companies), number of transactions (e.g., for Internet media and services companies), hospital bed days (e.g., for health care delivery companies), or proven and probable reserves (e.g., for oil and gas exploration and production companies).

Activity metrics disclosed should:

- Convey contextual information that would not otherwise be apparent from SASB accounting metrics.
- Be deemed generally useful for investors relying on SASB accounting metrics to perform their own calculations and create their own ratios.
- Be explained and consistently disclosed from period to period to the extent that they continue to be relevant. However, a decision to make a voluntary disclosure in one period does not obligate a continuation of that disclosure if it is no longer relevant, or if a better metric becomes available.¹⁸

Where relevant, the SASB recommends specific activity metrics that—at a minimum—should accompany SASB accounting metric disclosures.

Table 1. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Production by reportable segment ¹⁹	Quantitative	Number	RT0201-A
Number of employees	Quantitative	Number	RT0201-B

Units of Measure

Unless specified, disclosures should be reported in International System of Units (SI units).

Uncertainty

The SASB recognizes that there may be inherent uncertainty when measuring or disclosing certain sustainability data and information. This uncertainty may be related to variables such as the reliance on data from third-party reporting

¹⁸ Improving Business Reporting: Insights into Enhancing Voluntary Disclosures, FASB Business Reporting Research Project, January 29, 2001.

¹⁹ Note to **RT0201-A**—Production should be disclosed as the number of units produced by product category, where relevant product categories include (1) ground vehicles, (2) aircraft, (3) marine vehicles, (4) vehicle and aircraft components, and (5) space and weapons systems.

systems and technologies, or the unpredictable nature of climate events. Where uncertainty around a particular disclosure exists, the SASB recommends that the registrant should consider discussing its nature and likelihood.²⁰

Estimates

The SASB recognizes that scientifically-based estimates, such as the reliance on certain conversion factors or the exclusion of *de minimis* values, may occur for certain quantitative disclosures. Where appropriate, the SASB does not discourage the use of estimates or ranges. When using an estimate for a particular disclosure, the SASB expects that the registrant discuss its nature and substantiate its basis.

Timing

Unless otherwise specified, disclosure shall be for the registrant's fiscal year.

Limitations

There is no guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry, or company; therefore, a company must determine for itself the topics that warrant discussion in its SEC filings.

Use of the SASB Standards is voluntary. The Standards are not intended to replace any legal or regulatory requirements that may be applicable to a company's operations. When such laws or regulations address legal or regulatory topics, disclosure under SASB Standards is not meant to supersede those requirements.

Use of the SASB Standards is not required or endorsed by the SEC or various entities governing financial reporting, including the Financial Accounting Standards Board, the Government Accounting Standards Board, or the International Accounting Standards Board.

Forward-Looking Statements

Disclosures on sustainability topics can, in some circumstances, involve discussion of future trends and uncertainties related to the registrant's operations and financial condition, including those influenced by external variables (e.g., environmental, social, regulatory, and political). Companies making these disclosures in SEC filings should familiarize themselves with the safe harbor provisions of Section 27A of the Securities Act, and Section 21E of the Exchange Act, which preclude civil liability for material misstatements or omissions in such statements if the registrant takes certain steps. These include, among other things, identifying the disclosure as "forward-looking," and accompanying such disclosure with "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statements."

Notes on the Sustainability Accounting Standards

The following sections contain the disclosure guidance associated with each accounting metric, including guidance on definitions, scope, accounting, compilation, and presentation.

²⁰ The AICPA's Guide (see *supra* note 1) provides guidance related to measurement uncertainty.

The term “shall” is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms “should” and “may” are used to indicate guidance, which, although not required, provides a recommended means of disclosure.

Table 2. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Energy Management	Total energy consumed, percentage grid electricity, percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	RT0201-01
Hazardous Waste Management	Amount of hazardous waste, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	RT0201-02 TA07-11-01
	Number and aggregate quantity of reportable spills, quantity recovered ²¹	Quantitative	Number, Kilograms (kg)	RT0201-03
Data Security	Number of data security breaches and percentage involving confidential information ²²	Quantitative	Number, Percentage (%)	RT0201-04
	Percentage of operations, by revenue, independently certified to a suitable third-party cybersecurity management standard	Quantitative	Percentage (%)	TA07-12-01
	Discussion of approach to managing data security risks within (a) company operations and (b) products	Discussion and Analysis	n/a	RT0201-05
Product Safety	Number of recalls and total units recalled ²³	Quantitative	Number	RT0201-06
	Number of Airworthiness Directives received and total units affected ²⁴	Quantitative	Number	RT0201-07
	Amount of legal and regulatory fines and settlements associated with product safety ²⁵	Quantitative	U.S. Dollars (\$)	RT0201-08
Fuel Economy & Emissions in Use-phase	Revenue from alternative energy-related products	Quantitative	U.S. Dollars (\$)	RT0201-09
	Discussion of strategies and approach to address fuel economy and greenhouse gas emissions of products	Discussion and Analysis	n/a	RT0201-10
Business Ethics	Amount of legal and regulatory fines and settlements associated with incidents of corruption, bribery, and/or illicit international trade ²⁶	Quantitative	U.S. Dollars (\$)	RT0201-11
	Revenue from countries ranked in the “E” or “F” Band of Transparency International’s Government Defence Anti-Corruption Index	Quantitative	U.S. Dollars (\$)	RT0201-12
	Description of processes to manage business ethics risks throughout the value chain	Discussion and Analysis	n/a	RT0201-13

²¹ Note to **RT0201-03**—The registrant shall discuss its long-term activities to remediate spills that occurred in years prior to the reporting period but for which remediation activities are ongoing.

²² Note to **RT0201-04**—Disclosure shall include a description of the corrective actions taken in response to specific incidents.

²³ Note to **RT0201-06**—Disclosure shall include a discussion of notable recalls, such as those that affected a significant number of units or those related to a serious injury or fatality.

²⁴ Note to **RT0201-07**—The registrant shall discuss notable Airworthiness Directives, such as those that resulted in an Emergency Airworthiness Directive, affected a significant number of products, or were associated with plane grounding(s) or accident(s).

²⁵ Note to **RT0201-08**—Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

²⁶ Note to **RT0201-11**—Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Supply Chain Management & Materials Sourcing	Number of counterfeit parts detected, percentage avoided	Quantitative	Number, Percentage (%)	RT0201-14
	Percentage of materials costs for items containing critical materials	Quantitative	Percentage (%) by COGS	RT0201-15
	Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict free	Quantitative	Percentage (%)	RT0201-16
	Discussion of the management of risks associated with the use of critical materials and conflict minerals	Discussion and Analysis	n/a	RT0201-17 <u>TA07-14-01</u>

Energy Management

Description

Energy is a critical input for value creation for aerospace and defense companies due to energy-intensive manufacturing processes. Purchased electricity represents the largest share of energy expenditures in the industry, followed by purchased fuels. ~~As electricity production contributes significant GHG emissions and air pollution through the combustion of fossil fuels at the utility level, the cost of grid electricity may increase due to mitigation efforts directed at utilities. Similarly, as the extraction, production, and use of fossil fuels contribute to significant GHG emissions and environmental externalities, the cost of purchased fuel may also increase due to mitigation efforts. The likelihood and magnitude of impact of climate change~~The likelihood and magnitude of impact of long-term emissions regulations on aerospace and defense manufacturers will vary depending on the location of manufacturing facilities in the U.S. and abroad. Aerospace and defense companies' energy mix, including the use of electricity generated on-site ~~rather than~~, 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 companies' profitability and risk profile.

Accounting Metrics

RT0201-01. Total energy consumed, percentage grid electricity, percentage renewable

- .01 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or their multiples.
 - The scope includes energy purchased from sources external to the organization or produced by the organization itself (self-generated).
 - The scope includes only energy consumed by entities owned or controlled by the organization.
 - The scope includes energy from all sources, including direct fuel usage, purchased electricity, and heating, cooling, and steam energy.
- .02 In calculating energy consumption from fuels and biofuels, the registrant 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).
- .03 The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.
- .04 The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.
- .05 The scope of renewable energy includes renewable fuel the registrant consumes and renewable energy the registrant directly produces, purchases through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs), or for which Green-e Energy Certified RECs are paired with grid electricity.

- For any renewable electricity generated on-site, any RECs must be retained (i.e., not sold) and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- For renewable PPAs, the agreement must explicitly include and convey that RECs be retained and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- The renewable portion of the electricity grid mix that is outside of the control or influence of the registrant is excluded from disclosure.²⁷
- Renewable energy is defined as energy from sources that are capable of being replenished in a short time through ecological cycles, such as geothermal, wind, solar, hydro, and biomass.

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

- Energy from hydro sources that are certified by the Low Impact Hydropower Institute or that are eligible for a state Renewable Portfolio Standard.
- Energy from biomass sources is limited to that from 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 renewables” according to the Green-e Energy National Standard Version 2.5 (2014), and materials that are eligible for a state Renewable Portfolio Standard.

.07 The registrant 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 kWh to gigajoules (including for electricity from solar or wind energy).

²⁷ SASB recognizes that RECs reflect the environmental attributes of renewable energy that have been introduced to the grid, and that a premium has been paid by the purchaser of the REC to enable generation of renewable energy beyond any renewable energy already in the grid mix, absent the market for RECs.

Hazardous Waste Management

Description

Aerospace and defense companies face regulatory and operational challenges in managing their manufacturing waste, as many of these substances ~~can be hazardous to human health and the environment and therefore~~ are subject to hazardous waste regulations within the U.S. and internationally. For example, the Resource Conservation and Recovery Act (RCRA) regulates generation, transport, treatment, storage, and disposal of hazardous and solid waste within the U.S. Hazardous wastes generated by aerospace and defense manufacturing include metals, spent acids, caustics, solid catalysts, and wastewater treatment sludge. Proper processing and disposal of hazardous waste materials is essential to limiting risk of remediation liabilities, ~~finer, regulations, and possible loss of contracts. In addition, companies that are able to limit the waste of input materials and recycle the waste generated may achieve significant cost savings and improve profitability or regulatory penalties.~~

Accounting Metrics

~~RT0201-02TA07-11-01.~~ Amount of hazardous waste, percentage recycled

~~.08.~~ The ~~registrant shall calculate and disclose the~~ amount of hazardous waste ~~shall be calculated-generated~~ (in metric tons).

- ~~Hazardous wastes are defined per the legal or regulatory frameworks applicable within the jurisdictions where: the waste is generated.~~
 - ~~Hazardous waste-The registrant shall include both hazardous secondary materials defined according to 40 CFR 260.10 and materials that meet the definition of hazardous waste for the five largest source jurisdictions of hazardous waste under Subtitle C-generation, as well as the percentage of total hazardous waste generated in each of these jurisdictions.~~
 - ~~The registrant should consider the use of the U.S. Environmental Protection Agency's (EPA) Resource Conservation and Recovery Act (RCRA), according to 40 CFR 261.3) or European Commission Directives on Hazardous Waste for the purposes of defining hazardous waste for operations that are located in jurisdictions other than those to which these frameworks apply.~~
- ~~Disclosure corresponds with Global Reporting Initiative Effluents and Waste 2016 Disclosure 306-2 a. Hazardous wastes include those that display the following characteristics: ignitability, corrosivity, reactivity, or toxicity.~~

~~.08.09.~~ The percentage recycled shall be calculated as the weight (in metric tons) of hazardous waste ~~material~~ that was ~~reused or reclaimed, plus the weight recycled or remanufactured (through treatment or processing) by the registrant, plus the amount sent externally for further recycling,~~ divided by the total weight of hazardous waste ~~material, where:~~ (in metric tons).

- ~~Recycled hazardous wastes shall be categorized per laws applicable within the jurisdictions where the waste is recycled if it is used, reused, or reclaimed.~~

~~Disclosure corresponds with Global Reporting Initiative [Effluents and Waste 2016](#) Disclosure 306-2 a. ii.~~

- ~~Reclaimed materials are defined as those processed to recover or regenerate a usable product, consistent with . Common hazardous waste reclamation activities involve recovery of spent solvents (e.g., recovery of acetone) or metals (e.g., recovery of lead).~~
- ~~Reused materials are defined as those recovered products or components of products that are used for the same purpose for which they were conceived.~~
- ~~Recycled and remanufactured materials are defined as waste materials that have been reprocessed or treated by means of production or manufacturing processes and made into a final product, or made into a component for incorporation into a product.~~
- ~~Materials sent for further recycling include those materials that are transferred to a third party for the express purpose of reuse, recycling, or refurbishment.~~
- ~~The scope of recycled and remanufactured products includes primary recycled materials, co-products (outputs of equal value to primary recycled materials), and by-products (outputs of lesser value than primary recycled materials).~~
- ~~Portions of products and materials that are disposed of in landfills are not considered recycled; only the portions of products that are directly incorporated into new products, co-products, or by-products shall be included in the percentage recycled.~~
- ~~Materials incinerated, including for energy recovery, are not considered reused or recycled. Energy recovery is defined as the use of combustible waste as a means to generate energy through direct incineration, with or without other waste, but with recovery of the heat.~~

~~09 Electronic waste material (e-waste) shall be considered recycled only if the registrant can demonstrate that this material was transferred to entities with third-party certification to a standard for e-waste recycling, such as Basel Action Network's e-Steward® standard or the U.S. EPA's Responsible Recycling Practices (R2) standard.~~

- ~~The registrant shall disclose the standard(s) with which the entities it has transferred e-waste are compliant: _____~~

RT0201-03. Number and aggregate quantity of reportable spills, quantity recovered

.10 The registrant shall disclose the total number and quantity (in kilograms) of reportable spills, where:

- Reportable spills are defined as any release of a hazardous substance in an amount equal to or greater than the reportable quantity as listed in Table 302.4 of 40 CFR Part 302.4 of the U.S. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), including consideration of reportable quantities of mixtures and solutions as defined under 40 CFR Part 302.6 (b)(1).
- The number of reportable spills shall include any leaks, emissions, discharges, injections, disposals, and abandonment releases over time, counted once at the time identified, consistent with CERCLA definition of release (42 USC 9601(22)) and guidelines for reporting requirements (40 CFR Part 302).
- The aggregate quantity reported shall represent the total quantity of material released to the environment, and shall not be reduced by the amount of such hazardous substances that are subsequently recovered, evaporated, or otherwise lost.
- The scope of disclosure includes all spills, even those in jurisdictions that are not subject to regulation under CERCLA.

.11 The registrant shall calculate the quantity of spills recovered as the quantity of spilled hazardous substances (in kilograms) removed from the environment through short-term (i.e., less than one year from time of spill) release response activities, excluding:

- Amounts that were recovered during longer-term (i.e., more than one year from time of spill) remediation at spill sites.
- Amounts that evaporated, burned, or were dispersed.

.12 The registrant may choose to disclose releases to soil and water separately. A release that qualifies as a release to both soil and water should be reported as a single release to water, with the volume properly apportioned to soil and water.

Note to RT0201-03

.13 Where applicable, the registrant shall discuss its activities to remediate spills that occurred in years prior to the disclosure period but for which remediation activities are ongoing and long-term.

.14 Relevant activities include, but are not limited to, land-use controls, site monitoring, site maintenance, and continued cleanup.

Additional References

~~For guidance on the “legitimate recycling” of hazardous waste see 40 CFR 260.43.~~

Data Security

Description

Companies in the Aerospace & Defense industry have access to ~~highly classified~~sensitive military information and play a critical role in the execution and protection of military strategy. As such, companies in this industry are ~~prime targets at a high risk~~ for ~~hackers motivated to learn military secrets~~cyberattacks. A data security breach can be costly for a company, its clients, and the public when government defense operations are compromised. This issue also applies to aircraft manufacturers as technological advances may make aircraft susceptible to ~~cyber attackers~~cyberattacks. Ensuring data security may require aerospace and defense companies to invest in R&D research and development and increase ~~CapEx~~capital expenditures in the short to medium term to improve the security of their facilities systems and their products. Significant disruptions or security breaches are also likely to impair intangible assets through reputational damage, ~~and can lead to a loss in customer confidence.~~ ~~Subsequently, companies could lose market share and revenue if customers switch to more secure solutions.~~

Accounting Metrics

RT0201-04. Number of data security breaches and percentage involving confidential information

- .15 The registrant shall calculate and disclose the total number of data security breaches, which are defined as instances of unauthorized acquisition, access, use, or disclosure of protected information.
- .16 The scope of disclosure shall be limited to data security breaches, cybersecurity risks, and incidents that resulted in the registrant's business processes deviating from its expected outcomes for confidentiality, integrity, and availability.
 - The scope of disclosure shall include incidents of unauthorized acquisition or acquisition without valid authorization, resulting from people, process, or technology deficiencies or failures.
 - The scope of disclosure shall exclude disruptions of service due to equipment failures.
- .17 The registrant shall disclose the percentage of data security breaches in which confidential information was breached, where confidential information includes, but is not limited to:
 - Confidential Business Information (CBI), defined, consistent with 19 CFR 201.6, as information that concerns or relates to trade secrets, processes, operations, identification of customers, inventories, or other information of commercial value, the disclosure of which is likely to have the effect of causing substantial harm to the competitive position of the person, firm, partnership, or corporation from which the information was obtained. Confidential business information includes "proprietary information" within the meaning of section 777(b) of the Tariff Act of 1930 ([19 U.S.C. 1677f\(b\)](#)).
 - Classified national security information, defined as information that has been determined pursuant to Executive Order 13526 or any predecessor order to require protection against unauthorized disclosure and is marked to indicate its classified status when in documentary form.

- Personally Identifiable Information (PII), defined according to the definition established in [Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information](#) (GAO Report 08-536, May 2008) as any information about an individual that is maintained by an entity, including (1) any information that can be used to distinguish or trace an individual's identity, such as name, Social Security number, date and place of birth, mother's maiden name, or biometric records; and (2) any other information that is linked or linkable to an individual, such as medical, educational, financial, and employment information.
- .18 The scope of disclosure is limited to breaches in which customers were notified of the breach, either as required contractually or by law, or disclosures made voluntarily by the registrant.
- .19 Disclosure shall include incidents in which encrypted data were acquired with an encryption key that was also acquired.
- .20 The registrant may delay disclosure if a law enforcement agency has determined that notification impedes a criminal investigation until the law enforcement agency determines that such notification does not compromise such investigation.
- .21 Disclosure shall be additional but complementary to the U.S. Security and Exchange Commission's (SEC) [CF Disclosure Guidance: Topic No. 2, Cybersecurity](#).
- At a minimum, this includes instances when the costs or other consequences associated with one or more known incidents—or the risk of potential incidents—represents a material event, trend, or uncertainty that is reasonably likely to have a material effect on the registrant's results of operations, liquidity, or financial condition, or would cause reported financial information not to be necessarily indicative of future operating results or financial condition (e.g., theft of intellectual property, reduced revenue, increased cybersecurity protection expenditure, litigation costs, etc.).

Note to **RT0201-04**

- .22 The registrant shall describe the corrective actions taken in response to specific incidents, such as changes in operations, management, processes, products, business partners, training, or technology.
- .23 All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself will not compromise the registrant's ability to maintain data privacy and security.

TA07-12-01. Percentage of operations, by revenue, independently certified to a suitable third-party cybersecurity management standard

- .24 The percentage shall be calculated as revenue generated from products which are certified to a suitable third-party cybersecurity management standard divided by the total revenue generated from all products that are eligible for such certifications.

.25 Suitable third-party cybersecurity management standards shall exhibit the following characteristics²⁸.

- Explicit purpose of the standard is to aid companies in identifying cybersecurity threats and preventing, responding to, and remediating cybersecurity incidents;
- Be developed by credible subject matter experts; and
- Be developed with a suitable public exposure process.

.26 Third-party cybersecurity management standards include, but are not limited to, the following:

- International Standards Organization / International Electrotechnical Commission 27000-series
- The American Institute of Certified Public Accountants' (AICPA) Service Organization Controls (SOC) reports
- ISACA's COBIT 5

.27 Operations that are eligible to be certified include, but are not limited to, operations that involve the transfer and/or storage of personal information belonging to customers and/or employees.

.28 The registrant shall disclose the standards used when calculating the percentage of the overall amount of operations by revenue certified to third-party cybersecurity management standards as well as the percentage certified to each standard.

.29 For company operations that meet multiple cybersecurity management standards, the registrant shall not account for the revenue more than once when calculating the total percentage.

RT0201-05. Discussion of approach to managing data security risks within (a) company operations and (b) products

.24.30 The registrant shall discuss its approach to identifying, addressing, and managing data security risks (a) associated with its own operations and (b) associated with its products.

.25.31 For data security risks that relate to the registrant's operations, the registrant shall describe how it identifies and prioritizes threats and vulnerabilities in its information systems that pose a data security threat, where

- A threat is defined as any circumstance or event with the potential to adversely impact organizational operations (including mission, functions, image, or reputation), organizational assets, individuals, other organizations, or national security through an information system via unauthorized access, destruction, disclosure, or modification of information and/or denial of service.
- A vulnerability is defined as a weakness in an information system, system security procedures, internal controls, or implementation that could be exploited by a data security threat source.

²⁸ An example of a suitable third-party cybersecurity management system is ISO/IEC 27001 and its related 27XXX family of standards and controls characteristics are based on Paragraph .25 of AT Section 101

~~26.32~~ The registrant shall describe how it addresses and manages the threats and vulnerabilities it has identified, including, but not limited to, operational procedures, management processes, structure of products, selection of business partners, employee training, and use of technology.

~~27.33~~ The registrant should discuss trends it has observed in type, frequency, and origination of attacks to its data security and information systems.

~~28.34~~ Disclosure shall be additional but complementary to the disclosure of preparation, detection, containment, and post-incident activity according to the U.S. Security and Exchange Commission's (SEC) [CF Disclosure Guidance: Topic No. 2, Cybersecurity](#).

- At a minimum, this includes instances when the costs or other consequences associated with one or more known incidents—or the risk of potential incidents—represents a material event, trend, or uncertainty that is reasonably likely to have a material effect on the registrant's results of operations, liquidity, or financial condition or would cause reported financial information not to be necessarily indicative of future operating results or financial condition (e.g., reduced revenue, increased cybersecurity protection expenditure, litigation costs, etc.).

~~29.35~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces but disclosure itself will not compromise the registrant's ability to maintain data privacy and security.

~~30.36~~ The registrant may choose to describe the degree to which its management approach is aligned with an external standard or framework for managing data security, such as:

- ISO/IEC 27001:2013 – Information technology – Security techniques – Information security management systems – Requirements
- "[Framework for Improving Critical Infrastructure Cybersecurity, Version 1.0](#)," February 12, 2014, National Institute of Standards and Technology (NIST)

~~31.37~~ For data security risks associated with its products, the registrant shall discuss its approach to identifying, eliminating, and managing these risks.

~~32.38~~ The scope of disclosure shall include a discussion of all stages of the product lifecycle, as relevant, including product design, the manufacturing supply chain, product distribution, the product ~~use phase~~ use-phase, and end-of-life management.

~~33.39~~ The registrant shall discuss how it identifies and mitigates data security risks that may be present within its manufacturing supply chain, where:

- Examples of data security risks in the supply chain may include, but are not limited to, weaknesses in supplier information systems, risk of "backdoors" being inserted into products, or counterfeit products, components, or parts that create a data security risk.
- Examples of mitigation strategies may include, but are not limited to, hardware-based security considerations integrated into the product design and development process, management systems required of suppliers, the use of cybersecurity specialists, "ethical hacking," and supply chain controls.

34.40 The registrant shall discuss how it manages security flaws, bugs, and systems weaknesses that are detected in its products after product distribution and use.

- Disclosure should include a discussion of the effects of such incidents, including costs for remediation and impacts on future business.
- Disclosure should include a discussion of the management process for corrective actions.

35.41 Where relevant, the registrant should describe its products and services that specifically enable enhanced data security for customers or features that it integrates into existing products to specifically enhance data security.

- Examples of security-related products and services include hardware-based encryption products, multi-factor authentication devices (such as security tokens or biometric scanners), information assurance systems, secure communications systems, intelligence-driven computer network defense systems, penetration testing, and threat monitoring.

Product Safety

Description

~~Aerospace and defense products expose users and civilians to dramatic risk through low-probability but high-impact product accidents. For commercial aircraft manufacturing and aerospace and defense parts companies, passenger and cargo safety is paramount. Through proper design, as well as~~Product safety is an important consideration for Aerospace & Defense companies given the industry's key role in both commercial aviation and military operations. Product safety incidents are low-probability events that could result in direct or indirect financial impacts, including increased costs or reputational effects. Through product design and ongoing customer engagement involving maintenance and accident investigations, companies in this industry can ~~improve~~maintain strong performance on product safety. ~~Companies with poor product quality and safety may experience~~ over the long-term, mitigating potential financial consequences such as revenue loss due to ~~damaged reputation, repeated safety incidents or recalls,~~ or fines.

Accounting Metrics

RT0201-06. Number of recalls and total units recalled

~~36.42~~ The registrant shall disclose the total number of product-safety-related recalls, including those that are voluntary and involuntary, where:

- A recall is defined, consistent with the definition in the U.S. Consumer Product Safety Commission's [Recall Handbook](#), as any repair, replacement, refund, or notice/warning program intended to protect consumers from products that present a safety risk.
- Involuntary recalls are those required by regulatory agencies, and are issued when a product does not comply with regulatory safety standards, or when there is a safety-related defect in a product.
- Voluntary recalls are those initiated by the registrant in order to take products off the market.

~~37.43~~ The registrant shall disclose the total number of units recalled during the fiscal year.

~~38.44~~ The scope excludes disclosure of products provided to customers for the explicit purpose of testing, such as those products created for prototype testing related to governmental contracts.

~~39.45~~ The registrant may choose, in addition to total units recalled, to disclose the percentage of recalls that were (1) voluntarily and (2) involuntarily issued.

Note to RT0201-06

~~40.46~~ The registrant shall discuss notable recalls, such as those that affected a significant number of products or those related to serious injury or fatality.

~~41.47~~ For such recalls, the registrant should provide:

- Description and cause of the recall issue

- The total number of units recalled
- The cost to remedy the issue (in U.S. dollars)
- Whether the recall was voluntary or involuntary
- Corrective actions
- Any other significant outcomes (e.g., legal proceedings, fatalities, etc.)

RT0201-07. Number of Airworthiness Directives received and total units affected

~~42.48~~ The registrant shall disclose the number of unique Airworthiness Directives it received from aviation authorities and the total number of units affected, where:

- An Airworthiness Directive is a legally enforceable rule issued by the Federal Aviation Administration (FAA), the Department of Defense (DoD), or foreign equivalent that applies to aircraft, aircraft engines, propellers, and appliances. The registrant shall disclose the total number of units affected by each Airworthiness Directive, where:
- Total number of units affected is defined as the combined quantity of products and parts that were subject to part of any Airworthiness Directive that the registrant received during the fiscal year.

~~43.49~~ Relevant national and international Airworthiness Directives include, but are not limited to, those found in the following databases:

- FAA-regulated Airworthiness Directives, available [here](#)
- European Aviation Safety Agency-regulated Airworthiness Directives, available [here](#)
- Australian Civil Aviation Safety Authority-regulated Airworthiness Directives, available [here](#)
- Japanese Ministry of Land, Infrastructure, Transport, and Tourism-regulated Airworthiness Directives, available [here](#)

Note to **RT0201-07**

~~44.50~~ The registrant shall discuss notable Airworthiness Directives, such as those that resulted in an Emergency Airworthiness Directive, affected a significant number of products, or were associated with plane grounding(s) or accident(s).

~~45.51~~ For such Airworthiness Directives, the registrant should provide:

- Description and cause of the issue
- The total number of units affected
- The cost to remedy the issue (in U.S. dollars)

- Corrective actions
- Any other significant outcomes (e.g., legal proceedings, fatalities, etc.)

RT0201-08. Amount of legal and regulatory fines and settlements associated with product safety

~~46.52~~ The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with incidents relating to product safety, including, but not limited to, violations of the Federal Aviation Act, the Consumer Product Safety Act, the U.S. National Electrical Code, and Occupational Safety and Health Administration (OSHA) Safety Standards (such as the requirement for testing and certification by a Nationally Recognized Testing Laboratory [NRTL] under 29 CFR Part 1910 or by a Qualified Testing Laboratory [QTL] under 29 CFR Part 1926).

~~47.53~~ Disclosure shall include civil actions (e.g., civil judgment, settlements, or regulatory penalties) and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by any entity (government, businesses, or individuals).

Note to **RT0201-08**

~~48.54~~ The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., inadequate testing or certification, etc.) of fines and settlements.

~~49.55~~ The registrant shall describe any corrective actions it has implemented as a result of each incident. These may include, but are not limited to, specific changes in operations, management, processes, products, business partners, training, or technology.

~~50.56~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself will not compromise the registrant's ability to maintain data privacy and security. Sentence

Additional References

[FAA Airworthiness Directives](#)

Fuel Economy & Emissions in Use-phase

Description

Customer and regulatory concern about climate change and other environmental impacts is increasing the demand for energy-efficient and alternative energy products in the Aerospace & Defense industry. Many of the industry's products release ~~significant amounts of~~ greenhouse gases (GHGs) and other air emissions during use. As the designers and manufacturers of most of the global aerospace and defense transportation fleet, companies in this industry have a unique opportunity to support many industries and government agencies that are striving to meet increasing GHG and fuel-management goals and imperatives. Products with higher fuel economy and lower use-phase emissions are well-positioned to capture expanding market share and adapt to changing customer preferences and regulations around fuel economy and emissions.

Accounting Metrics

RT0201-09. Revenue from alternative energy-related products

~~51.57~~ The registrant shall disclose its total revenue from the sale of alternative energy-related products, where:

- Alternative energy-related products include products such as vehicles, vehicle components, and stationary power generation equipment that rely on alternative fuel or energy as a primary means of propulsion and/or energy production.
- Alternative energy and fuel includes:
 - Renewable fuel and energy, which is defined as that from sources that are capable of being replenished in a short time through ecological cycles, such as geothermal, wind, solar, hydroelectric, and biomass (including ethanol, first-generation biofuels, and advanced biofuels).
 - Hydrogen fuel and fuel cells including those that operate using natural gas, propane, and methanol.
- Electric, hybrid electric, and dual-fueled products for which one of the fuel sources is an alternative fuel shall be considered within the scope of disclosure.

RT0201-10. Discussion of strategies and approach to address fuel economy and greenhouse gas emissions of products

~~52.58~~ The registrant shall discuss its strategies and approach to improving the fuel economy and reducing the use-phase greenhouse gas (GHG) emissions of its products.

~~53.59~~ 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).

-54.60 Relevant technologies to discuss include, but are not limited to, those related to materials design and engineering, advanced powertrains, renewable fuels, energy storage and batteries, aerodynamic design, and products and fuels that otherwise result in reduced GHG emissions, where:

- Advanced powertrain technologies include vehicles and vehicle components that are electric, hybrid electric, plug-in hybrid, dual-fuel, and zero-emissions (e.g., fuel cell).
- Renewable fuels and energy technologies are those that operate on sources that are capable of being replenished in a short time through ecological cycles, including geothermal, wind, solar, hydroelectric, and biomass (including ethanol, first-generation biofuels, and advanced biofuels).
- Products that result in reduced GHG emissions include any vehicle or technology that achieves a significant reduction in petroleum consumption as well as advanced lean burn technology vehicles and technologies, as described in the U.S. National Defense Authorization Act of 2008.
- Fuels that result in reduced GHG emissions further include denatured alcohol, methanol, mixtures containing up to 85 percent methanol or denatured ethanol, natural gas, and propane (liquefied petroleum gas), as described in the U.S. Energy Policy Act (EPA) of 2005.
- Where relevant, the registrant shall discuss the technologies it is prioritizing to improve the fuel economy and reduce the GHG emissions of its products, such as the specific type of fuel systems it is developing (e.g., hybrid, electric, or fuel cell).

-55.61 The registrant shall discuss the factors influencing these efforts, such as meeting civil customer demand, alignment with industry initiatives, and/or meeting requirements of federal procurement programs and initiatives, where:

- Relevant programs and initiatives to discuss include, but are not limited to, Executive Order 13514, International Civil Aviation Organization Resolution A38-18, and the Marine Corps Medium Tactical Vehicle Replacement initiative.

-56.62 The registrant should discuss the benchmarks it uses to measure improvements in product fuel efficiency for relevant vehicles and/or vehicle system segments, including a discussion of targets for fuel efficiency improvements.

-57.63 The registrant should provide measurements of fuel efficiency and fuel efficiency improvements for its relevant vehicle and/or vehicle systems segments.

- Measurements of fuel efficiency and fuel efficiency improvements may include:
 - Inherent fuel efficiency measurements, such as miles per gallon for vehicles and vessels and 1/Specific Air Range for aerospace vehicles; or
 - Year-over-year fuel efficiency improvements.

-58.64 The registrant may discuss how customer demand and requirements affect fuel efficiency measures and improvements, where relevant.

Business Ethics

Description

Aerospace and defense companies are ~~particularly~~ vulnerable to regulatory scrutiny of business ethics and export practices because of their frequent interactions with U.S. and foreign governments as well as global corporate customers. The contract bidding process for aerospace and defense products and services provides opportunities for cooperative behavior to assist in obtaining or retaining business, ~~however~~. However, these same practices can also result in corruption and bribery. Companies in this industry have ~~often~~ been found in violation of corruption and anti-bribery laws such as the Foreign Corrupt Practices Act (FCPA) and the U.K. Bribery Act. They are under increasing pressure to ensure that their governance structures and practices can prevent corruption and participation—whether willful or unintentional—in illegal or unethical payments to government officials, or exertion of unfair influence through gifts or other means. Operating in corruption-prone countries can exacerbate these risks. Unethical practices may jeopardize future revenue growth due to reputational risks and can result in significant legal costs and liabilities.

Accounting Metrics

RT0201-11. Amount of legal and regulatory fines and settlements associated with incidents of corruption, bribery, and/or illicit international trade

~~59.65~~ The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with incidents of corruption, bribery, and/or illicit international trade, including, but not limited to, violations of the following:

- Foreign Corrupt Practices Act of 1977 (FCPA) (15 U.S.C. § 78dd-1, *et seq.*)
- Arms Export Control Act (AECA)
- Export Administration Regulations (EAR), 15 C.F.R. Parts 730–774
- Immigration and Customs Enforcement (ICE)
- International Traffic in Arms Regulations (ITAR), 22 C.F.R. Parts 120–130
- U.S. Munitions List (USML) (ITAR Part 121)

~~60.66~~ Disclosure shall include civil actions (e.g., civil judgment, settlements, or regulatory penalties) and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by any entity (government, businesses, or individuals).

Note to **RT0201-11**

~~61.67~~ The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., bribing an official, etc.) of fines and settlements.

~~-62.68~~ The registrant shall describe any corrective actions it has implemented as a result of each incident. This may include, but is not limited to, specific changes in operations, management, processes, products, business partners, training, or technology.

~~-63.69~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself will not compromise the registrant's ability to maintain data privacy and security.

RT0201-12. Revenue from countries ranked in the "E" or "F" Band of Transparency International's Government Defence Anti-Corruption Index

~~-64.70~~ The registrant shall disclose the amount of revenue from countries scored in the "E" or "F" band of Transparency International's Government Defence Anti-Corruption Index.

- Transparency International's Government Defence Anti-Corruption Index defines bands "E" and "F" respectively, as having "Very High" and "Critical" levels of risk of corruption.

~~-65.71~~ The registrant shall calculate its disclosure according to the scoring in the most current available version of the Government Defence Anti-Corruption Index at the close of its fiscal year via Transparency International's publicly accessible [website](#).

~~-66.72~~ The registrant may choose to provide discussion around operations that are located in countries with "E" or "F" scores in the index but that present low business ethics risks. The registrant may choose to provide similar discussion for operations located in countries that are not scored in the "E" or "F" Band of the index but that present unique or high business ethics risks.

RT0201-13. Description of processes to manage business ethics risks throughout the value chain

~~-67.73~~ The registrant shall discuss its processes and due diligence procedures for assessing and managing risks relating to business ethics that it faces within the scope of its own operations as well as those associated with business partners in its value chain.

~~-68.74~~ Relevant processes to discuss include, but are not limited to, employee awareness programs, internal mechanisms for reporting and following up on suspected violations, anti-corruption policies, and participation in the International Forum on Business Ethical Conduct (IFBEC).

~~-69.75~~ Relevant business ethics risks include bribery, as regulated by the Foreign Corrupt Practices Act (FCPA) and the International Traffic in Arms Regulations (ITAR); corruption, as regulated by the FCPA; and illicit arms trade, as regulated by the ITAR, the Export Administration Regulations (EAR), and Defense Offset Disclosures Act.

~~-70.76~~ Relevant business partners include customers, suppliers, contractors, subcontractors, and joint-venture partners.

~~-71.77~~ The registrant shall discuss areas of its operations that are at the highest risk for corruption and bribery occurrences, such as those operations in countries with low rankings in Transparency International's [Government Defence Anti-Corruption Index](#).

~~-72.78~~ The registrant may choose to discuss the implementation of one or more of the following:

- Defense Industry Initiative on Business Ethics and Conduct (DII) principles
- Key Organization for Economic Co-operation and Development (OECD) guidelines
- International Chamber of Commerce (ICC) Rules of Conduct against Extortion and Bribery
- Transparency International Business Principles for Countering Bribery
- United Nations Global Compact 10th Principle
- World Economic Forum (WEF) Partnering Against Corruption Initiative (PACI)
- TRACE International TRACE Standard

Supply Chain Management & Materials Sourcing

Description

Aerospace and defense companies are exposed to supply chain risks ~~when rare earth~~ from the sourcing of critical materials or ~~“conflict” minerals and metals are used in~~ counterfeit products. Counterfeit components can lead to product malfunctions and compromised safety and security. Proactive supply chain ~~audits and~~ management will help insulate companies from reputational and regulatory risk. Sourcing risks associated with rare metals and conflict minerals are due to a low substitution ratio, concentration of deposits in only a few countries, and geopolitical considerations. Companies in this industry also face competition due to increasing global demand for these minerals from other sectors, which can result in significant price increases ~~and/or~~ supply risks. There is ~~also a risk that~~ additionally the potential for counterfeit or compromised products ~~can~~ enter the supply chain of aerospace and defense companies, affecting product performance and safety. Companies ~~that are able to limit the use with robust supply chain management processes can ensure adequate supplies of critical and conflict~~ key materials, ~~as well as securing their supply,~~ will not only minimize environmental and social externalities related to extraction, but also protect themselves from supply disruptions and volatile input prices. and reduce the likelihood of acquiring counterfeit products, mitigating the risk of financial or reputational effects.

Accounting Metrics

RT0201-14. Number of counterfeit parts detected, percentage avoided

~~73.79~~ The registrant shall disclose the total number of counterfeit parts or suspected counterfeit parts that were detected in its operations, where:

- Counterfeit parts and suspected counterfeit parts are defined according to definitions contained in 48 CFR Part 252.246–7007, Contractor Counterfeit Electronic Part Detection and Avoidance System.
- The number of counterfeit parts detected includes those that the registrant, its business partners, or its customers become aware of or any electronic part or end item, component, part, or assembly that gives the registrant, its business partners, or its customers any reason to suspect that it contains counterfeit electronic parts.
- The scope of disclosure includes those parts detected before procurement, and therefore avoided; those detected during manufacturing, assembly, and testing; and those detected after sale to the registrant’s customer(s).

~~74.80~~ The percentage avoided is calculated as the number of counterfeit or suspect counterfeit parts that were detected prior to the sale and delivery of the part to a customer divided by the total number of counterfeit or suspect counterfeit parts that were detected, where:

- Detection prior to sale and delivery includes any counterfeit or suspect counterfeit part that was detected during procurement, manufacturing, assembly, or testing. This includes counterfeit or suspect counterfeit parts that were not purchased by the registrant but could have been purchased, except for the fact that they were detected.

~~.75.81~~ The registrant should discuss at which point it detected the counterfeit parts (e.g., whether the parts were detected by the registrant's business partners, the registrant's testing systems prior to production or after production, or if the registrant was notified by its customers, etc.).

~~.76.82~~ The registrant should discuss its compliance with the provisions of Defense Federal Acquisition Regulation Supplement: Detection and Avoidance of Counterfeit Electronic Parts (DFARS Case 2012-D055) and/or SAE International Standard, SAE AS 5553 – Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition.

RT0201-15. Percentage of materials costs for items containing critical materials

~~.77.83~~ The registrant shall calculate the percentage as the ~~cost of raw~~ materials costs of goods sold, in U.S. dollars, of items that contain critical materials divided by ~~the total cost of raw~~ materials cost of goods sold.

- The scope of disclosure includes materials costs for parts, components, commodities, and associated freight, and storage, and excludes those for overhead, labor, recalls, warranties, or other costs of goods sold.

~~.78.84~~ A critical material is defined, consistent with the National Research Council's "Minerals, Critical Minerals, and the U.S. Economy," ~~"Minerals, Critical Minerals, and the U.S. Economy"~~, as one material that is both essential in use and subject to the risk of supply restriction.

~~.85~~ ~~At a minimum, the scope~~ Examples of critical materials ~~includes~~ include, but are not limited to, the following minerals and metals:

- Antimony, cobalt, fluorspar, gallium, germanium, graphite, indium, magnesium, niobium, tantalum, and tungsten;
- Platinum group metals (platinum, palladium, iridium, rhodium, ruthenium, and osmium); and
- Rare earth elements, which include yttrium, scandium, lanthanum, and defined by the National Research Council, as well as lanthanides (cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium).
- In addition to the above, defense-related critical materials may include materials specifically identified by the Department of Defense (DoD), through the [Strategic and Critical Materials 2016 Report on Stockpile Requirements](#), for potential shortfall in defense-related applications: tin, aluminum oxide-fused crude, silicon carbide, bismuth, manganese metal electrolytic, beryllium metal, and chromium metal as well as DoD proprietary materials (e.g., specific types of carbon fiber and a specialty rare earth oxide).

RT0201-16. Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict free

~~.79~~ The registrant shall calculate the percentage as the number of tungsten, tin, tantalum, and gold smelters and/or refineries within its supply chain that are verified to be conflict free divided by the total number of tungsten, tin, tantalum, and gold smelters and/or refineries within its supply chain.

~~.80 A smelter or refiner is considered to be conflict free if it can demonstrate compliance with:~~

- ~~• The Electronic Industry Citizenship Coalition (EICC) and Global e-Sustainability Initiatives (GeSI) Conflict-Free Smelter Program (CFSP) assessment protocols.~~
- ~~• The Responsible Jewellery Council's (RJC) Chain-of-Custody (CoC) Standard.~~

~~.81 A smelter or refinery is considered to be within the registrant's supply chain if it supplies, or is approved to supply, tungsten, tin, tantalum, or gold that is contained in any product the registrant manufactures or contracts to be manufactured.~~

- ~~• The scope includes smelters or refineries that supply material directly to the registrant, as well as those that supply material to any of its suppliers of raw materials, components, or subassemblies.~~

RT0201-17TA07-14-01. Discussion of the management of risks associated with the use of critical materials ~~and conflict minerals~~

~~.82, 86~~ The registrant shall discuss its strategic approach to managing its risks associated with ~~usage~~the use of critical materials ~~and conflict minerals~~ in its products, including physical limits on availability, and access, price, and reputational risks, where:

- A critical material is defined, consistent with the National Research Council's "[Minerals, Critical Minerals, and the U.S. Economy](#)," "~~Minerals, Critical Minerals, and the U.S. Economy~~", as one a material that is both essential in use and subject to the risk of supply restriction. ~~At a minimum, the scope~~Examples of critical materials ~~includes~~include, but are not limited to, the following minerals and metals defined by the National Research Council, as well as materials specifically identified by the Department of Defense (DoD), through the [Strategic and Critical Materials 2013 Report on Stockpile Requirements](#), for potential shortfall in defense-related applications:
 - Antimony, cobalt, fluorspar, gallium, germanium, graphite, indium, magnesium, niobium, tantalum, and tungsten;
 - Platinum group metals (platinum, palladium, iridium, rhodium, ruthenium, and osmium); and
 - 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).
 - In addition to the above, defense-related critical materials include: tin, aluminum oxide-fused crude, silicon carbide, bismuth, manganese metal electrolytic, beryllium metal, and chromium metal as well as DoD proprietary materials (e.g., specific types of carbon fiber and a specialty rare earth oxide).

- ~~• Conflict minerals are defined as tungsten, tin, tantalum, and gold.~~

~~.83, 87~~ The registrant ~~should~~may identify which materials and minerals present a risk to its operations, ~~which~~the type of risk they represent, and the strategies the registrant uses to mitigate the risk.

- ~~For critical materials, relevant~~Relevant strategies ~~to discuss~~may include diversification of suppliers, stockpiling of materials, ~~expenditures in R&D for~~development or procurement of alternative and substitute materials, and investments in recycling technology for critical materials.

~~.84 For conflict minerals, relevant strategies to discuss include due diligence practices, supply chain auditing, supply chain engagement, and partnerships with industry groups or nongovernmental development organizations.~~



RESOURCE TRANSFORMATION SECTOR

ELECTRICAL & ELECTRONIC EQUIPMENT*

Sustainability Accounting Standard

PROPOSED CHANGES TO PROVISIONAL STANDARDS

EXPOSURE DRAFT

REDLINE OF STANDARD FOR PUBLIC COMMENT

Prepared by the
Sustainability Accounting Standards Board®

October 2017

* Sustainable Industry Classification System™ (SICS™) #RT0202

ELECTRICAL & ELECTRONIC EQUIPMENT

Sustainability Accounting Standard

About the SASB

The Sustainability Accounting Standards Board (SASB) was founded in 2011 as an independent standard-setting organization. The SASB issues and maintains sustainability accounting standards for 79 industries, focusing on the subset of industry-specific sustainability factors that are reasonably likely to have material financial impacts on companies within that industry. Companies can use the standards to disclose material information to investors in SEC filings, including Forms 10-K, 20-F, and 8-K, as well as S-1 and S-3, in a cost-effective and decision-useful manner. The standards are designed to help companies better comply with existing disclosure obligations, working within the framework of existing U.S. securities laws.

The SASB Standards Board is responsible for developing and issuing the standards, maintaining technical agendas, proposing updates to the standards, and executing the standard-setting process. The SASB staff is responsible for performing research and engaging in consultation on the standards, supporting the work of the Standards Board.

The SASB Foundation, an independent 501(c)3 non-profit, is responsible for the funding and oversight of the SASB, including safeguarding the SASB's independence and integrity through due process oversight and inquiry resolution. The SASB Foundation Board of Directors appoints members of the SASB.

About this Standard

This Standard is an exposure draft presented for public review and comment. **This version is not intended for implementation.**

The public comment period lasts for 90 days, beginning on October 2, 2017, and ending on December 31, 2017. The Standard is subject to change thereafter. SASB Standards are scheduled to be ratified by the SASB in early 2018.

For instructions on providing comments to SASB, please click [here](https://www.sasb.org/public-comment) (<https://www.sasb.org/public-comment>).

SUSTAINABILITY ACCOUNTING STANDARDS BOARD

1045 Sansome Street, Suite 450
San Francisco, CA 94111

www.sasb.org

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Electrical & Electronic Equipment industry.

SASB Sustainability Accounting Standards comprise **(1) disclosure guidance and (2) accounting standards or metrics** for use by U.S. and foreign public companies in their disclosures to investors, such as in annual reports and filings with the U.S. Securities and Exchange Commission (SEC), including Forms 10-K, 20-F, 40-F, 10-Q, 8-K and S-1 and S-3. The Standards facilitate the meaningful disclosure of sustainability information that is useful to investors in making decisions on investments and corporate suffrage.¹ The Standards reflect the fact that certain sustainability information is important for assessing the future financial performance of an issuer, particularly over the long term.

SASB Standards identify sustainability topics that are reasonably likely to constitute material information for a company within a particular industry. Company management is responsible for determining whether those identified topics reflect information that is material to investors and should be disclosed in filings, based on that company's specific circumstances. For further details regarding the use of the SASB Standards, in particular guidance on determinations of materiality, please see SASB's Implementation Guide.²

SASB Standards provide companies with sustainability metrics designed to communicate performance on industry-level sustainability topics in a concise, comparable format using existing reporting mechanisms. Companies can use the Standards to help ensure that disclosure is reliable, decision-useful for investors, and cost-effective for issuers.

SASB Standards are intended to constitute "suitable criteria" for purposes of an attestation engagement as defined by Paragraph .A42 of AT-C section 105³ and referenced in AT-C section 395.⁴ "Suitable criteria" have the following attributes:

- *Relevance*—Criteria are relevant to the subject matter.
- *Objectivity*—Criteria are free from bias.
- *Measurability*—Criteria permit reasonably consistent measurements, qualitative or quantitative, of subject matter.
- *Completeness*—Criteria are complete when subject matter prepared in accordance with them does not omit relevant factors that could reasonably be expected to affect decisions of the intended users made on the basis of that subject matter.

Industry Description

The Electrical & Electronic Equipment industry includes companies that develop and manufacture a broad range of electric components, including power generation equipment, energy transformers, electric motors, switchboards, automation equipment, heating and cooling equipment, lighting, and transmission cables. These include non-

¹ The AICPA defines sustainability information in its Guide, [Attestation Engagements on Sustainability Information \(Including Greenhouse Gas Emissions Information\)](#) (Issued July 2017), as follows: "information about sustainability matters (such as economic, environmental, social and governance performance)." It further explains that "sustainability metrics and sustainability indicators are components of sustainability information. Sustainability information may be nonquantitative (narrative), historical, or forward-looking."

² <https://library.sasb.org/implementation-guide>

³ <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AT-C-00105.pdf>

⁴ <http://pcaobus.org/Standards/Attestation/Pages/AT701.aspx>

structural commercial and residential building equipment, such as Heating, Ventilation, and Air Conditioning (HVAC) systems, lighting fixtures, security devices, and elevators; electrical power equipment, including traditional power generation and transmission equipment and renewable energy equipment; industrial automation controls; measurement instruments; and electrical components used for industrial purposes, including coils, wires, and cables. Companies in this industry operate globally and generate a significant portion of their revenue from outside the country of their domicile.

Users of the SASB Standards

The SASB Standards are intended for use by public companies and by investors to inform investment decisions. The standards facilitate disclosure of financially material sustainability-related information in a concise, comparable, cost-effective, decision-useful format.

The SASB Standards are designed for integration into existing reporting mechanisms, such as SEC filings. This keeps the administrative and cost burden to a minimum. SEC filings include Form 10-K for U.S. companies, Form 20-F for foreign issuers, Form 40-F for Canadian issuers, quarterly reports on Form 10-Q, current reports on Form 8-K, and registration statements on Forms S-1 and S-3. The SASB Standards are also recognized by the European Commission as a suitable framework for companies to provide information to investors pursuant to EU Directive 2014/95/EU. See “Guidelines on non-financial reporting (methodology for reporting non-financial information).”⁵ Thus, SASB standards are a cost-effective way to satisfy both U.S. and European reporting requirements.

SASB evaluates the materiality of sustainability-related topics by using the high threshold of financial materiality that is established under the U.S. securities laws.⁶ Although designed to meet the rigorous disclosure requirements of the U.S. capital markets (thereby producing a high-quality set of evidence-based standards focused on material investor-focused topics), the standards represent a best practice that can be used by companies of all types (public and private) to describe their material sustainability-related risks and opportunities.

Guidance for Disclosure of Sustainability Topics in SEC Filings

1. Industry-Level Sustainability Topics

For the Electrical & Electronic Equipment industry, the SASB has identified the following sustainability disclosure topics:

- Energy Management
- Hazardous Waste Management
- Product Safety
- Product Lifecycle Management & ~~Innovation for Environmental Efficiency~~
- Business Ethics & Competitive Behavior
- Materials Sourcing

2. Determination of Materiality

⁵ https://ec.europa.eu/info/publications/170626-non-financial-reporting-guidelines_en

⁶ https://library.sasb.org/materiality_bulletin/

In the U.S., sustainability disclosures are governed by the same laws and regulations that generally govern disclosures by securities issuers. According to the U.S. Supreme Court, a fact is material if, in the event such fact is omitted from a particular disclosure, there is a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of the information made available.⁷

Through a rigorous process of research, review of evidence, and public input, the SASB has identified sustainability topics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within each Sustainable Industry Classification System™ (SICS™) industry.⁸ **However, the issuer must determine what information is (or is reasonably likely to be) material to the reasonable investor.** For further information regarding a process that corporations can use to assess the financial materiality of the sustainability-related topics in SASB standards, please see SASB's Implementation Guide.⁹

3. SEC Requirements Relating to Disclosure of Material Sustainability Information

If a public company determines that certain sustainability information is reasonably likely to be material, it must then determine whether disclosure of some or all of the information under applicable SASB Standards is required under the U.S. federal securities laws. Several provisions of those laws are relevant to sustainability disclosures.

Regulation S-K sets forth certain disclosure requirements associated with Form 10-K and other SEC filings. Item 303 of Regulation S-K requires companies to, among other things, describe in the Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) section of Form 10-K "any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed."¹⁰

Furthermore, the instructions to Item 303 state that the MD&A "shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition."¹¹

The SEC has provided guidance for companies to use in determining whether a trend or uncertainty should be disclosed. The two-part assessment prescribed by the SEC can be applied to the topics included within this Standard:

- First, a company is not required to make disclosure about a known trend or uncertainty if its management determines that such trend or uncertainty is not reasonably likely to occur.

⁷ *TSC Industries v. Northway, Inc.*, 426 U.S. 438 (1976).

⁸ https://library.sasb.org/materiality_bulletin/

⁹ <https://library.sasb.org/implementation-guide>

¹⁰ C.F.R. 229.303(Item 303)(a)(3)(ii).

¹¹ SEC [Release Nos. 33-8056; 34-45321; FR-61] Commission Statement about Management's Discussion and Analysis of Financial Condition and Results of Operations: "We also want to remind registrants that disclosure must be both useful and understandable. That is, management should provide the most relevant information and provide it using language and formats that investors can be expected to understand. Registrants should be aware also that investors will often find information relating to a particular matter more meaningful if it is disclosed in a single location, rather than presented in a fragmented manner throughout the filing."

- Second, if a company's management cannot make a reasonable determination of the likelihood of an event or uncertainty, then disclosure is required "unless management determines that a material effect on the registrant's financial condition or results of operation is not reasonably likely to occur."

Companies should also consider the applicability of other Regulation S-K requirements. Specifically, Item 101 ("Description of Business") requires a company to provide a description of its business and its subsidiaries. Item 103 ("Legal Proceedings") requires a company to describe briefly any material pending or contemplated legal proceedings; instructions to Item 103 provide specific disclosure requirements for administrative or judicial proceedings arising from laws and regulations that target discharge of materials into the environment, or that are primarily for the purpose of protecting the environment. Item 503(c) ("Risk Factors") requires a company to provide discussion of the most significant factors that make an investment in the registrant speculative or risky, clearly stating the risk and specifying how it affects the company.

Finally, as a general matter, Securities Act Rule 408 and Exchange Act Rule 12b-20 require a registrant to disclose, in addition to the information expressly required by law or regulation, "such further material information, if any, as may be necessary to make the required statements, in light of the circumstances under which they are made, not misleading."

4. Where Disclosures Should Be Made in SEC Filings

In using the definition of materiality established under the U.S. federal securities laws, the SASB has identified and developed industry-specific sustainability topics and metrics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within a particular industry. As a general matter, the SASB believes that investors are best served when disclosure of such information is made in SEC filings. An issuer might, for example, make the disclosure in a sub-section of MD&A with a caption, "**Sustainability-Related Information**," with a section that includes the material topics, performance metrics, and management's view with respect to corporate positioning. See SASB's "Mock 10-Ks" for examples of preparing an MD&A using the SASB Standards.¹² Issuers are not precluded from using the Standards elsewhere, such as in stand-alone communications to investors or in sustainability reports (sometimes referred to as corporate social responsibility reports or environmental, social, and governance reports), company websites, or elsewhere. Corporate communication on material topics, including sustainability-related material topics, should be consistent across communication channels. As discussed above, SEC regulations may compel inclusion of material sustainability information in an SEC filing where it is deemed financially material.

The SASB recognizes that sustainability topics are relatively new areas of investor interest, and it may be difficult to determine whether particular sustainability information is material in certain situations. Accordingly, issuers might also consider using the SASB Standards in filings using Form 8-K, Item 8.01 ("Other Events"). This provision states that "The registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not otherwise called for by this form, that the registrant deems of importance to security holders." Making a disclosure under Item 8.01 would not require the issuer to make a decision regarding materiality, and might also provide the company with more time to make the disclosure than is permitted under filing rules applicable to Form 10-K, thereby facilitating the completeness and accuracy of the disclosed information.

¹² <http://using.sasb.org/mock-10-k-library/>

When using the Standards, issuers should cite or refer to the relevant SASB Standard.

More detailed guidance on preparing disclosures of material information related to sustainability topics and making topic-level materiality determinations can be found in the **SASB Conceptual Framework**, available for download via <http://www.sasb.org/approach/conceptual-framework/>, and the **SASB Implementation Guide for Companies**, available for download via <https://library.sasb.org/implementation-guide/>.

Guidance on Accounting for Sustainability Topics

The SASB has identified accounting metrics for each sustainability topic included in this Standard. The SASB recommends that companies within this industry consider using these sustainability accounting metrics when preparing disclosures on the sustainability topics identified herein.

When disclosing information related to a sustainability topic identified by this Standard, companies should consider including a narrative description of any material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description might in certain circumstances include a discussion of the following:¹³

- The registrant's **governance** around the risks and opportunities related to the topic, including board oversight of and management's role in assessing and managing such risks and opportunities.
- The registrant's **strategic approach** regarding actual and potential impacts of topic-related risks and opportunities on the organization's **businesses, strategy, and financial planning**, over the **short, medium, and long term**.
- The registrant's process to **identify, assess, and manage** topic-related risks, and how these risks are integrated into the registrant's overall risk management process.
- The registrant's **use of metrics or targets** to assess and manage topic-related risks and opportunities.
- Data for the registrant's **last three completed fiscal years** (when available).

The SASB recommends that registrants use SASB Standards specific to their primary industry as identified in SICSTM. If a registrant generates significant revenue from multiple industries, the SASB recommends that it also consider sustainability topics that the SASB has identified for those industries, and disclose the associated SASB accounting metrics.

Further, the SASB recommends that companies design, implement, and maintain adequate systems of internal control over sustainability performance information to provide reasonable confidence regarding the achievement of related reporting objectives, such as those relating to the reliability of disclosed information.¹⁴

¹³ These areas for possible additional narrative description are generally aligned with the [Recommendations of the Task Force on Climate-related Financial Disclosures](#), which contains a more extensive discussion of such disclosure matters.

¹⁴ In this regard, companies are referred to the report of a group of experts in this area. Robert H. Herz, Brad J. Monterio, Jeffrey C. Thomson, Leveraging the COSO Internal Control – Integrated Framework to Improve confidence in Sustainability Performance Data (August 2017).

The SASB takes no position as to whether third-party attestation is necessary to enhance the credibility of the disclosed sustainability information, but as a matter of good governance, the SASB suggests that such assurance be considered.¹⁵

Scope of Disclosure

Unless otherwise specified, the SASB recommends:

- That a registrant disclose information on sustainability topics and metrics for itself and for entities that are consolidated for financial reporting purposes, as defined by accounting principles generally accepted in the United States (“US GAAP”), for consistency with other accompanying information within SEC filings;¹⁶
- That for consolidated entities, disclosures be made, and accounting metrics calculated, for the whole entity, regardless of the size of the minority interest; and
- That information from unconsolidated entities not be included in the computation of SASB accounting metrics. However, the registrant should disclose information about unconsolidated entities to the extent that the registrant considers the information necessary for investors to understand the effect of sustainability topics on the company’s financial condition or operating performance. (Typically, this disclosure would be limited to risks and opportunities associated with these entities.)

Reporting Format

Use of Financial Data

In instances where accounting metrics, activity metrics, and technical protocols in this Standard incorporate financial data (e.g., revenues, cost of sales, expenses recorded and disclosed for fines, etc.), such financial data shall be prepared in accordance with US GAAP, and be consistent with the corresponding financial data reported in the registrant’s SEC filings. Should accounting metrics, activity metrics, and technical protocols in this Standard incorporate disclosure of financial data that is not prepared in accordance with US GAAP, the registrant shall disclose such information in accordance with SEC Regulation G.¹⁷

Activity Metrics and Normalization

The SASB recognizes that normalizing accounting metrics is important for the analysis of SASB disclosures.

The SASB recommends that a registrant disclose any basic business data that may assist in the accurate evaluation and comparability of disclosure, to the extent that they are not already disclosed in Form 10-K (e.g., revenue, EBITDA, etc.).

¹⁵ The AICPA’s Guide (see supra note 1) provides guidance to assist accounting practitioners in performing attestation engagements on sustainability information.

¹⁶ See US GAAP consolidation rules (Section 810).

¹⁷ <https://www.sec.gov/rules/final/33-8176.htm>

Such data—termed “activity metrics”—may include high-level business data, including total number of employees, quantity of products produced or services provided, number of facilities, or number of customers. It may also include industry-specific data such as plant capacity utilization (e.g., for specialty chemical companies), number of transactions (e.g., for Internet media and services companies), hospital bed days (e.g., for health care delivery companies), or proven and probable reserves (e.g., for oil and gas exploration and production companies).

Activity metrics disclosed should:

- Convey contextual information that would not otherwise be apparent from SASB accounting metrics.
- Be deemed generally useful for investors relying on SASB accounting metrics to perform their own calculations and create their own ratios.
- Be explained and consistently disclosed from period to period to the extent that they continue to be relevant. However, a decision to make a voluntary disclosure in one period does not obligate a continuation of that disclosure if it is no longer relevant, or if a better metric becomes available.¹⁸

Where relevant, the SASB recommends specific activity metrics that—at a minimum—should accompany SASB accounting metric disclosures.

Table 1. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Number of units produced by product category ¹⁹	Quantitative	Number	RT0202-A
Number of employees	Quantitative	Number	RT0202-B

Units of Measure

Unless specified, disclosures should be reported in International System of Units (SI units).

Uncertainty

The SASB recognizes that there may be inherent uncertainty when measuring or disclosing certain sustainability data and information. This uncertainty may be related to variables such as the reliance on data from third-party reporting systems and technologies, or the unpredictable nature of climate events. Where uncertainty around a particular disclosure exists, the SASB recommends that the registrant should consider discussing its nature and likelihood.²⁰

¹⁸ Improving Business Reporting: Insights into Enhancing Voluntary Disclosures, FASB Business Reporting Research Project, January 29, 2001.

¹⁹ Note to **RT0202-A**—Production should be disclosed as number of units produced by product category, where relevant product categories include energy generation, energy delivery, and lighting and indoor climate control electronics.

²⁰ The AICPA’s Guide (see supra note 1) provides guidance related to measurement uncertainty.

Estimates

The SASB recognizes that scientifically-based estimates, such as the reliance on certain conversion factors or the exclusion of *de minimis* values, may occur for certain quantitative disclosures. Where appropriate, the SASB does not discourage the use of estimates or ranges. When using an estimate for a particular disclosure, the SASB expects that the registrant discuss its nature and substantiate its basis.

Timing

Unless otherwise specified, disclosure shall be for the registrant's fiscal year.

Limitations

There is no guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry, or company; therefore, a company must determine for itself the topics that warrant discussion in its SEC filings.

Use of the SASB Standards is voluntary. The Standards are not intended to replace any legal or regulatory requirements that may be applicable to a company's operations. When such laws or regulations address legal or regulatory topics, disclosure under SASB Standards is not meant to supersede those requirements.

Use of the SASB Standards is not required or endorsed by the SEC or various entities governing financial reporting, including the Financial Accounting Standards Board, the Government Accounting Standards Board, or the International Accounting Standards Board.

Forward-Looking Statements

Disclosures on sustainability topics can, in some circumstances, involve discussion of future trends and uncertainties related to the registrant's operations and financial condition, including those influenced by external variables (e.g., environmental, social, regulatory, and political). Companies making these disclosures in SEC filings should familiarize themselves with the safe harbor provisions of Section 27A of the Securities Act, and Section 21E of the Exchange Act, which preclude civil liability for material misstatements or omissions in such statements if the registrant takes certain steps. These include, among other things, identifying the disclosure as "forward-looking," and accompanying such disclosure with "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statements."

Notes on the Sustainability Accounting Standards

The following sections contain the disclosure guidance associated with each accounting metric, including guidance on definitions, scope, accounting, compilation, and presentation.

The term "shall" is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms "should" and "may" are used to indicate guidance, which, although not required, provides a recommended means of disclosure.

Table 2. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Energy Management	Total energy consumed, percentage grid electricity, percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	RT0202-01
Hazardous Waste Management	Amount of hazardous waste, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	RT0202-02
	Number and aggregate quantity of reportable spills, quantity recovered ²¹	Quantitative	Number, Kilograms (kg)	RT0202-03
Product Safety	Number of recalls and total units recalled ²²	Quantitative	Number	RT0202-04
	Amount of legal and regulatory fines and settlements associated with product safety ²³	Quantitative	U.S. Dollars (\$)	RT0202-05
Product Lifecycle Management & Innovation for Environmental Efficiency	Percentage of products by revenue that contain IEC 62474 declarable substances ²⁴	Quantitative	Percentage (%) by revenue	RT0202-06
	Percentage of eligible products by revenue that meet ENERGY STAR® criteria	Quantitative	Percentage (%) by revenue	RT0202-07
	Revenue from renewable energy-related and energy efficiency-related products	Quantitative	U.S. Dollars (\$)	RT0202-08
	Total energy cost savings achieved through energy performance contracts	Quantitative	U.S. Dollars (\$)	RT0202-09
Business Ethics & Competitive Behavior	Description of the management system for prevention of corruption and bribery throughout the value chain	Discussion and Analysis	n/a	RT0202-10
	Amount of legal and regulatory fines and settlements associated with charges of bribery or corruption ²⁵	Quantitative	U.S. Dollars (\$)	RT0202-11
	Amount of legal and regulatory fines and settlements associated with anti-competitive practices ²⁶	Quantitative	U.S. Dollars (\$)	RT0202-12
Materials Sourcing	Percentage of materials costs for items containing critical materials	Quantitative	Percentage (%)	RT0202-13

²¹ Note to **RT0202-03**—The registrant shall discuss its long-term activities to remediate spills that occurred in years prior to the reporting period but for which remediation activities are ongoing.

²² Note to **RT0202-04**—The registrant shall discuss notable recalls, such as those that affected a significant number of products or those related to serious injury or fatality.

²³ Note to **RT0202-05**—Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

²⁴ Note to **RT0202-06**—Disclosure shall include a discussion of approach to managing the use of IEC 62474 declarable substances.

²⁵ Note to **RT0202-11**—Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

²⁶ Note to **RT0202-12**—Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
	Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict-free	Quantitative	Percentage (%)	RT0202-14
	Discussion of the management of risks associated with the use of critical materials and conflict minerals	Discussion and Analysis	n/a	RT0202-15 <u>TA07-18-01</u>

Energy Management

Description

Energy is a critical input for value creation for electrical and electronic equipment companies ~~due to energy-intensive manufacturing processes.~~ Purchased electricity represents the largest share of energy expenditures in the industry, followed by purchased fuels. As electricity production contributes significant GHG emissions and air pollution through combustion of fossil fuels at the utility level, the cost of grid electricity may increase due to mitigation efforts directed at utilities. ~~Similarly, as the extraction, production, and use of fossil fuels contribute to significant GHG emissions and environmental externalities, the cost of purchased fuel may also increase due to mitigation efforts.~~ The likelihood and magnitude of impact of ~~climate change regulations~~ energy prices and energy mix on ~~aerospace and defense~~ electrical equipment manufacturers will vary depending on the location of manufacturing facilities in the U.S. and abroad. ~~Aerospace and defense~~ Electrical equipment companies' energy mix, including the use of electricity generated on-site as opposed to 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 their profitability and risk profile.

Accounting Metrics

RT0202-01. Total energy consumed, percentage grid electricity, percentage renewable

- .01 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or their multiples.
- The scope includes energy purchased from sources external to the organization or produced by the organization itself (self-generated).
 - The scope includes only energy consumed by entities owned or controlled by the organization.
 - The scope includes energy from all sources, including direct fuel usage, purchased electricity, and heating, cooling, and steam energy.
- .02 In calculating energy consumption from fuels and biofuels, the registrant 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).
- .03 The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.
- .04 The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.

.05 The scope of renewable energy includes renewable fuel the registrant consumes and renewable energy the registrant directly produces, purchases through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs), or for which Green-e Energy Certified RECs are paired with grid electricity.

- For any renewable electricity generated on-site, any RECs must be retained (i.e., not sold) and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- For renewable PPAs, the agreement must explicitly include and convey that RECs be retained and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- The renewable portion of the electricity grid mix that is outside of the control or influence of the registrant is excluded from disclosure.²⁷
- Renewable energy is defined as energy from sources that are capable of being replenished in a short time through ecological cycles, such as geothermal, wind, solar, hydro, and biomass.

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

- Energy from hydro sources that are certified by the Low Impact Hydropower Institute or that are eligible for a state Renewable Portfolio Standard.
- 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 renewables” according to the Green-e Energy National Standard Version 2.5 (2014), and materials that are eligible for a state Renewable Portfolio Standard.

.07 The registrant 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 kWh to gigajoules (for energy data including electricity from solar or wind energy).

²⁷ SASB recognizes that RECs reflect the environmental attributes of renewable energy that have been introduced to the grid, and that a premium has been paid by the purchaser of the REC to enable generation of renewable energy beyond any renewable energy already in the grid mix, absent the market for RECs.

Hazardous Waste Management

Description

Electrical and electronic equipment companies face regulatory and operational challenges in managing their manufacturing waste, as many of these substances can be hazardous to human health and the environment and therefore are subject to hazardous waste regulations within the U.S. and internationally. For example, the Resource Conservation and Recovery Act (RCRA) regulates generation, transport, treatment, storage, and disposal of hazardous and solid waste within the U.S. Hazardous compounds used in electrical and electronic equipment operations include chromium, nickel, cobalt, trichloroethylene, lead, and glycol ethers. Proper processing and disposal of hazardous waste materials are essential to limiting the risk of remediation liabilities, fines, and regulations. ~~In addition, companies that are able to limit the waste of input materials and recycle the waste generated may achieve significant cost savings and improve profitability.~~

Accounting Metrics

RT0202-02. Amount of hazardous waste, percentage recycled

.08 The amount of hazardous waste shall be calculated in metric tons, where:

- Hazardous waste includes both hazardous secondary materials, per 40 CFR 260.10, and waste that meets the definition of hazardous waste under Subtitle C of the U.S. Environmental Protection Agency's (EPA) Resource Conservation and Recovery Act (RCRA), per 40 CFR 261.3.
- Hazardous wastes include those that display the following characteristics: ignitability, corrosivity, reactivity, or toxicity.

.09 The percentage recycled shall be calculated as the weight of hazardous waste material that was reused or reclaimed, plus the weight recycled or remanufactured (through treatment or processing) by the registrant, plus the amount sent externally for further recycling, divided by the total weight of hazardous waste material, where:

- Reclaimed materials are defined as those processed to recover or regenerate a usable product, consistent with [RCRA hazardous waste regulation](#). Common hazardous waste reclamation activities involve recovery of spent solvents (e.g., recovery of acetone) or metals (e.g., recovery of lead).
- Reused materials are defined as those recovered products or components of products that are used for the same purpose for which they were conceived.
- Recycled and remanufactured materials are defined as waste materials that have been reprocessed or treated by means of production or manufacturing processes and made into a final product, or made into a component for incorporation into a product.
- Materials sent for further recycling include those materials that are transferred to a third party for the express purpose of reuse, recycling, or refurbishment.

- The scope of recycled and remanufactured products includes primary recycled materials, co-products (outputs of equal value to primary recycled materials), and by-products (outputs of lesser value than primary recycled materials).
- Portions of products and materials that are disposed of in landfills are not considered recycled; only the portions of products that are directly incorporated into new products, co-products, or by-products shall be included in the percentage recycled.
- Materials incinerated, including for energy recovery, are not considered reused or recycled. Energy recovery is defined as the use of combustible waste as a means to generate energy through direct incineration, with or without other waste, but with recovery of the heat.

.10 Electronic waste material (e-waste) shall be considered recycled only if the registrant can demonstrate that this material was transferred to entities with third-party certification to a standard for e-waste recycling, such as Basel Action Network’s e-Steward® standard or the U.S. EPA’s Responsible Recycling Practices (R2) standard.

- The registrant shall disclose the standard(s) with which the entities it has transferred e-waste are compliant.

RT0202-03. Number and aggregate quantity of reportable spills, quantity recovered

.11 The registrant shall disclose the total number and quantity (in kilograms) of reportable spills, where:

- Reportable spills are defined as any release of a hazardous substance in an amount equal to or greater than the reportable quantity as listed in Table 302.4 in 40 CFR Part 302.4 of the U.S. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), including consideration of reportable quantities of mixtures and solutions as defined under 40 CFR Part 302.6 (b)(1).
- The number of reportable spills shall include any leaks, emissions, discharges, injections, disposals, and abandonment releases over time, counted once at the time identified, consistent with CERCLA definition of release (42 USC 9601(22)) and guidelines for reporting requirements (40 CFR Part 302).
- The aggregate quantity reported shall represent the total quantity of material released to the environment, and shall not be reduced by the amount of such hazardous substances that are subsequently recovered, evaporated, or otherwise lost.
- The scope of disclosure includes all spills, even those in jurisdictions that are not subject to regulation under CERCLA.

.12 The registrant shall calculate the quantity of spills recovered as the quantity of spilled hazardous substances (in kilograms) removed from the environment through short-term release response activities, excluding:

- Amounts that were recovered during longer-term remediation at spill sites.
- Amounts that evaporated, burned, or were dispersed.

- .13 The registrant may choose to disclose releases to soil and water separately. A release that qualifies as a release to both soil and water should be reported as a single release to water, with the volume properly apportioned to soil and water.
- .14 The registrant may choose to separately indicate spills that occurred in the past, such as those that resulted from abandoned, legacy, or decommissioned operations but which were identified and disclosed during the fiscal year.

Note to **RT0202-03**

- .15 Where applicable, the registrant shall discuss its activities to remediate spills that occurred in years prior to the disclosure period but for which remediation activities are ongoing and long term.
- .16 Relevant activities include, but are not limited to, land-use controls, site monitoring, site maintenance, and continued cleanup.

Additional References

For guidance on the “legitimate recycling” of hazardous waste see 40 CFR 260.43.

Product Safety

Description

~~Proper safety procedures, tests, and protocols for electrical equipment can help companies lower reputational risks associated with recalls, protect sales, and prevent injuries and even accidental death among users. The proper and safe functioning of electrical and electronic equipment. If current and future product quality and safety are not managed effectively, it can result in large equipment is an important sustainability issue because of potential risks to product users, including electrical fires. In the event of a product safety incident, companies could be exposed to product liability claims and potential regulation. Through proper design and testing, companies in this industry can improve performance on product safety. Companies with poor product quality and safety may experience revenue loss due to damaged reputation, redesign costs, recalls, litigation, or fines. Proper safety procedures, tests, and protocols for electrical equipment can help companies reduce the risk of such adverse impacts, and strengthen a company's brand reputation.~~

Accounting Metrics

RT0202-04. Number of recalls and total units recalled

.17 The registrant shall disclose the number of recalls and the total number of units recalled, where:

- A recall is defined as any repair, replacement, refund, or notice/warning program intended to protect consumers from products that present a safety risk, consistent with the definition established in the [U.S. Consumer Product Safety Commission's Recall Handbook](#).
- The total number of units recalled is defined as the combined quantity of products that were recalled as part of any recall during the fiscal year.

.18 The scope of disclosure includes voluntary recalls initiated by the registrant as well as involuntary recalls mandated by governmental regulatory agencies, where:

- Involuntary recalls are those required by regulatory agencies, and are issued when a product does not comply with regulatory safety standards, or when there is a safety-related defect in a product.
- Governmental agencies with regulatory oversight include, but are not limited to, the following:
 - Consumer Product Safety Commission (CPSC)
 - Food and Drug Administration (FDA)

.19 The registrant may choose, in addition to total units recalled, to disclose the percentage of recalls that were (1) voluntarily and (2) involuntarily issued.

Note to RT0202-04

.20 The registrant shall discuss notable recalls, such as those that affected a significant number of products or those related to serious injury or fatality.

.21 For such recalls, the registrant should provide:

- Description and cause of the recall issue
- The total number of units recalled
- The cost to remedy the issue (in U.S. dollars)
- Whether the recall was voluntary or involuntary
- Corrective actions
- Any other significant outcomes (e.g., legal proceedings, fatalities, etc.)

RT0202-05. Amount of legal and regulatory fines and settlements associated with product safety

.22 The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with incidents relating to product safety, including, but not limited to, violations of the following:

- Consumer Product Safety Act
- Federal Food, Drug, and Cosmetic Act (e.g., the Electronic Product Radiation Control Provisions)
- U.S. National Electrical Code
- Occupational Safety and Health Administration (OSHA) Safety Standards (e.g., requirements for testing and certification of electrical equipment by a Nationally Recognized Testing Laboratory [NRTL] under 29 CFR Part 1910, or by a Qualified Testing Laboratory [QTL] under 29 CFR Part 1926).

.23 Disclosure shall include civil actions (e.g., civil judgment, settlements, or regulatory penalties) and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by any entity (government, businesses, or individuals).

Note to RT0202-05

.24 The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., inadequate testing or certification, etc.) of fines and settlements.

.25 The registrant shall describe any corrective actions it has implemented as a result of each incident. These may include, but are not limited to, specific changes in operations, management, processes, products, business partners, training, or technology.

Additional References

U.S. Consumer Product Safety Commission's [Recall Handbook](#)

Product Lifecycle Management & Innovation for Environmental Efficiency

Description

Electrical and electronic equipment companies face increasing challenges and opportunities associated with environmental externalities during the use-phase of their products. On the down side, regulation is pushing Regulations are incentivizing companies to avoid reduce or limit eliminate the use of certain chemicals of concerns concern in their product products. To a lesser extent regulatory, regulations and customer pressure in increasingly put pressure on customers are driving companies to lower the environmental footprint of their products, mainly in the use-phase, primarily in terms of energy intensity. At the same time, electrical Electrical and electronic equipment companies that develop cost-effective products and solutions for energy efficiency can benefit from increased revenues and market share, stronger competitive positioning, and enhanced brand value. Similarly, products and services that solve key environmental issues with reduced chemical safety concerns can represent a large market opportunities for early developers.

Accounting Metrics

RT0202-06. Percentage of products by revenue that contain IEC 62474 declarable substances

- .26 The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from products that contain declarable substances according to the International Electrotechnical Commission's IEC 62474—Material Declaration for Products of and for the Electrotechnical Industry, divided by total revenue.
- .27 A product contains a declarable substance if, according to IEC 62474, it contains an amount of the substance above the "reporting threshold," is within the scope of the "reporting application" identified, and for which the "reporting requirement" is mandatory according to IEC 62474.
- .28 The IEC 62474 [database of declarable substance groups](#) and declarable substances may be interactively queried, or the complete list may be downloaded as an Excel spreadsheet.
- .29 The scope of disclosure includes all products, including products from a company not required to declare, or otherwise making declarations, according to IEC 62474.

Note to RT0202-06

- .30 The registrant shall discuss its approach to managing its use of substances listed as declarable substance groups or declarable substances in IEC 62474, including a discussion of specific operational processes during which use of these substances is considered and a discussion of actions the registrant has taken to manage the use of these substances.
- .31 Relevant management approaches and actions to describe include, but are not limited to, product design criteria for the exclusion of substances (e.g., banned substances lists), use of material substitution assessments, materials and parts procurement guidelines, product safety testing, product declarations (e.g., material safety data sheets), and product labeling.

.32

.33 If the registrant assesses and manages the impact of known or potentially toxic substances with reference to other regulations, industry norms, or accepted chemical lists, it may choose to identify those practices, and it shall describe the degree of overlap with IEC 62474.

RT0202-07. Percentage of eligible products by revenue that meet ENERGY STAR® criteria

.34 The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from products meeting the requirements for ENERGY STAR certification, divided by total revenue from products eligible for ENERGY STAR certification.

- Eligible products are those in a product category for which ENERGY STAR certification exists, which includes the following electrical and electronic equipment product categories: uninterruptible power supply products, heating and cooling and ventilation equipment, and lighting and fans.

.35 The scope of disclosure includes products meeting the criteria of the most current version of the applicable ENERGY STAR standard.

- If the registrant has products certified to a previous version of an ENERGY STAR standard, it shall disclose this information, including the version of the standard to which its products are certified, a breakdown of how many products are certified to that version of the standard, and its timelines to achieve certification to the most current version of the standard.

RT0202-08. Revenue from renewable energy-related and energy efficiency-related products

.36 The registrant shall disclose its total revenue from renewable energy-related and energy efficiency-related products.

.37 Renewable energy-related products are defined as products and/or systems that enable the incorporation of renewable energy into established energy infrastructure, where:

- Renewable energy is defined as energy derived from sources that are capable of being replenished in a short time through ecological cycles, such as geothermal, wind, solar, hydroelectric, and biomass (including ethanol, first-generation biofuels, and advanced biofuels).
- Examples of products and systems include, but are not limited to, turbine controllers, relays, switchgears, solar PV fuses, SCADA systems, interconnection technologies, and other balance of plant equipment designed for renewable energy applications.
- The scope of products and systems is limited to those that enable the integration of renewable energy into established energy infrastructure and grids; it excludes revenue from the sale and/or installation of renewable energy generation hardware such as wind turbines, solar photovoltaic modules, and solar thermal electricity generation equipment.

.38 A product shall be considered to have been designed to increase energy efficiency if documentation shows that the registrant has tested, modeled, or otherwise established the increase to energy efficiency its product delivers during its use phase.

- Examples of products that increase energy efficiency include, but are not limited to, smart grid technologies and infrastructure (e.g., demand response systems, distribution automation, smart inverters, advanced metering equipment, etc.), smart home and intelligent building control products, flexible alternating current transmission systems, and low-loss transformers.
 - Smart grid is defined as a modernization of the electricity delivery systems so as to monitor, protect, and automatically optimize the operation of its interconnected elements – from the central and distributed generation through the transmission network and the distribution system, to industrial users and building automation systems, and to energy storage installations and to end-use consumers, consistent with the National Institute of Standards and Technology (NIST) Smart Grid Interoperability Standards.
- The scope of disclosure includes products that impart an incremental improvement to energy efficiency, insofar as the registrant can demonstrate that the improvement is meaningful, such as through alignment with the milestones set forth in Section 5, “Key Sectors” of the European Commission’s Road Map to a Resource Efficient Europe and/or with EU Directive 2012/27/EU; and/or through conformance with energy efficiency standards such as the International Electrotechnical Commission’s (IEC) IE2 High Efficiency, IE3 Premium Efficiency, and IE4 Super Premium Efficiency.
- The scope of disclosure excludes products that impart improved resource efficiency in an ancillary, indirect, or minimal way (e.g., a conventional product that is slightly lighter than the previous generation of the product).

~~RT0202-09. Total energy cost savings achieved through energy performance contracts~~

~~.39 The registrant shall disclose total energy cost savings achieved through energy performance contracts in U.S. dollars, where:~~

- ~~• Energy performance contracts are financing techniques that use cost savings from reduced energy consumption to repay the cost of energy conservation measures (ECMs). Energy performance contracts include contracts with the federal government, as well as those with state or local governments or private enterprises.~~
- ~~• ECMs are defined as measures applied to a building or facility that improve energy efficiency, are lifecycle cost effective under 10 CFR Part 436, Subpart A, and involve energy conservation, cogeneration facilities, renewable energy sources, improvements in operation and maintenance efficiencies, or retrofit activities. For the purposes of this definition, “improves energy efficiency” is not limited to a more efficient conversion of energy; rather, any instance when renewable energy is substituted for~~

conventional energy fuels, resulting in reduced usage of conventional energy sources, such a substitution constitutes “improved energy efficiency.”²⁸

- Total energy cost savings includes both energy cost savings and energy related cost savings achieved through energy performance contracts.

- Energy cost savings are defined as a reduction in the cost of energy, water, or wastewater treatment from the baseline cost established in the contract as a result of:

- The implementation of energy conservation measure(s);

- The lease or purchase of operating equipment, improvements, altered operations and maintenance, or technical services; or

- An increase in efficient use of existing energy sources by cogeneration or heat recovery.

- Energy related cost savings are defined as a reduction in expenses (other than energy cost savings) related to energy consuming equipment and generally related to equipment operations, maintenance, renewal, replacement, or repair expenses. One time energy related cost savings can result from avoided expenditures of operations and maintenance (O&M) or repair and replacement (R&R) funds, or from avoided capital expenditures for projects (e.g., equipment replacement) that, because of the energy performance contract project, become unnecessary.

~~40~~ Energy cost savings and energy related cost savings shall be calculated in aggregate, as the verified reduction in energy costs resulting from implementation of ECMs, consistent with methods for the U.S. Department of Energy (DOE) Federal Energy Management Program’s (FEMP) Energy Savings Performance Contracts (ESPC), or the equivalent.

~~41~~ Energy cost savings shall be calculated on an annual (fiscal year) basis for each active energy performance contract consistent with the measurement and verification methods outlined by the DOE’s FEMP, where:

- Active energy performance contracts are defined as those that have been accepted, commissioned, and installed, and are in their performance period until the contract term ends.

~~42~~ The registrant may choose to disclose the reduction in energy consumption, in gigajoules or their multiples, achieved through its use of ECMs under its energy performance contracts.

~~43~~ The registrant may choose to discuss guaranteed savings as compared to verified savings.

²⁸ U.S. Department of Energy, Indefinite Delivery Indefinite Quantity, Energy Savings Performance Contract guidance is available online: http://energy.gov/sites/prod/files/2013/10/f3/generic_idiq_espc_contract.pdf

Business Ethics & Competitive Behavior

Description

Electrical and electronic equipment manufacturers have ~~been come~~ under ~~increasing~~ scrutiny by authorities over the ~~use presence~~ of anticompetitive business practices. ~~In colluding to fix prices or conducting other including~~ anticompetitive behavior, ~~wherein~~ companies may willingly or unknowingly act like a cartel and violate antitrust laws in the U.S., E.U., or other countries. Similarly, companies have been found in violation of corruption and anti-bribery laws, such as the Foreign Corrupt Practices Act (FCPA) and the U.K. Bribery Act. These anticompetitive and unethical practices may jeopardize future revenue growth due to reputational risks, and can result in ~~significant~~ legal costs, fines, and litigation.

Accounting Metrics

RT0202-10. Description of the management system for prevention of corruption and bribery throughout the value chain

~~44.39~~ The registrant shall discuss its management system and due diligence procedures for assessing and managing corruption and bribery risks both internally and associated with business partners in its value chain.

- Relevant business partners include customers, suppliers, contractors, subcontractors, and joint venture partners.

~~45.40~~ Relevant aspects of a management system include employee awareness programs, internal mechanisms for reporting and following up on suspected violations, and anticorruption policies.

~~46.41~~ The registrant may choose to discuss the implementation of one or more of the following:

- Key Organization for Economic Co-operation and Development (OECD) [guidelines](#)
- International Chamber of Commerce (ICC) Rules of Conduct against Extortion and Bribery
- Transparency International Business Principles for Countering Bribery
- United Nations Global Compact 10th Principle
- World Economic Forum (WEF) Partnering Against Corruption Initiative (PACI)

RT0202-11. Amount of legal and regulatory fines and settlements associated with charges of bribery or corruption

~~47.42~~ The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with incidents relating to bribery and corruption, including, but not limited to, violations of the Foreign Corrupt Practices Act of 1977 (FCPA) (15 U.S.C. § 78dd-1, *et seq.*).

~~48.43~~ Disclosure shall include civil actions (e.g., civil judgment, settlements, or regulatory penalties) and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by any entity (government, businesses, or individuals).

~~49.44~~ Note to RT0202-11

~~50.45~~ The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., bribing an official, etc.) of fines and settlements.

~~51.46~~ The registrant shall describe any corrective action it has implemented as a result of each incident. This may include, but is not limited to, specific changes in operations, management, processes, products, business partners, training, or technology.

RT0202-12. Amount of legal and regulatory fines and settlements associated with anti-competitive practices

~~52.47~~ The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with anti-competitive behavior, such as those related to enforcement of U.S. laws and regulations on price-fixing, antitrust behavior (e.g., exclusivity contracts), patent misuse, or network effects and bundling of services and products to limit competition, including violations of the Sherman Antitrust Act of 1890 and the Clayton Antitrust Act of 1914.

~~53.48~~ Disclosure shall include civil actions (e.g., civil judgment, settlements, or regulatory penalties) and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by any entity (government, businesses, or individuals).

Note to RT0202-12

~~54.49~~ The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., price-fixing, patent misuse, antitrust, etc.) of fines and settlements.

~~55.50~~ The registrant shall describe any corrective actions it has implemented as a result of each incident. This may include, but is not limited to, specific changes in operations, management, processes, products, business partners, training, or technology.

Materials Sourcing

Description

Electrical and electronic equipment companies are exposed to supply chain risks when ~~rare earth or “conflict” minerals and metals~~critical materials are used in products. ~~Proactive supply chain audits and management will help insulate companies from reputational and regulatory risk.~~ Sourcing risks associated with ~~rare earth metals and conflict minerals~~critical materials are due to a low substitution ratio, concentration of deposits in only a few countries, and geopolitical considerations. ~~All of the conflict minerals—tin, tantalum, tungsten, and gold—are used in electronic equipment manufacturing, and could represent a significant cost for companies in order to comply with these new regulations.~~ Companies in this industry also face competition due to increasing global demand for these ~~minerals~~materials from other sectors, which can result in ~~significant~~ price increases and supply risks. ~~Benefits could be gained by a company’s ability to quickly reduce dependency on conflict and rare earth minerals and comply with all current and future forms of regulation relative to peers.~~ ~~Proactive supply chain management can help insulate companies from reputational and regulatory risk.~~ Companies that are able to limit the use of critical ~~and conflict~~ materials, as well as secure their supply, ~~will not only minimize environmental and social externalities related to extraction, but also protect themselves~~can mitigate the potential for financial impacts stemming from supply disruptions and volatile input prices.

Accounting Metrics

RT0202-13. Percentage of materials costs for ~~products~~items containing critical materials

~~.56.51~~ The registrant shall calculate the percentage as: the ~~cost of raw materials~~costs of goods sold, in U.S. dollars, of items that contain critical materials divided by total ~~cost of raw materials~~cost of goods sold.

- The scope of disclosure includes materials costs for parts, components, commodities, and associated freight, and storage, and excludes those for overhead, labor, recalls, warranties, or other costs of goods sold.

~~.57.52~~ A critical material is defined, consistent with the National Research Council’s [“Minerals, Critical Minerals, and the U.S. Economy.”](#) ~~“Minerals, Critical Minerals, and the U.S. Economy”~~, as ~~one a material~~one material that is both essential in use and subject to the risk of supply restriction.

~~.58.53~~ ~~At a minimum, the scope~~Examples of critical materials ~~includes~~include, but are not limited to, the following minerals and metals:

- Antimony, cobalt, fluor spar, gallium, germanium, graphite, indium, magnesium, niobium, tantalum, and tungsten;
- Platinum group metals (platinum, palladium, iridium, rhodium, ruthenium, and osmium); and
- 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).

RT0202-14. Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict free

~~.59~~ The registrant shall calculate the percentage as: the number of tungsten, tin, tantalum, and gold smelters and/or refineries within its supply chain that are verified to be conflict free divided by the total number of tungsten, tin, tantalum, and gold smelters and/or refineries within its supply chain.

~~.60~~ A smelter or refiner is considered to be conflict free if it can demonstrate compliance with:

~~.61~~ The Electronic Industry Citizenship Coalition (EICC) and Global e-Sustainability Initiatives (GeSI) Conflict Free Smelter Program (CFSP) assessment protocols.

~~.62~~ The Responsible Jewellery Council's (RJC) Chain of Custody (CoC) Standard.

~~.63~~ A smelter or refinery is considered to be within the registrant's supply chain if it supplies, or is approved to supply, tungsten, tin, tantalum, or gold that is contained in any product the registrant manufactures or contracts to be manufactured.

- ~~• The scope includes smelters or refineries that supply material directly to the registrant as well as those that supply material to any of its suppliers of raw materials, components, or subassemblies.~~

RT0202-15TA07-18-01. Discussion of the management of risks associated with the use of critical materials and conflict minerals

~~.64~~ .54 The registrant shall discuss its strategic approach to managing its risks associated with ~~usage~~ the use of critical materials ~~and conflict minerals~~ in its products, including physical limits on availability, and access, price, and reputational risks, where:

- A critical material is defined, consistent with the National Research Council's "[Minerals, Critical Minerals, and the U.S. Economy](#)," "[Minerals, Critical Minerals, and the U.S. Economy](#)", as ~~one a~~ material that is both essential in use and subject to the risk of supply restriction. ~~At a minimum, the scope~~ Examples of critical materials ~~includes~~ include, but are not limited to, the following minerals and metals defined by the National Research Council:
 - Antimony, cobalt, fluorspar, gallium, germanium, graphite, indium, magnesium, niobium, tantalum, and tungsten;
 - Platinum group metals (platinum, palladium, iridium, rhodium, ruthenium, and osmium); and
 - 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).
- ~~• Conflict minerals are defined as tungsten, tin, tantalum, and gold.~~

~~.65~~ .55 The registrant ~~should~~ may identify which materials and minerals present a risk to its operations, ~~which~~ the type of risk they represent, and the strategies the registrant uses to mitigate the risk.

- ~~For critical materials, relevant~~Relevant strategies ~~to discuss~~may include diversification of suppliers, stockpiling of materials, ~~expenditures in R&D for~~development or procurement of alternative and substitute materials, and investments in recycling technology for critical materials.

~~.66 For conflict minerals, relevant strategies to discuss include due diligence practices, supply chain auditing, supply chain engagement, and partnerships with industry groups or nongovernmental development organizations.~~



RESOURCE TRANSFORMATION SECTOR

INDUSTRIAL MACHINERY & GOODS*

Sustainability Accounting Standard

PROPOSED CHANGES TO PROVISIONAL STANDARDS

EXPOSURE DRAFT

REDLINE OF STANDARD FOR PUBLIC COMMENT

Prepared by the
Sustainability Accounting Standards Board®

October 2017

* Sustainable Industry Classification System™ (SICS™) #RT0203

INDUSTRIAL MACHINERY & GOODS

Sustainability Accounting Standard

About the SASB

The Sustainability Accounting Standards Board (SASB) was founded in 2011 as an independent standard-setting organization. The SASB issues and maintains sustainability accounting standards for 79 industries, focusing on the subset of industry-specific sustainability factors that are reasonably likely to have material financial impacts on companies within that industry. Companies can use the standards to disclose material information to investors in SEC filings, including Forms 10-K, 20-F, and 8-K, as well as S-1 and S-3, in a cost-effective and decision-useful manner. The standards are designed to help companies better comply with existing disclosure obligations, working within the framework of existing U.S. securities laws.

The SASB Standards Board is responsible for developing and issuing the standards, maintaining technical agendas, proposing updates to the standards, and executing the standard-setting process. The SASB staff is responsible for performing research and engaging in consultation on the standards, supporting the work of the Standards Board.

The SASB Foundation, an independent 501(c)3 non-profit, is responsible for the funding and oversight of the SASB, including safeguarding the SASB's independence and integrity through due process oversight and inquiry resolution. The SASB Foundation Board of Directors appoints members of the SASB.

About this Standard

This Standard is an exposure draft presented for public review and comment. **This version is not intended for implementation.**

The public comment period lasts for 90 days, beginning on October 2, 2017, and ending on December 31, 2017. The Standard is subject to change thereafter. SASB Standards are scheduled to be ratified by the SASB in early 2018.

For instructions on providing comments to SASB, please click [here](https://www.sasb.org/public-comment) (https://www.sasb.org/public-comment).

SUSTAINABILITY ACCOUNTING STANDARDS BOARD

1045 Sansome Street, Suite 450
San Francisco, CA 94111

www.sasb.org

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Industrial Machinery & Goods industry.

SASB Sustainability Accounting Standards comprise **(1) disclosure guidance and (2) accounting standards or metrics** for use by U.S. and foreign public companies in their disclosures to investors, such as in annual reports and filings with the U.S. Securities and Exchange Commission (SEC), including Forms 10-K, 20-F, 40-F, 10-Q, 8-K and S-1 and S-3. The Standards facilitate the meaningful disclosure of sustainability information that is useful to investors in making decisions on investments and corporate suffrage.¹ The Standards reflect the fact that certain sustainability information is important for assessing the future financial performance of an issuer, particularly over the long term.

SASB Standards identify sustainability topics that are reasonably likely to constitute material information for a company within a particular industry. Company management is responsible for determining whether those identified topics reflect information that is material to investors and should be disclosed in filings, based on that company's specific circumstances. For further details regarding the use of the SASB Standards, in particular guidance on determinations of materiality, please see SASB's Implementation Guide.²

SASB Standards provide companies with sustainability metrics designed to communicate performance on industry-level sustainability topics in a concise, comparable format using existing reporting mechanisms. Companies can use the Standards to help ensure that disclosure is reliable, decision-useful for investors, and cost-effective for issuers.

SASB Standards are intended to constitute "suitable criteria" for purposes of an attestation engagement as defined by Paragraph .A42 of AT-C section 105³ and referenced in AT-C section 395.⁴ "Suitable criteria" have the following attributes:

- *Relevance*—Criteria are relevant to the subject matter.
- *Objectivity*—Criteria are free from bias.
- *Measurability*—Criteria permit reasonably consistent measurements, qualitative or quantitative, of subject matter.
- *Completeness*—Criteria are complete when subject matter prepared in accordance with them does not omit relevant factors that could reasonably be expected to affect decisions of the intended users made on the basis of that subject matter.

Industry Description

The Industrial Machinery & Goods industry manufactures ~~essential~~ equipment for a variety of sectors including construction, agriculture, energy, utility, mining, manufacturing, automotive and transportation. Products include diesel engines, earth-moving equipment, trucks, tractors, ships, industrial pumps, locomotives, and turbines.

¹ The AICPA defines sustainability information in its Guide, [Attestation Engagements on Sustainability Information \(Including Greenhouse Gas Emissions Information\)](#) (Issued July 2017), as follows: "information about sustainability matters (such as economic, environmental, social and governance performance)." It further explains that "sustainability metrics and sustainability indicators are components of sustainability information. Sustainability information may be nonquantitative (narrative), historical, or forward-looking."

² <https://library.sasb.org/implementation-guide>

³ <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AT-C-00105.pdf>

⁴ <http://pcaobus.org/Standards/Attestation/Pages/AT701.aspx>

Machinery manufacturers utilize large amounts of raw materials for production, ~~including~~ primarily steel, cast iron, plastics, rubber, paints, and glass. Manufacturers may also perform the machining and casting of parts before final assembly. The continued expansion of industrialized economies and population will support rising demand for industrial machinery and goods. At the same time, regulatory standards and customer demand will likely drive continued pressure to limit environmental ~~and social~~ externalities ~~in~~, such as air emissions, during the lifecycle of products.

Users of the SASB Standards

The SASB Standards are intended for use by public companies and by investors to inform investment decisions. The standards facilitate disclosure of financially material sustainability-related information in a concise, comparable, cost-effective, decision-useful format.

The SASB Standards are designed for integration into existing reporting mechanisms, such as SEC filings. This keeps the administrative and cost burden to a minimum. SEC filings include Form 10-K for U.S. companies, Form 20-F for foreign issuers, Form 40-F for Canadian issuers, quarterly reports on Form 10-Q, current reports on Form 8-K, and registration statements on Forms S-1 and S-3. The SASB Standards are also recognized by the European Commission as a suitable framework for companies to provide information to investors pursuant to EU Directive 2014/95/EU. See “Guidelines on non-financial reporting (methodology for reporting non-financial information).”⁵ Thus, SASB standards are a cost-effective way to satisfy both U.S. and European reporting requirements.

SASB evaluates the materiality of sustainability-related topics by using the high threshold of financial materiality that is established under the U.S. securities laws.⁶ Although designed to meet the rigorous disclosure requirements of the U.S. capital markets (thereby producing a high-quality set of evidence-based standards focused on material investor-focused topics), the standards represent a best practice that can be used by companies of all types (public and private) to describe their material sustainability-related risks and opportunities.

Guidance for Disclosure of Sustainability Topics in SEC Filings

1. Industry-Level Sustainability Topics

For the Industrial Machinery & Goods industry, the SASB has identified the following sustainability disclosure topics:

- Energy Management
- Employee Health & Safety
- Fuel Economy & Emissions in Use-phase
- Remanufacturing Design & Services
- Materials Sourcing

2. Determination of Materiality

In the U.S., sustainability disclosures are governed by the same laws and regulations that generally govern disclosures by securities issuers. According to the U.S. Supreme Court, a fact is material if, in the event such fact is omitted from a

⁵ https://ec.europa.eu/info/publications/170626-non-financial-reporting-guidelines_en

⁶ https://library.sasb.org/materiality_bulletin/

particular disclosure, there is a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of the information made available.⁷

Through a rigorous process of research, review of evidence, and public input, the SASB has identified sustainability topics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within each Sustainable Industry Classification System™ (SICS™) industry.⁸ **However, the issuer must determine what information is (or is reasonably likely to be) material to the reasonable investor.** For further information regarding a process that corporations can use to assess the financial materiality of the sustainability-related topics in SASB standards, please see SASB's Implementation Guide.⁹

3. SEC Requirements Relating to Disclosure of Material Sustainability Information

If a public company determines that certain sustainability information is reasonably likely to be material, it must then determine whether disclosure of some or all of the information under applicable SASB Standards is required under the U.S. federal securities laws. Several provisions of those laws are relevant to sustainability disclosures.

Regulation S-K sets forth certain disclosure requirements associated with Form 10-K and other SEC filings. Item 303 of Regulation S-K requires companies to, among other things, describe in the Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) section of Form 10-K "any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed."¹⁰

Furthermore, the instructions to Item 303 state that the MD&A "shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition."¹¹

The SEC has provided guidance for companies to use in determining whether a trend or uncertainty should be disclosed. The two-part assessment prescribed by the SEC can be applied to the topics included within this Standard:

- First, a company is not required to make disclosure about a known trend or uncertainty if its management determines that such trend or uncertainty is not reasonably likely to occur.
- Second, if a company's management cannot make a reasonable determination of the likelihood of an event or uncertainty, then disclosure is required "unless management determines that a material effect on the registrant's financial condition or results of operation is not reasonably likely to occur."

⁷ *TSC Industries v. Northway, Inc.*, 426 U.S. 438 (1976).

⁸ https://library.sasb.org/materiality_bulletin/

⁹ <https://library.sasb.org/implementation-guide>

¹⁰ C.F.R. 229.303(Item 303)(a)(3)(ii).

¹¹ SEC [Release Nos. 33-8056; 34-45321; FR-61] Commission Statement about Management's Discussion and Analysis of Financial Condition and Results of Operations: "We also want to remind registrants that disclosure must be both useful and understandable. That is, management should provide the most relevant information and provide it using language and formats that investors can be expected to understand. Registrants should be aware also that investors will often find information relating to a particular matter more meaningful if it is disclosed in a single location, rather than presented in a fragmented manner throughout the filing."

Companies should also consider the applicability of other Regulation S-K requirements. Specifically, Item 101 (“Description of Business”) requires a company to provide a description of its business and its subsidiaries. Item 103 (“Legal Proceedings”) requires a company to describe briefly any material pending or contemplated legal proceedings; instructions to Item 103 provide specific disclosure requirements for administrative or judicial proceedings arising from laws and regulations that target discharge of materials into the environment, or that are primarily for the purpose of protecting the environment. Item 503(c) (“Risk Factors”) requires a company to provide discussion of the most significant factors that make an investment in the registrant speculative or risky, clearly stating the risk and specifying how it affects the company.

Finally, as a general matter, Securities Act Rule 408 and Exchange Act Rule 12b-20 require a registrant to disclose, in addition to the information expressly required by law or regulation, “such further material information, if any, as may be necessary to make the required statements, in light of the circumstances under which they are made, not misleading.”

4. Where Disclosures Should Be Made in SEC Filings

In using the definition of materiality established under the U.S. federal securities laws, the SASB has identified and developed industry-specific sustainability topics and metrics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within a particular industry. As a general matter, the SASB believes that investors are best served when disclosure of such information is made in SEC filings. An issuer might, for example, make the disclosure in a sub-section of MD&A with a caption, “**Sustainability-Related Information**,” with a section that includes the material topics, performance metrics, and management’s view with respect to corporate positioning. See SASB’s “Mock 10-Ks” for examples of preparing an MD&A using the SASB Standards.¹² Issuers are not precluded from using the Standards elsewhere, such as in stand-alone communications to investors or in sustainability reports (sometimes referred to as corporate social responsibility reports or environmental, social, and governance reports), company websites, or elsewhere. Corporate communication on material topics, including sustainability-related material topics, should be consistent across communication channels. As discussed above, SEC regulations may compel inclusion of material sustainability information in an SEC filing where it is deemed financially material.

The SASB recognizes that sustainability topics are relatively new areas of investor interest, and it may be difficult to determine whether particular sustainability information is material in certain situations. Accordingly, issuers might also consider using the SASB Standards in filings using Form 8-K, Item 8.01 (“Other Events”). This provision states that “The registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not otherwise called for by this form, that the registrant deems of importance to security holders.” Making a disclosure under Item 8.01 would not require the issuer to make a decision regarding materiality, and might also provide the company with more time to make the disclosure than is permitted under filing rules applicable to Form 10-K, thereby facilitating the completeness and accuracy of the disclosed information.

When using the Standards, issuers should cite or refer to the relevant SASB Standard.

More detailed guidance on preparing disclosures of material information related to sustainability topics and making topic-level materiality determinations can be found in the **SASB Conceptual Framework**, available for download via

¹² <http://using.sasb.org/mock-10-k-library/>

<http://www.sasb.org/approach/conceptual-framework/>, and the **SASB Implementation Guide for Companies**, available for download via <https://library.sasb.org/implementation-guide/>.

Guidance on Accounting for Sustainability Topics

The SASB has identified accounting metrics for each sustainability topic included in this Standard. The SASB recommends that companies within this industry consider using these sustainability accounting metrics when preparing disclosures on the sustainability topics identified herein.

When disclosing information related to a sustainability topic identified by this Standard, companies should consider including a narrative description of any material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description might in certain circumstances include a discussion of the following:¹³

- The registrant's **governance** around the risks and opportunities related to the topic, including board oversight of and management's role in assessing and managing such risks and opportunities.
- The registrant's **strategic approach** regarding actual and potential impacts of topic-related risks and opportunities on the organization's **businesses, strategy, and financial planning**, over the **short, medium, and long term**.
- The registrant's process to **identify, assess, and manage** topic-related risks, and how these risks are integrated into the registrant's overall risk management process.
- The registrant's **use of metrics or targets** to assess and manage topic-related risks and opportunities.
- Data for the registrant's **last three completed fiscal years** (when available).

The SASB recommends that registrants use SASB Standards specific to their primary industry as identified in SICSTM. If a registrant generates significant revenue from multiple industries, the SASB recommends that it also consider sustainability topics that the SASB has identified for those industries, and disclose the associated SASB accounting metrics.

Further, the SASB recommends that companies design, implement, and maintain adequate systems of internal control over sustainability performance information to provide reasonable confidence regarding the achievement of related reporting objectives, such as those relating to the reliability of disclosed information.¹⁴

¹³ These areas for possible additional narrative description are generally aligned with the [Recommendations of the Task Force on Climate-related Financial Disclosures](#), which contains a more extensive discussion of such disclosure matters.

¹⁴ In this regard, companies are referred to the report of a group of experts in this area. Robert H. Herz, Brad J. Monterio, Jeffrey C. Thomson, Leveraging the COSO Internal Control – Integrated Framework to Improve confidence in Sustainability Performance Data (August 2017).

The SASB takes no position as to whether third-party attestation is necessary to enhance the credibility of the disclosed sustainability information, but as a matter of good governance, the SASB suggests that such assurance be considered.¹⁵

Scope of Disclosure

Unless otherwise specified, the SASB recommends:

- That a registrant disclose information on sustainability topics and metrics for itself and for entities that are consolidated for financial reporting purposes, as defined by accounting principles generally accepted in the United States (“US GAAP”), for consistency with other accompanying information within SEC filings;¹⁶
- That for consolidated entities, disclosures be made, and accounting metrics calculated, for the whole entity, regardless of the size of the minority interest; and
- That information from unconsolidated entities not be included in the computation of SASB accounting metrics. However, the registrant should disclose information about unconsolidated entities to the extent that the registrant considers the information necessary for investors to understand the effect of sustainability topics on the company’s financial condition or operating performance. (Typically, this disclosure would be limited to risks and opportunities associated with these entities.)

Reporting Format

Use of Financial Data

In instances where accounting metrics, activity metrics, and technical protocols in this Standard incorporate financial data (e.g., revenues, cost of sales, expenses recorded and disclosed for fines, etc.), such financial data shall be prepared in accordance with US GAAP, and be consistent with the corresponding financial data reported in the registrant’s SEC filings. Should accounting metrics, activity metrics, and technical protocols in this Standard incorporate disclosure of financial data that is not prepared in accordance with US GAAP, the registrant shall disclose such information in accordance with SEC Regulation G.¹⁷

Activity Metrics and Normalization

The SASB recognizes that normalizing accounting metrics is important for the analysis of SASB disclosures.

The SASB recommends that a registrant disclose any basic business data that may assist in the accurate evaluation and comparability of disclosure, to the extent that they are not already disclosed in Form 10-K (e.g., revenue, EBITDA, etc.).

¹⁵ The AICPA’s Guide (see supra note 1) provides guidance to assist accounting practitioners in performing attestation engagements on sustainability information.

¹⁶ See US GAAP consolidation rules (Section 810).

¹⁷ <https://www.sec.gov/rules/final/33-8176.htm>

Such data—termed “activity metrics”—may include high-level business data, including total number of employees, quantity of products produced or services provided, number of facilities, or number of customers. It may also include industry-specific data such as plant capacity utilization (e.g., for specialty chemical companies), number of transactions (e.g., for Internet media and services companies), hospital bed days (e.g., for health care delivery companies), or proven and probable reserves (e.g., for oil and gas exploration and production companies).

Activity metrics disclosed should:

- Convey contextual information that would not otherwise be apparent from SASB accounting metrics.
- Be deemed generally useful for investors relying on SASB accounting metrics to perform their own calculations and create their own ratios.
- Be explained and consistently disclosed from period to period to the extent that they continue to be relevant. However, a decision to make a voluntary disclosure in one period does not obligate a continuation of that disclosure if it is no longer relevant, or if a better metric becomes available.¹⁸

Where relevant, the SASB recommends specific activity metrics that—at a minimum—should accompany SASB accounting metric disclosures.

Table 1. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Number of units produced by product category ¹⁹	Quantitative	Number	RT0203-A
Number of employees	Quantitative	Number, Percentage (%)	RT0203-B

Units of Measure

Unless specified, disclosures should be reported in International System of Units (SI units).

Uncertainty

The SASB recognizes that there may be inherent uncertainty when measuring or disclosing certain sustainability data and information. This uncertainty may be related to variables such as the reliance on data from third-party reporting systems and technologies, or the unpredictable nature of climate events. Where uncertainty around a particular disclosure exists, the SASB recommends that the registrant should consider discussing its nature and likelihood.²⁰

¹⁸ Improving Business Reporting: Insights into Enhancing Voluntary Disclosures, FASB Business Reporting Research Project, January 29, 2001.

¹⁹ Note to RT0203-A – At a minimum, the registrant 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.

²⁰ The AICPA’s Guide (see supra note 1) provides guidance related to measurement uncertainty.

Estimates

The SASB recognizes that scientifically-based estimates, such as the reliance on certain conversion factors or the exclusion of *de minimis* values, may occur for certain quantitative disclosures. Where appropriate, the SASB does not discourage the use of estimates or ranges. When using an estimate for a particular disclosure, the SASB expects that the registrant discuss its nature and substantiate its basis.

Timing

Unless otherwise specified, disclosure shall be for the registrant's fiscal year.

Limitations

There is no guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry, or company; therefore, a company must determine for itself the topics that warrant discussion in its SEC filings.

Use of the SASB Standards is voluntary. The Standards are not intended to replace any legal or regulatory requirements that may be applicable to a company's operations. When such laws or regulations address legal or regulatory topics, disclosure under SASB Standards is not meant to supersede those requirements.

Use of the SASB Standards is not required or endorsed by the SEC or various entities governing financial reporting, including the Financial Accounting Standards Board, the Government Accounting Standards Board, or the International Accounting Standards Board.

Forward-Looking Statements

Disclosures on sustainability topics can, in some circumstances, involve discussion of future trends and uncertainties related to the registrant's operations and financial condition, including those influenced by external variables (e.g., environmental, social, regulatory, and political). Companies making these disclosures in SEC filings should familiarize themselves with the safe harbor provisions of Section 27A of the Securities Act, and Section 21E of the Exchange Act, which preclude civil liability for material misstatements or omissions in such statements if the registrant takes certain steps. These include, among other things, identifying the disclosure as "forward-looking," and accompanying such disclosure with "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statements."

Notes on the Sustainability Accounting Standards

The following sections contain the disclosure guidance associated with each accounting metric, including guidance on definitions, scope, accounting, compilation, and presentation.

The term "shall" is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms "should" and "may" are used to indicate guidance, which, although not required, provides a recommended means of disclosure.

Table 2. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Energy Management	Total energy consumed, percentage grid electricity, percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	RT0203-01
Employee Health & Safety	(1) Total Recordable Injury Rate (TRIR), (2) Fatality Rate, and (3) Near Miss Frequency Rate	Quantitative	Rate	RT0203-02
Fuel Economy & Emissions in Use-phase	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	Quantitative	Gallons per 1,000 Ton-miles	RT0203-03
	Sales-weighted fuel efficiency for non-road equipment	Quantitative	Gallons per hour	RT0203-04
	Sales-weighted fuel efficiency for stationary generators	Quantitative	Watt/gallon	RT0203-05
	Sales-weighted emissions of (a) <u>nitrogen oxides (NOx)</u> and (b) <u>particulate matter (PM)</u> for: (1) marine diesel engines, (2) locomotive diesel engines, (3) <u>on-road medium- and heavy-duty engines</u> , and (34) other non-road diesel engines	Quantitative	Grams per kilowatt-hour	RT0203-06 <u>TA07-19-01</u>
Remanufacturing Design & Services	Revenue from remanufactured products and remanufacturing services ²¹	Quantitative	U.S. Dollars (\$)	RT0203-07
Materials Sourcing	Percentage of materials costs for products containing critical materials	Quantitative	Percentage (%)	RT0203-08
	Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict-free	Quantitative	Percentage (%)	RT0203-09
	Discussion of the management of risks associated with the use of critical materials and conflict minerals	Discussion and Analysis	n/a	RT0203-10 <u>TA07-20-01</u>

²¹ Note to **RT0203-07**—Disclosure shall include a discussion of efforts to obtain end-of-life products and parts for remanufacture.

Energy Management

Description

Energy is a critical input in industrial machinery production. Purchased electricity typically represents ~~the largest a large~~ share of energy expenditures in the industry, ~~followed by in addition to~~ purchased fuels. ~~Fossil fuel and electrical energy consumption contribute to environmental impacts, including climate change and pollution. As electricity consumption indirectly contributes to climate change and air pollution, the cost of grid electricity may increase as utilities face more stringent regulations and higher production costs.~~ A company's energy mix, including the use of electricity generated onsite rather than grid-sourced electricity and the use of alternative energy, can play an important role in influencing both the cost and reliability of energy supply. The manner in which a company manages its overall energy efficiency and intensity, its reliance on different energy types, and its ability to access alternative sources of energy can influence its profitability and risk profile.

Accounting Metrics

RT0203-01. Total energy consumed, percentage grid electricity, percentage renewable

- .01 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or their multiples.
 - The scope includes energy purchased from sources external to the organization or produced by the organization itself (self-generated).
 - The scope includes only energy consumed by entities owned or controlled by the organization.
 - The scope includes energy from all sources, including direct fuel usage, purchased electricity, and heating, cooling, and steam energy.
- .02 In calculating energy consumption from fuels and biofuels, the registrant 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).
- .03 The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.
- .04 The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.
- .05 The scope of renewable energy includes renewable fuel the registrant consumes and renewable energy the registrant directly produces, purchases through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs), or for which Green-e Energy Certified RECs are paired with grid electricity.
 - For any renewable electricity generated on-site, any RECs must be retained (i.e., not sold) and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.

- For renewable PPAs, the agreement must explicitly include and convey that RECs be retained and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- The renewable portion of the electricity grid mix that is outside of the control or influence of the registrant is excluded from disclosure.²²
- Renewable energy is defined as energy from sources that are capable of being replenished in a short time through ecological cycles, such as geothermal, wind, solar, hydro, and biomass.

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

- Energy from hydro sources that are certified by the Low Impact Hydropower Institute or that are eligible for a state Renewable Portfolio Standard.
- 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 renewables” according to the Green-e Energy National Standard Version 2.5 (2014), and materials that are eligible for a state Renewable Portfolio Standard.

.07 The registrant 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 kWh to gigajoules (for energy data including electricity from solar or wind energy).

²² SASB recognizes that RECs reflect the environmental attributes of renewable energy that have been introduced to the grid, and that a premium has been paid by the purchaser of the REC to enable generation of renewable energy beyond any renewable energy already in the grid mix, absent the market for RECs.

Employee Health & Safety

Description

Employees ~~working~~ in industrial machinery manufacturing facilities face health and safety risks from exposure to ~~heavy~~ machinery, ~~heavy~~, moving equipment, and electrical hazards-, ~~among others~~. Creating ~~an effective~~ safety culture is critical to proactively mitigate ~~the safety impacts~~, which ~~can~~ could result in: ~~financial consequences, including higher healthcare costs, contingent liabilities, litigation, and work disruption~~. By maintaining a safe work environment and promoting a culture of safety, companies can minimize ~~the risk of injuries or fatalities among employees, safety-related expenses and~~ potentially ~~improving~~ improve productivity-, ~~and can minimize safety-related expenses~~. ~~On the down side, injuries and fatalities can result in significant financial consequences, including healthcare costs, contingent liabilities, litigation, and work disruption.~~

Accounting Metrics

RT0203-02. (1) Total Recordable Injury Rate (TRIR), (2) Fatality Rate, and (3) Near Miss Frequency Rate

- .08 For registrants whose workforce is entirely U.S.-based, the registrant shall disclose its Total Recordable Injury Rate (TRIR) and fatality rate, as calculated and reported in the Occupational Health and Safety Administration (OSHA) Form 300.
- OSHA guidelines provide details on determination of whether an event is a recordable occupational incident, and definitions for exemptions for incidents that occur in the work environment but are not occupational.
 - The scope of disclosure includes all employees on the registrant's payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers, as well as employees who are not on the registrant's payroll, but who are supervised by the registrant on a day-to-day basis, consistent with the recordable injuries and illnesses to be disclosed on the OSHA 300 Log.
- .09 For registrants whose workforce includes non-U.S.-based employees, the registrant shall calculate its TRIR according to the U.S. Bureau of Labor Statistics [guidance](#) and/or using the U.S. Bureau of Labor Statistics [calculator](#).
- .10 The registrant shall disclose its Near Miss Frequency Rate (NMFR), where a near miss is defined as an 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.
- The registrant should refer to organizations such as the National Safety Council (NSC) for guidance on implementing near miss reporting.
 - The registrant should disclose its process for classifying, identifying, and reporting near miss incidents.
- .11 The scope includes all employees, domestic and foreign.
- .12 Rates shall be calculated as: (statistic count / total hours worked) * 200,000.

Fuel Economy & Emissions in Use-phase

Description

Consumer and regulatory concern over climate change and other environmental impacts is increasing demand for machinery products that operate with ~~minimal environmental and human health~~ reduced air emissions and improved fuel efficiency externalities at the use-phase. Many of the industry's products release greenhouse gases (GHGs) and other air emissions during use, ~~and consume water and other materials.~~ Emissions regulations in major markets including the U.S. and Europe are driving mandatory fuel-efficiency improvements and emissions reductions, while customers also seek greater efficiency to reduce fuel costs. Companies in the industry are adapting to this trend by offering products with improved fuel efficiency, lower particulate matter and GHG emissions, and better material efficiency. Fuel economy and use-phase emissions of products will increasingly drive market share in this industry as regulations around fuel economy and emissions continue to strengthen/advance.

Accounting Metrics

RT0203-03. Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles

- .13 The registrant shall disclose its sales-weighted average fleet fuel efficiency for medium- and heavy-duty vehicles, where:
- 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 fiscal year and measured in gallons per 1,000 ton-miles.
 - The scope of disclosure includes vehicles in the fleet that weigh 8,500 pounds or more, and which are covered under the Heavy Duty (HD) National Program, including combination tractors (commonly known as semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles.
 - Where fleet averages are calculated by model year for regulatory purposes, the registrant shall use these performance data.
 - In the absence of regulatory guidance on calculating a fleet average, the registrant shall calculate performance based on the fuel economy of vehicles sold during the fiscal year, weighted by sales volume.
- .14 The registrant shall disclose the sales-weighted fuel efficiency requirement for its medium- and heavy-duty vehicles, pursuant to HD National Program Fuel Consumption Standards, as issued and regulated by the National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (EPA).

RT0203-04. Sales-weighted fuel efficiency for non-road equipment

- .15 The registrant shall disclose its sales-weighted average fuel efficiency for its non-road equipment and vehicles, where:

- Fuel efficiency is defined as the average fuel economy of its non-road equipment, weighted by the number of each sold during the fiscal year and measured in gallons of fuel consumed per hour of operation (gallons per hour).
 - In calculating gallons per hour the registrant shall use the model-rated fuel efficiency value for each piece of equipment, where available.
 - Where model-rated fuel efficiency values are not available, the registrant 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).
- 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.

RT0203-05. Sales-weighted fuel efficiency for stationary generators

.16 The registrant shall disclose the sales-weighted average fuel efficiency of its stationary generators, where:

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

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

- The harmonic mean is the reciprocal of the average of the reciprocal values. The harmonic mean captures the average amount of fuel needed by each generator to produce a given amount of power.

RT0203-06TA07-19-01. Sales-weighted emissions of (a) nitrogen oxides (NO_x) and (b) PMparticulate matter (PM) for: (1) marine diesel engines, (2) locomotive diesel engines, (3) on-road medium- and heavy-duty engines, and (34) other non-road diesel engines

.18 The registrant shall disclose the sales-weighted average emissions of ~~nitrogen oxides (NO_x) and particulate matter (PM)~~ for each of the following product categories: (1) marine diesel engines, (2) locomotive diesel engines, (3) on-road heavy-duty engines, and ~~(34)~~ other non-road diesel engines, where:

- Emissions are calculated as the average emissions of (a) NO_x and (b) PM for engines, weighted by the number of each sold during the fiscal year and measured in grams per kilowatt-hour.
- Marine diesel engines are defined as those that are addressed within the scope of 40 CFR Part 1042, 40 CFR Part 94, ~~or 40 CFR Part 89-~~, or foreign equivalent.
- Locomotive diesel engines are defined as those that are addressed within the scope of 40 CFR Part 1033-, or foreign equivalent.
- On-road heavy-duty engines are defined as those that are addressed within the scope of 40 CFR Subpart A, or foreign equivalent.

- Other non-road diesel engines are defined as those that are addressed within the scope of 40 CFR Part 1039, or foreign 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.
 - Emissions shall be calculated according to the test method described in 40 CFR Part 1065, or foreign equivalent.
 - The registrant should disclose if any products do not meet current emission standards established in 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; ~~and 40 CFR Part 86 Subpart A for heavy-duty on-road engines;~~ 40 CFR Part 1039 for other non-road diesel engines, or foreign equivalents.
- .19 The registrant should discuss its progress toward, and readiness for, future EPA U.S. federal and state-level, or foreign equivalent, emissions standards-- that could affect its products.

Remanufacturing Design & Services

Description

Industrial machinery and goods manufacturing uses large quantities of steel, iron, aluminum, glass, plastics, and other materials. The extraction and production of these raw materials and the manufacturing process for finished products and goods can create significant environmental impacts such as air emissions and social impact water pollution, and could lead to financial and operations operational risks for companies. 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 resources 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

RT0203-07. Revenue from remanufactured products and remanufacturing services

.20 The registrant shall disclose the amount of revenue (in U.S. dollars) from products that are remanufactured and services associated with remanufacturing goods, where:

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

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

Note to RT0203-07

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

.23 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.

Materials Sourcing

Description

Industrial machinery companies are exposed to supply chain risks as ~~rare earth or "conflict" minerals and~~ critical materials are used in electrical components of their products. Sourcing risks associated with these ~~metals~~ materials are due to a low substitution ratio, concentration of deposits in only a few countries, and geopolitical considerations. The industry also faces competition from increasing global demand for these minerals from other sectors that can result in ~~significant~~ price increases and further supply chain risks. Companies that ~~are able to~~ can limit the use of critical and conflict materials and secure their supply can ~~minimize~~ mitigate the ~~environmental and social impact related to extraction while protecting themselves against~~ risk of supply disruptions and volatile input prices.

Accounting Metrics

RT0203-08. Percentage of materials costs for products containing critical materials

.24 The registrant shall calculate the percentage as: the ~~cost of raw~~ costs of goods sold, in U.S. dollars, of items that contain critical materials divided by total ~~cost of raw~~ cost of goods sold.

- The scope of disclosure includes materials costs for parts, components, commodities, and associated freight, and storage, and excludes those for overhead, labor, recalls, warranties, or other costs of goods sold.

.25 A critical material is defined, consistent with the National Research Council's "Minerals, Critical Minerals, and the U.S. Economy," ~~"Minerals, Critical Minerals, and the U.S. Economy"~~, as ~~one~~ a material that is both essential in use and subject to the risk of supply restriction.

.26 ~~At a minimum, the scope~~ Examples of critical materials ~~includes~~ include, but are not limited to, the following minerals and metals:

- Antimony, cobalt, fluor spar, gallium, germanium, graphite, indium, magnesium, niobium, tantalum, and tungsten;
- Platinum group metals (platinum, palladium, iridium, rhodium, ruthenium, and osmium); and
- 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).

~~RT0203-10~~ TA07-20-01. Discussion of the management of risks associated with the use of critical materials ~~and conflict minerals~~

.27 The registrant shall discuss its strategic approach to managing its risks associated with ~~usage~~ the use of critical materials ~~and conflict minerals~~ in its products, including physical limits on availability, and access, price, and reputational risks, where:

- A critical material is defined, consistent with the National Research Council's "[Minerals, Critical Minerals, and the U.S. Economy](#)," "[Minerals, Critical Minerals, and the U.S. Economy](#)", as ~~one~~ material that is both essential in use and subject to the risk of supply restriction. ~~At a minimum, the scope~~Examples of critical materials ~~includes~~include, but are not limited to, the following minerals and metals defined by the National Research Council:

- Antimony, cobalt, fluorspar, gallium, germanium, graphite, indium, magnesium, niobium, tantalum, and tungsten;
- Platinum group metals (platinum, palladium, iridium, rhodium, ruthenium, and osmium); and
- 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).

- ~~Conflict minerals are defined as tungsten, tin, tantalum, and gold.~~

.28 The registrant ~~should~~may identify which materials and minerals present a risk to its operations, ~~which~~the type of risk they represent, and the strategies the registrant uses to mitigate the risk.

- ~~For critical materials, relevant~~Relevant strategies ~~to discuss~~may include diversification of suppliers, stockpiling of materials, ~~expenditures in R&D for~~development or procurement of alternative and substitute materials, and investments in recycling technology for critical materials.

~~.29 For conflict minerals, relevant strategies to discuss include due diligence practices, supply chain auditing, supply chain engagement, and partnerships with industry groups or nongovernmental development organizations.~~



RESOURCE TRANSFORMATION SECTOR

CONTAINERS & PACKAGING*

Sustainability Accounting Standard

PROPOSED CHANGES TO PROVISIONAL STANDARDS

EXPOSURE DRAFT

REDLINE OF STANDARD FOR PUBLIC COMMENT

Prepared by the
Sustainability Accounting Standards Board®

October 2017

* Sustainable Industry Classification System™ (SICS™) #RT0204

CONTAINERS & PACKAGING

Sustainability Accounting Standard

About the SASB

The Sustainability Accounting Standards Board (SASB) was founded in 2011 as an independent standard-setting organization. The SASB issues and maintains sustainability accounting standards for 79 industries, focusing on the subset of industry-specific sustainability factors that are reasonably likely to have material financial impacts on companies within that industry. Companies can use the standards to disclose material information to investors in SEC filings, including Forms 10-K, 20-F, and 8-K, as well as S-1 and S-3, in a cost-effective and decision-useful manner. The standards are designed to help companies better comply with existing disclosure obligations, working within the framework of existing U.S. securities laws.

The SASB Standards Board is responsible for developing and issuing the standards, maintaining technical agendas, proposing updates to the standards, and executing the standard-setting process. The SASB staff is responsible for performing research and engaging in consultation on the standards, supporting the work of the Standards Board.

The SASB Foundation, an independent 501(c)3 non-profit, is responsible for the funding and oversight of the SASB, including safeguarding the SASB's independence and integrity through due process oversight and inquiry resolution. The SASB Foundation Board of Directors appoints members of the SASB.

About this Standard

This Standard is an exposure draft presented for public review and comment. **This version is not intended for implementation.**

The public comment period lasts for 90 days, beginning on October 2, 2017, and ending on December 31, 2017. The Standard is subject to change thereafter. SASB Standards are scheduled to be ratified by the SASB in early 2018.

For instructions on providing comments to SASB, please click [here](https://www.sasb.org/public-comment) (<https://www.sasb.org/public-comment>).

SUSTAINABILITY ACCOUNTING STANDARDS BOARD

1045 Sansome Street, Suite 450
San Francisco, CA 94111

www.sasb.org

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Containers & Packaging industry.

SASB Sustainability Accounting Standards comprise **(1) disclosure guidance and (2) accounting standards or metrics** for use by U.S. and foreign public companies in their disclosures to investors, such as in annual reports and filings with the U.S. Securities and Exchange Commission (SEC), including Forms 10-K, 20-F, 40-F, 10-Q, 8-K and S-1 and S-3. The Standards facilitate the meaningful disclosure of sustainability information that is useful to investors in making decisions on investments and corporate suffrage.¹ The Standards reflect the fact that certain sustainability information is important for assessing the future financial performance of an issuer, particularly over the long term.

SASB Standards identify sustainability topics that are reasonably likely to constitute material information for a company within a particular industry. Company management is responsible for determining whether those identified topics reflect information that is material to investors and should be disclosed in filings, based on that company's specific circumstances. For further details regarding the use of the SASB Standards, in particular guidance on determinations of materiality, please see SASB's Implementation Guide.²

SASB Standards provide companies with sustainability metrics designed to communicate performance on industry-level sustainability topics in a concise, comparable format using existing reporting mechanisms. Companies can use the Standards to help ensure that disclosure is reliable, decision-useful for investors, and cost-effective for issuers.

SASB Standards are intended to constitute "suitable criteria" for purposes of an attestation engagement as defined by Paragraph .A42 of AT-C section 105³ and referenced in AT-C section 395.⁴ "Suitable criteria" have the following attributes:

- *Relevance*—Criteria are relevant to the subject matter.
- *Objectivity*—Criteria are free from bias.
- *Measurability*—Criteria permit reasonably consistent measurements, qualitative or quantitative, of subject matter.
- *Completeness*—Criteria are complete when subject matter prepared in accordance with them does not omit relevant factors that could reasonably be expected to affect decisions of the intended users made on the basis of that subject matter.

Industry Description

The Containers & Packaging industry manufactures a wide range of products, including corrugated cardboard packaging, food and beverage containers, bottles for household products, aluminum cans, steel drums, and other forms of packaging. ~~Collectively, the glass, metal, plastic, and paper containers segments share similar hurdles and~~

¹ The AICPA defines sustainability information in its Guide, [Attestation Engagements on Sustainability Information \(Including Greenhouse Gas Emissions Information\)](#) (Issued July 2017), as follows: "information about sustainability matters (such as economic, environmental, social and governance performance)." It further explains that "sustainability metrics and sustainability indicators are components of sustainability information. Sustainability information may be nonquantitative (narrative), historical, or forward-looking."

² <https://library.sasb.org/implementation-guide>

³ <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AT-C-00105.pdf>

⁴ <http://pcaobus.org/Standards/Attestation/Pages/AT701.aspx>

~~Companies in the industry typically function as business-characteristics-to-business entities and many have international operations. The industry uses large amounts of converts raw certain inputs such as metal, plastic, paper, and glass materials. Materials sourcing is a significant costs for the industry and is associated with environmental and social externalities in the supply chain, resulting in reputational and pricing risks. Similarly the including metal, plastic, paper, and glass materials into semi-finished or finished packaging products. The design, manufacturing and end-of-life treatment of containers and packaging can create significant environmental impact. As a result, the industry is under increasing customer and regulatory pressure to limit social and environmental impacts throughout the life cycle of their products-carry important sustainability considerations, including tradeoffs in energy use, water consumption, and the product lifecycle.~~

Users of the SASB Standards

The SASB Standards are intended for use by public companies and by investors to inform investment decisions. The standards facilitate disclosure of financially material sustainability-related information in a concise, comparable, cost-effective, decision-useful format.

The SASB Standards are designed for integration into existing reporting mechanisms, such as SEC filings. This keeps the administrative and cost burden to a minimum. SEC filings include Form 10-K for U.S. companies, Form 20-F for foreign issuers, Form 40-F for Canadian issuers, quarterly reports on Form 10-Q, current reports on Form 8-K, and registration statements on Forms S-1 and S-3. The SASB Standards are also recognized by the European Commission as a suitable framework for companies to provide information to investors pursuant to EU Directive 2014/95/EU. See “Guidelines on non-financial reporting (methodology for reporting non-financial information).”⁵ Thus, SASB standards are a cost-effective way to satisfy both U.S. and European reporting requirements.

SASB evaluates the materiality of sustainability-related topics by using the high threshold of financial materiality that is established under the U.S. securities laws.⁶ Although designed to meet the rigorous disclosure requirements of the U.S. capital markets (thereby producing a high-quality set of evidence-based standards focused on material investor-focused topics), the standards represent a best practice that can be used by companies of all types (public and private) to describe their material sustainability-related risks and opportunities.

Guidance for Disclosure of Sustainability Topics in SEC Filings

1. Industry-Level Sustainability Topics

For the Containers & Packaging industry, the SASB has identified the following sustainability disclosure topics:

- Greenhouse Gas (GHG) Emissions
- Air Quality
- Energy Management
- Water Management
- Waste Management
- Product Safety
- Product Lifecycle Management
- Materials Sourcing

2. Determination of Materiality

⁵ https://ec.europa.eu/info/publications/170626-non-financial-reporting-guidelines_en

⁶ https://library.sasb.org/materiality_bulletin/

In the U.S., sustainability disclosures are governed by the same laws and regulations that generally govern disclosures by securities issuers. According to the U.S. Supreme Court, a fact is material if, in the event such fact is omitted from a particular disclosure, there is a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of the information made available.⁷

Through a rigorous process of research, review of evidence, and public input, the SASB has identified sustainability topics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within each Sustainable Industry Classification System™ (SICS™) industry.⁸ **However, the issuer must determine what information is (or is reasonably likely to be) material to the reasonable investor.** For further information regarding a process that corporations can use to assess the financial materiality of the sustainability-related topics in SASB standards, please see SASB's Implementation Guide.⁹

3. SEC Requirements Relating to Disclosure of Material Sustainability Information

If a public company determines that certain sustainability information is reasonably likely to be material, it must then determine whether disclosure of some or all of the information under applicable SASB Standards is required under the U.S. federal securities laws. Several provisions of those laws are relevant to sustainability disclosures.

Regulation S-K sets forth certain disclosure requirements associated with Form 10-K and other SEC filings. Item 303 of Regulation S-K requires companies to, among other things, describe in the Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) section of Form 10-K "any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed."¹⁰

Furthermore, the instructions to Item 303 state that the MD&A "shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition."¹¹

The SEC has provided guidance for companies to use in determining whether a trend or uncertainty should be disclosed. The two-part assessment prescribed by the SEC can be applied to the topics included within this Standard:

- First, a company is not required to make disclosure about a known trend or uncertainty if its management determines that such trend or uncertainty is not reasonably likely to occur.

⁷ *TSC Industries v. Northway, Inc.*, 426 U.S. 438 (1976).

⁸ https://library.sasb.org/materiality_bulletin/

⁹ <https://library.sasb.org/implementation-guide>

¹⁰ C.F.R. 229.303(Item 303)(a)(3)(ii).

¹¹ SEC [Release Nos. 33-8056; 34-45321; FR-61] Commission Statement about Management's Discussion and Analysis of Financial Condition and Results of Operations: "We also want to remind registrants that disclosure must be both useful and understandable. That is, management should provide the most relevant information and provide it using language and formats that investors can be expected to understand. Registrants should be aware also that investors will often find information relating to a particular matter more meaningful if it is disclosed in a single location, rather than presented in a fragmented manner throughout the filing."

- Second, if a company's management cannot make a reasonable determination of the likelihood of an event or uncertainty, then disclosure is required "unless management determines that a material effect on the registrant's financial condition or results of operation is not reasonably likely to occur."

Companies should also consider the applicability of other Regulation S-K requirements. Specifically, Item 101 ("Description of Business") requires a company to provide a description of its business and its subsidiaries. Item 103 ("Legal Proceedings") requires a company to describe briefly any material pending or contemplated legal proceedings; instructions to Item 103 provide specific disclosure requirements for administrative or judicial proceedings arising from laws and regulations that target discharge of materials into the environment, or that are primarily for the purpose of protecting the environment. Item 503(c) ("Risk Factors") requires a company to provide discussion of the most significant factors that make an investment in the registrant speculative or risky, clearly stating the risk and specifying how it affects the company.

Finally, as a general matter, Securities Act Rule 408 and Exchange Act Rule 12b-20 require a registrant to disclose, in addition to the information expressly required by law or regulation, "such further material information, if any, as may be necessary to make the required statements, in light of the circumstances under which they are made, not misleading."

4. Where Disclosures Should Be Made in SEC Filings

In using the definition of materiality established under the U.S. federal securities laws, the SASB has identified and developed industry-specific sustainability topics and metrics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within a particular industry. As a general matter, the SASB believes that investors are best served when disclosure of such information is made in SEC filings. An issuer might, for example, make the disclosure in a sub-section of MD&A with a caption, "**Sustainability-Related Information**," with a section that includes the material topics, performance metrics, and management's view with respect to corporate positioning. See SASB's "Mock 10-Ks" for examples of preparing an MD&A using the SASB Standards.¹² Issuers are not precluded from using the Standards elsewhere, such as in stand-alone communications to investors or in sustainability reports (sometimes referred to as corporate social responsibility reports or environmental, social, and governance reports), company websites, or elsewhere. Corporate communication on material topics, including sustainability-related material topics, should be consistent across communication channels. As discussed above, SEC regulations may compel inclusion of material sustainability information in an SEC filing where it is deemed financially material.

The SASB recognizes that sustainability topics are relatively new areas of investor interest, and it may be difficult to determine whether particular sustainability information is material in certain situations. Accordingly, issuers might also consider using the SASB Standards in filings using Form 8-K, Item 8.01 ("Other Events"). This provision states that "The registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not otherwise called for by this form, that the registrant deems of importance to security holders." Making a disclosure under Item 8.01 would not require the issuer to make a decision regarding materiality, and might also provide the company with more time to make the disclosure than is permitted under filing rules applicable to Form 10-K, thereby facilitating the completeness and accuracy of the disclosed information.

¹² <http://using.sasb.org/mock-10-k-library/>

When using the Standards, issuers should cite or refer to the relevant SASB Standard.

More detailed guidance on preparing disclosures of material information related to sustainability topics and making topic-level materiality determinations can be found in the **SASB Conceptual Framework**, available for download via <http://www.sasb.org/approach/conceptual-framework/>, and the **SASB Implementation Guide for Companies**, available for download via <https://library.sasb.org/implementation-guide/>.

Guidance on Accounting for Sustainability Topics

The SASB has identified accounting metrics for each sustainability topic included in this Standard. The SASB recommends that companies within this industry consider using these sustainability accounting metrics when preparing disclosures on the sustainability topics identified herein.

When disclosing information related to a sustainability topic identified by this Standard, companies should consider including a narrative description of any material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description might in certain circumstances include a discussion of the following:¹³

- The registrant's **governance** around the risks and opportunities related to the topic, including board oversight of and management's role in assessing and managing such risks and opportunities.
- The registrant's **strategic approach** regarding actual and potential impacts of topic-related risks and opportunities on the organization's **businesses, strategy, and financial planning**, over the **short, medium, and long term**.
- The registrant's process to **identify, assess, and manage** topic-related risks, and how these risks are integrated into the registrant's overall risk management process.
- The registrant's **use of metrics or targets** to assess and manage topic-related risks and opportunities.
- Data for the registrant's **last three completed fiscal years** (when available).

The SASB recommends that registrants use SASB Standards specific to their primary industry as identified in SICSTM. If a registrant generates significant revenue from multiple industries, the SASB recommends that it also consider sustainability topics that the SASB has identified for those industries, and disclose the associated SASB accounting metrics.

Further, the SASB recommends that companies design, implement, and maintain adequate systems of internal control over sustainability performance information to provide reasonable confidence regarding the achievement of related reporting objectives, such as those relating to the reliability of disclosed information.¹⁴

¹³ These areas for possible additional narrative description are generally aligned with the [Recommendations of the Task Force on Climate-related Financial Disclosures](#), which contains a more extensive discussion of such disclosure matters.

¹⁴ In this regard, companies are referred to the report of a group of experts in this area. Robert H. Herz, Brad J. Monterio, Jeffrey C. Thomson, Leveraging the COSO Internal Control – Integrated Framework to Improve confidence in Sustainability Performance Data (August 2017).

The SASB takes no position as to whether third-party attestation is necessary to enhance the credibility of the disclosed sustainability information, but as a matter of good governance, the SASB suggests that such assurance be considered.¹⁵

Scope of Disclosure

Unless otherwise specified, the SASB recommends:

- That a registrant disclose information on sustainability topics and metrics for itself and for entities that are consolidated for financial reporting purposes, as defined by accounting principles generally accepted in the United States (“US GAAP”), for consistency with other accompanying information within SEC filings;¹⁶
- That for consolidated entities, disclosures be made, and accounting metrics calculated, for the whole entity, regardless of the size of the minority interest; and
- That information from unconsolidated entities not be included in the computation of SASB accounting metrics. However, the registrant should disclose information about unconsolidated entities to the extent that the registrant considers the information necessary for investors to understand the effect of sustainability topics on the company’s financial condition or operating performance. (Typically, this disclosure would be limited to risks and opportunities associated with these entities.)

Reporting Format

Use of Financial Data

In instances where accounting metrics, activity metrics, and technical protocols in this Standard incorporate financial data (e.g., revenues, cost of sales, expenses recorded and disclosed for fines, etc.), such financial data shall be prepared in accordance with US GAAP, and be consistent with the corresponding financial data reported in the registrant’s SEC filings. Should accounting metrics, activity metrics, and technical protocols in this Standard incorporate disclosure of financial data that is not prepared in accordance with US GAAP, the registrant shall disclose such information in accordance with SEC Regulation G.¹⁷

Activity Metrics and Normalization

The SASB recognizes that normalizing accounting metrics is important for the analysis of SASB disclosures.

The SASB recommends that a registrant disclose any basic business data that may assist in the accurate evaluation and comparability of disclosure, to the extent that they are not already disclosed in Form 10-K (e.g., revenue, EBITDA, etc.).

¹⁵ The AICPA’s Guide (see supra note 1) provides guidance to assist accounting practitioners in performing attestation engagements on sustainability information.

¹⁶ See US GAAP consolidation rules (Section 810).

¹⁷ <https://www.sec.gov/rules/final/33-8176.htm>

Such data—termed “activity metrics”—may include high-level business data, including total number of employees, quantity of products produced or services provided, number of facilities, or number of customers. It may also include industry-specific data such as plant capacity utilization (e.g., for specialty chemical companies), number of transactions (e.g., for Internet media and services companies), hospital bed days (e.g., for health care delivery companies), or proven and probable reserves (e.g., for oil and gas exploration and production companies).

Activity metrics disclosed should:

- Convey contextual information that would not otherwise be apparent from SASB accounting metrics.
- Be deemed generally useful for investors relying on SASB accounting metrics to perform their own calculations and create their own ratios.
- Be explained and consistently disclosed from period to period to the extent that they continue to be relevant. However, a decision to make a voluntary disclosure in one period does not obligate a continuation of that disclosure if it is no longer relevant, or if a better metric becomes available.¹⁸

Where relevant, the SASB recommends specific activity metrics that—at a minimum—should accompany SASB accounting metric disclosures.

Table 1. Activity Metrics

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Amount of production, by substrate ¹⁹	Quantitative	Metric tons (t)	RT0204-A
Percentage of production as (a) paper/wood, (b) glass, (c) metal, and (d) plastic	Quantitative	Percentage (%) by revenue	RT0204-B
Number of employees	Quantitative	Number	RT0204-C

Units of Measure

Unless specified, disclosures should be reported in International System of Units (SI units).

Uncertainty

The SASB recognizes that there may be inherent uncertainty when measuring or disclosing certain sustainability data and information. This uncertainty may be related to variables such as the reliance on data from third-party reporting systems and technologies, or the unpredictable nature of climate events. Where uncertainty around a particular disclosure exists, the SASB recommends that the registrant should consider discussing its nature and likelihood.²⁰

¹⁸ Improving Business Reporting: Insights into Enhancing Voluntary Disclosures, FASB Business Reporting Research Project, January 29, 2001.

¹⁹ Note to RT0204-A – Relevant substrates include paper and/or wood fiber, glass, metal, and petroleum-based substrates (i.e., polymers).

²⁰ The AICPA’s Guide (see supra note 1) provides guidance related to measurement uncertainty.

Estimates

The SASB recognizes that scientifically-based estimates, such as the reliance on certain conversion factors or the exclusion of *de minimis* values, may occur for certain quantitative disclosures. Where appropriate, the SASB does not discourage the use of estimates or ranges. When using an estimate for a particular disclosure, the SASB expects that the registrant discuss its nature and substantiate its basis.

Timing

Unless otherwise specified, disclosure shall be for the registrant's fiscal year.

Limitations

There is no guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry, or company; therefore, a company must determine for itself the topics that warrant discussion in its SEC filings.

Use of the SASB Standards is voluntary. The Standards are not intended to replace any legal or regulatory requirements that may be applicable to a company's operations. When such laws or regulations address legal or regulatory topics, disclosure under SASB Standards is not meant to supersede those requirements.

Use of the SASB Standards is not required or endorsed by the SEC or various entities governing financial reporting, including the Financial Accounting Standards Board, the Government Accounting Standards Board, or the International Accounting Standards Board.

Forward-Looking Statements

Disclosures on sustainability topics can, in some circumstances, involve discussion of future trends and uncertainties related to the registrant's operations and financial condition, including those influenced by external variables (e.g., environmental, social, regulatory, and political). Companies making these disclosures in SEC filings should familiarize themselves with the safe harbor provisions of Section 27A of the Securities Act, and Section 21E of the Exchange Act, which preclude civil liability for material misstatements or omissions in such statements if the registrant takes certain steps. These include, among other things, identifying the disclosure as "forward-looking," and accompanying such disclosure with "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statements."

Notes on the Sustainability Accounting Standards

The following sections contain the disclosure guidance associated with each accounting metric, including guidance on definitions, scope, accounting, compilation, and presentation.

The term "shall" is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms "should" and "may" are used to indicate guidance, which, although not required, provides a recommended means of disclosure.

Table 2. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage covered under a regulatory program	Quantitative	Metric tons CO ₂ -e, Percentage (%)	RT0204-01
	Description of long-term and short-term strategy or plan to manage Scope 1 emissions, including emission-reduction targets and an analysis of performance against those targets	Discussion and Analysis	n/a	RT0204-02
Air Quality	Air emissions for the following pollutants: NO _x (excluding N ₂ O), SO _x , particulate matter (PM), and volatile organic compounds (VOCs)	Quantitative	Metric tons (t)	RT0204-03 TA07-21-01
Energy Management	Total energy consumed, <u>total self-generated</u> , percentage grid electricity, percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	RT0204-04 TA07-22-01
Water Management	(1) Total water withdrawn, percentage in regions with High or Extremely High Baseline Water Stress and (2) percentage recycled water usage	Quantitative	Cubic Meters (m ³), Percentage (%)	RT0204-05
	Number of incidents of non-compliance with water quality permits, standards, and regulations	Quantitative	Number	RT0204-06 TA07-23-01
Waste Management	Amount of total waste from manufacturing , <u>percentage hazardous waste</u> , percentage recycled	Quantitative	Metric tons (t), Percentage (%)	RT0204-07 TA07-24-01
Product Safety	Number of recalls and total units recalled ²¹	Quantitative	Number	RT0204-08
	Discussion of process to identify and manage emerging materials and chemicals of concern	Discussion and Analysis	n/a	RT0204-09
Product Lifecycle Management	Percentage of raw materials from (1) recycled content (2) renewable resources <u>and (3) recycled content and renewable resources</u>	Quantitative	Percentage (%) by metric tons	RT0204-10 TA07-25-01
	Revenue from products that are reusable, recyclable, and/or compostable	Quantitative	U.S. Dollars (\$)	RT0204-11
	Description of strategies to reduce the environmental impact of packaging throughout its lifecycle	Discussion and Analysis	n/a	RT0204-12
Materials Sourcing	Total wood fiber purchased <u>procured</u> , percentage from certified sources	Quantitative	Metric tons (t), Percentage (%) by weight	RT0204-13 TA07-26-01
	Total aluminum purchased, percentage from certified sources	Quantitative	Metric tons (t), Percentage (%) by weight	RT0204-14

²¹ Note to **RT0204-08**—The registrant shall discuss notable recalls, such as those that affected a significant number of products, a significant number of units of one product, or those related to serious injury or fatality.

Greenhouse Gas Emissions

Description

Containers and packaging manufacturing generates ~~significant~~ direct (Scope 1) ~~greenhouse gas~~ (GHG) emissions from the combustion of fossil fuels in manufacturing and cogeneration processes. GHG emissions ~~contribute to climate change and can~~ create additional regulatory compliance costs and risks for containers and packaging companies due to ~~climate change emissions~~ mitigation policies. Financial impacts on companies will vary depending on the specific location of operations and the prevailing emissions regulations. Companies that cost-effectively reduce GHG emissions in their operations through better energy efficiency, use of cleaner fuels, or manufacturing improvements can garner financial benefits in the form of lower costs and operating risks or additional revenues from the sale of carbon allowances.

Accounting Metrics

RT0204-01. Gross global Scope 1 emissions, percentage covered under a regulatory program

- .01 The registrant shall disclose gross global Scope 1 ~~greenhouse gas~~ (GHG) emissions to the atmosphere of the six GHGs covered under the Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).
 - Emissions of all gases shall be disclosed in metric tons of carbon dioxide equivalents (CO₂-e), calculated in accordance with published global warming potential (GWP) factors. To date, the preferred source for GWP factors is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2013).
 - Gross emissions are GHGs emitted to the atmosphere before accounting for any GHG reduction activities, offsets, or other adjustments for activities in the reporting period that have reduced or compensated for emissions.
 - Disclosure corresponds to section CC8.2 of the Carbon Disclosure Project (CDP) Questionnaire (2015) and REQ-11 of the Climate Disclosure Standards Board (CDSB) Climate Change Reporting Framework (CCRF) (2015).
- .02 Scope 1 emissions are defined by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD) in [The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, March 2004](#)~~2015~~ (hereafter, the “GHG Protocol”).
 - These emissions include direct emissions of GHGs from stationary or mobile sources that include, but are not limited to, equipment, production facilities, office buildings, and transportation (i.e., marine, road, or rail).

- .03 GHG emission data shall be consolidated according to the approach with which the registrant consolidates its financial reporting data, which is generally aligned with:
- The Financial Control approach defined by the GHG Protocol and referenced by the [CDP Guidance for companies reporting on climate change on behalf of investors & supply chain members 2013](#) (hereafter, the “CDP Guidance”).²²
 - The approach detailed in REQ-1, “Organizational boundary setting for GHG emissions reporting,” of the CDSB CCRF (2015).²³
- .04 The underlying technical approach to data collection, analysis, and disclosure shall be consistent with the CDP Guidance.
- The registrant shall consider the CDP Guidance as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.
- .05 The registrant shall disclose the percentage of its emissions that are covered under a regulatory program, such as the European Union Emissions Trading Scheme (EU ETS), Western Climate Initiative (WCI), California Cap-and-Trade (California Global Warming Solutions Act), or other regulatory programs.
- Regulatory programs include cap-and-trade schemes and carbon tax/fee systems.
 - Disclosure shall exclude emissions covered under voluntary trading systems and disclosure-based regulations (e.g., the U.S. Environmental Protection Agency (EPA) mandatory reporting rule).
- .06 The registrant should discuss any change in its emissions from the previous fiscal year, such as if the change was due to emissions reductions, divestment, acquisition, mergers, changes in output, and/or changes in calculation methodology.
- .07 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 registrant may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.
- .08 The registrant should discuss the calculation methodology for its emission disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations, mass balance calculations, etc.
- .09 The registrant should consult the most recent version of each document referenced in this standard at the time disclosure occurs.

²² “An organization has financial control over an operation if it has the ability to direct the financial and operating policies of the operation with a view to gaining economic benefits from its activities. Generally an organization has financial control over an operation for GHG accounting purposes if the operation is treated as a group company or subsidiary for the purposes of financial consolidation.” *Guidance for companies reporting on climate change on behalf of investors & supply chain members 2013*, p. 95.

²³ This is based on the requirements of International Accounting Standards/International Financial Reporting Standards (IAS/IFRS) on consolidation and equity accounting and is consistent with how information relating to entities within a group or interest in joint ventures/associates would be included on consolidated financial statements, as further detailed in *CDSB Proposals for Boundary Setting in Mainstream Reports*.

RT0204-02. Description of long-term and short-term strategy or plan to manage Scope 1 emissions, including emission-reduction targets and an analysis of performance against those targets

.10 The registrant shall discuss the following where relevant:

- The scope, such as whether strategies, plans, and/or reduction targets pertain differently to different business units, geographies, or emissions sources;
- Whether strategies, plans, and/or reduction targets are related to or associated with an emissions disclosure (reporting) or reduction program (e.g., EU ETS, RGGI, WCI, etc.), including regional, national, international, or sectoral programs; and
- The activities and investments required to achieve the plans, and any risks or limiting factors that might affect achievement of the plans and/or targets.

.11 For emission-reduction targets, the registrant shall disclose:

- The percentage of emissions within the scope of the reduction plan;
- The percentage reduction from the base year;
 - The base year is the first year against which emissions are evaluated towards the achievement of the target.
- Whether the target is absolute or intensity based, and the metric denominator if it is an intensity-based target;
- The timelines for the reduction activity, including the start year, the target year, and the base year. Disclosure shall be limited to activities that were ongoing (active) or reached completion during the fiscal year; and
- The mechanism(s) for achieving the target, such as energy efficiency efforts, energy source diversification, carbon capture and storage, etc.

.12 Where necessary, the registrant shall discuss any circumstances in which the target base year emissions have been, or may be, recalculated retrospectively or where the target base year has been reset.

.13 Disclosure corresponds with:

- CDSB CCRF (2015) REQ-9, "Management actions."
- CDP questionnaire (2015) "CC3. Targets and Initiatives."

Air Quality

Description

~~Apart from In addition to GHGs, which have global impacts, other Containers & Packaging manufacturing emits air emissions from container and packaging manufacturing can have significant, localized including sulfur oxides (SO₂), nitrogen oxides (NO_x), and particulate matter (PM), which are linked with human health and environmental impacts. As with GHGs GHG emissions, emissions of air pollutants in the Containers & Packaging industry typically stem from the combustion of fuels and the processing of raw materials. Air pollutants include sulfur dioxide (SO₂) and nitrogen oxides (NO_x), which can contribute to acid rain and smog. Financial impacts from air emissions will vary depending on Emissions from the specific location of operations and the prevailing air emissions regulations. Active management of the issue through technological and process improvements can mitigate the impacts of increasingly stringent global air industry have declined considerably in recent years. Air emissions abatement expenditures can be significant, while air-quality regulations can create regulatory uncertainty. Companies can also that can cost-effectively reduce air emissions could improve operational efficiency, benefit from operational efficiencies and a lower cost structure over time. Human health impacts and financial consequences of poor air quality management are likely to be exacerbated by the proximity of manufacturing to communities., and mitigate regulatory risk.~~

Accounting Metrics

~~RT0204-03TA07-21-01. Air emissions for the following pollutants: NO_x (excluding N₂O), SO_x, particulate matter (PM), and volatile organic compounds (VOCs)~~

.14 The registrant shall disclose its emissions of air pollutants that are released to the atmosphere as a result of its activities:

- Direct air emissions from stationary or mobile sources that include, but are not limited to, production facilities, office buildings, marine vessels transporting products, and truck fleets.

.15 The registrant shall disclose emissions released to the atmosphere by emissions type. Substances include:

- Oxides of nitrogen (including NO and NO₂ and excluding N₂O), reported as NO_x.
- Sulfur emissions which include oxides of sulfur and sulfuric acid (including SO₂, SO₃, and H₂SO₄), reported as SO_x.
 - Registrants may report sulfur emissions as total sulfur dioxide (SO₂), as permitted by regional or national regulations.
- PM, reported as the sum of PM₁₀ and PM_{2.5}, or all particulates less than 10 micrometers in diameter, where:
 - PM₁₀ is defined as inhalable coarse particles larger than 2.5 microns but smaller than 10 microns and PM_{2.5} is defined as fine particulate matter of 2.5 microns or less.
 - Registrants may report particulate matter emissions as of total filterable particulate matter, as permitted by regional or national regulations.

- Non-methane ~~volatile organic compounds (VOCs)~~, 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 by the U.S. Environmental Protection Agency (EPA) as having negligible photochemical reactivity.
 - Where regional and national definitions supersede EPA regulations, such as EC Directive 1999/13/EC and Schedule 1 of the Canadian Environmental Protection Act 1999, the registrant may refer to the relevant regulations on VOCs.
 - Registrants may report VOC emissions as carbon, as permitted by regional or national regulations.

.16 This scope does not include CO₂, CH₄, and N₂O, which are disclosed in RT0204-01 as Scope 1 GHG emissions.

.17 Air emissions data shall be consolidated according to the approach with which the registrant consolidates its financial reporting data, which is aligned with the consolidation approach used for RT0204-01.

.18 The registrant should discuss the calculation methodology for its emission disclosure, such as whether data are from continuous emissions monitoring systems (CEMS), engineering calculations, mass balance calculations, etc.

Energy Management

Description

~~Fuel combustion onsite contributes to the Containers & Packaging industry's direct (Scope 1) GHG emissions. However, electricity purchases from the grid create indirect impacts on the climate through Scope 2 emissions. These firms are highly reliant on energy as an input for value creation, due to their manufacturing is energy-intensive operations. Since electricity consumption can indirectly contribute to climate change and air pollution through. In most facilities, energy is derived from the direct combustion of biomass and fossil fuels. at the utility level, the cost of grid electricity may increase as utilities face higher regulatory compliance costs. With manufacturing and assembly plants located worldwide, the likelihood and impact of climate change regulations will vary depending on the exact location of facilities. Decisions regarding generating electricity on-site versus sourcing it from the grid, as well as the use of biomass and other renewable energy, can create trade-offs related to the energy supply's cost and reliability for operations and the extent of the regulatory risk from Scope 1 or other air emissions. The manner in which a company manages its overall energy efficiency and intensity, its reliance on different energy types of energy and the associated sustainability risks, and its ability to access alternative energy sources of energy can influence is likely to significantly impact its profitability and risk profile. financial performance.~~

Accounting Metrics

~~RT0204-04TA07-22-01. Total energy consumed, total self-generated energy, percentage grid electricity, percentage renewable~~

~~.19 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or their multiples.~~

- ~~• The scope includes energy purchased from sources external to the organization or produced by the organization itself (self-generated).~~
- ~~• The scope includes only energy consumed by entities owned or controlled by the organization.~~
- ~~• The scope includes energy from all sources, including direct fuel usage, purchased electricity, and heating, cooling, and steam energy.~~

~~.20 In calculating energy consumption from fuels and biofuels, the registrant 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).~~

~~.21 The registrant shall disclose the amount of energy self-generated by the registrant as an aggregate figure in gigajoules or their multiples.~~

- ~~• The registrant may disclose the amount of energy that it sells to an electric utility or end-use customer in excess of what it generates.~~

~~.21.22 The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.~~

~~22.23~~ The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.

~~23.24~~ The scope of renewable energy includes renewable fuel the registrant consumes and renewable energy the registrant directly produces, purchases through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs), purchases through a Green-e Energy Certified utility or supplier program, or for which Green-e Energy Certified RECs are paired with grid electricity.

- For any renewable electricity generated on-site, any RECs must be retained (i.e., not sold) and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- For renewable PPAs, the agreement must explicitly include and convey that RECs be retained and retired on behalf of the registrant in order for the registrant to claim them as renewable energy.
- The renewable portion of the electricity grid mix that is outside of the control or influence of the registrant is excluded from disclosure.²⁴
- Renewable energy is defined as energy from sources that are ~~capable of being~~ replenished ~~in at a rate greater than or equal to their rate of depletion, consistent with EPA definitions~~ short time through ecological cycles, such as geothermal, wind, solar, hydro, and biomass.

~~24.25~~ For the purposes of this disclosure, the scope of renewable energy from hydro and biomass sources is limited to the following:

- Energy from hydro sources that are certified by the Low Impact Hydropower Institute or that are eligible for a state Renewable Portfolio Standard.
- 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 renewables” according to the Green-e Energy National Standard Version 2.5 (2014), ~~and/or~~ materials that are eligible for a state Renewable Portfolio Standard.

~~25.26~~ The registrant 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 kWh to gigajoules (for energy data including electricity from solar or wind energy).

²⁴ SASB recognizes that RECs reflect the environmental attributes of renewable energy that have been introduced to the grid, and that a premium has been paid by the purchaser of the REC to enable generation of renewable energy beyond any renewable energy already in the grid mix, absent the market for RECs.

Water Management

Description

Water is becoming an increasingly scarce resource worldwide due to population growth, rapid urbanization, and climate change. Water scarcity can result in higher supply costs and higher risk of shortages for companies with water-intensive operations. Containers and packaging production is relatively water-intensive. Water is used primarily for cooling, steam generation, and product processing. Furthermore, container and packaging manufacturing can generate process wastewater, which may be contaminated with heavy metals, suspended solids, extreme pH levels, and organic pollutants. Reducing water use and contamination through recycling and other water management strategies can lead to operational efficiency and lower operating costs, and can minimize the impacts of regulations, water supply shortages, and community-related disruptions of operations. Containers & Packaging manufacturing requires water for various stages of production, including in raw-materials processing, process cooling, and steam generation at on-site cogeneration plants. Companies require ample, stable water supplies and produce large volumes of wastewater, which is commonly treated on-site and discharged into the environment. Process water typically contains dissolved organic compounds and other solids, underscoring the importance of water treatment. In addition to water effluents, water availability is an increasing concern for the industry. The industry's water needs are met by surface-water withdrawals and public utility supply. Water scarcity could result in higher supply costs, supply disruptions, and tension with local water users. Containers & Packaging manufacturing facilities, depending on their location, may be exposed to these risks. Companies can adopt various strategies to address water supply and treatment issues, such as cost-effectively enhancing the recycling of process water, improving production techniques to lower water intensity, and ensuring compliance with water-effluent regulations.

Accounting Metrics

RT0204-05. (1) Total water withdrawn, percentage in regions with High or Extremely High Baseline Water Stress and (2) percentage recycled water usage

~~26.27~~ The registrant shall disclose the amount of water (in thousands of cubic meters) that was withdrawn from fresh water sources for use in operations.

- Fresh water may be defined according to the local statutes and regulations where the registrant operates. Where there is no regulatory definition, fresh water shall be considered to be water that has a solids (TDS) concentration of less than 1000 mg/l per the Water Quality Association definition.
- Water obtained from a water utility can be assumed to meet the definition of fresh water.

~~27.28~~ Using the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct (publicly available online [here](#)), the registrant shall analyze all of its operations for water risks and identify activities that are in a location with High (40–80%) or Extremely High (>80%) Baseline Water Stress. Water withdrawn in locations with High or Extremely High Baseline Water Stress shall be indicated as a percentage of the total water withdrawn.

~~28.29~~ The registrant shall disclose the percentage of its total water usage that was met from recycled water usage during the fiscal year, where:

- Total water usage includes all fresh water withdrawals, non-fresh water withdrawals, and all usage of recycled water (which, if reused multiple times, shall be counted as usage each time it is reused).
- Recycled water usage includes any volume of water that is recycled and reused, and water reused multiple times shall be counted as recycled each time it is recycled and reused.
- Recycled water includes water that is reused in closed-loop and open-loop systems.
- Recycled water includes grey water, water treated prior to reuse, and water not treated prior to reuse.
- The percentage shall be calculated as the total recycled water usage divided by total water usage.

RT0204-06TA07-23-01. Number of incidents of non-compliance with water quality permits, standards, and regulations

~~29.30~~ The registrant shall disclose the total number of instances of non-compliance, including violations of a technology-based standard and exceedances of a quality-based standard.

~~30.31~~ The scope of disclosure includes incidents governed by federal, state, and local statutory permits and regulations, including, but not limited to, the discharge of a hazardous substance, violation of pretreatment requirements, or total maximum daily load (TMDL) exceedances.

~~31.32~~ ~~An incident~~ The scope of disclosure shall only include incidents of non-compliance ~~shall be disclosed regardless of whether it~~ that resulted in ana formal enforcement action ~~(e.g., fine, warning letter, etc.)~~ (s).

- Formal enforcement actions are defined as statutorily recognized actions that address a violation or threatened violation of water quality laws, regulations, policy or orders, and include administrative penalty orders, administrative orders, and judicial actions, among others. For example, the EPA provides guidance on the scope of formal enforcement actions in, [Informal and Formal Actions, Summary Guidance and Portrayal on EPA Websites](#).

~~32.33~~ Violations, regardless of their measurement methodology or frequency, shall be disclosed. These include:

- For continuous discharges, limitations, standards, and prohibitions that are generally expressed as maximum daily, weekly average, and monthly averages.
- For 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-

Additional references

[Secondary Drinking Water Regulations: Guidance for Nuisance Chemicals](#)

Waste Management

Description

Containers and packaging companies face regulatory and operational challenges in managing their process waste, as many of these substances can be harmful to human health and the environment. Container and packaging manufacturing generates wastes subject to regulations within the U.S. and internationally, such as the Resource Conservation and Recovery Act (RCRA), which regulates the generation, transport, treatment, storage, and disposal of hazardous and solid waste. Proper processing and disposal of waste materials are ~~essential~~important to ~~limiting~~limit ~~the~~ risk of remediation liabilities, fines, and regulations. In addition, companies that ~~are able to~~can reuse process waste as raw materials in production may achieve cost savings ~~and improve profitability~~.

Accounting Metrics

~~RT0204-07~~TA07-24-1. Amount of ~~total waste from manufacturing, percentage hazardous waste,~~ percentage recycled

~~.34~~ The registrant shall calculate and disclose the amount of total hazardous waste from manufacturing shall be calculated generated (in metric tons);

- ~~•~~ Hazardous wastes are defined per the legal or regulatory frameworks applicable within the jurisdictions where: the waste is generated.
- ~~•~~ Waste includes both secondary materials, per 40 CFR 241.2, and waste that meets the definition of solid waste, according to 40 CFR 261.2.

~~The percentage hazardous shall be calculated as the weight registrant shall disclose the legal or regulatory framework used to define hazardous waste for the five largest source jurisdictions of hazardous waste at the point of generation divided by, as well as the percentage of total weight of waste material. Hazardous waste shall include both hazardous secondary materials defined according to 40 CFR 260.10, and materials that meet the definition of hazardous waste under Subtitle C of the U.S. Environmental Protection Agency's (EPA) Resource Conservation and Recovery Act (RCRA), according to 40 CFR 261.3 generated in each of these jurisdictions.~~

- ~~▪~~ The registrant should consider the use of the EPA's Resources Conservation and Recovery Act (RCRA) or European Commission Directives on Hazardous Waste for the purposes of defining hazardous waste for operations which are located in jurisdictions other than those to which these frameworks apply.
- ~~•~~ Disclosure corresponds with Global Reporting Initiative [Effluents and Waste 2016](#) Disclosure 306-2 a. Hazardous wastes include those that display the following characteristics: ignitability, corrosivity, reactivity, or toxicity.

~~.35~~ The percentage recycled shall be calculated as the weight (in metric tons) of hazardous waste material that was reused or reclaimed, plus the weight recycled or remanufactured (through treatment or processing) by the registrant, plus the amount sent externally for further recycling, divided by the total weight of hazardous waste material, (in metric tons).

- Recycled hazardous wastes shall be categorized per laws applicable within the jurisdictions where the waste is recycled.
- Disclosure corresponds with Global Reporting Initiative [Effluents and Waste 2016](#) Disclosure 306-2 a. ii.
- ~~A hazardous waste is recycled if it is used, reused, or reclaimed.~~
- ~~Reclaimed materials are defined as those processed to recover or regenerate a usable product, consistent with . Common hazardous waste reclamation activities involve recovery of spent solvents (e.g., recovery of acetone) or metals (e.g., recovery of lead).~~
- ~~Reused materials are defined as those recovered products or components of products that are used for the same purpose for which they were conceived.~~
- ~~Recycled and remanufactured materials are defined as waste materials that have been reprocessed or treated by means of production or manufacturing processes and made into a final product, or made into a component for incorporation into a product.~~
- ~~Materials sent for further recycling include those materials that are transferred to a third party for the express purpose of reuse, recycling, or refurbishment.~~
- ~~The scope of recycled and remanufactured products includes primary recycled materials, co-products (outputs of equal value to primary recycled materials), and by products (outputs of lesser value than primary recycled materials).~~
- ~~Portions of products and materials that are disposed of in landfills are not considered recycled; only the portions of products that are directly incorporated into new products, co-products, or by products shall be included in the percentage recycled.~~
- ~~Materials incinerated, including for energy recovery, are not considered reused or recycled. Energy recovery is defined as the use of combustible waste as a means to generate energy through direct incineration, with or without other waste, but with recovery of the heat.~~

Additional References

For guidance on the “legitimate recycling” of hazardous waste, see 40 CFR 260.43.

Product Safety

Description

The quality and safety of ~~containers~~container and packaging products is a critical factor for the industry, since ~~many of their~~ products may come into contact with consumables including foods, beverages, and ~~pharmaceuticals, and can leach small amounts of chemicals. Similarly, poor quality of packaging can lead to unintended consequences, such as increased food spoilage or tarnished quality of contents, which may result~~may be used in ~~product recalls and adverse~~the health ~~impacts~~care industry. Evolving ~~scientific~~ understanding on the health impacts of packaging may lead to a shift in consumer preferences for certain types of packaging, ~~or for manufacturers that can properly address health and~~. Some products may be recalled in the event of a product safety issue, possibly increasing costs to the manufacturer or resulting in reputation impacts. Companies with strong management of product safety can enhance their brand reputation and reduce the risk of adverse impacts associated with product safety concerns. Recalls can be a significant expense for companies and can impact future business. Safety concerns that translate into actual health impact can result in significant reputational damage, as well as legal and regulatory penalties.

Accounting Metrics

RT0204-08. Number of recalls and total units recalled

~~33.36~~ 33.36 The registrant shall disclose the total number of product-safety-related recalls, including those that are voluntary as well as involuntary, where:

- A recall is defined, consistent with the U.S. Consumer Product Safety Commission's [Recall Handbook](#), as any repair, replacement, refund, or notice/warning program intended to protect consumers from products that present a safety risk.
- Involuntary recalls are those required by regulatory agencies, and are issued when a product does not comply with regulatory safety standards or when there is a safety-related defect in a product.
- Voluntary recalls are those initiated by the registrant in order to take products off the market.
- Governmental agencies with regulatory oversight include, but are not limited to, the following:
 - U.S. Food and Drug Administration (FDA)
 - U.S. Department of Agriculture Food and Safety Inspection Service (FSIS)
 - U.S. Centers for Disease Control (CDC)
 - U.S. Consumer Product Safety Commission (CPSC)
 - European Food Safety Authority (EFSA)
 - Canadian Food Inspection Agency (CFIA)

34.37 The registrant may choose, in addition to total units recalled, to disclose the percentage of recalls that were (1) voluntarily and (2) involuntarily issued.

35.38 Note to RT0204-08

36.39 The registrant shall discuss notable recalls, such as those that affected a significant number of products, a significant number of units of one product, or those related to serious injury or fatality.

37.40 For such recalls, the registrant should provide:

- Description and cause of the recall issue
- The total number of units recalled
- The cost to remedy the issue (in U.S. dollars)
- Whether the recall was voluntary or involuntary
- Corrective actions
- Any other significant outcomes (e.g., legal proceedings, fatalities, etc.)

RT0204-09. Discussion of process to identify and manage emerging materials and chemicals of concern

38.41 The registrant shall discuss its approach to managing the use of materials, chemicals, and substances that may be of human health and/or environmental concern to consumers, customers (e.g., retailers and commercial buyers), regulators, and/or others (e.g., non-governmental organizations, scientific researchers, etc.).

39.42 “Materials, chemicals, and substances” includes individual compounds, classes of chemicals, and categories of chemicals.

40.43 At a minimum, the registrant shall discuss how it assesses materials and chemicals for hazard characteristics and risk traits, including the operational processes it employs for these assessments and other actions it takes to manage hazards and risks.

41.44 Relevant operational processes may include, but are not limited to, product formulation and design, materials and chemicals procurement, product safety testing, product labeling, and product declarations (e.g., material safety data sheets).

42.45 Relevant actions to discuss may include:

- Exclusion of substances (e.g., use of banned substances lists).
- Use of material substitution assessments, tools, and screening methods (e.g., GreenScreen® For Safer Chemicals or CleanGredients® Data Verification).

- Implementation of EN 13428 or ISO 18602, which include criteria on determining the amount and minimization of hazardous constituents and determining the amount of four heavy metals (lead, cadmium, mercury, and hexavalent chromium) in packaging.
- Performance on the [Global Protocol on Packaging Sustainability 2.0](#) metrics for Impact on Human Health (e.g., Toxicity, Cancer, and Non-Cancer).

43.46 Emerging materials and chemicals of concern include, but are not limited to:

- Plasticizers such as phthalates and BPA;
- Certain phenols and phenol derivatives such as butylated hydroxytoluene and pentachlorophenol;
and
- Preservatives such as formaldehyde.

Product Lifecycle Management

Description

Containers and packaging companies face ~~increasing opportunities and~~ challenges associated with ~~potential~~ environmental and social impacts of their products throughout the lifecycle. Advancements in material use and innovations in packaging design are increasingly driving market ~~share~~ shares in the industry. Designing for ~~the sustainable~~ end-of-life ~~treatment of~~ packaging is an important opportunity for manufacturers to avoid ~~future regulation and negative~~ potential regulatory or reputational ~~repercussions~~ impacts. While the lifecycle impact of containers and packaging depends largely on their use and disposal, companies that can effectively mitigate environmental and health impacts during the design phase may gain competitive advantage as environmental concerns rise among the industry's customers and ~~the ultimate~~ consumers.

Accounting Metrics

~~RT0204-10TA07-25-01. Percentage of raw materials from (1) recycled content (2) renewable resources, and (3) renewable and recycled content~~

~~44.47~~ The registrant shall disclose the percentage of raw materials consumed (by metric tons) that are derived from recycled content.

~~45.48~~ Recycled content is defined, consistent with definitions in ISO 14021:1999, *Environmental labels and declarations—Self-declared environmental claims (Type II environmental labelling)*, as the portion, by mass, of recycled or recovered material in a product or packaging, where only pre-consumer and post-consumer materials shall be considered as recycled content, and where:

- Recycled material is defined as material that has been reprocessed from recovered (or reclaimed) material by means of a manufacturing process and made into a final product or a component for incorporation into a product.
- Recovered material is defined as material that would have otherwise been disposed of as waste or used for energy recovery, but has instead been collected and recovered (or reclaimed) as a material input, in lieu of new primary material, for a recycling or manufacturing process.
- Pre-consumer material is defined as material that has been diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap that is generated in a process and is capable of being reclaimed within the same process that generated it.
- Post-consumer material is defined as material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product that can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

~~46.49~~ The percentage shall be calculated as the total weight (in metric tons) of raw materials from recycled content divided by the total weight (in metric tons) of all raw materials for products, where:

- The scope of raw materials in the denominator of the percentage calculation includes all inputs that are processed to be sold as a finished good, including recycled raw materials and virgin raw materials.
- The weight of raw materials should be calculated as the amount of materials in inventory at the beginning of the reporting period, plus any purchase of materials made during the reporting period, less any materials in raw materials inventory on hand at the end of the reporting period.

~~.47.50~~ The registrant shall disclose the percentage of raw materials consumed (by metric tons) ~~for containers and packaging products~~ derived from renewable resources.

~~.48.51~~ Renewable resources are defined, consistent with the [Global Protocol on Packaging Sustainability 2.0](#), as those that are composed of biomass from a living source and are replenished at a rate equal to or greater than the rate of depletion, where:

- ~~For use in this standard, renewable resources include materials from virgin and recycled sources.~~
- ~~Biomass is defined as a material of biological origin, excluding materials embedded in geological formations or transformed to fossilized material and excluding peat. This includes organic material (both living and dead) from above and below ground, such as trees, crops, grasses, tree litter, algae, animals, and waste of biological origin (e.g., manure), consistent with the Global Protocol on Packaging Sustainability 2.0.~~

~~.52~~ ~~The percentage shall be calculated as the total weight (in metric tons) of raw materials from renewable resources divided by the total weight (in metric tons) of all raw materials for products, where:~~

- ~~The scope of raw materials in the denominator of the percentage calculation includes all inputs that are processed to be sold as a finished good, including renewable raw materials and non-renewable raw materials.~~
- ~~The weight of raw materials should be calculated as the amount of materials in inventory at the beginning of the reporting period, plus any purchase of materials made during the reporting period, less any materials in raw materials inventory on hand at the end of the reporting period.~~

~~.53~~ ~~The registrant shall disclose the percentage of raw materials consumed (by metric tons) derived from renewable resources.~~

~~.54~~ ~~Renewable resources are defined, consistent with the [Global Protocol on Packaging Sustainability 2.0](#), as those that are composed of biomass from a living source and are replenished at a rate equal to or greater than the rate of depletion, where:~~

- For use in this standard, renewable resources ~~are limited to those that are~~ include materials from virgin ~~sources and, as such, have not been~~ recycled sources.
- Biomass is defined as a material of biological origin, excluding materials embedded in geological formations or transformed to fossilized material and excluding peat. This includes organic material (both living and dead) from above and below ground, such as trees, crops, grasses, tree litter,

algae, animals, and waste of biological origin (e.g., manure), consistent with the Global Protocol on Packaging Sustainability 2.0.

~~.49.55~~ The percentage shall be calculated as the total weight (in metric tons) of raw materials from renewable resources divided by the total weight (in metric tons) of all raw materials for products, where:

- The scope of raw materials in the denominator of the percentage calculation includes all inputs that are processed to be sold as a finished good, including renewable raw materials and non-renewable raw materials.
- The weight of raw materials should be calculated as the amount of materials in inventory at the beginning of the reporting period, plus any purchase of materials made during the reporting period, less any materials in raw materials inventory on hand at the end of the reporting period.

~~.56 For packaging~~ The registrant shall disclose the percentage of raw materials consumed (by metric tons) that contain both recycled content and virgin parts, or which are made renewable resources.

~~.57~~ The percentage shall be calculated as the total weight (in metric tons) of raw materials from both renewable resources and nonrenewable resources, the registrant shall classify the portion of the material as recycled or renewable, based on a content divided by the total weight (in metric tons) of all raw materials for products, where:

- The scope of raw materials in the denominator of the percentage calculation (or estimate, where appropriate) of the weight of each portion includes all inputs that are processed to be sold.
- The weight of raw materials should be calculated as the amount of materials in inventory at the beginning of the reporting period, plus any purchase of materials made during the reporting period, less any materials in raw materials inventory on hand at the end of the reporting period.

RT0204-11. Revenue from products that are reusable, recyclable, and/or compostable

~~.50.58~~ The registrant shall disclose the amount of revenue (in U.S. dollars) from products that are reusable, recyclable, and/or compostable where:

- “Reusable” is defined as a product or packaging that has been conceived and designed to accomplish, within its lifecycle, a certain number of trips, rotations, or uses for the same purpose for which it was conceived, consistent with definitions in ~~ISO 14021:1999, Environmental labels and declarations—Self-declared environmental claims (Type II environmental labelling)~~; the ISO 18603 Reuse standard.
- “Recyclable” is defined a product or packaging that can be diverted from the waste stream through available processes and programs and can be collected, processed, and returned to use in the form of raw materials or products, consistent with definitions in ISO ~~14021:1999, Environmental labels and declarations—Self-declared environmental claims (Type II environmental labelling)~~; 18604 Material Recycling standard.
- “Compostable” is defined as that which undergoes degradation by biological processes during composting to yield CO₂, water, inorganic compounds, and biomass at a rate consistent with other

known compostable materials and that leaves no visible, distinguishable, or toxic residue. [Definitions are consistent with definitions in the ISO 18606 Organic Recycling standard.](#) Compostable plastics are further defined by ASTM Standard D6400, 2004, Standard Specification for Compostable Plastics.

~~.51.59~~ For products that are reusable, recyclable, and/or compostable, the registrant shall not account for the products' revenue more than once.

RT0204-12. Description of strategies to reduce the environmental impact of packaging throughout its lifecycle

~~.52.60~~ The registrant shall discuss its strategies to reduce the environmental impact of packaging throughout its lifecycle, such as reducing packaging weight and volume for a given application or using alternative materials, including those that are recycled, recyclable, compostable, or degradable.

~~.53.61~~ Relevant disclosure may include, but is not limited to, discussion of the following:

- Implementation of EN 13428 or ISO 18602, which include criteria on minimization of packaging weight and optimization to the amount needed for safety, hygiene, and consumer acceptance of the packed product.
- Implementation of EN 13430 or ISO 18604, which include criteria for recyclable packaging.
- Implementation of EN 13432, ISO14855-1:2005, ASTM D6400, or ASTM D6868, which include criteria for packaging recoverable through biodegradation and composting.
- Implementation of ISO 14021, which includes criteria for renewable and recycled material content claims.
- Performance on the [Global Protocol on Packaging Sustainability 2.0](#) metrics for Packaging Weight and Optimization and/or Assessment and Minimization of Substances Hazardous to the Environment.

~~.54.62~~ The registrant may choose to discuss its use of Life Cycle Assessment (LCA) analysis in the context of its approach to environmental impact reduction and maximization of product efficiency, including weight reduction and transportation efficiency.

- When discussing improvements to the environmental efficiency of packaging products they should be discussed in terms of LCA functional unit service parameters (i.e., time, extent, and quality of function).

Additional References

~~EPA Waste Hierarchy~~

~~Summary of the EPA Municipal Solid Waste Program~~

Materials Sourcing

Description

The production of containers and packaging requires large quantities of raw materials, including wood fiber, metals, glass, and plastics. Wood fiber is derived from forests, metals and glass precursors are sourced from mines, and plastics are created largely from petroleum products. The extraction of these resources can result in environmental externalities ~~such as habitat loss and pollution, as well as negative social impacts including labor abuses and adverse community impacts.~~ The industry also ~~faces~~may face supply chain challenges, regulatory risk, and reputational damage from the use of ~~tin, a conflict mineral, in some products~~some materials. Supply disruptions due to environmental or social issues in the supply chain could increase materials costs for containers and packaging companies. Due to increasing consumer concern surrounding these supply chain issues, the industry's customers are increasingly packaging products that mitigate environmental and social impacts. In response, containers and packaging companies are implementing responsible sourcing practices internally and through the use of third-party supplier certification. Certification has been most common for wood fiber and to a lesser extent aluminum substrates, which have garnered particular attention for externalities surrounding their extraction.

Accounting Metrics

RT0204-13TA07-26-01. Total wood fiber ~~purchased~~procured, percentage from certified sources

.55.63 The registrant shall disclose the total weight (in metric tons) of wood-fiber-based raw materials ~~purchased~~procured during the fiscal year.

- The scope of raw materials includes all inputs that are processed to be sold as a finished good, including recycled raw materials, virgin raw materials, and goods that will be consumed directly in the production process.

.56.64 The percentage shall be calculated as the total weight (in metric tons) of its wood-fiber-based raw materials that are certified to a responsible sourcing standard divided by the total weight (in metric tons) of wood-fiber-based raw materials, where responsible sourcing certifications include those promulgated by the following organizations (or the equivalent):

- Forest Stewardship Council (FSC) (i.e., FSC 100% label and FSC Mixed Sources and FSC Recycled labels),
- Sustainable Forest Initiative (SFI) (i.e., SFI Chain of Custody and SFI Certified Sourcing labels),
- Programme for the Endorsement of Forest Certification (PEFC) (i.e., PEFC Certified and PEFC Recycled labels),
- American Tree Farm System (ATFS).

.57.65 The registrant may disclose separately the percent of fiber that is certified to each relevant responsible sourcing standard (e.g., FSC, SFI, PEFC, and ATFS) and relevant standards (e.g., FSC 100% label, FSC Mixed

Sources and FSC Recycled labels, SFI Chain of Custody and SFI Certified Sourcing labels, and PEFC Certified and PEFC Recycled labels).

~~.58.66~~ For products that are certified to multiple schemes, the registrant shall not account for the product's weight more than once.

RT0204-14. Total aluminum purchased, percentage from certified sources

~~.59.67~~ The registrant shall disclose the total weight (in metric tons) of aluminum-based raw materials purchased during the fiscal year.

- The scope of raw materials includes all inputs that are processed to be sold as a finished good, including recycled raw materials, virgin raw materials, and goods that will be consumed directly in the production process.

~~.60.68~~ The percentage shall be calculated as the total weight (in metric tons) of its aluminum-based raw materials that are certified to a responsible sourcing standard divided by the total weight of aluminum-based raw materials

~~.61.69~~ Responsible sourcing certification includes that promulgated by the Aluminum Stewardship Initiative (ASI) (i.e., Performance Standard Version 1 and Chain of Custody Standard Draft 2) or certification to an equivalent standard.