



Sustainability Accounting Standards

PROPOSED CHANGES TO PROVISIONAL STANDARDS

EXPOSURE DRAFTS

REDLINE OF STANDARDS FOR PUBLIC COMMENT

TECHNOLOGY & COMMUNICATIONS SECTOR

Electronic Manufacturing Services & Original Design
Manufacturing
Software & IT Services
Hardware
Semiconductors
Telecommunication Services
Internet Media & Services

Prepared by the
Sustainability Accounting Standards Board®

TECHNOLOGY & COMMUNICATIONS SECTOR

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TECHNOLOGY & COMMUNICATIONS SECTOR

Electronic Manufacturing Services & Original Design Manufacturing*

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REDLINE OF STANDARD FOR PUBLIC COMMENT

Prepared by the
Sustainability Accounting Standards Board®

October 2017

* Sustainable Industry Classification System™ (SICS™) #TC0101

ELECTRONIC MANUFACTURING SERVICES & ORIGINAL DESIGN MANUFACTURING

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>).

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Electronic Manufacturing Services & Original Design Manufacturing 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 Electronic Manufacturing Services (EMS) & Original Design Manufacturing (ODM) industry consists of two main segments. EMS companies provide assembly, logistics, and after-market services for original equipment manufacturers. The ODM segment of the industry provides engineering and design services for original equipment

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>

manufacturers and may own significant intellectual property. Companies typically operate and sell products globally. Although EMS & ODM companies produce equipment for a variety of sectors, the industry is closely associated with the technology Hardware industry.

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 Electronic Manufacturing Services & Original Design Manufacturing industry, SASB has identified the following material sustainability topics:

- Water & Waste Management in Manufacturing
- Fair Labor Practices
- Product Lifecycle Management
- 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

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 manufacturing facilities	Quantitative	Number	TC0101-A
Total square footage of manufacturing facilities	Quantitative	Square footage	TC0101-B
Number of employees	Quantitative	Number	TC0101-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.¹⁹

Estimates

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

¹⁹ The AICPA’s Guide (see supra note 1) provides guidance related to measurement uncertainty.

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. ~~Material~~ Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Water & Waste Management in Manufacturing	Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress	Quantitative	Cubic meters (m ³), Percentage (%)	TC0101-01
	Amount of hazardous waste from manufacturing, percentage recycled	Quantitative	Tons (t), Percentage (%)	TC0101-02 TA03-01-01
Fair Labor Practices	(1) Total Recordable Injury Rate and (2) Near Miss Frequency Rate for (a) full time employees and (b) contract employees	Quantitative	Rate	TC0101-03
	Number and total duration of work stoppages ²⁰	Quantitative	Number, Worker days	TC0101-04
	Percentage of (a) facilities and (b) suppliers suppliers' facilities audited in the EICC Validated Audit Process (VAP) or to an equivalent social and environmental responsibility code of conduct	Quantitative	Percentage (%) of facilities	TC0101-05
	Social and environmental responsibility audit compliance for (a) registrant and (b) suppliers: (1) priority non-conformance rate and associated corrective action rate, and (2) other non-conformances rate and associated corrective action rate	Quantitative	Rate in number per facility	TC0101-06
Product Lifecycle Management	Percentage of products by revenue that contain IEC 62474 declarable substances ²¹	Quantitative	Percentage (%) by revenue (\$)	TC0101-07
	Percentage of eligible products by revenue meeting the requirements for EPEAT [®] certification or equivalent ²²	Quantitative	Percentage (%) by revenue (\$)	TC0101-08
	Weight of end-of-life materials recovered, percentage of recovered materials that are recycled	Quantitative	Tons (t), Percentage (%)	TC0101-09
Supply Chain Management	Percentage of products by revenue that contain critical materials	Quantitative	Percentage (%) by revenue (\$)	TC0101-10 TA03-02-01

²⁰ Note to **TC0101-04** –Disclosure shall include a description of the reason for the work stoppage, the impact on production, and any corrective actions taken.

²¹ Note to **TC0101-07** –Disclosure shall include a discussion of the approach to managing the use of IEC 62474 declarable substances.

²² Note to **TC0101-08** – Disclosure shall include a discussion of efforts to incorporate environmentally focused principles into product design.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
& Materials Sourcing	Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict-free	Quantitative	Percentage (%)	TC0101-11
	Discussion of the management of risks associated with the use of critical materials and conflict minerals	Discussion and Analysis	n/a	TC0101-11 TA03-02-02

Water & Waste Management in Manufacturing

Description

The manufacturing of computers, computer components, and other electronics is both water and chemical intensive and can generate significant releases to water and generate solid waste, including hazardous substances. Having access to sufficient water supply is critical to operations. Further, state, federal, and foreign environmental laws are placing increased emphasis on resource conservation and waste management and customer demand is increasing for stringent environmental standards during manufacturing. Therefore, EMS & ODM companies that are able to reduce their waste and the amount of water used during manufacturing while ensuring that waste that is generated is reused, recycled or disposed of appropriately will face lower regulatory risks and could benefit from cost savings.

Accounting Metrics

TC0101-01. Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress

- .01 The registrant shall disclose the amount of water (in cubic meters) that was withdrawn from freshwater 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 total dissolved 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 freshwater.²³
- .02 The registrant shall disclose the total amount of water by volume (in cubic meters) that was recycled during the fiscal year. This figure shall include the amount recycled in closed loop and open loop systems.
- Any volume of water reused multiple times shall be counted as recycled each time it is recycled and reused.
- .03 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 facilities 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.

~~TC0101-02~~. ~~TA03-01-01~~. Amount of hazardous waste from manufacturing, percentage recycled

- .04 The registrant shall calculate and disclose the amount of hazardous waste generated (in metric tons) ~~that meets~~.
- Hazardous wastes are defined per the ~~definition~~ legal or regulatory frameworks applicable within the jurisdictions where the waste is generated.

²³ <http://water.epa.gov/drink/contaminants/secondarystandards.cfm>

- The registrant shall disclose the legal or regulatory framework used to define 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) 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.
- ~~This includes wastes that display the following characteristics: ignitability, corrosivity, reactivity, or toxicity.~~
- Disclosure corresponds with Global Reporting Initiative Effluents and Waste 2016 Disclosure 306-2 a.

~~04.05~~ The percentage recycled shall be calculated as the weight (in metric tons) of hazardous waste ~~material~~ that was ~~reused plus the weight recycled or remanufactured (through treatment or processing) by the registrant plus the weight sent externally for further recycling,~~ divided by the total weight of hazardous ~~material, where:~~ waste (in metric tons).

- ~~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 a production or manufacturing process and made into a final product or made into a component for incorporation into a product.~~
- ~~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 to 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 sent for further recycling include those materials which are transferred to a third party for the expressed purpose of reuse, recycling, or refurbishment.~~
- ~~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.~~
- 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.

- 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.

~~05.06~~ The registrant shall disclose the standard(s) ~~to~~with which the entities it has transferred e-waste to are ~~complaint-compliant~~.

Fair Labor Practices

Description

EMS & ODM companies operate in a highly competitive environment based on cost, and therefore they rely heavily on securing low-cost and contract labor. Furthermore, the industry faces increased scrutiny over labor standards after numerous highly publicized examples of poor working conditions and unrest at industry facilities. Labor agencies used to hire employees could influence compliance with labor laws and customer supplier standards. The use of hazardous materials in manufacturing processes also raises concerns about worker health and safety. Despite potential short-term cost challenges, EMS & ODM companies that are able to ensure fair working conditions and wages, protect worker health and safety, and eliminate the use of child or forced labor will be better positioned to retain customers with stricter supplier standards and will limit their regulatory liabilities.

Accounting Metrics

TC0101-03. (1) Total Recordable Injury Rate and (2) Near Miss Frequency Rate for (a) full time employees and (b) contract employees

~~06.07~~ For registrants whose workforce is entirely U.S.-based, the registrant shall disclose its total recordable injury rate (TRIR), as calculated and reported in the Occupational Safety and Health Administration's (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 occurred in the work environment but are not occupational.

~~07.08~~ For registrants whose workforce includes non-U.S.-based employees, the registrant shall calculate its total recordable injury rate according to the U.S. Bureau of Labor Statistics guidance and/or using the U.S. Bureau of Labor Statistics calculator.

~~08.09~~ The registrant shall disclose its near miss frequency rate (NMFR), where a near miss is defined as an incident where 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.

~~09.10~~ The registrant shall disclose its TRIR and NMFR separately for its full-time employees and for contract employees, including independent contractors and those employed by third-parties (e.g., temp agencies, labor brokers, etc.).

~~10.11~~ The scope includes all employees, domestic and foreign.

~~11.12~~ Rates shall be calculated as: (statistic count / total hours worked)*200,000.

TC0101-04 . Number and total duration of work stoppages

~~12.13~~ The registrant shall disclose the total duration, in worker days idle, of work stoppages involving 1,000 or more workers lasting one full shift or longer.

- Worker days idle is calculated as the product of days idle and number of workers involved.

~~13.14~~ The scope of disclosure includes any work stoppage including strikes and lockouts.

Note to TC0101-04

~~14.15~~ The registrant shall describe the reason for each work stoppage (as stated by labor), the impact on production, and any corrective actions taken as a result.

TC0101-05- Percentage of (a) facilities and (b) ~~suppliers~~ suppliers' facilities audited in the EICC Validated Audit Process (VAP) or to an equivalent social and environmental responsibility code of conduct

~~15.16~~ The registrant shall calculate and disclose the percentage of audit coverage as:

- (a) the total number of manufacturing facilities subject to an EICC Validated Audit Process (VAP) audit divided by the total number of manufacturing facilities; and
- (b) the total number of Tier 1 supplier facilities subject to an EICC VAP audit divided by the total number of Tier 1 supplier facilities.

~~16.17~~ Tier 1 suppliers are defined as those that transact directly with the registrant for goods and services directly related to manufacturing.

- The registrant may limit its disclosure to those suppliers that in aggregate account for greater than, or equal to, 80% of its supplier spending directly related to manufacturing.

~~17.18~~ The registrant may disclose its compliance with an audit recognized by the EICC Membership Compliance Program or an equivalent code of conduct if the standard and audit are sufficiently similar in scope and enforcement to the VAP.

~~18.19~~ The registrant shall indicate how an alternative audit protocol is equivalent to the criteria of the EICC VAP. At a minimum, the criteria must include:

- Labor provisions, including criteria focused on freely chosen employment, child labor avoidance, working hours, wage & benefits, humane treatment, non-discrimination, and freedom of association.
- Health & Safety provisions, including criteria focused on occupational safety, emergency preparedness, occupational injury and illness, industrial hygiene, physically demanding work, and dormitory and canteen operations.
- Environment provisions, including criteria focused on environmental permits and reporting, pollution prevention and source reduction, hazardous substances, wastewater and solid waste, air emissions, and product content restrictions.

- Ethics provisions, including those focused on business Integrity, improper advantage, payments and gifts policy, disclosure of information, intellectual property, fair business, advertising, & competition, protection of identity, responsible sourcing of minerals, privacy, and non-retaliation.
- Management System provisions, including management system certification, management accountability for labor and ethics, worker feedback and participation mechanisms, and demonstration that the management system addresses the following as related to social and environmental responsibility: tracking of laws and regulations, tracking of customer requirements, risk assessments, measurement of objectives and implementation plans, training, and communication, audits and assessments, corrective action processes, and maintenance of documentation and records.

TC0101-06. Social and environmental responsibility audit compliance for (a) registrant and (b) suppliers: (1) priority non-conformance rate and associated corrective action rate, and (2) other non-conformances rate and associated corrective action rate

~~19.20~~ The registrant shall disclose:

- ~~(a)~~ Its compliance with the EICC VAP based on the number of non-conformances identified.
- (b) Its Tier 1 suppliers' compliance with the EICC VAP based on the number of non-conformances identified.

~~20.21~~ Tier 1 suppliers are defined as those that transact directly with the registrant for goods and services directly related to manufacturing.

- The registrant may limit its disclosure to those suppliers that in aggregate account for greater than, or equal to, 80% of its supplier spending directly related to manufacturing.

~~21.22~~ For (a) and (b) the registrant shall calculate and disclose the priority non-conformance rate as: total number of priority non-conformances identified divided by the number of facilities audited.

- ~~Priority non-conformances are the highest severity non-conformance and require escalation by Auditors. Priority non-conformances confirm the presence of underage child workers (below the legal age for work or apprenticeship), forced labor, health and safety issues that can cause immediate danger to life or serious injury, and environmental practices that can cause serious and immediate harm to the community. Issues representing an immediate danger must be corrected as soon as practical but not longer than 30 days after discovery.~~
- In equivalent codes of conduct priority non-conformances may also be referred to as "zero tolerance" issues or "core violations."

~~22.23~~ For (a) and (b) the registrant shall calculate and disclose the other non-conformance rate as: total number of major and minor non-conformances identified divided by the number of facilities audited.

- A major non-conformance is seen as a significant failure in the management system – one that affects the ability of the system to produce the desired results. It may also be caused by failure to implement an established process or procedure or if the process or procedure is ineffective.

- A minor non-conformance by itself doesn't indicate a systemic problem with the management system. It is typically an isolated or random incident.

~~23.24~~ A corrective action is defined by the timely completion of a Corrective Action Plan (CAP), which describes how and when the facility will address each of the identified non-conformances, according to the following timelines:

- Priority non-conformance – submission of a CAP within one week of discovery and completion of a CAP within 30 days from discovery.
- Major non-conformance – submission of a CAP within two weeks from receipt of final Validated Audit Report (VAR) and completion of a CAP within 90 days from receipt of final VAR.
- Minor non-conformance – submission of a CAP within two weeks from receipt of final VAR and completion of a CAP within 270 days from receipt of final VAR.

~~24.25~~ For (a) and (b) the registrant shall calculate and disclose its corrective action rate for priority non-conformances as: the number of corrective action plans completed within 30 days to address priority non-conformances divided by the total number of priority non-conformances that have been identified.

~~25.26~~ For (a) and (b) the registrant shall calculate and disclose its corrective action rate for other non-conformances as: the number of corrective action plans completed within 90 days to address major non-conformances plus the number of corrective action plans completed within 270 days to address minor non-conformances divided by the total number of major and minor non-conformances that have been identified.

~~26.27~~ The registrant may disclose its compliance with an audit recognized by the EICC Membership Compliance Program or an equivalent code of conduct if the standard and audit are sufficiently similar in scope and enforcement to the VAP.

Product Lifecycle Management

Description

EMS & ODM and Hardware companies face increasing challenges associated with environmental and social externalities attributed to product manufacturing, transport, use and disposal. Rapid obsolescence of hardware products exacerbates the externalities. For EMS & ODM companies, addressing product lifecycle concerns such as hazardous material inputs, energy efficiency during use, and electronic waste, particularly through product design and end-of-life services could increase shareholder value through improved competitive positioning, greater market share, and lower regulatory, demand, and supply chain risks.

Accounting Metrics

TC0101-07-. Percentage of products by revenue that contain IEC 62474 declarable substances

~~27.28~~ The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from design and manufacturing services for electrical and electronic products that contain declarable substances according to International Electrotechnical Commission's IEC 62474 - Material Declaration for Products of and for the Electrotechnical Industry divided by total revenue from design and manufacturing services for electrical, electronic, and related technology products.

~~28.29~~ 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.

~~29.30~~ 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.

Note to TC0101-07

~~30.31~~ The registrant shall discuss its approach to managing the use of substances that appear as declarable substance groups or declarable substances in IEC 62474, including specific operational processes which take these substances into consideration.

~~31.32~~ Relevant operational processes may include, but are not limited to, product design, materials and parts procurement, product safety testing, product labeling, and product declarations (e.g. material safety data sheets).

~~32.33~~ Relevant actions to discuss may include the exclusion of substances (e.g. banned substances lists), use of material substitution assessments, product labeling, or any other methods considering usage of substances from these lists.

~~33.34~~ 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 identify those practices, and it shall describe the degree of overlap with IEC 62474.

TC0101-08. Percentage of eligible products by revenue meeting the requirements for EPEAT® certification or equivalent

~~34.35~~ The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from design and manufacturing services for products meeting the requirements for EPEAT certification divided by total revenue from design and manufacturing services for products eligible for EPEAT certification.

- Eligible products are those in a product category for which EPEAT certification exists, which includes desktop computers, notebook computers, and computer displays.
- Product categories not currently within the scope of EPEAT certification – such as mobile phones – but for which there is an equivalent certification standard (e.g., Standard for Sustainability of Mobile Phones, UL 110) may be considered eligible products.

~~35.36~~ A product meets the requirements of EPEAT if it has achieved third-party certification to the EPEAT standard or an equivalent certification, or the registrant can otherwise demonstrate that the product meets these requirements (in lieu of third-party certification).

~~36.37~~ Standards that are equivalent to EPEAT include those that have criteria and requirements covering substantially similar topics, such as addressing:

- Reduction or elimination of environmentally sensitive materials
- Material selection and declaration
- Design for end-of-life
- Product longevity or lifecycle extension
- Energy conservation
- End-of-life management
- Corporate performance
- Packaging

~~37.38~~ SASB identifies the TCO Development fourth generation family of standards as similar to EPEAT for the purposes of this disclosure.

Note to **TC0101-08**

~~38.39~~ The registrant shall discuss its approach to incorporating environmentally focused principles into product design.

~~39.40~~ Relevant considerations to discuss include elimination of toxic substances, use of recycled materials, reduction of packaging, design for consolidated shipping, design of low energy consumption products, design for product

take-back, labeling for recycling, and the elimination or replacement of materials that are subject to resource scarcity (e.g., cobalt, rare earth elements, etc.), among others.

~~40.41~~ Examples of environmentally focused principles or criteria include those outlined in Environmentally Conscious Design (IEC-62430 or IEC-62075) or U.S. EPA's Design for Environment (DfE).

TC0101-09. Weight of end-of-life material recovered, percentage of recovered materials that are recycled

~~41.42~~ The registrant shall disclose the weight, in tons, of materials recovered including through reverse logistics services, recycling services, product take-back programs, and refurbishment services.

- The scope of disclosure shall include products, materials, and parts that are at the end of their useful life and would have otherwise been disposed of as waste or used for energy recovery, but have instead been collected.
- The scope of disclosure shall include both materials physically handled by registrant and materials of which the registrant does not take physical possession, but for which it has contracted with a third party the task of collection for the expressed purpose of reuse, recycling, or refurbishment.
- The scope of disclosure excludes products and parts that are in-warranty and have been collected for repairs.

~~42.43~~ The percentage recycled shall be calculated as the weight of incoming material that was reused plus the weight of material recycled or remanufactured (through treatment or processing) by the registrant plus the weight of material sent externally for further recycling divided by the total weight of incoming recovered material.

~~43.44~~ Reused materials are defined as those recovered products or components of products that are used for the same purpose for which they were conceived.

- The scope of reused materials includes products donated and/or refurbished by the registrant or third parties.
- The scope of disclosure includes reuse by the registrant or by third parties through direct contract with the registrant.

~~44.45~~ Recycled and remanufactured materials are defined as waste materials that have been reprocessed or treated by means of a production or manufacturing process and made into a final product or made into a component for incorporation into a product.

- 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 to primary recycled materials).
- The scope of disclosure includes recycling conducted by the registrant or by third parties through direct contract with the registrant.

- 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 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.
- 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.

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

Supply Chain Management ~~and~~ & Materials Sourcing

Description

The EMS & ODM industry's reliance on critical and conflict minerals and metals has become a focus of attention due to associated supply constraints, resulting price volatility, and a low potential for materials substitution. Furthermore, companies face regulations related to their use of conflict minerals, which can lead to increased costs associated with new reporting requirements. EMS & ODM companies with strong supply chain management and materials sourcing practices and the ability to adapt to increased resource scarcity will be better positioned to protect shareholder value. Innovations at the product-design phase to reduce dependence on some of these materials may also lower risk.

Accounting Metrics

~~TC0101-10-TA03-02-01. Percentage of products by revenue that contain critical materials~~

~~-46.47~~ The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from product design and manufacturing services for products that contain critical materials divided by total revenues from product design and manufacturing services for products.

~~-47.48~~ A critical material is defined, consistent with the National Research Council's "Minerals, Critical Minerals, and the U.S. Economy," as ~~one~~ area material that is both essential in use and subject to the risk of supply restriction.²⁴

- ~~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 the lanthanides (cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium).

~~TC0101-11. Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict free~~

~~-48~~ 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.

~~-49~~ A smelter or refiner is considered to be conflict free if it can demonstrate compliance with:

²⁴ National Research Council. *Minerals, Critical Minerals, and the U.S. Economy*. Washington, DC: The National Academies Press, 2008.

- ~~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.~~
- ~~Any other due diligence certification, audit, or program that meets the conflict mineral provisions of Dodd-Frank Section 1502.~~

~~.50 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 products the registrant manufactures or contracts to be manufactured.~~

~~.51 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.~~

TC0101-12-TA03-02-02. Discussion of the management of risks associated with the use of critical materials and conflict minerals

~~.52.49~~ 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," as a material that is both essential in use and subject to the risk of supply restriction. Examples of critical materials 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).~~

~~.50~~ 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.

~~.53.51~~ ~~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.

~~.54.52~~ ~~For conflict minerals, relevant strategies to discuss include due diligence practices, supply chain auditing, supply chain engagement, and partnerships with industry groups or non-governmental development organizations.~~



TECHNOLOGY & COMMUNICATIONS SECTOR

Software & IT Services*

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™) #TC0102

SOFTWARE & IT SERVICES

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).

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Software & IT Services 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

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>

The Software & Information Technology (IT) Services industry offers products and services globally and includes companies involved in the development and sales of applications software, infrastructure software, and middleware. The industry also includes IT Services companies delivering specialized IT functions, such as consulting and outsourced services. New industry business models include cloud computing, software as a service, virtualization, machine-to-machine communication, big data analysis, and machine learning.

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 Software & IT Services industry, the SASB has identified the following sustainability disclosure topics:

- Environmental Footprint of Hardware Infrastructure
- Data Privacy & Freedom of Expression
- Data Security
- Recruiting & Managing a Global, Diverse Skilled Workforce
- Managing Systemic Risks from Technology Disruptions
- Intellectual Property Protection & Competitive Behavior

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.

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

Activity Metrics and Normalization

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>

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
Number of licenses or subscriptions, percentage cloud-based	Quantitative	Number	TC0102-A
Data processing capacity, percentage outsourced ¹⁹	Quantitative	See note	TC0102-B
Petabytes of data storage, percentage outsourced ²⁰	Quantitative	Petabytes, Percentage	TC0102-C

Units of Measure

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

¹⁹ Note to **TC0102-B** – Data processing capacity shall be reported in units of measure typically tracked by the registrant or used as the basis for contracting software and IT services, such as Million Service Units (MSUs), Million Instructions per Second (MIPS), Mega Floating- Point Operations per Second (MFLOPS), compute cycles, or other. Alternatively, the registrant may disclose owned and outsourced data processing needs in other units of measure, such as rack space or data center square footage. The percentage outsourced shall include co-location facilities and cloud services (e.g., Platform as a Service and Infrastructure as a Service).

²⁰ Note to **TC0102-C** – The percentage outsourced shall include co-location facilities and cloud services (e.g., Platform as a Service and Infrastructure as a Service).

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.²¹

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

²¹ The AICPA's Guide (see *supra* note 1) provides guidance related to measurement uncertainty.

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. ~~Material~~ Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Environmental Footprint of Hardware Infrastructure	Total energy consumed, percentage grid electricity, percentage renewable energy	Quantitative	Gigajoules, Percentage (%)	TC0102 TA03-04-01
	Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress	Quantitative	Cubic meters (m ³), Percentage (%)	TC0102-02
	Description of the integration of environmental considerations to strategic planning for data center needs	Discussion and Analysis	n/a	TC0102-03
Data Privacy & Freedom of Expression	Discussion of policies and practices relating to collection, usage, and retention of customers' information and personally identifiable information	Discussion and Analysis	n/a	TC0102-04
	Percentage of users whose customer information is collected for secondary purpose, percentage who have opted-in	Quantitative	Percentage (%)	TC0102-05
	Amount of legal and regulatory fines and settlements associated with customer privacy ²²	Quantitative	U.S. dollars (\$)	TC0102-06
	Number of government or law enforcement requests for customer information, number of records requested, percentage resulting in disclosure	Quantitative	Number, Percentage (%)	TC0102-07 TA03-04-01
	List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring ²³	Discussion and Analysis	n/a	TC0102-08
Data Security	Number of data security breaches and , percentage involving customers' personally identifiable information (PII), <u>number of customers affected</u> ²⁴	Quantitative	Number, Percentage (%)	TC0102-09 TA03-06-01
	Discussion of management approach to identifying and addressing data security risks	Discussion and Analysis	n/a	TC0102-10
	<u>Percentage of operations, by revenue, independently certified to a suitable third-party cybersecurity management standard</u>	<u>Quantitative</u>	<u>Percentage (%)</u>	<u>TA03-05-01</u>

²² Note to **TC0102-06** – Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

²³ Note to **TC0102-08** –Disclosure shall include a description of the extent of the impact in each case and, where relevant, a discussion of the registrant's policies and practices related to freedom of expression.

²⁴ Note to **TA03-06-01** –Disclosure shall include a description of corrective actions implemented in response to data security incidents or threats.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Recruiting & Managing a Global, Diverse Skilled Workforce	Percentage of employees that are (1) foreign nationals and (2) located offshore ²⁵	Quantitative	Percentage (%)	TC0102-11
	Employee engagement as a percentage ²⁶	Quantitative	Percentage (%)	TC0102-12
	Percentage of gender and racial/ethnic group representation for: (1) executives and (2) all others	Quantitative	Percentage (%)	TC0102-13
Managing Systemic Risks from Technology Disruptions	Number of (1) performance issues and (2) service disruptions; total customer downtime ²⁷	Quantitative	Number, Days	TC0102-14
	Discussion of business continuity risks related to disruptions of operations	Discussion and Analysis	n/a	TC0102-15
Intellectual Property Protection & Competitive Behavior	Number of patent litigation cases, number successful, and number as patent holder	Quantitative	Number	TC0102-16
	Amount of legal and regulatory fines and settlements associated with anti-competitive practices ²⁸	Quantitative	U.S. dollars (\$)	TC0102-17

²⁵ Note to **TC0102-11** –Disclosure shall include a description of potential risks of recruiting foreign nationals and/or offshore employees, and management approach to addressing these risks.

²⁶ Note to **TC0102-12** –Disclosure shall include a description of methodology employed.

²⁷ Note to **TC0102-14** –Disclosure shall include a description of each significant performance issue or service disruption and any corrective actions taken to prevent future disruptions.

²⁸ Note to **TC0102-17** –Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

Environmental Footprint of Hardware Infrastructure

Description

With the growth of cloud-based service offerings, companies in this industry own, operate, or rent increasingly more data centers and other hardware; thus, managing the energy and water use associated with IT hardware infrastructure is becoming important to shareholder value. Despite the increasing efficiency of data centers, their growing importance in the economy and to the industry's operations requires companies to focus on energy and water efficiency. Companies face a tradeoff between energy and water consumption due to data center cooling needs. Decisions about data center specifications are important for managing costs, obtaining a reliable supply of energy and water, and lowering reputational risks, particularly as there is an increasing global regulatory focus on climate change and as opportunities arise from innovations in energy efficiency and renewable energy.

Accounting Metrics

~~TC0102~~TA03-03-01. Total energy consumed, percentage grid electricity, percentage renewable energy

.01 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or its 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), and 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 When reporting self-generated energy consumption, the registrant shall not double-count fuel consumption.~~

- ~~• For example, if a registrant generates electricity from natural gas and then consumes the generated electricity, the energy consumption is counted once as energy from fuel consumption.~~

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

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

- 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)

~~which that~~ explicitly includes renewable energy certificates (RECs), or for which Green-e Energy Certified RECs are paired with grid electricity, European Union Guarantees of Origin. ~~For all renewable energy consumed as electricity in this manner, RECs must be retired on behalf of the registrant to be claimed as renewable energy as part of this disclosure (GOs), and other recognized renewable energy attribute certificates.~~

- For any renewable electricity generated on-site, any RECs (and equivalents) 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;
- If using multiple green energy certifications (REC, GOs, etc.), the registrant shall disclose the type of certificate used.
- 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.⁴⁶²⁹

.06 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 the U.S. Environmental Protection Agency's (EPA) definitions ~~short time through ecological cycles,~~ such as geothermal, wind, solar, hydro, and biomass.

- ~~For the purposes of this disclosure, the scope of renewable energy from hydro and biomass sources are~~ limited to the following: Energy from hydro sources ~~those~~ that are certified by the Low Impact Hydropower Institute; ~~Energy from biomass sources or~~ that are ~~Green-e Energy certified or~~ eligible for a state Renewable Portfolio Standard.

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

- Energy from biomass sources that meets at least one of the following criteria:
 - Certification 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);
 - Classification as an "eligible renewable" according to the Green-e Energy National Standard Version 2.5 (2014); or
 - Eligibility for a state Renewable Portfolio Standard.

²⁹ 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.

~~.08~~ 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).

~~.07.09~~ 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 ~~for~~ electricity from solar or wind energy).

~~.08.10~~ The registrant may choose to disclose the trailing twelve-month (TTM) weighted average power usage effectiveness (PUE) for its data centers where PUE is defined as the ratio of the total amount of power used by a computer data center facility to power delivered to computing equipment.

~~.09.11~~ If disclosing PUE, the registrant shall follow the guidance and calculation methodology described in The Green Grid's White Paper #49-PUE: A Comprehensive Examination of the Metric.

TC0102-02. Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress

~~.10.12~~ The registrant shall disclose the amount of water (in cubic meters) that was withdrawn from freshwater 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 freshwater.

~~.11.13~~ The registrant shall disclose the total amount of water by volume (in cubic meters) that was recycled during the fiscal year. This figure shall include the amount recycled in closed loop and open loop systems.

- Any volume of water reused multiple times shall be counted as recycled each time it is recycled and reused.

~~.12.14~~ 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 facilities 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.

TC0102-03. Description of the integration of environmental considerations to strategic planning for data center needs

~~.13.15~~ The registrant shall disclose strategic environmental considerations for the specification of data centers, including factors affecting energy and water consumption.

- Relevant aspects of data center specifications include, but are not limited to, the selection, design, construction, refurbishment, and location of data center operations.

~~14.16~~ The scope of this disclosure includes existing owned data centers, new data centers, and outsourced data center services, insofar as their selection integrates environmental considerations.

~~15.17~~ Examples of environmental criteria may include, but are not limited to, energy efficiency standards; layout design, such as hot aisle/cold aisle; and location-based factors, such as regional humidity, average temperature, water availability, regional- or state-level carbon legislation or pricing, or carbon intensity of grid electricity, among others.

~~16.18~~ The registrant shall disclose how the environmental considerations were incorporated into data center specifications made during the reporting year, including decisions to insource or outsource data center services, improve efficiency of existing data centers, or to construct new data centers.

Additional References

Uptime Institute. 2009. Opinion of the Institute, Green Computing. "Lean Clean & Green, The Global Energy Future of Enterprise IT & the Data Center Energy—The New Disruptive Technology."

Data Privacy & Freedom of Expression

Description

As software and IT services companies increasingly deliver products and services over the Internet and through mobile devices, they must carefully manage two separate and often conflicting priorities. On the one hand, companies use customer data to innovate and provide customers with new products and services and to generate revenues. On the other hand, there are privacy concerns associated with companies having access to a wide range of customer data, such as personal, demographic, content, and behavioral data, which is leading to increased regulatory scrutiny in the U.S. and abroad. The delivery of cloud-based software and IT services also raises concerns about potential access to user data by governments that may use it to limit the freedoms of citizens. Managing these issues well is important to reduce regulatory and reputational risks and to limit impacts on profitability from data privacy violations.

Accounting Metrics

TC0102-04. Discussion of policies and practices relating to collection, usage, and retention of customers' information and personally identifiable information

~~17.19~~ The registrant shall describe the nature, scope, and implementation of its policies and practices related to privacy of customer information, with a specific focus on how they address the collection, usage, and retention of customers' personally identifiable information, where:

- Customer information includes information that pertains to a user's attributes or actions, including but not limited to, records of communications, content of communications, demographic data, behavioral data, location data, or personally identifiable information.
- Demographic data is defined as the quantifiable statistics which identify and distinguish a given population.
- Examples of demographic data include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, and employment status.
- Behavioral data is defined as the product of tracking, measuring, and recording individual behaviors such as consumers' on-line browsing patterns, buying habits, brand preferences, and product usage patterns, among others.
- Location data is defined as data describing the physical location or movement patterns of an individual, such as Global Positioning System coordinates or other related data which would enable identifying and tracking an individual's physical location.¹⁸³⁰
- Personally Identifiable Information (PII) is defined as any information about an individual 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

³⁰ GAO Report 08-536, *Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information*, May 2008

records; and (2) any other information that is linked or linkable to an individual, such as medical, educational, financial, and employment information.¹⁶

~~18.20~~ The registrant shall describe the information “life cycle” (i.e., collection, use, retention, processing, disclosure and destruction) and how information handling practices at each stage may affect individuals’ privacy.

- With respect to data collection, it may be relevant for the registrant to discuss which data or types of data is collected without consent of an individual, which requires opt-in consent, and which requires opt-out action from the individual.
- With respect to usage of data, it may be relevant for the registrant to discuss which data or types of data are used by the registrant internally, and under what circumstance the registrant shares, sells, rents, or otherwise distributes data or information to third-parties.
- With respect to retention, it may be relevant for the registrant to discuss which data or types of data it retains, the length of time of retention, and practices used to ensure that data is stored securely.

~~19.21~~ The registrant shall discuss the degree to which its policies and practices address similar issues as outlined in the OMB Guidance for Implementing the Privacy Provisions of the E-Government Act of 2002 (M-03-22), including use of Privacy Impact Assessments (PIAs), where:

- Privacy Impact Assessment is an analysis of how information is handled that ensures handling conforms to applicable legal, regulatory, and policy requirements regarding privacy; determines the risks and effects of collecting, maintaining and disseminating information in identifiable form in an electronic information system; and examines and evaluates protections and alternative processes for handling information to mitigate potential privacy risks.
- As outlined by OMB M-03-22, PIAs must analyze and describe: (a) what information is to be collected, (b) why the information is being collected, (c) intended use of the information, (d) with whom the information will be shared, (e) what opportunities individuals have to decline to provide information (i.e., where providing information is voluntary) or to consent to particular uses of the information (other than required or authorized uses), and how individuals can grant consent, and (f) how the information will be secured, among other government-specific requirements.

~~20.22~~ The registrant shall discuss how its policies and practices related to privacy of customer information address children’s privacy, which at a minimum includes the provisions of the Children’s Online Privacy Protection Act (COPPA).

TC0102-05. Percentage of users whose customer information is collected for secondary purpose, percentage who have opted-in

~~21.23~~ The registrant shall indicate the percentage of customers whose customer information is collected for its own secondary use or for transfer to a third party, where:

- Customer information includes information that pertains to a user’s attributes or actions, including but not limited to, records of communications, content of communications, demographic data, behavioral data, location data, or personally identifiable information.

- Demographic data is defined as the quantifiable statistics which identify and distinguish a given population. Examples of demographic data include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, and employment status.
- Behavioral data is defined as the product of tracking, measuring, and recording individual behaviors such as consumers' on-line browsing patterns, buying habits, brand preferences, and product usage patterns, among others.
- Location data is defined as data describing the physical location or movement patterns of an individual, such as Global Positioning System coordinates or other related data which would enable identifying and tracking an individual's physical location.
- Secondary purpose is defined as the intentional use of data by the registrant (i.e., not a breach of security) that is outside of the primary purpose for which the data was collected. Examples of secondary uses include, but are not limited to, selling targeted ads, selling aggregated behavioral or location data, improving own product and service offerings, and transferring data or information to a third-party through sale, rental, or sharing.

~~22.24~~ Of the users whose customer information is collected for secondary use or transfer to third parties, the registrant shall indicate the percentage that provided opt-in consent, where:

- Opt-in is defined as express affirmative consent required to use or share content.

~~23.25~~ The registrant may choose to discuss what type of customer information is collected, the extent of data collected from different groups, and/or the types of secondary uses for which demographic data is collected.

TC0102-06. Amount of legal and regulatory fines and settlements associated with customer privacy

~~24.26~~ The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with incidents relating to customer privacy, including, but not limited to, violations of the Children's Online Privacy Protection Act, Directive 2002/58/EC (ePrivacy Directive), the US-EU Safe Harbor Program, and the Federal Trade Commission Privacy Act.

~~25.27~~ 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 TC0102-06

~~26.28~~ The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., unauthorized monitoring, sharing of data, children's privacy, etc.) of fines and settlements.

~~27.29~~ 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.

~~28.30~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself would not compromise the registrant's ability to maintain data privacy and security.

~~29~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself would not compromise the registrant's ability to maintain data privacy and security.

TC0102-07-TA03-04-01. Number of government or law enforcement requests for customer information, number of records requested, percentage resulting in disclosure

~~30.31~~ The registrant shall disclose the total number of requests for customer content and non-content data information ~~that it received from government or from~~ law enforcement agencies ~~during the reporting year and the percentage of requests with which it complied, where:~~

- Customer content includes customer-generated information such as email, text or recorded phone conversation
- Non-content data, ~~while non-content data~~ includes information such as an email address, a person's name, country of residence, or gender, or system-generated data such as IP addresses and traffic data. ~~Both content and non-content data can include personally identifiable information, where: Personally Identifiable Information (PII)~~
 - In order to differentiate between content and non-content data issuers may consult the sections of the Electronic Communications Privacy Act of 1986 linked above to help conceptualize this distinction. It should be noted that both content and non-content data can include personally identifiable information, which is defined as any information about an individual 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 in accordance with GAO Report 08-536, Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information.⁴⁹

~~32~~ The registrant shall disclose the total number of user's records requested.

- The number of records requested shall be calculated as the number of unique users included in the scope of the government or law enforcement agency request.
- Accounts the registrant cannot verify as belonging to the same user shall be disclosed separately.

~~33~~ The registrant shall calculate the percentage of requests that resulted in disclosure as the fraction of total requests for which information was disclosed to the requesting law enforcement agency.

- The scope of the percentage disclosed shall include requests that resulted in full or partial compliance with the disclosure request within the reporting fiscal year.

~~34.34~~ The scope of this disclosure includes aggregated, de-identified, and anonymized data, which is intended to prevent the recipient from reconfiguring the data to identify an individual's actions or identity.

- The registrant may choose to discuss if these characteristics apply to a portion of its data releases if this discussion would provide necessary context for interpretation of the registrant disclosure.

~~32.35~~ The registrant may choose to describe its policy for determining whether to comply with a request for customer data, including under what conditions it will release customer data, what requirements must be met in the request, and the level of management approval required.

~~33.36~~ The registrant may choose to describe its policy for notifying customers about such requests, including the timing of notification.

~~34.37~~ The scope of this disclosure is both domestic and international operations. The registrant may choose to disclose by region or country.

TC0102-08. List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring

~~35.38~~ The registrant shall disclose a list of the countries where its products and services are monitored, blocked, or content is filtered or censored due to governmental, judicial, or law enforcement requests or requirements, where:

- Monitoring occurs when a government authority or law enforcement agency has routine access to content or non-content data of specific users or of all users of a particular product or service.
- Blocking occurs when the registrant is prohibited by law or government authority from providing some or all of the registrant's products or services in a country.
- Content filtering or censoring occurs when a government authority alters access to, or display of, content of a product or service either directly by overriding service provision, or indirectly by requiring that a company remove certain content. Examples include content that is considered politically or culturally sensitive.

~~36.39~~ The scope of this disclosure includes company operations that have been discontinued, or were never offered, in a region due to government activity related to monitoring, blocking, content filtering, or censoring.

Note to **TC0102-08**

~~37.40~~ The registrant shall describe the extent of monitoring, blocking, content filtering, or censorship across its product or service lines, including the specific products affected, nature and duration of impact, and percent of customers affected.

~~38.41~~ The registrant should discuss implications of blocking or censorship, such as affecting ability to grow market share, or increased costs to comply with these restrictions.

~~39.42~~ For products and services that have been modified in a manner material to their functionality, the registrant shall identify the product or service affected and discuss the nature of the modification, indicating whether modification was undertaken to avoid monitoring or blocking, or to enable monitoring or blocking. The

registrant shall describe how the modified product or service differs from the product or service offering in its home country or other significant markets.

~~40.43~~ Where relevant, the registrant shall discuss its policies and practices related to freedom of expression, including how they influence its decision making when operating in countries that may request or require some form of monitoring, blocking, content filtering, or censoring of the registrant's content.

Data Security

Description

Software & IT Services companies are targets of growing data security threats from cyber-attacks and social engineering, which puts their own data and their customers' data at risk. Adequate prevention, detection, and remediation of data security threats can influence customer acquisition and retention and can serve to lower extraordinary expenses from data security breaches. Concerns about data security can also serve as revenue generating opportunities for this industry through provision of security software and services.

Accounting Metrics

~~TC0102-09~~ ~~TA03-06-01~~. **Number of data security breaches and, percentage involving customers' personally identifiable information (PII), number of customers affected**

~~.44~~ The registrant shall calculate and disclose the total number of data security breaches, ~~which identified during the fiscal year~~ where:

- ~~Data security breaches~~ are defined as instances of ~~internal and/or external~~ unauthorized acquisition, access, use, or disclosure of ~~protected customer~~ information.
- 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, ~~and~~ integrity, ~~and availability~~.

~~.44.45~~ Disclosure shall be additional but complementary to the SEC's CF Disclosure Guidance: Topic No. 2, Cybersecurity.

- ~~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.~~
- At a minimum, instances in which the costs or other consequences associated with one or more known incidents—or the risk of potential incidents—represent 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 to not 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.).

~~.42.46~~ The registrant shall disclose the percentage of data security breaches in which customers' personally identifiable information (PII) was breached, where:

- ~~Personally Identifiable Information~~ PII is defined 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.²⁰³¹

- The scope of disclosure is limited to breaches in which customers were notified of the breach, either as required by state law or voluntarily by the registrant.
- ~~Disclosure shall include incidents when encrypted data were acquired with an encryption key that was also acquired.~~
- ~~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 the investigation.~~
- ~~At a minimum, this includes 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.).~~

.47 The registrant shall disclose the total number of unique customers who were affected by data breaches including those whose personal data was compromised in a data breach.

- Accounts which the registrant cannot verify as belonging to the same user shall be disclosed separately.

Note to **TC0102-09TA03-06-01**

~~.43.48~~ 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.

~~.49 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.~~

~~.50 The registrant should disclose its policy for disclosing data breaches to affected customers in a timely manner.~~

TC0102-10. Discussion of management approach to identifying and addressing data security risks

~~.44.51~~ The registrant shall identify vulnerabilities in its information systems which pose a data security threat, where:

- A data security 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 the Nation through an information system via unauthorized access, destruction, disclosure, or modification of information, and/or denial of service.

³¹ *Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information*, GAO Report 08-536, May 2008.

- 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.

~~45.52~~ The registrant shall describe how it addresses the threats and vulnerabilities it has identified, including but not limited to, through operational procedures, management processes, structure of products, selection of business partners, employee training, or use of technology.

~~46.53~~ The registrant should discuss trends it has observed in type, frequency, and origination of attacks to its data security and information systems.

~~47.54~~ 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 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.).

~~48.55~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces but disclosure itself would not compromise the registrant's ability to maintain data privacy and security.

~~49.56~~ 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 1.10,”](#) January 10, 2017, National Institute of Standards and Technology (NIST).

Additional References

Definitions

NIST-defined attack vectors:

- External/Removable Media – an attack executed from removable media or a peripheral device—for example, malicious code spreading onto a system from an infected USB flash drive.
- Attrition – an attack that employs brute force methods to compromise, degrade, or destroy systems, networks, or services (e.g., a DDoS intended to impair or deny access to a service or application; a brute force attack against an authentication mechanism, such as passwords, captchas, or digital signatures).

- Web – an attack executed from a website or web-based application—for example, a cross-site scripting attack used to steal credentials or a redirect to a site that exploits browser vulnerability and installs malware.
- Email – an attack executed via an email message or attachment—for example, exploit code disguised as an attached document or a link to a malicious website in the body of an email message.
- Improper Usage – any incident resulting from violation of an organization’s acceptable usage policies by an authorized user, excluding the above categories, for example; a user installs file sharing software, leading to the loss of sensitive data; or a user performs illegal activities on a system.
- Loss or Theft of Equipment – the loss or theft of a computing device or media used by the organization, such as a laptop or smartphone.
- Other – an attack that does not fit into any of the other categories.

GAO Report 08-536, Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information, May 2008

The NIST 800 Series is a set of documents that describe United States federal government computer security policies, procedures and guidelines. NIST (National Institute of Standards and Technology) is a unit of the U.S. Commerce Department. The documents are available free of charge and can be useful to businesses and educational institutions, as well as to government agencies. (Available on- line at: <http://csrc.nist.gov/publications/PubsSPs.html>)

TA03-05-01. Percentage of operations, by revenue, independently certified to a suitable third-party cybersecurity management standard.

.57 The percentage shall be calculated as revenue generated from products that 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.

.58 Suitable third-party cybersecurity management standards shall exhibit the following characteristics^{32,33}:

- Explicitly state the 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
- Be developed with a suitable public exposure process

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

- International Standards Organization / International Electrotechnical Commission 27000-series

³² An example of a suitable third-party cybersecurity management system is ISO/IEC 27001 and its related 27XXX family of standards and controls

³³ Characteristics are based on Paragraph .25 of AT Section 101.

- The American Institute of Certified Public Accountants' (AICPA) Service Organization Controls (SOC) reports

- ISACA's COBIT 5

.60 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.

.61 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.

~~.50.~~62 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.

Recruiting & Managing a Global, Diverse Skilled Workforce

Description

Employees are key contributors to value creation in the Software & IT Services industry. While the number of job openings in the industry continues to grow, companies are finding it difficult to recruit qualified employees to fill these positions. The shortage in technically skilled domestic employees has created intense competition to acquire highly-skilled employees, contributing to high employee turnover rates. To respond to talent shortages, companies are hiring foreign nationals and are offshoring operations, which create employee management and sustainability challenges and related business risks. Some companies are contributing to relevant education and training programs to expand the availability of domestic skilled employees. Companies offer significant monetary and non-monetary benefits in order to improve employee engagement and therefore retention and productivity. Initiatives to improve employee engagement and work-life balance might influence the recruitment and retention of a diverse workforce. As the industry is characterized by relatively low representation from women and minority groups, efforts to recruit from and develop diverse talent pools can serve to address the talent shortage and generally improve the value of company offerings. Greater workforce diversity is important for innovation and helps companies understand the needs of their diverse and global customer base.

Accounting Metrics

TC0102-11. Percentage of employees that are (1) foreign nationals and (2) located offshore

-54.63 The registrant shall disclose the percentage of employees that are foreign nationals, where:

- Foreign nationals are defined as anyone requiring a visa for work in the country in which he or she is employed.

-52.64 The registrant shall indicate the percentage of employees that are located offshore from the registrant's country of domicile, by region.

Note to TC0102-11

-53.65 The registrant shall describe potential risks from recruiting foreign nationals and/or offshore employees, which may arise from immigration, naturalization, or visa regulations; loss of control; threats to intellectual property; or cultural or political sensitivities.

-54.66 The registrant shall describe management's approach to addressing the risks it has identified related to recruiting foreign nationals, which may include developing local talent pools, political lobbying for immigration reform, outsourcing of operations, or joining or forming industry partnerships.

-55.67 The registrant shall describe management's approach to addressing the additional risks it has identified related to conducting offshore business activities, which may include implementing safeguards for data security, piracy, and IP protection and diversifying the locations of offshore operations.

TC0102-12. Employee engagement as a percentage

~~56.68~~ The registrant shall disclose employee engagement as a percentage (i.e., the percentage of employees deemed “actively engaged” as opposed to “not engaged”, “passive”, or “actively disengaged”). If engagement is measured as an index (e.g. strength of employee agreement with a survey statement), it shall be converted into a percentage for this disclosure.

~~57.69~~ The disclosure shall be calculated based on the results of an employee engagement survey or research study conducted by the registrant, an external entity contracted to perform such a study by the registrant, or an independent third party.

Note to **TC0102-12**

~~58.70~~ The registrant shall briefly describe the:

- Source of its survey (e.g. third-party survey or registrant’s own),
- Methodology used to calculate the percentage (e.g., a simple average of individual employee survey responses, with a numerical value assigned to the strength of agreement or disagreement with a survey statement),
- Summary of questions or statements included in the survey or study (e.g., those related to goal setting, support to achieve goals, training and development, work processes, and commitment to the organization).

~~59.71~~ Where the survey methodology has changed compared to previous reporting years, the registrant shall indicate results based on both the old and new methods in the year in which the change is made.

~~60.72~~ If results are limited to a subset of employees, the registrant shall include the percentage of employees included in the study or survey, and the representativeness of the sample.

~~61.73~~ The registrant may choose to disclose results of other survey findings such as the percentage of employees: proud of their work/where they work, inspired by their work/co-workers, aligned with corporate strategy and goals, etc.

TC0102-13. Percentage of gender and racial/ethnic group representation for: (1) executives and (2) all others

~~62.74~~ The registrant should summarize and disclose employee representation by employee category in the following table format:

EMPLOYEE CATEGORY	GENDER			RACE AND ETHNICITY					
	Male	Female	NA*	White	Black or African American	Hispanic or Latino	Asian	Other**	NA*
Executives/Sr. Managers									
All Others									

*NA = not available/not disclosed

^Other includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and "two or more races" classification

~~63.75~~ The registrant shall classify its employees according to the U.S. Equal Employment Opportunity Commission [EEO-1 Job Classification Guide](#) into the following two categories: Executives/Sr. Managers and All others (i.e., other EEO-1 categories, including mid-level managers, professionals, technicians, sales, admin support, and service workers).

~~64.76~~ The registrant shall categorize the gender of its employees as: male, female, not disclosed/available.

~~65.77~~ The registrant shall classify the racial/ethnic group of its employees in the following categories, using the same definitions employed for the registrant's [EEO-1 Report](#): White, Black or African American, Hispanic or Latino, Asian, and Other (includes: American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races), not disclosed/available.

~~66.78~~ Where racial/ethnic group and/or gender representation percentages are significantly influenced by the country or region where the workforce is located, the registrant shall provide contextual disclosure to ensure proper interpretation of results.

- Where relevant the registrant may provide supplemental breakdown of gender and racial/ethnic group representation by country or region.

Managing Systemic Risks from Technology Disruptions

Description

With trends towards increased cloud computing and use of Software as a Service (SaaS), software and IT service providers need to ensure they have robust infrastructure and policies in place to minimize disruptions to their services. Disruptions such as programming errors or server downtime have the potential to generate systemic risks, as computing and data storage functions move from individual company servers in various industries to data centers of cloud-computing service providers. The risks are heightened particularly if the affected customers are in sensitive sectors, such as financial institutions or utilities, which are considered critical national infrastructure. Companies' investments in improving the reliability and quality of their IT infrastructure and services are likely to affect their ability to attract and retain customers, and they may face additional costs in the absence of such efforts.

Accounting Metrics

TC0102-14. Number of (1) performance issues and (2) service disruptions; total customer downtime

~~67.79~~ The registrant shall disclose the number of performance issues and service disruptions in software and IT services provided to customers, where:

- Performance issues are defined as any planned or unplanned downtime causing an interruption, of more than 10 minutes but less than or equal to 30 minutes, in the provision of cloud-based services to customers.
- Service disruptions are defined as any planned or unplanned downtime causing an interruption of more than 30 minutes in provision of cloud-based services to customers.

~~68.80~~ Performance issues and service disruptions include, but are not limited to, those caused by technical failures, programming errors, cyber-attacks, weather events, or natural disasters at hosting facilities.

~~69.81~~ The registrant shall disclose the total customer downtime related to performance issues and service disruptions in software and IT services provided to customers, where:

- Total customer downtime is defined as the interruption duration of each service disruption multiplied by the number of software and IT services licenses affected, reported in license-days. For context, the registrant shall indicate the licensing basis (e.g. number of seats, number of CPU cores, number of cloud subscriptions, etc.) and whether the licenses are consumption-based or capacity based.

Note to TC0102-14

~~70.82~~ For each significant service disruption, the registrant shall disclose the duration of the disruption, the extent of impact, and the root cause, as well as any corrective actions taken to prevent future disruptions. Where material, the registrant shall indicate the associated cost incurred, such as remediation costs to correct technology or process issues, as well as any liability costs.

~~74.83~~ A service disruption is considered significant if the cost to correct is material or if it is disruptive to a large number of customers or fundamental business operations in a manner that affects time to market, revenue capture, or other material parameters.

TC0102-15. Discussion of business continuity risks related to disruptions of operations

~~72.84~~ The registrant shall discuss potential business continuity risks associated with technology disruptions affecting operations. Examples of disruptions include, but are not limited to, those caused by technical failures, programming errors, cyber-attacks, weather events, or natural disasters at hosting facilities.

~~73.85~~ The registrant shall discuss measures it implements to address business continuity risks, such as technologies or process that reduce impacts from disruptions, enhance the resilience of systems, insure against loss, or provide redundancies to critical business operations.

~~74.86~~ The registrant should discuss estimated amount of potential loss, probability of that loss, and the associated timeframe. These estimates may be based on insurance figures or other third-party or internal assessments of potential loss.

~~75.87~~ The registrant shall identify which critical business operations support cloud-based services, and shall further note whether those operations are owned or outsourced.

Additional References

Definitions

The following are definitions from the National Institute of Standards and Technology (NIST), of the U.S. Department of Commerce (Available on-line at: <http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf>).

Cloud computing: Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

SaaS – Software as a Service: The capability provided to the consumer is to use the provider’s applications running on a cloud infrastructure.³⁴ The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user- specific application configuration settings.

PaaS – Platform as a Service: The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools

³⁴ A cloud infrastructure is the collection of hardware and software that enables the five essential characteristics of cloud computing. The cloud infrastructure can be viewed as containing both a physical layer and an abstraction layer. The physical layer consists of the hardware resources that are necessary to support the cloud services being provided, and typically includes server, storage and network components. The abstraction layer consists of the software deployed across the physical layer, which manifests the essential cloud characteristics. Conceptually the abstraction layer sits above the physical layer.

supported by the provider.²²³⁵ The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

IaaS – Infrastructure as a Service: The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer can deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).

³⁵ This capability does not necessarily preclude the use of compatible programming languages, libraries, services, and tools from other sources.

Intellectual Property Protection & Competitive Behavior

Description

Intellectual Property (IP) protection is an important driver of innovation. However, acquisition of patents and other IP protection can sometimes be used as a strategy to restrict competition, particularly when companies are dominant market players benefiting from network effects. Management of the interconnection between IP and anti-competitive business practices is an important governance issue with potential material impact for software companies due to monetary penalties and restrictions of activities resulting from legal and regulatory actions.

Accounting Metrics

TC0102-16. Number of patent litigation cases, number successful, and number as patent holder

~~76.88~~ The registrant shall disclose the number of patent litigation cases in which it was involved as either the patent holder or the patent challenger.

- The scope of disclosure includes cases that were adjudicated during the fiscal year even if the decision is under appeal.
- A patent holder is defined as the owner of the exclusive right to prevent others from making, using, offering for sale or selling, or importing the inventions protected by the patent.
- A patent challenger is defined as the party seeking to invalidate or limit the scope of an existing patent or pending patent application by demonstrating that a patent fails to satisfy one or more of the statutory criteria of patentability (e.g., novelty, utility, nonobviousness).

~~77.89~~ The registrant shall disclose the number of successful cases, where:

- Success is defined as the instances where a liability and damages or permanent injunction (if included) decision was made in favor of the registrant.³⁶ Success encompasses findings made in summary judgment, trial by jury, and bench awards.
- Litigation success as a patent holder refers to the registrant's involvement in litigation for which it is successful in pursuing damages for unauthorized use of its intellectual property rights by others (i.e., suing for patent infringement), or litigation in which another entity challenges the scope or efficacy of the registrant's patent (i.e., defending patent against legal challenge).
- Litigation success as a patent challenger refers to the registrant's involvement in litigation through which it is successful in seeking, either proactively or reactively, to protect its own rights by challenging the scope of rights held by another patent owner or the scope of rights to be conveyed to another party as part of a pending patent application.

³⁶ From "2013 Patent Litigation Study: Big cases make headlines, while patent cases proliferate," by PwC. Available on-line at: http://www.pwc.com/en_US/us/forensic-services/publications/assets/2013-patent-litigation-study.pdf

~~-78.90~~ The registrant shall disclose the number of cases in which it was the patent holder.

TC0102-17. Amount of legal and regulatory fines and settlements associated with anti- competitive practices

~~-79.91~~ 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, anti-trust 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.

~~-80.92~~ 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 **TC0102-17**

~~-81.93~~ 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, anti-trust, etc.) of fines and settlements.

~~-82.94~~ 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.



TECHNOLOGY & COMMUNICATIONS SECTOR

Hardware*
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™) #TC0103

Hardware

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

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Hardware 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 Hardware industry consists of companies with global operations that design or manufacture technology hardware products, including personal computers (PCs), consumer electronics, communications equipment, storage devices,

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>

components, and peripherals. The industry relies heavily on the Electronic Manufacturing Services (EMS) and Original Design Manufacturing (ODM) industry for both design and manufacturing services.

Note: Select companies in the Hardware industry are also engaged in activities of the Software & IT Services (TC0102) or Internet Media & Services (TC0401) industries. SASB standards for such activities are outlined in the Software & IT Services, and Internet Media & Services industry standards. For the purposes of this standard, it is assumed that Hardware companies outsource a significant proportion of product manufacturing activities, and therefore issues around water and waste management in manufacturing, which may be material for companies in the industry that have significant manufacturing operations, are not covered by this standard.

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 Hardware industry, the SASB has identified the following sustainability disclosure topics:

- Product Security
- Employee Inclusion
- Product Lifecycle Management
- Supply Chain Management ~~and~~ & 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	TC0103-A
Total square footage of manufacturing facilities	Quantitative	Square footage	TC0103-B
Percentage of production from owned facilities	Quantitative	Percentage	TC0103-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

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

¹⁹ Note to **TC0103-A** – The registrant shall indicate the number of units produced during the fiscal year whether they were manufactured in its own facilities or they were produced by contract manufacturers or suppliers. Disclosure shall be according to the following product categories, which correspond to Level 3 of the Bloomberg Industry Classification System (BICS) as mapped to the Technology & Communications sector in the Sustainability Industry Classification System (SICS): Communications Equipment, Components, Computer Hardware, Computer Peripherals, Computer Storage, Consumer Electronics, Other Hardware, Printing & Imaging, and Transaction Management 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

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

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. ~~Material~~ Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Product Security_	Discussion of approach to identifying and addressing data security risks to new and existing products	Discussion and Analysis	n/a	TC0103-01
Employee Inclusion_	Percentage of gender and racial/ethnic group representation for: (1) executives and (2) all others	Quantitative	Percentage (%)	TC0103-02
Product Lifecycle Management_	Percentage of products by revenue that contain IEC 62474 declarable substances ²¹	Quantitative	Percentage (%) by revenue (\$)	TC0103-03
	Percentage of eligible products by revenue meeting the requirements for EPEAT® certification or equivalent ²²	Quantitative	Percentage (%) by revenue (\$)	TC0103-04
	Percentage of eligible products by revenue meeting ENERGY STAR® criteria	Quantitative	Percentage (%) by revenue (\$)	TC0103-05
	Weight of products and e-waste recovered through take-back programs, percentage of recovered materials that are recycled	Quantitative	Tons (t)	TC0103-06
Supply Chain Management & Materials Sourcing_	Percentage of products by revenue that contain critical materials	Quantitative	Percentage (%) by revenue (\$)	TC0103-07-01
	Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict-free	Quantitative	Percentage (%)	TC0103-08
	Discussion of the management of risks associated with the use of critical materials and conflict minerals	Discussion and Analysis	n/a	TC0103-09 TA03-07-02
	Percentage of suppliers audited in the EICC Validated Audit Process (VAP) or to an equivalent social and environmental responsibility code of conduct	Quantitative	Percentage (%) of facilities	TC0103-10
	Suppliers' social and environmental responsibility audit compliance: (1) priority non-conformance rate and associated corrective action rate, and (2) other non-conformances rate and associated corrective action rate	Quantitative	Rate in number per facility	TC0103-11

²¹ Note to **TC0103-03** – Disclosure shall include a discussion of the approach to managing the use of IEC 62474 declarable substances.

²² Note to **TC0103-04** – Disclosure shall include a discussion of efforts to incorporate environmentally focused principles into product design.

Product Security

Description

The increasing prevalence of cyber security threats creates both risks and opportunities for the Hardware industry. Products designed to ensure data security will help companies reduce reputational risks and enhance customer acquisition. Concerns about data security and related government actions can also serve as revenue generating opportunities for this industry through opportunities for federal contracts and the provision of security products.

Accounting Metrics

TC0103-01-. Discussion of approach to identifying and addressing data security risks to new and existing products

- .01 The registrant shall discuss its strategic approach to managing data security risks to its products.
- .02 Discussion shall focus on all stages of the product lifecycle, as relevant, including product design, the manufacturing supply chain, product distribution, the product use phase, and end-of-life management.
- .03 The registrant should discuss how hardware-based security considerations are integrated into the product design and development process.
- .04 The registrant should discuss how it identifies and mitigates data security risks that may be present within the manufacturing supply chain, such as risk of “backdoors” being inserted into products or counterfeit products, components, or parts that create a data security risk.
 - Efforts may include, but are not limited to, the use of cyber security specialists, “ethical hacking”, and supply chain controls.
- .05 The registrant should discuss how it manages security flaws, bugs, and systems weaknesses that appear in products after they have been sold and are in 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.
- .06 The registrant should describe products it markets 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 include hardware-based encryption products or multi-factor authentication devices (such as security tokens or biometric scanners).

Additional References

The NIST 800 Series is a set of documents that describe United States federal government computer security policies, procedures, and guidelines. NIST (National Institute of Standards and Technology) is a unit of the Commerce

Department. The documents are available free of charge, and can be useful to businesses and educational institutions, as well as to government agencies. (Available on-line at: <http://csrc.nist.gov/publications/PubsSPs.html>)

Employee Inclusion

Description

Despite efforts by the industry to improve workforce diversity and inclusion, Hardware company workforces are characterized by relatively low representation from women and minority groups. Greater workforce diversity is important for innovation as it helps companies understand the needs of their diverse and global customer base which results in the ability to design desirable products and communicate with customers effectively. It is also a means of attracting and retaining employees. Companies that are successful in recruiting and developing a diverse and inclusive workforce have the potential to enhance shareholder value over the long-term.

Accounting Metrics

TC0103-02. Percentage of gender and racial/ethnic group representation for: (1) executives and (2) all others

.07 The registrant should summarize and disclose employee representation by employee category in the following table format:

EMPLOYEE CATEGORY	GENDER			RACE AND ETHNICITY					
	Male	Female	NA*	White	Black or African American	Hispanic or Latino	Asian	Other**	NA*
Executives/Sr. Managers									
All Others									

*NA = not available/not disclosed
 ^Other includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and "two or more races" classification

- .08 The registrant shall classify its employees according to the U.S. Equal Employment Opportunity Commission [EEO-1 Job Classification Guide](#) into the following two categories: Executives/Sr. Managers and All others (i.e., other EEO-1 categories, including mid-level managers, professionals, technicians, sales, admin support, and service workers).
- .09 The registrant shall categorize the gender of its employees as: male, female, not disclosed/available.
- .10 The registrant shall classify the racial/ethnic group of its employees in the following categories, using the same definitions employed for the registrant's [EEO-1 Report](#): White, Black or African American, Hispanic or Latino, Asian, and Other (includes: American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races), not disclosed/available.
- .11 Where racial/ethnic group and/or gender representation percentages are significantly influenced by the country or region where the workforce is located, the registrant shall provide contextual disclosure to ensure proper interpretation of results.

- Where relevant the registrant may provide supplemental breakdown of gender and racial/ethnic group representation by country or region.

Product Lifecycle Management

Description

Hardware companies face increasing challenges associated with environmental and social externalities attributed to product manufacturing, transport, use and disposal. Rapid obsolescence of hardware products exacerbates the externalities. Addressing product lifecycle concerns such as hazardous material inputs, energy efficiency during use, and electronic waste, particularly through product design and end-of-life management could contribute to increased shareholder value through improved competitive positioning, greater market share, and lower regulatory, demand, and supply chain risks.

Accounting Metrics

TC0103-03. Percentage of products by revenue that contain IEC 62474 declarable substances

- .12 The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from products that contain declarable substances according to International Electrotechnical Commission's IEC 62474 - Material Declaration for Products of and for the Electrotechnical Industry divided by total revenue from electrical, electronic, and related technology products.
- .13 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.
- .14 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.

Note to **TC0103-03**

- .15 The registrant shall discuss its approach to managing the use of substances that appear as declarable substance groups or declarable substances in IEC 62474, including specific operational processes which take these substances into consideration.
- .16 Relevant operational processes may include, but are not limited to, product design, materials and parts procurement, product safety testing, product labeling, and product declarations (e.g., material safety data sheets).
- .17 Relevant actions to discuss may include the exclusion of substances (e.g., use of banned substances lists), use of material substitution assessments, product labeling, or any other methods considering usage of substances from these lists.

.18 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 identify those practices, and it shall describe the degree of overlap with IEC 62474.

TC0103-04-. Percentage of eligible products by revenue meeting the requirements for EPEAT® certification or equivalent

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

- Eligible products are those in a product category for which EPEAT certification exists, which includes desktop computers, notebook computers, and computer displays.
- Product categories not currently within the scope of EPEAT certification – such as mobile phones – but for which there is an equivalent certification standard (e.g., Standard for Sustainability of Mobile Phones, UL 110) may be considered eligible products.

.20 A product meets the requirements of EPEAT if it has achieved third-party certification to the EPEAT standard or an equivalent certification, or the registrant can otherwise demonstrate that the product meets these requirements (in lieu of third-party certification).

.21 Standards that are equivalent to EPEAT include those that have criteria and requirements covering substantially similar topics, such as addressing:

- Reduction or elimination of environmentally sensitive materials
- Material selection and declaration
- Design for end-of-life
- Product longevity or lifecycle extension
- Energy conservation
- End-of-life management
- Corporate performance
- Packaging

.22 SASB identifies the TCO Development fourth generation family of standards as similar to EPEAT for the purposes of this disclosure.

Note to TC0103-04

.23 The registrant shall discuss its approach to incorporating environmentally focused principles into product design.

.24 Relevant considerations to discuss include elimination of toxic substances, use of recycled materials, reduction of packaging, design for consolidated shipping, design of low energy consumption products, design for product

take-back, labeling for recycling, and the elimination or replacement of materials that are subject to resource scarcity (e.g., cobalt, rare earth elements, etc.), among others.

- .25 Examples of environmentally focused principles or criteria include those outlined in Environmentally Conscious Design (IEC-62430 or IEC-62075) or U.S. EPA's Design for Environment (DfE).

TC0103-05-. Percentage of eligible products by revenue meeting ENERGY STAR® -criteria

- .26 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 electronics and office equipment product categories: Audio/Video Equipment, Battery Charging Systems, Computers, Data Center Storage, Displays, Enterprise Servers, Imaging Equipment, Set-top Boxes and Cable Boxes, Small Network Equipment, Telephony, Televisions, Uninterruptible Power Supplies.

- .27 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 which version of the standard its products are certified to, 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.

TC0103-06-. Weight of products and e-waste recovered through take-back programs, percentage of recovered materials that are recycled

- .28 The registrant shall disclose the weight, in tons, of materials recovered including through product take-back programs and recycling services.

- The scope of disclosure shall include products, materials, and parts that are at the end of their useful life and would have otherwise been disposed of as waste or used for energy recovery, but have instead been collected.
- The scope of disclosure shall include both materials physically handled by registrant and materials of which the registrant does not take physical possession, but for which it has contracted with a third party the task of collection for the expressed purpose of reuse, recycling, or refurbishment.
- The scope of disclosure excludes products and parts that are in-warranty and have been collected for repairs.

.29 The percentage recycled shall be calculated as the weight of incoming material that was reused plus the weight of material recycled or remanufactured (through treatment or processing) by the registrant plus the weight of material sent externally for further recycling divided by the total weight of incoming recovered material.

.30 Reused materials are defined as those recovered products or components of products that are used for the same purpose for which they were conceived.

- The scope of reused materials includes products donated and/or refurbished by the registrant or third parties.

- The scope of disclosure includes reuse by the registrant or by third parties through direct contract with the registrant.

.31 Recycled and remanufactured materials are defined as waste materials that have been reprocessed or treated by means of a production or manufacturing process and made into a final product or made into a component for incorporation into a product.

- 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 to primary recycled materials).

- The scope of disclosure includes recycling conducted by the registrant or by third parties through direct contract with the registrant.

- 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 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.

.32 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) to which the entities it has transferred e-waste are compliant

Supply Chain Management ~~and~~ & Materials Sourcing

Description

Hardware companies often have limited direct control over labor and environmental standards in outsourced production. Standards vary by region and may be lax in some areas. Hardware companies are exposed to risks of supply chain disruptions, input price increases, and damage to brand reputation, particularly when supplier violate environmental or social standards and when rare earth or conflict minerals and metals are used in products. Companies also face regulatory risks from the use of conflict minerals. Hardware companies with strong supply chain standards, the ability to track and implement corrective measures for supplier performance, and the ability to adapt to increased resource scarcity will be better positioned to protect shareholder value. Innovations at the product-design phase to reduce dependence on some of these materials also reduce risk.

Accounting Metrics

~~TC0103-07~~ ~~TA0307-01~~. Percentage of products by revenue that contain critical materials

- .33 The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from product design and manufacturing services for products that contain critical materials divided by total revenues from product design and manufacturing services for products.
- .34 A critical material is defined, consistent with the National Research Council's "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.²³
- .35 ~~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 the lanthanides (cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium).

~~TC0103-08~~. ~~Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict free~~

- ~~.36 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.~~
- ~~.37 A smelter or refiner is considered to be conflict free if it can demonstrate compliance with:~~

²³ National Research Council. *Minerals, Critical Minerals, and the U.S. Economy*. Washington, DC: The National Academies Press, 2008

- ~~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.~~
- ~~Any other due diligence certification, audit, or program that meets the conflict mineral provisions of Dodd-Frank Section 1502.~~

~~.38 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 products 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.~~

~~TC0103-09-TA03-07-02. Discussion of the management of risks associated with the use of critical materials and conflict minerals~~

~~.39.36 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," as a material that is both essential in use and subject to the risk of supply restriction. Examples of critical materials 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).~~

~~.40.37 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.

~~.32 For conflict minerals, relevant strategies to discuss include due diligence practices, supply chain auditing, supply chain engagement, and partnerships with industry groups or non-governmental development organizations.~~

TC0103-10. Percentage of suppliers audited in the EICC Validated Audit Process (VAP) or to an equivalent social and environmental responsibility code of conduct

~~41.38~~ The registrant shall calculate and disclose the percentage of audit coverage as: the total number of Tier 1 supplier facilities subject to an EICC Validated Audit Process (VAP) audit divided by the total number of Tier 1 supplier facilities.

~~42.39~~ Tier 1 suppliers are defined as those that transact directly with the registrant for goods and services directly related to manufacturing.

- The registrant may limit its disclosure to those suppliers that in aggregate account for greater than, or equal to, 80% of its supplier spending directly related to manufacturing.

~~43.40~~ The registrant may disclose its compliance with an audit recognized by the EICC Membership Compliance Program or an equivalent code of conduct if the standard and audit are sufficiently similar in scope and enforcement to the VAP.

- The registrant shall indicate how an alternative audit protocol is equivalent to the criteria of the EICC VAP. At a minimum, the criteria must relating to: Labor provisions, including criteria focused on freely chosen employment, child labor avoidance, working hours, wage & benefits, humane treatment, non-discrimination, and freedom of association.
- Health & Safety provisions, including criteria focused on occupational safety, emergency preparedness, occupational injury and illness, industrial hygiene, physically demanding work, and dormitory and canteen operations.
- Environment provisions, including criteria focused on environmental permits and reporting, pollution prevention and source reduction, hazardous substances, wastewater and solid waste, air emissions, and product content restrictions.
- Ethics provisions, including those focused on business Integrity, improper advantage, payments and gifts policy, disclosure of information, intellectual property, fair business, advertising, & competition, protection of identity, responsible sourcing of minerals, privacy, and non-retaliation.
- Management System provisions, including management system certification, management accountability for labor and ethics, worker feedback and participation mechanisms, and demonstration that the management system addresses the following as related to social and environmental responsibility: tracking of law and regulations, tracking of customer requirements, risk assessments, measurement of objectives and implementation plans, training, and communication, audits and assessments, corrective action processes, and maintenance of documentation and records.

TC0103-11. Suppliers' social and environmental responsibility audit compliance: (1) priority non-conformance rate and associated corrective action rate, and (2) other non-conformances rate and associated corrective action rate

~~44.41~~ The registrant shall disclose its Tier 1 suppliers' compliance with the EICC VAP based on the number of non-conformances identified.

- Tier 1 suppliers are defined as those that transact directly with the registrant for goods and services directly related to manufacturing.

- The registrant may limit its disclosure to those suppliers that in aggregate account for greater than, or equal to, 80% of its supplier spending directly related to manufacturing.

45.42 The registrant shall calculate and disclose the priority non-conformance rate as: total number of priority non-conformances identified in the supply chain divided by the number of facilities audited.

- Priority non-conformances are the highest severity non-conformance and require escalation by Auditors. Priority non-conformances confirm the presence of underage child workers (below the legal age for work or apprenticeship), forced labor, health and safety issues that can cause immediate danger to life or serious injury, and environmental practices that can cause serious and immediate harm to the community. Issues representing an immediate danger must be corrected as soon as practical but not longer than 30 days after discovery.
- In equivalent codes of conduct priority non-conformances may also be referred to as “zero tolerance” issues or “core violations.”

46.43 The registrant shall calculate and disclose the other non-conformance rate as: total number of major and minor non-conformances identified in the supply chain divided by the number of facilities audited.

- A major non-conformances is seen as a significant failure in the management system – one that affects the ability of the system to produce the desired results. It may also be caused by failure to implement an established process or procedure or if the process or procedure is ineffective.
- A minor non-conformance by itself doesn’t indicate a systemic problem with the management system. It is typically an isolated or random incident.

47.44 A corrective action is defined by the timely completion of a Corrective Action Plan (CAP), which describes how and when the facility will address each of the identified non-conformances, according to the following timelines:

- Priority non-conformance – submission of a CAP within one week of discovery and completion of a CAP within 30 days from discovery.
- Major non-conformance – submission of a CAP within two weeks from receipt of final Validated Audit Report (VAR) and completion of a CAP within 90 days from receipt of final VAR.
- Minor non-conformance – submission of a CAP within two weeks from receipt of final VAR and completion of a CAP within 270 days from receipt of final VAR.

48.45 The registrant shall calculate and disclose its corrective action rate for priority non-conformances as: the number of corrective action plans completed within 30 days to address priority non-conformances divided by the total number of priority non-conformances that have been identified.

49.46 The registrant shall calculate and disclose its corrective action rate for other non-conformances as: the number of corrective action plans completed within 90 days to address major non-conformances plus the

number of corrective action plans completed within 270 days to address minor non-conformances divided by the total number of major and minor non-conformances that have been identified.

~~50.47~~ The registrant may disclose its compliance with an audit recognized by the EICC Membership Compliance Program or an equivalent code of conduct if the standard and audit are sufficiently similar in scope and enforcement to the VAP.



TECHNOLOGY & COMMUNICATIONS SECTOR

Semiconductors*

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™) #TC0201

SEMICONDUCTORS

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>).

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Semiconductors 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 Semiconductors industry includes companies that design or manufacturing semiconductor devices, Integrated Circuits, their raw materials and components, or capital equipment. Some companies in the industry provide

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>

outsourced manufacturing, assembly or other services for designers of semiconductor devices. Outsourcing of manufacturing and offshoring of operations is common to the industry.

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 Semiconductors industry, the SASB has identified the following sustainability disclosure topics:

- Greenhouse Gas Emissions
- Energy Management in Manufacturing
- Water & Waste Management in Manufacturing
- Recruiting & Managing a Global Skilled Workforce
- Employee Health & Safety
- Product Lifecycle Management
- Supply Chain Management & Materials Sourcing
- Intellectual Property
- Protection & Competitive Behavior

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

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

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).

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

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.).

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:

¹⁶ See US GAAP consolidation rules (Section 810).

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

- 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
Total production ¹⁹	Quantitative	See note	TC0201-A
Percentage of production from owned facilities	Quantitative	Percentage	TC0201-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

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

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

¹⁹ Note to **TC0201-A** – The registrant shall disclose total production from its own manufacturing facilities and those with which it contracts for manufacturing services. For semiconductor equipment manufacturers the total production shall be reported on a per unit basis. For semiconductor device manufacturers the total production shall be reported consistent with International SEMATECH Manufacturing Initiative’s Semiconductor Key Environment Performance Indicators Guidance, Technology Transfer #09125069A-ENG:

- For fabrication facilities, as square centimeters times number of mask layers (cm² x # mask layers), which represents the area of good die on a wafer in cm² units for a product type times the number of mask layers on the wafer for a product type
- For assembly and test (A/T) facilities, as units out, which represents the good package, system, or gross unit of final product from A/T facilities

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

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. ~~Material~~ Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions	Gross global Scope 1 emissions and amount of total emissions from perfluorocompounds (PFCs)	Quantitative	Metric tons CO ₂ -e	TC0201-01
	Description of long-term and short-term strategy or plan to manage Scope 1 emissions, including emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	n/a	TC0201-02
Energy Management in Manufacturing	Total energy consumed, percentage grid electricity, percentage renewable energy	Quantitative	Gigajoules, Percentage (%)	TC0201-03
Water & Waste Management in Manufacturing	Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress	Quantitative	Cubic meters (m ³), percentage (%)	TC0201-04
	Amount of hazardous waste from manufacturing, percentage recycled	Quantitative	Tons (t), percentage (%)	TC0201-05 TA03-08-01
Recruiting & Managing a Global Skilled Workforce	Percentage of employees that are (1) foreign nationals and (2) located offshore ²¹	Quantitative	Percentage (%)	TC0201-06
Employee Health & Safety	Discussion of efforts to assess, monitor, and reduce exposure of employees to human health hazards	Discussion and Analysis	n/a	TC0201-07
	Amount of legal and regulatory fines and settlements associated with employee health and safety violations ²²	Quantitative	U.S. dollars (\$)	TC0201-08
	Percentage of products by revenue that contain IEC 62474 declarable substances ²³	Quantitative	Percentage by revenue (\$)	TC0201-09

²¹ Note to **TC0201-06** –Disclosure shall include a description of potential risks of recruiting foreign nationals and/or offshore employees, and management approach to addressing these risks.

²² Note to **TC0201-08** –Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

²³ Note to **TC0201-09** –Disclosure shall include a discussion of efforts to minimize usage of these substances.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Product Lifecycle Management	Processor energy efficiency at a system-level for: (1) servers (2) desktops, and (3) laptops ²⁴	Quantitative	Overall ssj_ops/watt; base SPECint score/watt, base SPECfp score/watt; performance qualification score, battery life score (in minutes)	TC0201-10
Supply Chain Management & Materials Sourcing	Percentage of products by revenue that contain critical materials	Quantitative	Percentage (%) by revenue (\$)	TC0201-11 TA03-09-01
	Percentage of Tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict free	Quantitative	Percentage (%)	TC0201-12
	Discussion of the management of risks associated with use of critical materials and conflict minerals	Discussion and Analysis	n/a	TC0201-13 TA0309-02
Intellectual Property Protection & Competitive Behavior	Number of patent litigation cases, number successful, and number as patent holder	Quantitative	Number	TC0201-14
	Amount of legal and regulatory fines and settlements associated with anti-competitive practices ²⁵	Quantitative	U.S. dollars (\$)	TC0201-15

²⁴ Note to **TC0201-10** –Disclosure shall include a discussion of efforts to design for new and emerging usage patterns with respect to energy efficiency in all product categories (i.e., applications for servers, desktops, laptops, workstations, netbooks, tablets, mobile phones, and storage).

²⁵ Note to **TC0201-15** –Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

Greenhouse Gas Emissions

Description

Greenhouse gas (GHG) emissions, particularly those from perfluorocompounds, from semiconductor manufacturing operations are a source of risk for companies arising from current and potential future regulations in the U.S. and abroad and the related operational challenges with compliance. With the offshoring trend in the industry, the likelihood and impact of climate change regulations may vary depending on the location of facilities. Semiconductor companies focused on mitigating GHG emissions from operations under their control are likely to be better able to manage long-term regulatory risks.

Accounting Metrics

TC0201-01. Gross global Scope 1 emissions and amount of total emissions from perfluorocompounds – (PFCs)

- .01 The registrant shall report its total Scope 1 direct GHG emissions in metric tons of carbon dioxide equivalent (CO₂-e).
- .02 The CO₂-e calculation shall include emissions of CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ (the six Kyoto gases), calculated in accordance with the World Resources Institute / World Business Council on Sustainable Development's (WRI/WBCSD) Greenhouse Gas Reporting Protocol-Corporate Standard, or equivalent.
- .03 The registrant shall also report the amount of direct greenhouse gas emissions from its use of perfluorocompounds (PFCs) in metric tons CO₂-e.
 - PFCs shall continue to be included in the gross global Scope 1 GHG emissions figure.

TC0201-02. Description of long-term and short-term strategy or plan to manage Scope 1 emissions, including emissions reduction targets, and an analysis of performance against those targets

- .04 The registrant shall discuss the following where relevant:
 - The scope, such as if strategies, plans, and/or reduction targets pertain differently to different business units, geographies, or emissions sources;
 - If 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.
- .05 For emission-reduction targets the registrant shall disclose:
 - The percentage of emissions within the scope of the reduction plan;
 - The percentage reduction from base year
 - The base year is the first or starting year against which emissions are evaluated towards the achievement of the target;

- If 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;
- The mechanism(s) for achieving the target, such as energy efficiency efforts, energy source diversification, carbon capture and storage, etc.

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

.07 The registrant should focus its disclosure on Scope 1 emissions from perfluorocompounds (PFCs).

.08 Disclosure corresponds with:

- CDSB Section 4, "Management actions."²⁶
- CDP questionnaire "CC3. Targets and Initiatives."

²⁶ 4.12, "Disclosure shall include a description of the organization's long-term and short-term strategy or plan to address climate change-related risks, opportunities, and impacts, including targets to reduce GHG emissions and an analysis of performance against those targets." *Climate Change Reporting Framework – Edition 1.1*, October 2012, CDSB

Energy Management in Manufacturing

Description

Manufacturing semiconductor devices is an energy-intensive process that involves high energy costs. Fossil-fuel based energy production and consumption create significant environmental impacts. These impacts have the potential to affect the results of operation of semiconductor companies as costs of carbon-intensive energy rise from pricing of GHG emissions. However, companies may benefit from opportunities created and be able to utilize incentives for energy efficiency and renewable energy. As industry innovation adds complexity to manufacturing processes, new technologies to manufacture semiconductors are likely to consume more energy unless companies invest in the energy efficiency of their operations. It is becoming increasingly material for companies in energy-intensive industries such as semiconductors to manage their overall energy efficiency, their reliance on different types of energy and the associated risks, and their ability to access alternative energy sources.

Accounting Metrics

TC0201-03- Total energy consumed, percentage grid electricity, percentage renewable energy

.09 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or its 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.

.10 In calculating energy consumption from fuels and biofuels, the registrant shall use higher heating values (HHV), also known as gross calorific values (GCV), and 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).

~~.11 When reporting self-generated energy consumption, the registrant shall not double count fuel consumption.~~

- ~~• For example, if a registrant generates electricity from natural gas and then consumes the generated electricity, the energy consumption is counted once as energy from fuel consumption.~~

~~.12.11 The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.~~

~~.13.12 The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.~~

- 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) which~~that~~ explicitly includes renewable energy certificates (RECs), or for which Green-e Energy Certified RECs are paired with grid electricity.~~For all renewable energy consumed as electricity in this~~

manner, RECs must be retired on behalf of the registrant to be claimed as renewable energy as part of this disclosure, European Union Guarantees of Origin (GOs), and other recognized renewable energy attribute certificates.

- For any renewable electricity generated on-site, any RECs (and equivalents) 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.
- If using multiple green energy certifications (REC, GOs, etc.) the registrant shall disclose the type of certificate used.
- 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.⁴²⁷
- Renewable energy is defined as energy from sources that are capable of being replenished in at a short time through ecological cycles, rate greater than or equal to their rate of depletion, consistent with the U.S. Environmental Protection Agency's (EPA) definitions, such as geothermal, wind, solar, hydro, and biomass.

~~.14~~ For the purposes of this disclosure, the scope of renewable energy from hydro ~~and biomass~~ sources ~~are~~ limited to ~~the following~~:

- ~~Energy from hydro sources~~ those that are certified by the Low Impact Hydropower ~~institute.~~
- ~~Energy from biomass sources~~ Institute or that are ~~Green e Energy certified or~~ eligible for a state Renewable Portfolio Standard.

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

- Energy from biomass sources that meets at least one of the following criteria:
 - Certification 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);
 - Classification as an "eligible renewable" according to the Green-e Energy National Standard Version 2.5 (2014); or
 - Eligibility for a state Renewable Portfolio Standard.

~~.15~~ .14 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 ~~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.

Water & Waste Management in Manufacturing

Description

Significant volumes of ultra-pure water are critical to the semiconductor production process. As manufacturing becomes more complex, companies are finding it challenging to reduce water use, which is likely to pose operational risks as a result of increasing global water stress. Furthermore, contamination of local water resources, including from underground storage of hazardous materials used in semiconductors manufacturing, as well as inadequate waste management practices can increase operating costs of water purification and lead to social unrest or governmental intervention. Such actions can affect company reputation, halt production, or impose additional legal or regulatory costs on companies. Companies that address water and waste management in manufacturing operations and incorporate water stress considerations in decisions about fab locations will be better positioned to deal with existing, and emerging, regulations in the U.S. and globally.

Accounting Metrics

TC0201-04. Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress

~~-16.15~~ The registrant shall disclose the amount of water (in cubic meters) that was withdrawn from freshwater 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 total dissolved 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 freshwater.

~~-17.16~~ The registrant shall disclose the percentage of water recycled as the volume (in cubic meters) recycled divided by the volume of water withdrawn.

- Any volume of water reused multiple times shall be counted as recycled each time it is recycled and reused.

~~-18.17~~ 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 facilities 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.

~~TC0201-05-TA03-08-01. Amount of hazardous waste from manufacturing, percentage recycled~~

~~.18~~ The registrant shall calculate and disclose the amount of hazardous waste generated (in metric tons) ~~that meets~~.

- Hazardous wastes are defined per the definition legal or regulatory frameworks applicable within the jurisdictions where the waste is generated.
- The registrant shall disclose the legal or regulatory framework used to define 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) 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.

• ~~This includes wastes that display the following characteristics: ignitability, corrosivity, reactivity, or toxicity.~~

.19 Disclosure corresponds with Global Reporting Initiative Effluents and Waste 2016 Disclosure 306-2 a.

~~.19.20~~ The percentage recycled shall be calculated as the weight (in metric tons) of hazardous waste ~~material~~ that was ~~reused plus the amount 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 ~~material, where:~~ waste (in metric tons).

~~• 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 a production or manufacturing process and made into a final product or made into a component for incorporation into a product.~~

~~• The scope of recycled and remanufactured products include primary recycled materials, co-products (outputs of equal value to primary recycled materials), and by products (outputs of lesser value to 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 sent for further recycling include those materials which are transferred to a third party for the expressed purpose of reuse, recycling, or refurbishment.~~

~~• 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.~~

• 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.

~~.20.21~~ 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) ~~to~~ with which the entities it has transferred e-waste to are complaint-compliant.

Recruiting & Managing a Global Skilled Workforce

Description

Employees are key contributors to value creation in the semiconductors industry. Companies face competition and challenges in recruiting qualified employees, including electrical engineers, research scientists, and process engineers, and compensation for such employees is a significant cost component for the industry. To respond to domestic talent shortages, semiconductors companies are increasingly recruiting foreign nationals, even as they offshore operations, bringing with it associated sustainability and employee management challenges. Semiconductors companies that are able to put in place education, training, or recruitment policies that develop and leverage the talents of global skilled employees to fill their business needs can improve their competitive positioning.

Accounting Metrics

TC0201-06- Percentage of employees that are (1) foreign nationals and (2) located offshore

~~-21.22~~ The registrant shall disclose the percentage of employees that are foreign nationals where:

- Foreign Nationals are defined as anyone requiring a visa for work in the country in which they are employed.

~~-22.23~~ The registrant shall indicate the percentage of employees that are located offshore from the registrant's country of domicile, by region.

Note to TC0201-06

~~-23.24~~ The registrant shall describe potential risks from recruiting foreign nationals and/or offshore employees, which may arise from immigration, naturalization, or visa regulations; loss of control; threats to intellectual property; or cultural or political sensitivities.

~~-24.25~~ The registrant shall describe management's approach to addressing the risks it has identified related to recruiting foreign nationals, which may include developing local talent pools, political lobbying for immigration reform, outsourcing of operations, or joining or forming industry partnerships.

~~-25.26~~ The registrant shall describe management's approach to addressing the additional risks it has identified related to conducting offshore business activities, which may include implementing safeguards for data security, piracy, and IP protection and diversifying the locations of offshore operations.

Employee Health & Safety

Description

The long-term impact on worker health from chemical usage in semiconductor manufacturing is a major area of concern for the industry. Workers in fabs, particularly maintenance workers, are at risk of exposure to chemicals known to be hazardous to human health. Companies taking measures to protect employee health and safety will protect themselves from adverse litigation rulings from lawsuits related to both regulated and unregulated hazardous substances. Violations of employee health and safety regulations could result in monetary and non-monetary penalties and reputational impacts. Impacts may increase in magnitude over the medium- to long-term as the quality and availability of data on health hazards, particularly on long-term health effects, improves.

Accounting Metrics

TC0201-07. Discussion of efforts to assess, monitor, and reduce exposure of employees to human health hazards

~~26.27~~ The registrant shall discuss efforts to assess, monitor, and reduce exposure of employees to human health hazards including, but not limited to, solvents, corrosives, lead (and its compounds), arsenic (and its compounds), as well as known or suspected carcinogens, teratogens, and mutagens.

~~27.28~~ The registrant shall describe management approach in the context of short term (i.e., acute risks) and long term (i.e., chronic) risks.

~~28.29~~ Relevant efforts to discuss include, but are not limited to, risk assessments, participation in long-term health studies, ambient air monitoring in clean rooms, implementation of technology to control worker exposure, worker use of personal protective equipment, automation of processes, and phasing out, substituting, or using alternative materials.

~~29.30~~ The scope of employees shall focus on cleanroom workers in fabrication plants but should discuss other employees as relevant.

TC0201-08. Amount of legal and regulatory fines and settlements associated with employee health and safety violations

~~30.31~~ The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with health and safety violations.

~~31.32~~ Disclosure shall include civil actions (e.g., civil judgments, settlements, or regulatory penalties) and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by any entity (government, businesses, or individuals).

Note to TC0201-08

~~32.33~~ The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, non-prosecution agreement) and context of fines and settlements.

~~33.34~~ 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.

Product Lifecycle Management

Description

Semiconductor machinery and device manufacturers can reduce the environmental and human health impacts of their products by increasing the energy-efficiency of equipment and chips and reducing the amount of harmful materials in products. Semiconductors companies face increasing demand for devices that enable higher computing power and lower energy consumption. Semiconductors companies contributing to the development of cutting-edge energy-efficient devices that enable a longer battery life, reduce heat output, and allow end users to lower energy bills can gain a competitive advantage. Companies can also benefit from working to reduce and eventually eliminate the use of toxic materials from chips destined for consumer devices, which has implications in end of life management of electronic waste, an issue of growing legislative importance in the U.S. and abroad.

Accounting Metrics

TC0201-09. Percentage of products by revenue that contain IEC 62474 declarable substances

~~34.35~~ The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from products that contain declarable substances according to International Electrotechnical Commission's IEC 62474 - Material Declaration for Products of and for the Electrotechnical Industry divided by total revenue from products.

~~35.36~~ 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.

~~36.37~~ 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.

Note to TC0201-09

~~37.38~~ The registrant shall discuss its approach to managing the use of substances that appear as declarable substance groups or declarable substances in IEC 62474, including specific operational processes which take these substances into consideration.

~~38.39~~ Relevant operational processes may include, but are not limited to, product design, materials and parts procurement, product safety testing, product labeling, and product declarations (e.g. material safety data sheets).

~~39.40~~ Relevant actions to discuss may include the exclusion of substances (e.g. banned substances lists), use of material substitution assessments, product labeling, or any other methods considering usage of substances from these lists.

~~40.41~~ 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 identify those practices, and it shall describe the degree of overlap with IEC 62474.

TC0201-10. Processor energy efficiency at a system-level for: (1) servers (2) desktops, and (3) laptops

41.42 The registrant shall disclose the energy efficiency of its processors based on benchmarked performance per watt of energy consumed, using the following parameters:

- Representative product – The registrant shall calculate performance using a representative product for each product category (i.e., servers, desktops, laptops), where representative product would typically be the registrant’s bestselling specification of processor in the product category. If the registrant determines its representative product differently, it shall explain the criteria it used in this determination.
- System-level testing – Testing shall be conducted – and disclosure shall be made – at the system-level for a computer integrating the registrant’s processor and not at a component-level. The registrant shall conduct testing using a representative computer system structure, such as the bestselling system using the registrant’s processor or one that is widely commercially available.
- Specified benchmark – At a minimum the registrant shall disclose performance to the benchmarks defined below for each product category; the registrant may choose to disclose performance to additional benchmarks.

42.43 The registrant shall disclose the efficiencies for processors used in systems for the following product categories:

- Servers
- Desktop computers
- Laptops

43.44 For servers the registrant shall conduct testing according to the SPEC Power SPECpower_ssj2008 and disclose the results as:

- Overall ssj_ops/watt

44.45 For desktop computers the registrant shall conduct testing according to the SPEC CPU2006 benchmark and disclose two results:

- Base SPECint score/watt
- Base SPECfp score/watt

45.46 For laptops the registrant shall conduct testing according to the MobileMark® 2012 v1.5 and disclose two results:

- Performance qualification score
- Battery life score (in minutes)

47 Updates to the aforementioned benchmarks constitute updates to the requirements of this metric.

Note to **TC0201-10**

~~46.48~~ The registrant shall include a discussion of efforts to design for new and emerging usage patterns with respect to energy efficiency in all relevant product categories (e.g., applications for servers, desktops, laptops, workstations, netbooks tablets, mobile phones, storage, etc.).

- Discussion should include how, in the registrant's view, the energy efficiency of processors is influenced by factors such as growth of new product categories (e.g., machine-to-machine communication), new usage patterns (e.g., increased data consumption via mobile devices), purchasing specifications (e.g., ENERGY STAR), or consumer demand (e.g., environmentally conscious consumers).

~~47.49~~ For additional product categories, such as workstations, netbooks, tablets, mobile phones, and storage, for which a benchmark is not specified above the registrant may choose to disclose energy efficiency performance using a relevant benchmark.

- In this case the registrant shall describe the parameters it used to select and test to the benchmark.

Additional References

Registration, Evaluation, Authorisation and Restriction of Chemical (REACH) Regulation (EC) No 1907/2006

Candidate List of Substances of Very High Concern (SVHC) for Authorisation is published in accordance with Article 59(10) of the REACH Regulation).

The NIST 800 Series is a set of documents that describe United States federal government computer security policies, procedures, and guidelines. [NIST](http://www.nist.gov) (National Institute of Standards and Technology) is a unit of the Commerce Department. The documents are available free of charge, and can be useful to businesses and educational institutions, as well as to government agencies. (Available on-line at: <http://csrc.nist.gov/publications/PubsSPs.html>).

Definitions

The Standard Performance Evaluation Corporation (SPEC) is a non-profit corporation formed to establish, maintain and endorse a standardized set of benchmarks that can be applied to high-performance computers. SPEC develops benchmark suites and also reviews and publishes submitted results from member organizations and other benchmark licensees.

SPECpower_ssj2008 is a benchmark that evaluates the power and performance characteristics of volume server class computers. The initial benchmark addresses the performance of server-side Java, and additional workloads are planned.

SPEC CPU2006 is an industry-standardized, CPU-intensive benchmark suite, stressing a system's processor, memory subsystem and compiler. SPEC designed CPU2006 to provide a comparative measure of compute-intensive performance across the widest practical range of hardware using workloads developed from real user applications. SPEC CPU2006 is made up of two subcomponents that focus on two different types of compute intensive performance: CINT2006 for measuring and comparing compute-intensive integer performance; and CFP2006 for measuring and comparing compute-intensive floating point performance.

MobileMark® 2012 is an app-based benchmark for notebook PCs, promulgated by BAPCo, that measures battery life and performance simultaneously (showing how well a system design addresses the inherent tradeoffs between performance and power management).

Supply Chain Management & Materials Sourcing

Description

The industry's reliance on critical and conflict minerals and metals has become a focus of attention due to associated supply constraints, resulting price volatility, and a low potential for substitution. Furthermore, companies face regulations related to their use of conflict minerals, which can lead to increased costs associated with new reporting requirements. Semiconductors companies with strong supply chain standards and an ability to adapt to increased resource scarcity will be better positioned to protect shareholder value. Innovations at the product-design phase to reduce dependence on some of these materials may also reduce risk.

Accounting Metrics

~~TC0201-11-TA03-07-01. Percentage of products by revenue that contain critical materials~~

~~.48.50~~ The registrant shall calculate the percentage as: the revenue, in U.S. dollars, from product design and manufacturing services for products that contain critical materials divided by total revenues from product design and manufacturing services for products.

~~.49.51~~ A critical material is defined, consistent with the National Research Council's "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.⁴⁶

~~.50~~ ~~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 the lanthanides (cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium).

~~TC0201-12. Percentage of tungsten, tin, tantalum, and gold smelters within the supply chain that are verified conflict free~~

~~.51~~ ~~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.~~

~~.52~~ ~~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.~~
- ~~• Any other due diligence certification, audit, or program that meets the conflict mineral provisions of Dodd-Frank Section 1502.~~

~~.53 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 products 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 any of its suppliers of raw materials, components, or subassemblies.~~

TC0201-13TA03-07-02. Discussion of the management of risks associated with the use of critical materials and conflict minerals

~~.54.52~~ 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:~~

~~.53 A critical material is defined, consistent with the National Research Council's "Minerals, Critical Minerals, and the U.S. Economy," as a material that is both essential in use and subject to the risk of supply restriction.~~

~~.54 Examples of critical materials 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 the lanthanides (cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium).

~~.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.

~~.56 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.

~~.57 For conflict minerals, relevant strategies to discuss include due diligence practices, supply chain auditing, supply chain engagement, and partnerships with industry groups or non-governmental development organizations.~~

Intellectual Property Protection & Competitive Behavior

Description

While Intellectual Property (IP) protection is inherent to the business model of companies in the Semiconductors industry, companies' IP practices can sometimes conflict with the best interests of society. IP protection, on the one hand, is an important driver of innovation; on the other hand, some companies may also acquire and enforce patents and other IP protection in efforts to restrict competition, particularly if they are dominant market players. Industry standards setting can involve complex negotiations over patent rights and licensing terms, and companies are using cross-licenses and patent pools to address difficulties around patent thickets. However, such industry cooperation can also raise anti-trust concerns, for example, with provisions in portfolio cross-licenses that could enable price-fixing. Companies that are able to protect their IP and use it to spur innovation resulting in new products and services, while ensuring their IP management and other business practices do not unfairly restrict competition, have the potential to lower regulatory scrutiny and legal actions while improving revenues.

Accounting Metrics

TC0201-14. Number of patent litigation cases, number successful, and number as patent holder

.58 The registrant shall disclose the number of patent litigation cases in which it was involved as either the patent holder or the patent challenger.

- The scope of disclosure includes cases that were adjudicated during the fiscal year even if the decision is under appeal.
- A patent holder is defined as the owner of the exclusive right to prevent others from making, using, offering for sale or selling, or importing the inventions protected by the patent.
- A patent challenger is defined as the party seeking to invalidate or limit the scope of an existing patent or pending patent application by demonstrating that a patent fails to satisfy one or more of the statutory criteria of patentability (e.g., novelty, utility, nonobviousness).

.59 The registrant shall disclose the number of successful cases, where:

- Success is defined as the instances where a liability and damages or permanent injunction (if included) decision was made in favor of the registrant.⁴⁷²⁸ Success encompasses findings made in summary judgment, trial by jury, and bench awards.
- Litigation success as a patent holder refers to the registrant's involvement in litigation for which it is successful in pursuing damages for unauthorized use of its intellectual property rights by others (i.e., suing for patent infringement), or litigation in which another entity challenges the scope or efficacy of the registrant's patent (i.e., defending patent against legal challenge).
- Litigation success as a patent challenger refers to the registrant's involvement in litigation through which it is successful in seeking, either proactively or reactively, to protect its own rights by challenging

²⁸ From "2013 Patent Litigation Study: Big cases make headlines, while patent cases proliferate," by PwC. Available on-line at: http://www.pwc.com/en_US/us/forensic-services/publications/assets/2013-patent-litigation-study.pdf

the scope of rights held by another patent owner or the scope of rights to be conveyed to another party as part of a pending patent application.

.60 The registrant shall disclose the number of cases in which it was the patent holder.

TC0201-15. Amount of legal and regulatory fines and settlements associated with anti-competitive – practices

.61 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, anti-trust 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.

.62 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 **TC0201-15**

.63 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, anti-trust, etc.) of fines and settlements.

.64 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



TECHNOLOGY & COMMUNICATIONS SECTOR

Telecommunication Services*

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™) #TC0301

TELECOMMUNICATION SERVICES

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).

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Telecommunication Services 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 ~~Telecommunications~~ Telecommunication Services industry consists of ~~two main segments:~~ wireless and wireline telecommunications companies, as well as companies that provide cable and satellite services. The wireless services segment provides direct communication through radio-based cellular networks and operates and maintains the

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>

associated switching and transmission facilities. The wireline segment provides local and long-distance voice communication via the Public Switched Telephone Network. Wireline carriers also offer voice over internet protocol (VoIP) telephone, television, and broadband internet services over an expanding network of fiber optic cables. ~~The industry is influenced by increasing data use due to expansion in smartphones and tablets.~~ Cable providers distribute television programming from cable networks to subscribers. They typically also provide consumers with video services, high-speed internet service, and VoIP. These services are traditionally bundled into packages that provide subscribers with easier payment options than paying for each service separately. Satellite companies distribute TV programming through broadcasting satellites orbiting the Earth or through ground stations. Companies serve customers primarily in their domestic markets, although some U.S.-listed companies domiciled abroad operate in several countries.

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 Telecommunication Services industry, the SASB has identified the following sustainability disclosure topics:

- Environmental Footprint of Operations
- Data Privacy
- Data Security
- Product End-of-Life Management
- Managing Systemic Risks from Technology Disruptions
- Competitive Behavior & Open Internet

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

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

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

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
Wireless subscribers ¹⁹	Quantitative	Number	TC0301-A
Wireline subscribers ²⁰	Quantitative	Number	TC0301-B
Broadband subscribers ²¹	Quantitative	Number	TC0301-C
Network traffic, percentage on cellular network, and percentage on fixed network	Quantitative	Petabytes, Percentage	TC0301-D
Network bandwidth capacity, percentage leased ²²	Quantitative	Megabits per second (Mbit/s), Percentage (%)	TC0301-E

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

¹⁹ Note to **TC0301-A** – Wireless subscribers are defined as those customers that contract with the registrant for mobile services, which include cellular phone service and/or wireless data service.

²⁰ Note to **TC0301-B** – Wireline subscribers are defined as those customers that contract with the registrant for fixed line phone services.

²¹ Note to **TC0301-C** – Broadband subscribers are defined as those customers that contract with the registrant for fixed line cable and internet services, which include WiFi connections.

²² Note to **TC0301-E** – The registrant shall disclose the network bandwidth capacity as the maximum throughput of the network system, including owned and leased capacity; the percentage leased is defined as network capacity for which infrastructure is not owned by the registrant.

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.²³

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

²³ The AICPA's Guide (see *supra* note 1) provides guidance related to measurement uncertainty.

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. ~~Material~~Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Environmental Footprint of Operations	Total energy consumed, percentage grid electricity, percentage renewable energy; amount of energy consumed by (a) cellular and (b) fixed networks	Quantitative	Gigajoules, Percentage (%)	TC0301-TA <u>03-10-01</u>
Data Privacy	Discussion of policies and practices relating to collection, usage, and retention of customer information and personally identifiable information	Discussion and Analysis	n/a	TC0301-02
	Percentage of users whose customer information is collected for secondary purpose, percentage who have opted-in	Quantitative	Percentage (%)	TC0301-03
	Amount of legal and regulatory fines and settlements associated with customer privacy ²⁴	Quantitative	U.S. dollars (\$)	TC0301-04
	Number of government or law enforcement requests for customer information, percentage resulting in disclosure	Quantitative	Number, percentage (%)	TC0301-05 TA03-11-01
Data Security	Number of data security breaches, and percentage involving customers' personally identifiable information (PII), <u>number of customer affected</u> ²⁵	Quantitative	Number, percentage (%)	TC0301-06 TA03-12-01
	Discussion of management approach to identifying and addressing data security risks	Discussion and Analysis	n/a	TC0301-07
	<u>Percentage of operations, by revenue independently certified to a suitable third-party cybersecurity management standard</u>	<u>Quantitative</u>	<u>Percentage (%)</u>	<u>TA03-12-02</u>
Product End-of-Life Management	Materials recovered through take back programs, percentage of recovered materials that are (a) reused, (b) recycled, and (c) landfilled	Quantitative	Weight (tons), percentage by weight	TC0301-08
Managing Systemic Risks from Technology Disruptions	Average interruption frequency and average interruption duration ²⁶	Quantitative	Disruptions per customer, Hours per customer	TC0301-09
	Description of systems to provide unimpeded service during service interruptions	Discussion and Analysis	n/a	TC0301-10
Competitive Behavior & Open Internet	Amount of legal and regulatory fines and settlements associated with anti-competitive practices ²⁷	Quantitative	U.S. dollars (\$)	TC0301-11
	<u>Average actual sustained download speed of (1) owned and commercially-associated content and (2) non-associated content</u>	<u>Quantitative</u>	Megabits per second (<u>Mbps</u>)	<u>TA03-14-01</u>

²⁴ Note to **TC0301-04** –Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

²⁵ Note to **TA03-12-01** –Disclosure shall include a description of corrective actions implemented in response to data security incidents or threats.

²⁶ Note to **TC0301-09** –Disclosure shall include a description of each significant performance issue or service disruption and any corrective actions taken to prevent future disruptions.

²⁷ Note to **TC0301-11** –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
	Discussion of risks and opportunities associated with net neutrality, paid peering, zero rating, and related practices	Discussion and Analysis	n/a	TA03-14-02

Environmental Footprint of Operations

Description

Fossil fuel based energy production generates significant environmental impacts, ~~which that~~ have the potential to affect the results of operation of ~~telecom~~[Telecommunications Services](#) companies because they are highly reliant on a continuous, uninterrupted supply of energy for network operations, [broadcast facilities](#), and data centers. The way in ~~which telecom~~[that Telecommunication Services](#) companies manage their overall energy efficiency or intensity, their reliance on different types of energy, and their ability to access alternative sources of energy will become increasingly material as the global regulatory focus on climate change increases, bringing with it incentives for energy efficiency and renewable energy and pricing of GHG emissions.

Accounting Metrics

~~TC0304~~[TA03-10-01](#). **Total energy consumed, percentage grid electricity, percentage renewable energy; amount of energy consumed by (a) cellular and (b) fixed networks**

.01 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or its 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 The registrant shall disclose the portion of total energy consumed each by cellular networks and fixed networks, excluding support services (e.g., vehicle fleet and offices), where:

- Cellular network is defined as a wireless mobile network that uses radio waves for transmission, is distributed over land areas called cells, which are each served by at least one fixed-location transceiver (i.e., cell site or base station). Cellular networks include all wireless transmission of data over land cells from a fixed-location transceiver.
- Fixed network is defined as a solid medium telephone or data line such as a metal wire or fiber optic cable for transmission. Fixed networks include all stationary wireless connections between two fixed sites.

- The scope of disclosure for energy from cellular and fixed networks is limited to the energy directly used by the network equipment and does not include energy for any support services or functions (e.g., as vehicle fleet or offices).

.03 In calculating energy consumption from fuels and biofuels, the registrant shall use higher heating values (HHV), also known as gross calorific values (GCV), and 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).

~~.04 When reporting self-generated energy consumption, the registrant shall not double-count fuel consumption.~~

- ~~• For example, if a registrant generates electricity from natural gas and then consumes the generated electricity, the energy consumption is counted once as energy from fuel consumption.~~

~~.05.04 The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.~~

~~.06.05 The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.~~

- 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) ~~which that~~ explicitly includes renewable energy certificates (RECs), or for which Green-e Energy Certified RECs are paired with grid electricity, European Union Guarantees of Origin. ~~For all renewable energy consumed as electricity in this manner, RECs must be retired on behalf of the registrant to be claimed as renewable energy as part of this disclosure (GOs), and other recognized renewable energy attribute certificates.~~
- For any renewable electricity generated on-site, any RECs (and equivalents) 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.
- If using multiple green energy certifications (REC, GOs, etc.) the registrant shall disclose the type of certificate used
- 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.¹⁹²⁸
- 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 the U.S. Environmental Protection Agency's (EPA) definitions ~~short time through ecological cycles,~~ such as geothermal, wind, solar, hydro, and biomass.

²⁸ SASB recognizes that RECs reflect the environmental attributes of renewable energy that have been introduced to the grid.

- For the purposes of this disclosure, the scope of renewable energy from hydro ~~and biomass~~-sources ~~are~~ limited to ~~the following:~~ Energy from hydro sources ~~those~~ that are certified by the Low Impact Hydropower Institute:

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

- Energy from biomass sources that meets at least one of the following criteria:
 - Certification 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);
 - Classification as an “eligible renewable” according to the Green-e Energy National Standard Version 2.5 (2014); or
 - Eligibility 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-~~for~~ electricity from solar or wind energy).

Data Privacy

Description

As customers pay increased attention to privacy issues around cell phone, Internet, and email services, ~~Telecom~~Telecommunications Services companies will have to implement strong management practices and guidelines related to their use of customer data. ~~Telecom~~Telecommunications Services companies use growing volumes of customer location, web browsing, and demographic data to improve their services as well as to generate revenue by selling such data to third parties. ~~Additionally, Telecom~~Growing public concern about privacy has led to increased regulatory scrutiny over the use, collection, and sale of consumer data. These trends are increasing the importance to Telecommunications Services companies of adopting and communicating in a transparent manner policies about providing customer data to third parties, including the amount and type of data provided and the nature of its use (for example, use for commercial purposes). Additionally, Telecommunications Services companies receive, and must determine whether to comply with, government requests for customer information. In the absence of data privacy measures, companies could face difficulties in acquiring and retaining customers and could face increased regulatory scrutiny.

Accounting Metrics

TC0301-02. Discussion of policies and practices relating to collection, usage, and retention of ~~customer~~customers' information and personally identifiable information

.08 The registrant shall describe the nature, scope, and implementation of its policies and practices related to ~~customer~~privacy, of customer information, with a specific focus on ~~the~~ how they address the collection, usage, and retention of ~~customer information, demographic data, customer behavioral data, location data from cellphone usage, and~~customers' personally identifiable information, where:

- Customer information includes information that pertains to a user's attributes or actions, including but not limited to, records of communications, content of communications, demographic data, behavioral data, location data, or personally identifiable information.
- Demographic data is defined as the quantifiable statistics which identify and distinguish a given population.
- Examples of demographic data include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, and employment status.
- Behavioral data is defined as the product of tracking, measuring, and recording individual behaviors such as consumers' on-line browsing patterns, buying habits, brand preferences, and product usage patterns, among others.

- Location data is defined as data describing the physical location or movement patterns of an individual, such as Global Positioning System coordinates or other related data which would enable identifying a tracking an individual's physical location.²⁹
- Personally Identifiable Information (PII) is defined as any information about an individual 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.¹⁶

.09 The registrant shall describe the information "life cycle" (i.e., collection, use, retention, processing, disclosure, and destruction) and how information handling practices at each stage may affect individuals' privacy.

- With respect to data collection, it may be relevant for the registrant to discuss which data or types of data is collected without consent of an individual, which requires opt-in consent, and which requires opt-out action from the individual.
- With respect to usage of data, it may be relevant for the registrant to discuss which data or types of data are used by the registrant internally, and under what circumstance the registrant shares, sells, rents, or otherwise distributes data or information to third-parties.
- With respect to retention, it may be relevant for the registrant to discuss which data or types of data it retains, the length of time of retention, and practices used to ensure that data is stored securely.

.10 The registrant shall discuss the degree to which its policies and practices address similar issues as outlined in the OMB Guidance for Implementing the Privacy Provisions of the E-Government Act of 2002 (M-03-22), including use of Privacy Impact Assessments (PIAs), where:

- Privacy Impact Assessment is an analysis of how information is handled that ensures handling conforms to applicable legal, regulatory, and policy requirements regarding privacy; determines the risks and effects of collecting, maintaining and disseminating information in identifiable form in an electronic information system; and examines and evaluates protections and alternative processes for handling information to mitigate potential privacy risks.
- As outlined by OMB M-03-22, PIAs must analyze and describe: (a) what information is to be collected, (b) why the information is being collected, (c) intended use of the information, (d) with whom the information will be shared, (e) what opportunities individuals have to decline to provide information (i.e., where providing information is voluntary) or to consent to particular uses of the information (other than required or authorized uses), and how individuals can grant consent, and (f) how the information will be secured, among other government-specific requirements.

²⁹ GAO Report 08-536, *Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information*, May 2008

.11 The registrant shall discuss how its policies and practices related to privacy of customer information address children's privacy, which at a minimum includes the provisions of the Children's Online Privacy Protection Act (COPPA).

TC0301-03. Percentage of users whose customer information is collected for secondary purpose, percentage who have opted-in

.12 The registrant shall indicate the percentage of customers whose customer information is collected for its own secondary use or for transfer to a third party, where:

- Customer information includes information that pertains to a user's attributes or actions, including but not limited to, records of communications, content of communications, demographic data, behavioral data, location data, or personally identifiable information.
- Demographic data is defined as the quantifiable statistics which identify and distinguish a given population. Examples of demographic data include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, and employment status.
- Behavioral data is defined as the product of tracking, measuring, and recording individual behaviors such as consumers' on-line browsing patterns, buying habits, brand preferences, and product usage patterns, among others.
- Location data is defined as data describing the physical location or movement patterns of an individual, such as Global Positioning System coordinates or other related data which would enable identifying and tracking an individual's physical location.
- Secondary purpose is defined as the intentional use of data by the registrant (i.e., not a breach of security) that is outside of the primary purpose for which the data was collected. Examples of secondary uses include, but are not limited to, selling targeted ads, selling aggregated behavioral or location data, improving own product and service offerings, and transferring data or information to a third-party through sale, rental, or sharing.

.13 Of the users whose customer information is collected for secondary use or transfer to third parties, the registrant shall indicate the percentage that provided opt-in consent, where:

- Opt-in is defined as express affirmative consent required to use or share content.

.14 The registrant may choose to discuss what type of customer information is collected, the extent of data collected from different groups, and/or the types of secondary uses for which demographic data is collected.

TC0301-04. Amount of legal and regulatory fines and settlements associated with customer privacy

.15 The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with incidents relating to customer privacy, including, but not limited to, violations of the Children's Online Privacy Protection Act, Directive 2002/58/EC (ePrivacy Directive), the US-EU Safe Harbor Program, and the Federal Trade Commission Privacy Act.

.16 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 **TC0301-04**

.17 The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., unauthorized monitoring, sharing of data, children's privacy, etc.) of fines and settlements.

.18 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.

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

~~.19 All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself would not compromise the registrant's ability to maintain data privacy and security.~~

TC0301-05-TA03-11-01. Number of government or law enforcement requests for customer information, number of records requested, percentage resulting in disclosure

.20 The registrant shall disclose the total number of requests for customer content and non-content data information ~~received from government or law enforcement agencies during the reporting year and the percentage of requests with which it complied~~, where:

- Customer content~~Customer includes customer-generated~~ information such as email text or recorded phone conversation
- Non-content data includes information ~~that pertains to such as an email address, a user's attributes~~person's name, country of residence, or actions, including but not limited to, records of communications, content of communications, demographic data, behavioral data, location~~gender, or system-generated data, or such as IP addresses and traffic data~~
 - In differentiating between content and non-content data issuers may consult the sections of the Electronic Communications Privacy Act of 1986 linked above to help conceptualize this distinction
- ~~Both content and non-content data can include~~ personally identifiable information: where Personally Identifiable Information (PII) is defined as "any information about an individual 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 in accordance with GAO Report 08-536, Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information-¹⁷."
- ~~Examples of demographic data include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, and employment status.~~

- ~~Location data is defined as data describing the physical location or movement patterns of an individual, such as Global Positioning System coordinates or other related data which would enable identifying and tracking an individual's physical location.~~

~~.21~~ The registrant shall disclose the total number of user's records requested.

- The number of records requested shall be calculated as the number of unique users included in the scope of the government or law enforcement agency request.
- Accounts that the registrant cannot verify as belonging to the same user shall be disclosed separately.

~~.22~~ The registrant shall calculate the percentage of requests that resulted in disclosure as the fraction of total requests for which information was disclosed to the requesting law enforcement agency.

- The scope of disclosure of the percentage ~~resulting in disclosure disclosed~~ shall include requests that resulted in full or partial compliance with the disclosure request within the reporting fiscal year.

~~.21.23~~ The scope of this disclosure includes aggregated, de-identified, and anonymized data, which is intended to prevent the recipient from reconfiguring the data to identify an individual's actions or identity.

- The registrant may choose to discuss if these characteristics apply to a portion of its data releases if this discussion would provide necessary context for interpretation of the registrant disclosure.

~~.22.24~~ The registrant may choose to describe its policy for determining whether to comply with a request for customer data, including under what conditions it will release customer data, what requirements must be met in the request, and the level of management approval required.

~~.23.25~~ The registrant may choose to describe its policy for notifying customers about such requests, including the timing of notification.

Data Security

Description

Recent examples of cyber-attacks on critical infrastructure in both the U.S. and abroad illustrate the need for enhanced network security. As the providers of critical infrastructure, companies in this industry will face an increasing threat to shareholder value associated with data security, including potential costs associated with regulatory compliance or addressing security breaches, reputational damage, and lost revenues and market share.

Accounting Metrics

~~TC0301-06~~ ~~TA03-13-01~~. **Number of data security breaches and, percentage involving customers' personally identifiable information (PII), number of customers affected**

~~.26~~ The registrant shall calculate and disclose the total number of data security breaches, ~~which identified during the fiscal year~~ where:

- ~~Data security breaches~~ are defined as instances of ~~internal and/or external~~ unauthorized acquisition, access, use, or disclosure of ~~protected customer~~ information.
- The scope of disclosure shall be limited to data security breaches, ~~cyber security risks, and incidents~~ that resulted in the registrant's business processes deviating from its expected outcomes for confidentiality, ~~and~~ integrity, ~~and availability~~.

~~.24~~ ~~Disclosure shall be additional but complementary to the SEC's CF Disclosure Guidance: Topic No. 2, Cybersecurity~~

- ~~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.~~
- ~~At a minimum, instances in which the costs or other consequences associated with one or more known incidents—or the risk of potential incidents—represent 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 to not 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.).~~

~~.25~~ ~~.27~~ The registrant shall disclose the percentage of data security breaches in which customers' personally identifiable information (PII) was breached, where:

- ~~Personally Identifiable Information~~ PII is defined 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~~ individual's identity, such as name, ~~social security~~ Social Security number, date and place of birth, ~~mother's~~ ~~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.⁴⁸³⁰

- The scope of disclosure is limited to breaches in which customers were notified of the breach, either as required by state law or voluntarily by the registrant.

~~• Disclosure shall include incidents when encrypted data were acquired with an encryption key that was also acquired.~~

~~• 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 the investigation.~~

~~• At a minimum, this includes 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.).~~

.28 The registrant shall disclose the total number of unique customers who were affected by data breaches including all those whose personal data was compromised in a data breach.

- Accounts that the registrant cannot verify as belonging to the same user shall be disclosed separately.

Note to **TC0301-06TA03-13-01**

~~.26.29~~ 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.

~~.27.01 All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself would not compromise the registrant's ability to maintain data privacy and security.~~

.30 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.

.31 The registrant should disclose its policy for disclosing data breaches to affected customers in a timely manner.

TC0301-07-11. Discussion of management approach to identifying and addressing data security risks

~~.28.32~~ The registrant shall identify vulnerabilities in its information systems which pose a data security threat, where:

- A data security threat is defined as any circumstance or event with the potential to adversely impact organizational operations (including mission, functions, image, or reputation), organizational assets,

³⁰ *Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information*, GAO Report 08-536, May 2008.

individuals, other organizations, or the Nation through an information system via unauthorized access, destruction, disclosure, or modification of information, and/or denial of service.

- 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.

~~29.33~~ The registrant shall describe how it addresses the threats and vulnerabilities it has identified, including but not limited to, through operational procedures, management processes, structure of products, selection of business partners, employee training, or use of technology.

~~30.34~~ The registrant should discuss trends it has observed in type, frequency, and origination of attacks to its data security and information systems.

~~31.35~~ 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 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.).

~~32.36~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces but disclosure itself would not compromise the registrant's ability to maintain data privacy and security.

~~33.37~~ 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).

TA03-12-01. Percentage of operations, by revenue, independently certified to a suitable third-party cybersecurity management standard

.38 The percentage shall be calculated as revenue generated from products that 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.

.39 Suitable third-party cybersecurity management standards shall exhibit the following characteristics^{31,32}:

- Explicitly state that the 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.

.40 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

.41 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.

.42 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.

.43 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.

Additional References

GAO Report 08-536, Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information, May 2008

The NIST 800 Series is a set of documents that describe United States federal government computer security policies, procedures, and guidelines. [NIST](#) (National Institute of Standards and Technology) is a unit of the [U.S. Commerce Department](#). The documents are available free of charge, and can be useful to businesses and educational institutions, as well as to government agencies. (Available on-line at: <http://csrc.nist.gov/publications/PubsSPs.html>)

Definitions

[NIST-defined](#) attack vectors:

³¹ An example of a suitable third-party cybersecurity management system is ISO/IEC 27001 and its related 27XXX family of standards and controls

³² Characteristics are based on Paragraph .25 of [AT Section 101](#).

- External/Removable Media – an attack executed from removable media or a peripheral device—for example, malicious code spreading onto a system from an infected USB flash drive.
- Attrition – an attack that employs brute force methods to compromise, degrade, or destroy systems, networks, or services (e.g., a DDoS intended to impair or deny access to a service or application; a brute force attack against an authentication mechanism, such as passwords, captchas, or digital signatures).
- Web – an attack executed from a website or web-based application—for example, a cross-site scripting attack used to steal credentials or a redirect to a site that exploits browser vulnerability and installs malware.
- Email – an attack executed via an email message or attachment—for example, exploit code disguised as an attached document or a link to a malicious website in the body of an email message.
- Improper Usage – any incident resulting from violation of an organization’s acceptable usage policies by an authorized user, excluding the above categories, for example: a user installs file sharing software, leading to the loss of sensitive data; or a user performs illegal activities on a system.
- Loss or Theft of Equipment – the loss or theft of a computing device or media used by the organization, such as a laptop or smartphone.
- Other – an attack that does not fit into any of the other categories.

Product End-of-Life Management

Description

State laws in the U.S., legislation abroad, and societal pressure indicate increasing concern with addressing the issue of electronic waste, which could materially impact brand value, market share and regulatory costs. Electronic waste laws often require vendors or manufacturers to pay for the recycling of such waste or put in place product take-back and recycling programs. ~~Telecom~~ [Many Telecommunication Services](#) companies work in partnership with phone manufacturers to bundle telecom services and mobile devices, and therefore have a shared responsibility for end-of-life management of such devices. Their relationship with customers provides an opportunity for effective management of product recycling, reuse, and disposal.

Accounting Metrics

TC0301-08. Materials recovered through take back programs, percentage of recovered materials that are (a) reused, (b) recycled, and (c) landfilled

~~34.44~~ The registrant shall disclose the weight, in tons, of materials recovered including through product take-back programs and recycling services.

- The scope of disclosure shall include products, materials, and parts that are at the end of their useful life and would have otherwise been disposed of as waste or used for energy recovery, but have instead been collected.
- The scope of disclosure shall include both materials physically handled by registrant and materials of which the registrant does not take physical possession, but for which it has contracted with a third party the task of collection for the expressed purpose of reuse, recycling, or refurbishment.
- The scope of disclosure excludes products and parts that are in-warranty and have been collected for repairs.

~~35.45~~ The percentage reused shall be calculated as the weight of incoming material that was reused divided by the total weight of incoming recovered material.

- Reused materials are defined as those recovered products or components of products are used for the same purpose for which they were conceived.
- The scope of reused materials includes products donated and/or refurbished by the registrant or third parties.
- The scope of disclosure includes reuse by the registrant or by third-parties through direct contract with the registrant.

~~36.46~~ The percentage recycled shall be calculated as the weight of material recycled or remanufactured divided by the total weight of incoming recovered material, where:

- Recycled and remanufactured materials are defined as waste materials that have been reprocessed or treated by means of a production or manufacturing process and made into a final product or made into a component for incorporation into a product.
- 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 to primary recycled materials).
- The scope of disclosure includes recycling conducted by the registrant or by third parties through direct contract with the registrant.
- 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 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.

~~37.47~~ 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) to which the entities it has transferred e-waste are compliant.

Managing Systemic Risks from Technology Disruptions

Description

Systemic or economy-wide disruption may be created if the network infrastructure of ~~Telecom~~Telecommunication Services companies is unreliable and prone to business continuity risks. As the frequency of extreme weather events associated with climate change increases, ~~Telecom~~Telecommunication Services companies will face growing physical threats to network infrastructure, with potentially significant social or systemic impacts. In the absence of resilient and reliable infrastructure, companies may face lost revenue associated with service outages and unplanned capital expenditures to repair damaged or compromised equipment.

Accounting Metrics

TC0301-09. Average Interruption Frequency and Average Interruption Duration

~~38.48~~ Average Interruption Frequency is calculated as the total number of customer interruptions divided by the total number of customers served, where:

- The number of customer interruptions is the sum for all interruptions of the number of customer accounts that experienced an interruption in service during each incident (i.e., counting customer accounts multiple times if they experienced multiple service interruptions throughout the year).
- The number of customers served is the number of unique customer accounts with active service during the fiscal year.

~~39.49~~ Average Interruption Duration is calculated as the total customer interruption duration divided by the total number of customers served, where:

- The customer interruption duration is the sum for all interruptions of the total downtime of each interruption multiplied by the number of customer accounts affected by each interruption.
- The number of customers served is the number of unique accounts with active service during the fiscal year. Note to **TC0301-09**

~~40.50~~ For each significant service interruption, the registrant shall disclose the duration of the disruption, the extent of impact, and the root cause, as well as any corrective actions taken to prevent future disruptions.

- Where relevant, the registrant shall indicate costs incurred, such as those due to organizational change, training, or technology expenditures required for remediation, lost revenues, payment of warranties, or cost associated with breach of contract.

~~41.51~~ A service interruption is considered significant if it meets the thresholds set forth in Part 4 of the U.S. Federal Communication Commission's (FCC) rules (47 C.F.R. Part 4) for reporting as part of the Network Outage Reporting System (NORS).

TC0301-10. Description of systems to provide unimpeded service during service interruptions

~~42.52~~ The registrant shall discuss potential business continuity risks associated with technology disruptions affecting operations. Examples of disruptions include, but are not limited to, those caused by technical failures, programming errors, cyber-attacks, weather events, or natural disasters at hosting facilities.

~~43.53~~ The registrant shall discuss measures to address business continuity risks, including an identification of critical business operations and redundancies or other measures implemented to enhance resilience of the system or to reduce impact, including insurance against loss.

~~44.54~~ The registrant should discuss estimated amount of potential loss, probability of that loss, and the associated timeframe. These estimates may be based on insurance figures or other third-party or internal assessments of potential loss.

Competitive Behavior & Open Internet

Description

The Telecommunication Services industry contains classic examples of natural monopolies, where high capital costs can allow them to offer the most efficient production. Given the concentrated nature of telecommunications, cable, and satellite companies, they must manage their growth strategies within the parameters of a regulatory landscape designed to ensure competition. In addition to natural monopoly, many companies in this industry benefit from terminal access monopolies over the so-called “last-mile” of their networks, given their contractual relationship with each subscriber and the barriers for subscribers to change service providers. The nature of this relationship is the basis of much of the discussion around the need to protect an Open Internet, where all data on the Internet is treated equally in terms of performance and access.

Accounting Metrics

TC0301-11. Amount of legal and regulatory fines and settlements associated with anti- competitive practices

.45.55 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, anti-trust 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.

.46.56 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 **TC0301-11**

.47.57 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, anti-trust, etc.) of fines and settlements.

.48.58 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.

TA03-14-01. Average actual sustained download speed of (1) owned and commercially-associated content and (2) non-associated content

.59 The registrant shall disclose its average actual sustained download speed in Megabits per second (Mbps) for delivery of (1) owned and commercially-associated content and (2) non-associated content, where

- Actual sustained download speed is defined as throughput in Mbps utilizing three concurrent TCP connections measured at the 25-30 second interval of a sustained data transfer, consistent with the

FCC's Measuring Broadband America program.^[1] The registrant shall disclose its methodology for measuring download speed, such as the time period over which the test was conducted, sample size, whether it reflects peak versus non-peak speeds, whether the measurement isolates the effects of transient performance-enhancing features (e.g. throttling or "burst" speeds), and limits on accuracy.

- Owned and commercially-associated content is defined as content that is owned the by registrant directly, such as content created through media-production business segments of the registrant, its parent, or its subsidiaries, and content that is owned by companies with whom the registrant has commercial agreements, such as pay-for-priority agreements or content delivery network peering agreements.
- Non-associated content is defined as any content that is not owned by or commercially-associated with the registrant, as described above.

.60 The average actual sustained download speed of each tier of service shall be aggregated using a sales-weighted approach on a per-user account basis (i.e., weighted by number of user accounts in each tier of service, not actual usage).

.61 The registrant should disclose its average advertised download speed, defined as the download speed advertised for each user account based on the speed of the account type.

.62 The average advertised speed is calculated as the average of monthly advertised download speeds on a sales-weighted user account basis (i.e., weighted by number of user accounts, not actual usage).

TA03-14-02. Discussion of risks and opportunities associated with net neutrality, paid peering, zero rating, and related practices

.63 The registrant shall discuss risks and opportunities associated with net neutrality per the [FCC's Open Internet Principles](#) and other potential regulation, where:

- Net Neutrality refers to principles that would prevent behavior that harms consumers or competition by limiting the openness of the Internet. These principles include:³³
 - Transparency: That all ISPs must transparently disclose to their subscribers and users all relevant information as to the policies that govern their network.
 - No Blocking: That no legal content may be blocked.
 - No Unreasonable Discrimination: That ISPs may not act in a commercially unreasonable manner to harm the Internet, including favoring the traffic from an affiliated entity.

^[1] "A Report on Consumer Wireline Broadband Performance in the U.S.," FCC' Office of Engineering and Technology and Consumer and Governmental Affairs Bureau, http://www.fcc.gov/reports/measuring-broadband-america-2014#Actual_VS_Advert. The FCC has made available to stakeholders and the general public the open source software used on both its fixed and mobile applications, the data collected, and detailed information regarding the FCC's technical methodology for analyzing the collected data. See <http://www.samknows.com/opensource>.

³³ These principles were included in the FCC's [Open Internet Principles](#) (FCC 10-201 1.I.i-iii) and have been provided for the purposes of defining the principle of net neutrality.

.64 Open Internet regulations include, but is not limited to, the FCC [Open Internet Principles \(2010\)](#), the reclassification of Internet service providers (ISPs) as common carriers under Title II of the [Communications Act of 1934](#), or the use of Section 706 of the [Telecommunications Act of 1996](#) to regulate ISPs.

.65 The registrant shall discuss its policies for engagement in paid peering agreements and settlement-free peering agreements

- Peering agreement is defined as an arrangement whereby one Internet operation connects directly to another so that the two can trade traffic.

.66 The registrant shall discuss its policies for engagement in zero-rating

- Zero-rating is defined as an arrangement wherein customer data usage is not billed nor counted toward any customer data plan limit if they are accessing certain content affiliated with the mobile network operator or internet service provider

.67 Examples of risks include, but are not limited to, potential limitations on a registrant's ability to deliver its own content, increased competition from edge providers that stream content, reputational harm with consumers, and/or possible restrictions on a registrant's ability to generate new revenue streams from peering and pay-for-priority agreements or earn capital needed to support a growing and evolving broadband infrastructure.

.68 Examples of opportunities include, but are not limited to, growth in delivery of owned and affiliated content, increased market penetration, and/or improved advertising revenues.



TECHNOLOGY & COMMUNICATIONS SECTOR

Internet Media & Services*

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™) #TC0401

INTERNET MEDIA & SERVICES

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).

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Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Internet Media & Services 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 Internet Media & Services industry offers services globally and consists of two main segments. The Internet Media segment includes companies providing search engines and Internet advertising channels, online gaming, and online communities such as social networks, as well as content, usually easily searchable, such as educational, medical,

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>

health, sports, or news content. The Internet-based Services segment includes companies selling services mainly through the Internet. The industry generates revenues primarily from online advertising, on usually free content, with other sources of revenue being subscription fees, content sales, or sale of user information to interested third parties.

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 Internet Media & Services industry, the SASB has identified the following sustainability disclosure topics:

- Environmental Footprint of Hardware Infrastructure
- Data Privacy, Advertising Standards, and Freedom of Expression
- Data Security
- Employee Recruitment, Inclusion, and Performance
- Intellectual Property Protection & Competitive Behavior

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
Registrant-defined measure of customer activity ¹⁹	Quantitative	Number	TC0401-A
Data processing capacity, percentage outsourced ²⁰	Quantitative	See note	TC0401-B
Petabytes of data storage, percentage outsourced ²¹	Quantitative	Petabytes, Percentage (%)	TC0401-C

Units of Measure

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

Uncertainty

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

¹⁹ Note to **TC0401-A** – The registrant shall define and disclose a basic measure of customer activity suitable for its business activities. This may include sales transactions, purchase transactions, number of searches, monthly active users, page views, etc.

²⁰ Note to **TC0401-B** – Data processing capacity shall be reported in units of measure typically tracked by the registrant or used as the basis for contracting software and IT services, such as Million Service Units (MSUs), Million Instructions per Second (MIPS), Mega Floating- Point Operations per Second (MFLOPS), compute cycles, or other. Alternatively, the registrant may disclose owned and outsourced data processing needs in other units of measure, such as rack space or data center square footage. The percentage outsourced shall include co-location facilities and cloud services (e.g., Platform as a Service and Infrastructure as a Service).

²¹ Note to **TC0401-C** – The percentage outsourced shall include co-location facilities and cloud services (i.e., Platform as a Service and Infrastructure as a Service).

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.²²

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

²² The AICPA's Guide (see *supra* note 1) provides guidance related to measurement uncertainty.

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. ~~Material~~ Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Environmental Footprint of Hardware Infrastructure	Total energy consumed, percentage grid electricity, percentage renewable energy	Quantitative	Gigajoules, Percentage (%)	TC0401 <u>TA03-15-01</u>
	Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress	Quantitative	Cubic meters (m ³), Percentage (%)	TC0401-02
	Description of the integration of environmental considerations to strategic planning for data center needs	Discussion and Analysis	n/a	TC0401-03
Data Privacy, Advertising Standards, and Freedom of Expression	Discussion of policies and practices relating to behavioral advertising and customer privacy	Discussion and Analysis	n/a	TC0401-04
	Percentage of users whose customer information is collected for secondary purpose, percentage who have opted-in	Quantitative	Percentage (%)	TC0401-05
	Amount of legal and regulatory fines and settlements associated with customer privacy ²³	Quantitative	U.S. dollars (\$)	TC0401-06
	Number of government or law enforcement requests for customer information, <u>number of records requested</u> , percentage resulting in disclosure	Quantitative	Number, Percentage (%)	TC0401-07 <u>TA03-16-01</u>
	List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring ²⁴	Discussion and Analysis	n/a	TC0401-08
	Number of government requests to remove content, percentage compliance with requests	Quantitative	Number, Percentage (%)	TC0401-09
	Data Security	Number of data security breaches and , percentage involving customers' personally identifiable information (PII), <u>number of customers affected</u> ²⁵	Quantitative	Number, Percentage (%)
Discussion of management approach to identifying and addressing data security risks		Discussion and Analysis	n/a	TC0401-11
<u>Percentage of operations, by revenue, independently certified to a suitable third-party cybersecurity management standard</u>		<u>Quantitative</u>	<u>Percentage (%)</u>	<u>TA03-17-01</u>

²³ Note to **TC0401-06** – Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

²⁴ Note to **TC0401-08** – Disclosure shall include a description of the extent of the impact in each case and, where relevant, a discussion of the registrant's policies and practices related to freedom of expression.

²⁵ Note to ~~TC0401-10~~**TA03-18-01** – Disclosure shall include a description of corrective actions implemented in response to data security incidents or threats.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Employee Recruitment, Inclusion, and Performance	Percentage of employees that are foreign nationals ²⁶	Quantitative	Percentage (%)	TC0401-12
	Employee engagement as a percentage ²⁷	Quantitative	Percentage (%)	TC0401-13
	Percentage of gender and racial/ethnic group representation for: (1) executives and (2) all others	Quantitative	Percentage (%)	TC0401-14
Intellectual Property Protection & Competitive Behavior	Number of patent litigation cases, number successful, and number as patent holder	Quantitative	Number	TC0401-15
	Amount of legal and regulatory fines and settlements associated with anti-competitive practices ²⁸	Quantitative	U.S. dollars (\$)	TC0401-16

²⁶ Note to **TC0401-12** –Disclosure shall include a description of potential risks of recruiting foreign nationals and management approach to addressing these risks.

²⁷ Note to **TC0401-13** –Disclosure shall include a description of methodology employed.

²⁸ Note to **TC0401-16** –Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.

Environmental Footprint of Hardware Infrastructure

Description

With the Internet & Media Services industry providing an increasing amount of content and service offerings, companies in this industry own, operate, or rent increasingly more data centers and other hardware; thus, managing the energy and water use associated with the IT hardware infrastructure is becoming important to shareholder value. Despite the increasing efficiency of data centers, their growing importance in the economy and to the industry's operations requires companies to focus on energy and water efficiency. Companies face a tradeoff between energy and water consumption due to data center cooling needs. Decisions about data center specifications are important for managing costs, obtaining a reliable supply of energy and water, and lowering reputational risks, particularly as there is an increasing global regulatory focus on climate change and as opportunities arise from innovations in energy efficiency and renewable energy.

Accounting Metrics

~~TC0401~~TA03-15-01. Total energy consumed, percentage grid electricity, percentage renewable energy

.01 The registrant shall disclose total energy consumption from all sources as an aggregate figure in gigajoules or its 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), and 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 When reporting self-generated energy consumption, the registrant shall not double-count fuel consumption.~~

- ~~• For example, if a registrant generates electricity from natural gas and then consumes the generated electricity, the energy consumption is counted once as energy from fuel consumption.~~

~~.04.03~~ The registrant shall disclose purchased grid electricity consumption as a percentage of its total energy consumption.

~~.05.04~~ The registrant shall disclose renewable energy consumption as a percentage of its total energy consumption.

- 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) which that explicitly includes renewable energy certificates (RECs), or for which Green-e Energy

Certified RECs are paired with grid electricity, European Union Guarantees of Origin. ~~For all renewable energy consumed as electricity in this manner, RECs must be retired on behalf of the registrant to be claimed as renewable energy as part of this disclosure (GOs), and other recognized renewable energy attribute certificates.~~

- For any renewable electricity generated on-site, any RECs (and equivalents) 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;
- If using multiple green energy certifications (REC, GOs, etc.) the registrant shall disclose the type of certificate used.
- 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.²⁹
- 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 the U.S. Environmental Protection Agency's (EPA) definitions ~~short time through ecological cycles,~~ such as geothermal, wind, solar, hydro, and biomass.

~~.06.05~~ For the purposes of this disclosure, the scope of renewable energy from hydro ~~and biomass~~ sources ~~are~~ is limited to ~~the following~~

- ~~Energy from hydro sources~~ those that are certified by the Low Impact Hydropower Institute ~~Energy from biomass sources~~ or that are ~~Green-e Energy certified or~~ eligible for a state Renewable Portfolio Standard.

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

- Energy from biomass sources that meets at least one of the following criteria:
 - Certification 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);
 - Classification as an "eligible renewable" according to the Green-e Energy National Standard Version 2.5 (2014); or
 - Eligibility for a state Renewable Portfolio Standard.

²⁹ SASB recognizes that RECs reflect the environmental attributes of renewable energy that ~~has~~ 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.~~

- .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-~~for~~ electricity from solar or wind energy).
- .08 The registrant may choose to disclose the trailing twelve-month (TTM) weighted average power usage effectiveness (PUE) for its data centers where PUE is defined as the ratio of the total amount of power used by a computer data center facility to power ~~delivered to~~ computing equipment.
- .09 If disclosing PUE, the registrant shall follow the guidance and calculation methodology described in The Green Grid's White Paper #49-PUE: A Comprehensive Examination of the Metric.

TC0401-02. Total water withdrawn, percentage recycled, percentage in regions with High or Extremely High Baseline Water Stress

- .10 The registrant shall disclose the amount of water (in cubic meters) that was withdrawn from freshwater 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 freshwater.³⁰
- .11 The registrant shall disclose the total amount of water by volume (in cubic meters) that was recycled during the fiscal year. This figure shall include the amount recycled in closed loop and open loop systems.
- Any volume of water reused multiple times shall be counted as recycled each time it is recycled and reused.
- .12 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 facilities 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.

TC0401-03. Description of the integration of environmental considerations to strategic planning for data center needs

- .13 The registrant shall disclose strategic environmental considerations for the specification of data centers, including factors affecting energy and water consumption.
- Relevant aspects of data center specifications include, but are not limited to, the selection, design, construction, refurbishment, and location of data center operations.
- .14 The scope of this disclosure includes existing owned data centers, new data centers, and outsourced data center services, insofar as their selection integrates environmental considerations.

³⁰ <http://water.epa.gov/drink/contaminants/secondarystandards.cfm>

- .15 Examples of environmental criteria may include, but are not limited to, energy efficiency standards; layout design, such as hot aisle/cold aisle; and location-based factors, such as regional humidity, average temperature, water availability, regional- or state-level carbon legislation or pricing, or carbon intensity of grid electricity, among others.
- .16 The registrant shall disclose how the environmental considerations were incorporated into data center specifications made during the reporting year, including decisions to insource or outsource data center services, improve efficiency of existing data centers, or to construct new data centers.

Additional References

Uptime Institute. 2009. **Opinion of the Institute, Green Computing**. “Lean Clean & Green, The Global Energy Future of Enterprise IT [& the Data Center Energy—The New Disruptive Technology.](#)”

Data Privacy, Advertising Standards, and Freedom of Expression

Description

Companies in the Internet & Media Services industry need customer data to innovate new tools and services, generate revenues through advertising sales, and track and prevent criminal activities, such as hacking and online predators targeting children. However, the use and storage of a wide range of customer data, such as personal, demographic, content, and behavioral data, raises privacy concerns, leading to increased regulatory scrutiny in the U.S. and abroad. Companies with dominant market positions may have an undue advantage in collecting and using vast amounts of user data. Companies face reputational risks from providing access to user data to governments, which raises concerns that the data may be used to limit the freedoms of their citizens. Companies also may face local laws or government demands requiring censorship of culturally- or politically-sensitive material on websites, and these may differ from country to country. This issue has impacts on company profitability and can influence decisions to enter or operate in certain markets.

Accounting Metrics

TC0401-04. Discussion of policies and practices relating to behavioral advertising and customer privacy

.17 The registrant shall describe the nature, scope, and implementation of its policies and practices related to privacy of customer information, with a specific focus on how they address the collection, usage, and retention of customers' personally identifiable information and the registrant's approach to behavioral advertising, where:

- Customer information includes information that pertains to a user's attributes or actions, including but not limited to, records of communications, content of communications, demographic data, behavioral data, location data, or personally identifiable information.
- Demographic data is defined as the quantifiable statistics which identify and distinguish a given population.
- Examples of demographic data include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, and employment status.
- Behavioral data is defined as the product of tracking, measuring, and recording individual behaviors such as consumers' on-line browsing patterns, buying habits, brand preferences, and product usage patterns, among others.
- Behavioral advertising makes use of data that was the product of tracking, measuring, and recording individual behaviors such as consumers' on-line browsing patterns, buying habits, brand preferences, and product usage patterns, among others.
- Location data is defined as data describing the physical location or movement patterns of an individual, such as Global Positioning System coordinates or other related data which would enable identifying and tracking an individual's physical location.

- Personally Identifiable Information (PII) is defined as any information about an individual 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.³¹

.18 With respect to behavioral advertising the registrant should describe how it addresses the following principles, described by the cross-industry Self-Regulatory Principles for Online Behavioral Advertising:

- Education - participation in educational efforts for consumers about behavioral online advertising
- Transparency - clearly disclosing information about data collection and data use practices
- Consumer control - allowing users to choose whether data is collected or transferred to non-affiliates
- Data security - providing basic security provisions and having clear policies relating to retention of customer information
- Material changes - obtaining consent before applying changes to policies that are less restrictive than existing ones
- Sensitive data - abiding by the Children's Online Privacy Protection Act, and handling customer data such as financial information, Social Security numbers, and medical information
- Accountability - participation in self-regulatory organizations such as the Direct Marketing Association

.19 The registrant shall describe the information "life cycle" (i.e., collection, use, retention, processing, disclosure and destruction) and how information handling practices at each stage may affect individuals' privacy.

- With respect to data collection, it may be relevant for the registrant to discuss which data or types of data is collected without consent of an individual, which requires opt-in consent, and which requires opt-out action from the individual.
- With respect to usage of data, it may be relevant for the registrant to discuss which data or types of data is used by the registrant internally and under what circumstance the registrant shares, sells, rents, or otherwise distributes data or information to third-parties.
- With respect to retention, it may be relevant for the registrant to discuss which data or types of data it retains, the length of time of retention, and practices used to ensure that data is stored securely.

.20 The registrant shall discuss the degree to which its policies and practices address similar issues as outlined in the OMB Guidance for Implementing the Privacy Provisions of the E-Government Act of 2002 (M-03-22), including use of Privacy Impact Assessments (PIAs), where:

³¹ GAO Report 08-536, *Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information*, May 2008

- Privacy Impact Assessment is an analysis of how information is handled that ensures handling conforms to applicable legal, regulatory, and policy requirements regarding privacy; determines the risks and effects of collecting, maintaining and disseminating information in identifiable form in an electronic information system; and examines and evaluates protections and alternative processes for handling information to mitigate potential privacy risks.
- As outlined by OMB M-03-22, PIAs must analyze and describe: (a) what information is to be collected, (b) why the information is being collected, (c) intended use of the information, (d) with whom the information will be shared, (e) what opportunities individuals have to decline to provide information (i.e., where providing information is voluntary) or to consent to particular uses of the information (other than required or authorized uses), and how individuals can grant consent, and (f) how the information will be secured, among other government-specific requirements.

.21 The registrant shall discuss how its policies and practices related to privacy of customer information address children’s privacy, which at a minimum includes the provisions of the Children’s Online Privacy Protection Act (COPPA).

TC0401-05. Percentage of users whose customer information is collected for secondary purpose, percentage who have opted-in

.22 The registrant shall indicate the percentage of customers whose customer information is collected for its own secondary use or for transfer to a third party, where:

- Customer information includes information that pertains to a user’s attributes or actions, including but not limited to, records of communications, content of communications, demographic data, behavioral data, location data, or personally identifiable information.
- Demographic data is defined as the quantifiable statistics which identify and distinguish a given population. Examples of demographic data include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, and employment status.
- Behavioral data is defined as the product of tracking, measuring, and recording individual behaviors such as consumers’ on-line browsing patterns, buying habits, brand preferences, and product usage patterns, among others.
- Location data is defined as data describing the physical location or movement patterns of an individual, such as Global Positioning System coordinates or other related data which would enable identifying an tracking an individual’s physical location.
- Secondary purpose is defined as the intentional use of data by the registrant (i.e., not a breach of security) that is outside of the primary purpose for which the data was collected. Examples of secondary uses include, but are not limited to, selling targeted ads, selling aggregated behavioral or location data, improving own product and service offerings, and transferring data or information to a third-party through sale, rental, or sharing.

.23 Of the users whose customer information is collected for secondary use or transfer to third parties, the registrant shall indicate the percentage that provided opt-in consent, where:

- Opt-in is defined as express affirmative consent required to use or share content.

.24 The registrant may choose to discuss what type of customer information is collected, the extent of data collected from different groups, and/or the types of secondary uses for which demographic data is collected.

TC0401-06. Amount of legal and regulatory fines and settlements associated with customer privacy

.25 The registrant shall disclose the amount (excluding legal fees) of all fines or settlements associated with incidents relating to customer privacy, including, but not limited to, violations of the Children’s Online Privacy Protection Act, Directive 2002/58/EC (ePrivacy Directive), the US-EU Safe Harbor Program, and the Federal Trade Commission Privacy Act.

.26 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 **TC0401-06**

.27 The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., unauthorized monitoring, sharing of data, children’s privacy, etc.) of fines and settlements.

.28 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.

.29 All disclosure shall be sufficient such that it is specific to the risks the registrant faces, but disclosure itself would not compromise the registrant’s ability to maintain data privacy and security.

TC0401-07-TA03-16-01. Number of government or law enforcement requests for customer information, number of records requested, percentage resulting in disclosure

.30 The registrant shall disclose the total number of requests for customer content and non-content data information ~~that it received from government or from~~ law enforcement agencies ~~during the reporting year and the percentage of requests with which it complied., where:~~

- Customer content includes customer-generated information such as email, text or recorded phone conversation
- ~~Non-content data, while non-content data~~ includes information such as an email address, a person’s name, country of residence, or gender, or system-generated data such as IP addresses and traffic data. ~~Both content and non-content data can include personally identifiable information, where: Personally Identifiable Information (PII)~~

- In order to differentiate between content and non-content data issuers may consult the sections of the Electronic Communications Privacy Act of 1986 linked above to help conceptualize this distinction. It should be noted that both content and non-content data can include personally identifiable information, which is defined as any information about an individual 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 in accordance with GAO Report 08-536, Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information.³²

.31 The registrant shall disclose the total number of user's records requested.

- The number of records requested shall be calculated as the number of unique users included in the scope of the government or law enforcement agency request.
- Accounts the registrant cannot verify as belonging to the same user shall be disclosed separately.

.32 The registrant shall calculate the percentage of requests that resulted in disclosure as the fraction of total requests for which information was disclosed to the requesting law enforcement agency.

- The scope of the percentage disclosed shall include requests that resulted in full or partial compliance with the disclosure request within the reporting fiscal year.

~~.31.33~~ The scope of this disclosure includes aggregated, de-identified, and anonymized data, which is intended to prevent the recipient from reconfiguring the data to identify an individual's actions or identity.

- The registrant may choose to discuss if these characteristics apply to a portion of its data releases if this discussion would provide necessary context for interpretation of the registrant disclosure.

~~.32.34~~ The registrant may choose to describe its policy for determining whether to comply with a request for customer data, including under what conditions it will release customer data, what requirements must be met in the request, and the level of management approval required.

~~.33.35~~ The registrant may choose to describe its policy for notifying customers about such requests, including the timing of notification.

~~.34.36~~ The scope of this disclosure is both domestic and international operations. The registrant may choose to disclose by region or country.

TC0401-08. List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring

³² GAO Report 08-536, *Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information*, May 2008

~~35.37~~ The registrant shall disclose a list of the countries where its products and services are monitored, blocked, content is filtered, or censored due to governmental, judicial, or law enforcement requests or requirements, where:

- Monitoring occurs when a government authority or law enforcement agency has routine access to content or non-content data of specific users or all users of a particular product or service.
- Blocking occurs when the registrant is prohibited by law or government authority from providing some or all of the registrant's products or services in a country.
- Content filtering or censoring occurs when a government authority alters access to, or display of, content of a product or service either directly by overriding service provision, or indirectly by requiring that a company remove certain content. Examples include content that is considered politically or culturally sensitive.

~~36.38~~ The scope of this disclosure includes company operations that have been discontinued, or were never offered, in a region due to government activity related to monitoring, blocking, content filtering, or censoring.

Note to **TC0401-08**

~~37.39~~ The registrant shall describe the extent of monitoring, blocking, content filtering, or censorship across its product or service lines, including the specific products affected, nature and duration of impact, and percent of customers affected.

~~38.40~~ The registrant should discuss implications of blocking or censorship, such as affecting ability to grow market share, or increased costs to comply with these restrictions.

~~39.41~~ For products and services that have been modified in a manner material to their functionality, the registrant shall identify the product or service affected and discuss the nature of the modification, indicating whether modification was undertaken to avoid monitoring or blocking, or to enable monitoring or blocking. The registrant shall describe how the modified product or service differs from the product or service offering in its home country or other significant markets.

~~40.42~~ Where relevant, the registrant shall discuss its policies and practices related to freedom of expression, including how they influence its decision making when operating in countries that may request or require some form of monitoring, blocking, content filtering, or censoring of the registrant's content.

TC0401-09. Number of government requests to remove content, percentage compliance with requests

~~41.43~~ The registrant shall disclose the number of requests to remove content it received from government or law enforcement agencies and the percentage of requests with which it complied.

~~42.44~~ The percentage resulting in disclosure shall include requests that resulted in full or partial compliance with the content removal request.

~~43.45~~ The registrant may choose to describe its policy for determining whether to comply with a request to remove content, including under what conditions it will remain, what requirements must be met in the request, and the level of management approval required.

~~44.46~~ The scope of this disclosure is both domestic and international operations. The registrant may choose to disclose by region or country.

Data Security

Description

Companies in the Internet Media & Services industry are subject to a large and growing number of cyber-attacks and social engineering threats, which puts customer information and their own data at risk. By tackling data security threats through prevention, detection, and remediation companies will be better positioned for customer acquisition and retention and may reduce extraordinary expenses from breaches of data security.

Accounting Metrics

~~TC0401-10~~ ~~TA03-18-01~~. **Number of data security breaches and, percentage involving customers' personally identifiable information (PII), number of customers affected**

~~.47~~ The registrant shall calculate and disclose the total number of data security breaches, ~~which identified during the fiscal year~~ where:

- ~~Data security breaches~~ are defined as instances of ~~internal and/or external~~ unauthorized acquisition, access, use, or disclosure of ~~protected customer~~ information.
- 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, ~~and integrity, and availability.~~

~~.48~~ Disclosure shall be additional but complementary to the SEC's [CF Disclosure Guidance: Topic No. 2, Cybersecurity](#).

- ~~At a minimum, instances in which the costs or other consequences associated with one or more known incidents—or the risk of potential incidents—represent 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 to not~~ 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.).

~~• 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.~~

~~.45~~ ~~.49~~ The registrant shall disclose the percentage of data security breaches in which customers' personally identifiable information (PII) was breached, where:

- ~~Personally Identifiable Information~~ PII is defined 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.³³

- The scope of disclosure is limited to breaches in which customers were notified of the breach, either as required by state law or voluntarily by the registrant.

~~• Disclosure shall include incidents when encrypted data were acquired with an encryption key that was also acquired.~~

- ~~• 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~~the investigation.~~

~~.50 The registrant shall disclose the total number of unique customers who were affected by data breaches, including those whose personal data was compromised in a data breach.~~

- ~~• Accounts which the registrant cannot verify as belonging to the same user shall be disclosed separately.~~

Note to ~~TC0401-10~~TA03-18-01

~~.46.51~~ 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.

~~.52 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.~~

~~.53 The registrant should disclose its policy for disclosing data breaches to affected customers in a timely manner.~~

TC0401-11. Discussion of management approach to identifying and addressing data security risks

~~.47.54~~ The registrant shall identify vulnerabilities in its information systems which pose a data security threat, where:

- A data security 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 the Nation through an information system via unauthorized access, destruction, disclosure, or modification of information, and/or denial of service.
- 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.

~~.48.55~~ The registrant shall describe how it addresses the threats and vulnerabilities it has identified, including but not limited to, through operational procedures, management processes, structure of products, selection of business partners, employee training, or use of technology.

³³ ~~GAO Report 08-536, Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information, GAO Report 08-536, May 2008.~~

~~49.56~~ The registrant should discuss trends it has observed in type, frequency, and origination of attacks to its data security and information systems.

~~50.57~~ 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 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.).

~~51.58~~ All disclosure shall be sufficient such that it is specific to the risks the registrant faces but disclosure itself would not compromise the registrant's ability to maintain data privacy and security.

~~52.59~~ 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).

Additional References

GAO Report 08-536, *Privacy: Alternatives Exist for Enhancing Protection of Personally Identifiable Information*, May 2008

The NIST 800 Series is a set of documents that describe United States federal government computer security policies, procedures and guidelines. [NIST](#) (National Institute of Standards and Technology) is a unit of the U.S. Commerce Department. The documents are available free of charge and can be useful to businesses and educational institutions, as well as to government agencies. (Available on- line at: <http://csrc.nist.gov/publications/PubsSPs.html>)

Definitions

[NIST-defined](#) attack vectors:

- External/Removable Media – an attack executed from removable media or a peripheral device—for example, malicious code spreading onto a system from an infected USB flash drive.
- Attrition – an attack that employs brute force methods to compromise, degrade, or destroy systems, networks, or services (e.g., a DDoS intended to impair or deny access to a service or application; a brute force attack against an authentication mechanism, such as passwords, captchas, or digital signatures).

- Web – an attack executed from a website or web-based application—for example, a cross-site scripting attack used to steal credentials or a redirect to a site that exploits browser vulnerability and installs malware.
- Email – an attack executed via an email message or attachment—for example, exploit code disguised as an attached document or a link to a malicious website in the body of an email message.
- Improper Usage – any incident resulting from violation of an organization’s acceptable usage policies by an authorized user, excluding the above categories, for example; a user installs file sharing software, leading to the loss of sensitive data; or a user performs illegal activities on a system.
- Loss or Theft of Equipment – the loss or theft of a computing device or media used by the organization, such as a laptop or smartphone.
- Other – an attack that does not fit into any of the other categories.

TA03-17-01. Percentage of operations, by revenue, independently certified to a suitable third-party cybersecurity management standard

.60 The percentage shall be calculated as revenue generated from products that 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.

.61 Suitable third-party cybersecurity management standards shall exhibit the following characteristics^{34,35}:

- Explicitly state the 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
- Be developed with a suitable public exposure process

.62 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

.63 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.

³⁴ An example of a suitable third-party cybersecurity management system is ISO/IEC 27001 and its related 27XXX family of standards and controls

³⁵ Characteristics are based on Paragraph .25 of AT Section 101.

.64 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.

~~.53.~~65 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.

Employee Recruitment, Inclusion, and Performance

Description

Employees are key contributors to value creation in the Internet Media & Services industry. While the number of job openings in the industry continues to grow, companies are finding it difficult to recruit qualified employees to fill these positions. The shortage in technically skilled domestic employees has created intense competition to acquire highly-skilled employees, contributing to high employee turnover rates. In response to talent shortages companies are hiring foreign nationals, which creates risks related to perceived social implications in the host and home countries of workers. Companies offer significant monetary and non-monetary benefits in order to improve employee engagement and therefore retention and productivity. Initiatives to improve employee engagement and work-life balance might influence the recruitment and retention of a diverse workforce. As the industry is characterized by relatively low representation from women and minority groups, efforts to recruit from and develop diverse talent pools can serve to address the talent shortage and generally to improve the value of company offerings. Greater workforce diversity is important for innovation, and it helps companies understand the needs of their diverse and global customer base.

Accounting Metrics

TC0401-12. Percentage of employees that are foreign nationals

-54.66 The registrant shall disclose the percentage of employees that are foreign nationals, where:

- Foreign nationals are defined as anyone requiring a visa for work in the country in which he or she is employed.

Note to TC0401-12

-55.67 The registrant shall describe potential risks from recruiting foreign nationals, which may arise from immigration, naturalization, or visa regulations.

-56.68 The registrant shall describe management's approach to addressing the risks it has identified related to recruiting foreign nationals, which may include developing local talent pools, political lobbying for immigration reform, outsourcing of operations, or joining or forming industry partnerships.

TC0401-13. Employee engagement as a percentage

-57.69 The registrant shall disclose employee engagement as a percentage (i.e., the percentage of employees deemed "actively engaged" as opposed to "not engaged", "passive", or "actively disengaged"). If engagement is measured as an index (e.g. strength of employee agreement with a survey statement), it shall be converted into a percentage for this disclosure.

-58.70 The disclosure shall be calculated based on the results of an employee engagement survey or research study conducted by the registrant, an external entity contracted to perform such a study by the registrant, or an independent third party.

Note to TC0401-13

~~59.71~~ The registrant shall briefly describe the:

- Source of its survey (e.g. third-party survey or registrant’s own),
- Methodology used to calculate the percentage (e.g., a simple average of individual employee survey responses, with a numerical value assigned to the strength of agreement or disagreement with a survey statement),
- Summary of questions or statements included in the survey or study (e.g., those related to goal setting, support to achieve goals, training and development, work processes, and commitment to the organization).

~~60.72~~ Where the survey methodology has changed compared to previous reporting years, the registrant shall indicate results based on both the old and new methods in the year in which the change is made.

~~61.73~~ If results are limited to a subset of employees, the registrant shall include the percentage of employees included in the study or survey, and the representativeness of the sample.

~~62.74~~ The registrant may choose to disclose results of other survey findings such as the percentage of employees: proud of their work/where they work, inspired by their work/co-workers, aligned with corporate strategy and goals, etc.

TC0401-14. Percentage of gender and racial/ethnic group representation for: (1) executives and (2) all others

~~63.75~~ The registrant should summarize and disclose employee representation by employee category in the following table format:

EMPLOYEE CATEGORY	GENDER			RACE AND ETHNICITY					
	Male	Female	NA*	White	Black or African American	Hispanic or Latino	Asian	Other**	NA*
Executives/Sr. Managers									
All Others									

*NA = not available/not disclosed

^Other includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and “two or more races” classification

~~64.76~~ The registrant shall classify its employees according to the U.S. Equal Employment Opportunity Commission [EEO-1 Job Classification Guide](#) into the following two categories: Executives/Sr. Managers and All others (i.e., other EEO-1 categories, including mid-level managers, professionals, technicians, sales, admin support, and service workers).

~~65.77~~ The registrant shall categorize the gender of its employees as: male, female, not disclosed/available.

~~66.78~~ The registrant shall classify the racial/ethnic group of its employees in the following categories, using the same definitions employed for the registrant's [EEO-1 Report](#): White, Black or African American, Hispanic or Latino, Asian, and Other (includes: American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races), not disclosed/available.

~~67.79~~ Where racial/ethnic group and/or gender representation percentages are significantly influenced by the country or region where the workforce is located, the registrant shall provide contextual disclosure to ensure proper interpretation of results.

- Where relevant the registrant may provide supplemental breakdown of gender and racial/ethnic group representation by country or region.

Intellectual Property Protection & Competitive Behavior

Description

Despite the openness of the Internet, companies in the industry spend a significant proportion of their revenues on Intellectual Property (IP) protection, including acquisition of patents and copyrights. While IP protection is inherent to the business model of companies in the industry and is an important driver of innovation, some companies may also acquire patents and other IP protection in efforts to restrict competition, particularly if they are dominant market players that enjoy network effects. Management of the interconnection between IP and anti-competitive business practices is an important governance issue with potential material impact for companies in this industry due to monetary penalties and restrictions of activities resulting from legal and regulatory actions.

Accounting Metrics

TC0401-15. Number of patent litigation cases, number successful, and number as patent holder

~~68.80~~ The registrant shall disclose the number of patent litigation cases in which it was involved as either the patent holder or the patent challenger.

- The scope of disclosure includes cases that were adjudicated during the fiscal year even if the decision is under appeal.
- A patent holder is defined as the owner of the exclusive right to prevent others from making, using, offering for sale or selling, or importing the inventions protected by the patent.
- A patent challenger is defined as the party seeking to invalidate or limit the scope of an existing patent or pending patent application by demonstrating that a patent fails to satisfy one or more of the statutory criteria of patentability (e.g., novelty, utility, nonobviousness).

~~69.81~~ The registrant shall disclose the number of successful cases, where:

- Success is defined as the instances where a liability and damages or permanent injunction (if included) decision was made in favor of the registrant.³⁶ Success encompasses findings made in summary judgment, trial by jury, and bench awards.
- Litigation success as a patent holder refers to the registrant's involvement in litigation for which it is successful in pursuing damages for unauthorized use of its intellectual property rights by others (i.e., suing for patent infringement), or litigation in which another entity challenges the scope or efficacy of the registrant's patent (i.e., defending patent against legal challenge).
- Litigation success as a patent challenger refers to the registrant's involvement in litigation through which it is successful in seeking, either proactively or reactively, to protect its own rights by challenging

³⁶ From "2013 Patent Litigation Study: Big cases make headlines, while patent cases proliferate," by PwC. Available on-line at: http://www.pwc.com/en_US/us/forensic-services/publications/assets/2013-patent-litigation-study.pdf

the scope of rights held by another patent owner or the scope of rights to be conveyed to another party as part of a pending patent application.

~~70.82~~ The registrant shall disclose the number of cases in which it was the patent holder.

TC0401-16. Amount of legal and regulatory fines and settlements associated with anti- competitive practices

~~71.83~~ 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, anti-trust 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.

~~72.84~~ 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 **TC0401-16**

~~73.85~~ 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, anti-trust, etc.) of fines and settlements.

~~74.86~~ 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