

1. Q: What are Taskforce on Climate-related Financial Disclosure (TCFD) recommendations, and how do the TCFD recommendations relate to the SASB Standards?

A: TCFD published a set of recommendations in 2017 to help companies to provide financial markets with better information on climate-related risks and opportunities. “*Recommendations of the Task Force on Climate-related Financial Disclosures*” (TCFD Recommendations) is the source document for these recommendations. TCFD Recommendations include high level principles for effective disclosure of climate-related risks and opportunities. They also provide recommended disclosures across four key areas: governance, strategy, risk management, and metrics and targets.

The TCFD also published implementation guidance for companies in the document “*Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*” (Implementation Annex). The Implementation Annex includes guidance for implementing the recommended disclosures and example metrics for specific sectors. The Implementation Annex extensively references the SASB Standards as a tool for implementing TCFD Recommendations.

This relationship is illustrated below.



2. Q: I am overwhelmed by requests for sustainability information. Why would I disclose climate-related risk using both TCFD and SASB?

A: TCFD Recommendations establish high-level *principles and recommendations for disclosing climate-related risk*, but the TCFD intentionally did not develop detailed, industry-specific standards or metrics for disclosing climate risk. Instead, in its Implementation Annex, TCFD explicitly references existing standards which companies can use to identify the climate-related risks and metrics most relevant to their industry. SASB Standards are among the most frequently-cited such tools in TCFD's Implementation Annex.

3. Q: Specifically, how does TCFD reference SASB Standards as implementation tools?

A: TCFD references many SASB metrics, by industry and number, in its Implementation Annex. SASB Standards are among the most frequently referenced tools for disclosing climate-related risks in this annex. The following table provides examples of references to SASB in TCFD sector-specific guidance and its rationale for doing so.

Automobiles Industry (Transportation Group)				
<u>Financial Impact</u>	<u>SASB Metric</u>	<u>Description</u>	<u>Unit of Measure</u>	<u>TCFD Rationale</u>
Revenues	TR0101-09	Sales-weighted average passenger fleet fuel economy, consumption, or emissions, by region	Mpg, L/km, gCO ₂ /km, km/L	New technologies are needed to manage transition risk as demand grows for lower-carbon product alternatives. Organizations with stronger offerings of low-carbon alternative products in their core business will be better-positioned for success in the low carbon economy.
	TR0101-10	Number of (1) zero emission vehicles (ZEV) sold, (2) hybrid vehicles sold, and (3) plug-in hybrid vehicles sold	Vehicle units sold	
Assets/Liabilities	TR0101-01	Amount of total waste from manufacturing, percentage recycled	Metric tons (t), Percentage (%)	How an organization manages its product life cycle emissions and utilization of raw materials will provide insight into the organization's ability to adapt to a low-carbon economy.
	TR0101-02	Weight of end-of-life material recovered, percentage recycled	Metric tons (t), Percentage (%)	
	TR0101-03	Average recyclability of vehicles sold, by weight	Percentage (%) by sales-weighted weight (metric tons)	

Real Estate Development & Management Industry (Materials & Buildings Group)				
<u>Financial Impact</u>	<u>SASB Metric</u>	<u>Description</u>	<u>Unit of Measure</u>	<u>TCFD Rationale</u>
Revenues/Assets & Liabilities	IF0402-04	Percentage of eligible portfolio that (1) has obtained an energy rating and (2) is certified to ENERGY STAR®, by property subsector	Percentage (%) by floor area (ft ²)	<p>Regulatory measures such as carbon pricing as well as transition to low-carbon properties may impact the financial viability of existing properties. Understanding the percentage certified as sustainable (against relevant indices) provides investors with an indication about the potential impact of regulatory measures and demand changes on earning capacity of real estate portfolios.</p>
Expenditures	IF0402-02	Total energy consumed by portfolio area with data coverage, percentage grid electricity, and percentage renewable, each by property subsector	Gigajoules (GJ), Percentage (%)	<p>The real estate industries are energy- and carbon-intensive industries in terms of the use of the properties. Understanding the levels of energy consumption by source provides an indication of the potential impacts of regulatory measures in relation to the use of certain energy sources and transition risks in a low-carbon economy scenario.</p> <p>In the transition to a low-carbon economy, the energy efficiency of properties provides investors with an indication of the vulnerability of the portfolio to transition risk and thus earning capacity of real estate portfolios.</p>
Expenditures	IF0402-06	Water withdrawal data coverage as a percentage of total floor area and percentage in regions with High or Extremely High Baseline Water Stress, each by property subsector	Percentage (%) by floor area (ft ²)	<p>Water stress can result in increased cost of supply, inability to deliver water to real estate tenants, and/or legislation to regulate water consumption. The percent withdrawn in high-water-stress areas informs the risk of significant costs or limitations to this service capacity.</p>



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Assets & Liabilities	IF0402-13	Area of properties located in FEMA Special Flood Hazard Areas or foreign equivalent, by property subsector	Square feet (ft ²)	Flooding risks can result in physical damage to properties, impacting their serviceability. Understanding the relative size of properties in high-flood-risk areas by subsector informs investors about potential changes to the earning capacity of real estate portfolios.
Agriculture Industry (Agriculture, Food & Forest Products Group)				
<u>Financial Impact</u>	<u>SASB Metric</u>	<u>Description</u>	<u>Unit of Measure</u>	<u>TCFD Rationale</u>
Expenditures	CN0101-06	(1) Total water withdrawn and (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Cubic meters (m ³), Percentage (%)	Water stress can result in increased cost of supply, factual inability to produce, and/or legislation to regulate water withdrawal for production. The quantity of water consumed, and percent withdrawn in high-water-stress areas inform the risk of significant costs or limitations to production capacity.
Expenditures	CN0101-01	(1) Gross global Scope 1 emissions (2) Biogenic carbon dioxide (CO ₂) emissions	Metric tons (t) CO ₂ -e	(Relatively) high carbon emissions in the value chain are expected to result in regulations (including carbon prices) to drive lower emissions from products. This can result in a significant decrease in future earning capacity.

Please refer to the TCFD's document "Implementing the Recommendations of the TCFD (June 2017)" for all citations of SASB Standards in TCFD's implementation guidance.

4. Q: I'd like to know more about how SASB Standards can help companies implement the TCFD recommendations.

A: The SASB and the TCFD have common goals to provide guidance for identifying climate-related risks and opportunities, connecting such risks or opportunities to financial impacts, and developing effective disclosures to communicate these impacts. Both the SASB and the TCFD consider acute and chronic physical risks of climate change, as well as transition risks (i.e. risks to which a company is exposed as we transition to a low-carbon economy). Both the SASB and the TCFD connect these risks to financial impacts, meaning impacts on a company's income statement, cash flow statement, balance sheet or cost of capital.

TCFD Recommendations and SASB Standards complement each other. The TCFD Recommendations include high level recommended disclosures in the areas of governance, strategy, risk management and metrics and targets *across all sectors*, along with supplementary guidance for certain sectors. The SASB Standards provide detailed climate-related disclosure topics and metrics for *specific industries*, focusing on the topics reasonably likely to have a material effect on financial performance of companies in each industry.

To align the SASB Standards more directly with the TCFD Recommendations in the areas of governance, strategy, and risk management, SASB has proposed revisions to the introduction to all SASB Standards. The SASB recommends that issuers disclose their governance, strategy, and risk management processes, as well as metrics and targets, associated with the industry-specific sustainability topics in the SASB Standards. Thus, SASB has applied the TCFD's approach to governance, strategy, and risk management disclosure to all sustainability topics in the SASB Standards, not only climate-related topics. The SASB recommends that issuers provide these disclosures for the sustainability topics the issuer determines to be material to their business. The proposed introduction to the SASB Standards references the TCFD Recommendations for a more extensive discussion and examples of appropriate governance, strategy and risk management disclosures.

The figure below illustrates how the SASB Standards align with different elements of the TCFD Recommendations.

Core Elements of Recommended Climate-related Disclosures, and Their Alignment with SASB Standards



Source: "Recommendations of the TCFD", June 2017

5. Q: How do the SASB and the TCFD frameworks differ?

A: While TCFD Recommendations and the SASB's standards are largely complementary, with the SASB Standards providing detailed disclosure topics and metrics to implement the TCFD



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Recommendations, there are some differences. TCFD's recommendations and SASB's standards were designed to meet different needs.

The TCFD was established to fulfill a request by the G20 Finance Ministers that the Financial Stability Board (FSB) investigate "how the financial sector can take account of climate-related issues. In seeking to improve market understanding and analysis of climate-related risks and opportunities, the TCFD developed recommendations for "climate-related financial disclosures that would be useful to investors, lenders, and insurance underwriters in understanding material risks." As such, the TCFD's recommendations "provide a common set of principles" to guide disclosure and to help financial markets assess and price climate-related risks and opportunities.

SASB Standards are primarily focused on the company-specific and industry-specific manifestation of sustainability risks – those risks most likely to impact the financial performance of companies in an industry. SASB research demonstrates that 72 out of 79 industries¹ are significantly exposed in some way to climate-related risk.² However, climate risk manifests itself differently across different industries. SASB Standards are focused on disclosure topics and metrics that illustrate how climate risk is most likely to impact financial performance of companies in a specific industry. Thus, the SASB's standards provide companies with a tool to implement the TCFD's recommendations by providing industry-specific disclosures that communicate climate-related risks in a decision-useful way for investors.

TCFD's systemic risk-focused recommendations call for some information to be disclosed by companies in all industries. This results in three significant differences between the TCFD recommendations and the SASB Standards. The differences are in the scope of industries covered, greenhouse gas emissions, and scenario analysis. These differences are discussed below.

- **Scope of Industries Covered by Climate Risk Disclosures:** The SASB Standards include climate-related risk as a recommended disclosure topic in 72 of 79 industries. There are seven industries for which SASB research has not found climate-related risk to present a financially-material risk. For these seven industries, the SASB Standards do not include disclosure of governance, strategy, risk management, or metrics and targets related to climate risk. The seven industries are: Advertising and Marketing; Consumer Finance; Education; Media Production and Distribution; Professional Services; Tobacco; Toys and Sporting Goods. Companies in these seven industries may need to make supplemental disclosures in addition to those suggested by the SASB Standards to disclose information consistent with the TCFD recommendations.
- **Greenhouse Gas Emission Disclosure:** The Metrics and Targets section of the TCFD Recommendations recommends disclosure of greenhouse gas emissions, including Scope 1, Scope 2, and, in some cases, Scope 3 emissions. The TCFD provides more specific guidance as to when greenhouse gas emissions should be disclosed: when the information is determined to be material by the company; by organizations in four non-

¹ SASB has developed the Sustainable Industry Classification System (SICS™) by which it classifies industries.

² SASB, Climate Risk Technical Bulletin TB001-10182016, 2016



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financial groups identified by TCFD as most exposed to climate risk (energy, transportation, materials and building, and agriculture/food/forest products) if the organization has more than one billion U.S. dollar equivalent (USDE) in annual revenue; and by asset managers and asset owners in climate-related reports to their clients and beneficiaries, respectively. Practically, these three provisions result in recommended disclosure of greenhouse gas emissions across most industries, because asset managers and asset owners will need this information to complete carbon foot-printing exercises and will likely request it from companies.

- The SASB Standards include Scope 1 greenhouse gas emissions as a recommended disclosure topic or metric in 23 of 79 industries for which SASB found that greenhouse gas emissions are reasonably likely to be material to financial performance. (Appendix 1 lists the 23 industries for which SASB's standards include greenhouse gas emissions as a disclosure topic or metric.) Companies in the 56 industries for which SASB's standards do not include greenhouse gas emissions would need to make supplemental disclosures in addition to those suggested by the SASB Standards to disclose information consistent with the TCFD recommendations or to meet asset manager and asset owner requests for greenhouse gas emission data.
 - The SASB Standards do not include Scope 2 greenhouse gas emissions as a recommended disclosure topic; instead, the standards include the disclosure of energy usage as a proxy for Scope 2 emissions. This metric appears in 37 of 79 industries for which SASB found that energy management is reasonably likely to be material to financial performance. Companies would need to disclose Scope 2 emissions via supplemental disclosure in addition to the disclosures suggested by the SASB Standards to disclose information consistent with the TCFD or to meet asset manager and asset owner requests for greenhouse gas emission data.
 - The SASB Standards do not include Scope 3 greenhouse gas emissions as a recommended disclosure topic. The TCFD Implementation Annex provides the disclosure of Scope 3 emissions as an illustrative example of a metric for the Energy Group, but does not provide additional guidance regarding the disclosure of Scope 3 emissions.
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- **Scenario Analysis:** The Strategy section of the TCFD Recommendations recommend that companies disclose the resilience of their business strategies to climate-related risk considering a 2° or lower scenario subject to a materiality assessment by the reporting entity. The TCFD encourages all companies to perform a basic level of scenario analysis in their strategic planning and risk management processes, and further recommends that industries which are more exposed to climate risks (energy, transportation, materials and building, and agriculture/food/forest products) perform a more “in-depth” analysis. The TCFD further recommends that these organizations disclose the scenario(s) used in their analysis, the critical parameters, assumptions, and analytical choices used in the analysis, the time frames used for the scenarios, and information describing the resiliency of an organization’s strategy to the chosen scenarios.
 - The TCFD acknowledges in its section on future work that some Task Force members believed that the use of “specific standardized or reference climate-related scenarios” was “intuitively appealing” but was “not a practical solution at this time” due to the lack



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of availability of broadly applicable scenarios for all industries. It encourages organizations to further the Recommendations of the Task Force by developing scenarios to enable organizations to incorporate such analysis into their strategic planning processes.

- The SASB Standards recommend disclosures related to scenario analysis in 9 of 79 industries. The industries for which SASB recommends scenario analysis disclosures are: Insurance, Oil and Gas – Exploration and Production, Coal Operations, Agricultural Products, Meat Poultry and Dairy, Forestry Management, Engineering & Construction Services, Home Builders, and Real Estate industries. SASB included scenario analysis disclosures for these 9 industries in its standards because (a) climate-related risks are likely to be material in the given industry and (b) such disclosures meet SASB's Criteria for Accounting Metrics³ as useful, comparable, representative, and applicable. SASB will evaluate the addition of disclosures related to scenario analysis to additional industries over time as broadly applicable scenarios become available.

6. Q. If I disclose in accordance with the SASB Standards, will my disclosures be consistent with the TCFD recommendations?

A. For companies in many industries, the answer to this question is yes, assuming that they make the governance, strategy, risk management and target/metrics disclosures suggested in the introduction to the SASB Standards, that they use the TCFD Recommendations as a guide to prepare those disclosures, and that they disclose the climate-related topics and metrics included in the SASB Standards for their industry. As noted in question 5 above, there are three exceptions to this statement:

- Companies in the seven industries for which the SASB Standards do not include climate risk will need to make supplemental disclosures regarding climate risk to disclose information consistent with the TCFD Recommendations.
- Companies in the 56 industries for which the SASB Standards do not include greenhouse gas emissions may need to make supplemental disclosures of greenhouse gas emissions to disclose information consistent with the TCFD Recommendations or to meet asset manager and asset owner requests for greenhouse gas emission data.
- Companies in the 70 industries for which the SASB Standards do not include disclosures related to scenario analysis may need to make supplemental disclosures regarding the resilience of their strategies under different climate-related scenarios to disclose information consistent with the TCFD Recommendations.

³ These Criteria are described in SASB's Conceptual Framework.



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Appendix I – Disclosure of Scope I Emissions and Energy Usage across the SASB Standards

Sector	Industry	Scope 1 Emissions	Energy Usage (in lieu of Scope 2 Emissions)
Healthcare	Biotechnology		X
	Pharmaceuticals		X
	Medical Equipment and Supplies		X
	Health Care Delivery		X
	Health Care Distribution		
	Managed Care		
Financials	Commercial Banks		
	Investment Banking and Brokerage		
	Asset Management and Custody Activities		
	Consumer Finance		
	Mortgage Finance		
	Security and Commodity Exchanges		
	Insurance		
Technology and Communications	Electronic Manufacturing Services and ODM		
	Software and IT Services		X
	Hardware		
	Semiconductors	X	X
	Telecommunications		X
	Internet and Media Services		X
Extractives & Minerals Processing	Oil and Gas – Exploration and Production	X	
	Oil and Gas – Midstream	X	
	Oil and Gas – Refining and Marketing	X	
	Oil and Gas – Services		
	Coal Operations	X	
	Iron and Steel	X	X
	Metals and Mining	X	X
	Construction Materials	X	X
Transportation	Automobiles		
	Auto Parts		X
	Car Rentals and Leasing		
	Airlines	X	
	Air Freight and Logistics	X	
	Marine Transportation	X	
	Rail Transportation	X	
	Road Transportation	X	
Services	Education		
	Professional Services		
	Hotels and Lodging		X
	Casinos and Gaming		X
	Restaurants		X
	Leisure Facilities		X
	Cruise Lines	X	
	Advertising and Marketing		
	Media Production and Distribution		
Resource Transformation	Cable and Satellite		X
	Chemicals	X	X
	Aerospace and Defense		X
	Electrical and Electronic Equipment		X
	Industrial Machinery and Goods		X
Food and Beverage	Containers and Packaging	X	X
	Agricultural Products	X	X
	Meat, Poultry, and Dairy	X	X



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	Processed Foods		X
	Non-Alcoholic Beverages		X
	Alcoholic Beverages		X
	Tobacco		
	Food Retailers and Distributors	X	X
Consumer Goods	Household and Personal Products		X
	Drug Retailers and Convenience Stores		
	Multiline and Specialty Retailers & Distributors		X
	E-Commerce		X
	Apparel Accessories and Footwear		
	Appliance Manufacturing		
	Building Products and Furnishings		X
	Toys and Sporting Goods		
	Biofuels		
Renewable Resources and Alternative Energy	Solar Energy		X
	Wind Energy		
	Fuel Cells and Industrial Batteries		X
	Forestry and Logging		
	Pulp and Paper Products	X	X
	Electric Utilities	X	
Infrastructure	Gas Utilities	X	
	Water Utilities		X
	Waste Management	X	
	Engineering and Construction Services		
	Home Builders		
	Real Estate Owners, Developers and Investment Trusts		X
	Real Estate Services		

*Industries shaded in Green are industries in the four non-financial groups for which the TCFD recommended additional disclosure. For companies in these groups that have greater than one billion USDE in annual revenue, the TCFD recommended disclosure of the three elements of Strategy and three elements of Metrics and Targets, regardless of company-level determinations of materiality.