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February 9, 2017

The Task Force on Climate-Related Financial Disclosure
Bank of England
Threadneedle St
London, EC2R 8AH
RE: TCFD Recommendation Report Public Comment Period

Dear Members of the TCFD:

I write on behalf of the Sustainability Accounting Standards Board (SASB), a non-profit organization that issues sustainability accounting standards for the disclosure of material sustainability information in regulatory filings. More than 2,800 individuals—affiliated with companies with $11T market capital and investors representing $23.4T assets under management—participated in industry working groups to provide input on SASB's provisional standards. In these working groups, 82% of issuers and investors agreed that SASB's proposed disclosure topics are likely to constitute material information. SASB's full set of provisional sustainability accounting standards for 79 industries in 10 sectors was published in March 2016 for use by the capital markets. SASB is now engaged in a period of stakeholder consultation to get feedback on the standards before they are codified at the end of 2017.

Thank you for the opportunity to provide feedback on the Recommendations of the Task Force on Climate-related Financial Disclosure, Implementing the Recommendations of the Task Force and Technical Supplement – The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities.

We have provided comments on the TCFD's recommendations and suggested areas for further consideration by the TCFD. In addition, we have made a commitment to carrying forth the TCFD's recommendations.

SASB's comments are organized around the following topics:

1. <u>Climate Risk Framework</u> – We support the general climate risk framework and have several recommendations to streamline and strengthen it.
2. <u>Four-part Recommendation</u> – We support the four core elements of disclosure, and we have recommendations to reduce redundancies and improve usefulness.
3. <u>Implementation and Format</u> – We request that the TCFD provide more guidance related to its vision of the implementation of its recommendation.
4. <u>Scenario Analysis</u> – We support the recommendations on scenario analysis and suggest the TCFD provides further guidance on the topic.
5. <u>Materiality</u> – We request the TCFD to provide clarification on the materiality basis for disclosure and its recommendation for line item disclosures.

6. Other Comments – We provide additional comments on several other areas of the TCFD recommendations.
7. Industry-specific Comments – We provide feedback on the industry-specific guidance contained in Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures and include Annex A, attached to this document with comments on each industry.
8. SASB Next Steps – We provide a summary of actions we plan to take to determine how to align SASB's standards with the TCFD recommendations.

SASB supports the important work of the TCFD to move global markets toward comprehensive, comparable, and complete disclosure of material climate risks. Thank you again for the opportunity to participate in the Public Comment Process for TCFD's Recommendation Report. We look forward to continuing to support the important work of the TCFD.

Best regards,

Dr. Jean Rogers
CEO & Founder, SASB

Andrew Collins
Technical Director, SASB

1. Climate Risk Framework

As we conveyed in the joint statement from CDP, CDSB, CERES, and SASB dated May 31, 2016, we find risk frameworks, such as the one recommended by the TCFD, to be useful and beneficial tools. They are essential is providing a structured way to identify, compare, manage, and communicate risks. We find these frameworks most effective when they are concise, easy to communicate, and contain categories that are mutually exclusive and collectively exhaustive.

We recommend that the TCFD revisit its "Climate-Related Risks, Opportunities, and Financial Impacts" (p. 7-10 and Tables 1 and 2) and coalesce around a more streamlined climate risk framework, which it can then reference throughout the rest of the recommendation reports. Following are several recommendations for how the TCFD may wish to update its climate risk framework.

1. <u>Eliminate standalone "risk" and "opportunity" categories</u> – Generally, we do not see a need to have separate categories for risks and opportunities: a poorly managed opportunity is a risk, a well-managed risk presents an opportunity. Although we see value in discussing and providing examples of how a given climate risk category can lead to specific upsides or downsides, we believe that it is a somewhat artificial distinction to separate risk and opportunities into silos. For example:
    a. The language the TCFD currently uses to describe Technology Risks, such as the phrase "improvements and innovations," sounds like one that is typically used to discuss upside as opposed to downside.
    b. The opportunity areas Markets and Products and Services can both be considered the upsides of "Technology Risks".
2. <u>Reduce the number of climate risks and opportunity categories</u> – The TCFD's recommended climate risk framework currently contains six categories of risk and five categories of opportunity. We believe that having fewer categories would ease understanding, implementation, and communication of the TCFD's recommendations. We subscribe to the mantra "simplify without dumbing down." To this end we make the following recommendations:
    a. We suggest eliminating "Reputation" as a category, as this is an impact area rather than a standalone risk that can be managed. In other words, we do not see value in separating an issuer's "climate reputation" from the underlying issues which may influence perceptions of an issuer's reputation. These may include past, present, or future greenhouse gas emissions, technology transition activities, legal and regulatory influence, etc. We believe these issues are better captured in other categories.
    b. We suggest eliminating "Market Risk" as a category. The TCFD describes market risks as "*…shifts in supply and demand for certain commodities, products, and services as climate-related risks and opportunities are increasingly taken into account*." It is SASB's view that this category is redundant of Technology Risk, which the TCFD states covers "*reduced demand for products and services*". The TCFD later includes "*increased production costs due to changing input prices (e.g., energy, water)*," which seems to be redundant of what is described in Physical Risks as "*Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants).*" There are several such examples of redundant language. We recommend that the TCFD review the climate risk and opportunity categories to ensure that they are mutually exclusive.
    c. Lastly, we note that the term "market risk" is typically used to describe the overall performance of financial markets (i.e., systematic risk), so should the TCFD retain this category, we recommend a more suitable title (e.g., Supply & Demand Risk).
3. <u>Provide clearer examples for each category</u> – For the listed climate risk and opportunity categories to provide maximum value to preparers and investors, we feel that most categories would benefit from clearer, more precise definitions and more illustrative examples. We suggest

that the TCFD clarify the content in Tables 1 and 2 (p 10-11), including but not limited to the following areas:

a. Energy Source (Climate-Related Opportunities) – In our view, it is unclear what aspect of "energy sourcing" this opportunity area is referring to. Is it referring to the opportunity for increased demand for providers of renewable energy and associated technologies? Or is it referring to opportunities for users of renewable energy? We believe this area would benefit from more clarity and demonstrative examples. The report, citing Ceres research, states "Organizations that shift their energy usage toward low emission energy sources could potentially save on annual energy costs." This area would benefit from an explanation of the mechanisms by which energy costs saving could occur (i.e., use of PPAs to reduce costs and increase cost certainty).
b. Resilience – We believe that this area would benefit from a clearer explanation of how the TCFD defines "climate resilience." We understand the term "resilience" to often be used in discussing physical resilience, or the ability to adapt to physical impacts of climate risk. We do acknowledge, however, that there are broader and different conceptions of climate resiliency. Given the range of definitions for "climate resilience", this area would benefit from clarification of this term. The current examples serve to confuse rather than clarify and in our view are better suited to other categories that the TCFD defines. For example:
    - "Efficient water management" describes an action that we believe fits better in the resource efficiency category.
    - New opportunities for insurance companies seem to be closely related to "new markets" as opposed to their resilience (though the opportunity may arise due to lack of resilience of the underlying insured asset).
    - "Participate in renewable energy programs and adopt energy-efficiency measure," is, in SASB's view, related to climate mitigation rather than resilience.

2. TCFD Four Part Disclosure

SASB recognizes the need and value for both quantitative and narrative disclosures related to climate risks. Therefore, we are generally supportive of the four-part framework proposed by the TCFD in its Recommendations. As well, we are supportive of the overall content of each part. However, we see a high degree of overlap between the content in each category. This redundancy could potentially lead to confusion amongst users and hinder adoption. We recommend that the TCFD provide clearer guidance on the distinction between the disclosures expected for each of the four recommendation areas (Governance, Strategy, Risk Management, and Metrics & Targets).

Following are some specific comments:

<u>Governance</u>

- The recommendations here seem to portray governance around climate-related risks as a separate responsibility from the oversight of other risks as opposed to being integrated into board oversight of all risks and threats. The TCFD may wish to put forth recommendations that encourage preparers to disclose how climate risk management responsibilities are integrated into existing governance functions.

<u>Strategy</u>

- In SASB's view, there is not a clear distinction between the disclosures expected in the strategy section and the risk management section. For example, the recommended disclosure "Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term" (Strategy) is not materiality different from the recommended disclosure "Describe the organization's processes for identifying and assessing climate-related risks." (Risk Management).

- We note that section b) uses the term "have affected." In our view, disclosure on climate risks should not be restricted to past effects, but instead also encompass a strategic disclosure in management's understanding of future potential effects.
- In section c), the phrase "climate scenarios" would benefit from a description or qualifying language. To those without expertise in climate-disclosure, it will not be immediately clear what this terms means. The TCFD may wish to point users to other sections of its reports that explain what is meant by the term "climate scenario."
- The TCFD provides the following recommendation in section b) of the Strategy section: "If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described" (p. 19). This recommendation seems directly redundant of guidance that follows in section c) which relates entirely to scenario analysis.

<u>Risk Management</u>

- The TCFD recommends in part a) that "Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered." SASB believes this to be a relevant recommendation, but a disclosure that is limited to one of the risk categories (regulatory risk). Therefore, we are unsure why this is mentioned in this section. Instead, we suggest that this area be updated to recommend a disclosure of how preparers assess and identify which of the risks outlined in Table and Table 2 (p. 11-12) are material to their operations.

<u>Metrics & Targets</u>

- We notice frequent use of terms such as "where relevant" (in reference to disclosure of internal carbon prices) and "if appropriate" (in reference to disclosure of scope 3 emission). The TCFD, however, fails to provide guidance for users on how to determine relevance and appropriateness. We recommend that the TCFD provide additional guidance for preparers regarding which are the essential elements of the recommendation and which elements may apply only in certain instance. We also recommend that the TCFD provide additional guidance for preparers for how to determine if it is relevant to disclose an internal carbon price and/or scope 3 emissions.

3. Implementation & Format

We are greatly supportive of the TCFD's recommendation that "…preparers of climate-related financial disclosures provide such disclosures in their mainstream (i.e., public) financial filings." SASB is founded on the belief that certain climate-related information, in addition to other environmental, social, and governance information, can be considered material under existing securities regulations—such as those promulgated by the U.S. Securities and Exchange Commission—and should therefore be disclosed in statutory filings.

Given the overall objective of the TCFD—to have preparers disclose climate-related information in mainstream financial reports—we believe the recommendations need to contain more guidance on two key areas. First, the TCFD should provide additional guidance on the recommended length, level of detail, and location of climate-related disclosures. Second, the TCFD should elaborate on how its recommendations should be followed in light of existing compulsory and voluntary disclosure on climate-related risks, inside and outside of mainstream financial filings.

Disclosure Format

We feel that preparers would benefit from the TCFD's guidance on:

- The specific sections of "mainstream financial reports" into which climate-related disclosure should be integrated. For example, the TCFD may wish to suggest integration into the Strategic Report & Directors Report or elsewhere in the Annual Report for UK filers, into the Management's Discussion & Analysis section or other sections of the Form 10-K for US filers, etc. The TCFD may wish to provide this guidance for the regions listed in Table A3.1, so that preparers in major capital markets have a better sense of where to disclose climate-related risks and opportunities.
- Whether climate-related information should be integrated throughout different sections of mainstream financial reports, all together as a separate section, and/or if certain climate information belongs in supplemental or standalone corporate reports (e.g., integrated or sustainability reports).
- The expected length and level of detail that the TCFD recommends when a preparer implement its framework. Given that the TCFD recommends disclosure on the four sections (Governance, Strategy, Risk Management, and Metrics & Targets) and numerous sub-elements within each section, we see the possibility that disclosure could be particularly voluminous. We recommend that the TCFD guides users to provide a volume of disclosure that is detailed but tenable in the context of financial reporting requirements and obligations to disclose on environmental, social, and governance topics other than climate.

One action that the TCFD could take would be to publish illustrative examples or "mock" disclosures according to its recommendation. SASB has undertaken similar work; we have provided "mock 10-Ks" for many of our industry standards to provide an example for issuers in how to practically integrate SASB disclosures into their Form 10-K reporting. We recommend that the TCFD consider providing similar examples so that preparers have a tangible example of how to consider the location, level of detail, length, style of language, and other aspects of preparing a climate-related disclosure. The TCFD could prepare such resources for major regions, such as those listed in Table A3.1.

Place in Reporting Landscape

Given the range of mandatory and voluntary disclosure frameworks, guidelines, and requirements (well summarized in Tables A3.1, A3.2, and A3.3), we suggest that the TCFD provide more detailed guidance on how it envisions issuers to implement its recommendations within this landscape.

We recognize that the TCFD made efforts to cite and reference a range of frameworks (SASB, GRI, CDP, CDSB, IPIECA, GRESB, etc.). These references recognize the enormous amount of longstanding work that has been conducted on climate-related disclosures. However, the TCFD has not provided in its recommendations the option for preparers to use one of many existing frameworks to fulfill the disclosure recommendations. Instead, the TCFD has selected different elements from numerous sustainability and climate-related disclosure frameworks. Instead of creating flexibility for preparers around the globe and driving towards harmonized disclosure on climate, the recommendations may instead be viewed as an entirely additional form of disclosure. To address this issue, we recommend that the TCFD provide more detailed guidance on what type, form, and avenue of disclosure will fulfill the TCFD's disclosure recommendations.

For example, the TCFD should explain how disclosure according to its recommendations intersects with any other climate-related disclosures in mainstream financial reports, sustainability reports, or other avenues (e.g., websites, climate-focused reports, etc.). We note that current climate-related disclosures may be mandatory or voluntary depending on the jurisdiction of a preparer, and they may focus solely on climate risks or be included in a broader disclosure on other environmental, social, and governance factors. Therefore, there are a variety of reporting considerations a preparer must weigh in determining how to implement the TCFD's recommendations. We recommend that the TCFD provide more guidance for preparers in integrating its recommendations into the landscape of existing climate-related disclosures.

Harmonization / Recognize Role of Each Organization

SASB supports the importance of harmonization among leading, global organizations that are working to improve climate-related disclosures from issuers to investors. We are committed to, where possible, aligning with peer organizations addressing this need. We feel the TCFD is somewhat uniquely positioned to "*Encourage standard setting organizations and others to actively work toward greater alignment of frameworks and to support adoption*." In addition to encouraging this convergence, we believe that the TCFD is in a position to help clarify the relationships among various standard setting and related organizations that focus on issuer disclosure of climate risk. Specifically, we encourage the TCFD to update its recommendations as they relate to harmonization among standards setters in the following ways:

- In its implementation guidance, the TCFD makes reference to principles, metrics, criteria, and aspects of the IIRC <Integrated Reporting> Framework, the G20/OECD Principle of Corporate Governance, GRI G4 Sustainability Reporting Guidelines, CDSB Climate Change Reporting Framework, SASB Sustainability Accounting Standards, the CDP Climate Change Questionnaire and other frameworks. Although Table A3.3 communicates key differentiators between these initiatives, the TCFD does not adequately explain what this means for users of the recommendations. In our view, there are risks, challenges, and considerations for preparers that may use frameworks and metrics not designed for integration into mainstream financial reports—such as those designed for generating integrated reports or sustainability reports—to meet the requirements of its recommendations.
- SASB's standards have been uniquely designed to be useful to investors, creditors, and insurers to understand climate-related and other sustainability risks. Furthermore, they have been designed for integration into mainstream financial reports such as the U.S. SEC's Form 10-K. We request that the TCFD further clarify the differences and similarities among different initiatives. In addition to the factors outlined in Table A3.3, others that the TCFD may wish to outline are: sustainability scope (e.g., climate risks, emissions disclosure, multiple types of capital, range of ESG factors), focus (e.g., general, industry-specific, single industry, etc.), framework format (e.g., principles, specific metrics, operational guidelines, etc.).
- We note that the TCFD provides "recommended disclosures" for both its "all sector" and "supplemental guidance". We encourage the TCFD to review this content and ensure that these sections do not conflate related guidelines with equivalent guidelines. For example, <IR> principles 3.10 and 4.8 are relevant to the TCFD's governance disclosures but they are not equivalent (i.e., separately disclosing <IR> principles 3.10 and 4.8 will not necessarily fulfil the TCFD's recommended disclosure).

4. Scenario Analysis

SASB is supportive of the TCFD recommending the use of scenario analysis in assessing climate-related risks and opportunities. SASB believes it to be a powerful tool for issuers own management of climate-related risks and opportunities and that it can form the basis for communication on climate-related risks.

We offer the following thoughts on how the TCFD may improve the usefulness of its recommendations related to scenario analysis:

- The TCFD states "*The Task Force believes that organizations should use a range of scenarios that illuminate future exposure to both transition and physical climate-related risks and opportunities, such as business-as-usual, NDC, and 2°C scenarios."* We strongly support the recommendation that preparers use multiple potential future scenarios to assess and communicate climate risks. However, the TCFD makes various inconsistent statements around which scenarios a preparer should use—in some instances suggesting use of a 2°C scenario, in some suggesting the decision is entirely up to the preparer, and in some suggesting the use of both "favorable" and "unfavorable" scenarios. We suggest that the TCFD clarify its recommendations to provide more guidance around which scenario(s) a preparer should use.
- The TCFD states "*In identifying scenarios that might work best, organizations may make use of existing publicly-available scenarios and models or organizations may wish to internally develop their own scenarios*." We believe, however, that the TCFD needs to provide more structured recommendations in order for disclosures to be useful. In SASB's view, much of the value from a scenario analysis comes from a) the comparison of the results of scenario analysis amongst competitors, b) the comparison of multiple potential future outcomes for a single company, and c) understanding management's view of which outcome it considers most likely (i.e., what it is strategically planning for). We recommend that the TCFD recommend specific scenarios and communicate the necessity of employing more than one scenario. SASB suggests that the TCFD recommend that preparers present the results from a 2°C scenario and from the scenario that, in management's view, is most likely to come to fruition (if it is not a 2°C scenario). By recommending usage of a single scenario across preparers, disclosures will be more comparable and therefore more useful to investors, insurers, creditors, and others. By recommending that management opine on the climate scenario it considers most likely, investors and others will be able to understand if their expectations about climate risk are aligned with management's.
- Given concerns about the comparability of scenario analysis, sensitivity around disclosing potentially confidential business information, and lack of availability of industry-specific scenarios, the TCFD may wish to provide recommendations that do not recommend that every issuer in every industry model complex climate scenarios for their operations and present detailed results. Instead, the TCFD might recommend that preparers use select results from existing climate scenarios (e.g., change in energy prices, increase in frequency of extreme weather, spread of tropical disease) that are material to their operations and use these results to inform management of near-, mid-, and long-term risks. Therefore, we recommend that the TCFD provide more clarity around which aspects and which conclusions from the scenario analysis should be disclosed and in what level of detail. For example, in the Oil and Gas Exploration & Production industry SASB recommends disclosure of reserve sensitivity against a 2°C scenario. While other climate factors (physical, regulatory, and transition-related) will affect oil and gas companies, we determined that this is was the most concise and salient impact from a globally coordinated effort to limit warming to 2°C. We acknowledge that the TCFD states "*The Task Force believes that all organizations exposed to climate-related risks should consider: (1) using scenario analysis to help inform their strategic and financial planning processes and (2) disclosing the potential impacts and related organizational responses. The Task Force recognizes that, for many organizations, scenario analysis is or would be a highly qualitative exercise. However, organizations with more significant exposure to transition risk and/or physical risk should undertake more rigorous qualitative and, if relevant, quantitative scenario analysis*" but suggest it may wish to provide additional guidance, perhaps on an industry basis, for which preparers should undertake a "qualitative exercise" versus which should take a more rigorous, quantitative approach.
- When the phrase "2° scenario" is introduced (e.g., p. 29 of the Recommendation report and p. 2 of the technical supplement), it needs to be clearly defined and explained as it is not a commonly understood term. For example, the IEA definition of an "energy system deployment pathway and

an emissions trajectory consistent with at least a 50% chance of limiting the average global temperature increase to 2°C" is highly technical and therefore should not be assumed to be common knowledge.

- When the use of scenario analysis is suggested it is unclear if this includes a recommendation to use both physical and transition scenarios, or one or the other. If this determination is up to a preparer to determine, the TCFD should provide guidance for determining which type of scenario is most applicable. If there are industry-specific attributes which might increase the relevance of a physical scenario versus a transition scenario or vice versa, then the TCFD should include this in the relevant "supplemental guidance" sections.
- More generally, we encourage the TCFD to provide substantially more recommendations on industry-specific considerations or conducting scenario analysis across the twenty-three sub-industries (4 financials and 19 non-financials) it identified. A starting point for this work may be to look at scenarios in the IEA's World Energy Outlook (WEO) 2016 more broadly than just how they portray projections of price and demand for energy given a range of potential global economic transitions. In addition to this information, the scenarios contain projections related to clean air regulations (i.e., for non-greenhouse gas emissions), renewable energy uptake, growth in demand for clean water and water distribution technologies (e.g., pumps, desalination equipment, etc.), growth in demand energy efficiency technologies (i.e., for building, transportation, and industrial energy users, etc.), and other areas. There are clear industry-specific implications for these various scenario assumptions.
- We are encouraged that the TCFD points to Nationally Determined Contributions (NDCs), furnished in connection with the Paris Agreement, as relevant to inform expectations around the trajectory of global climate regulation. In SASB's view these are highly informative for corporations, investors, creditors, and others, however, we note that NDCs are not climate scenarios in the pure sense of the term. The TCFD should provide additional guidance for how NDCs can be analyzed to inform a preparer's climate scenario.
- We are in full agreement with the areas on page 9 of the Technical Supplement that the TCFD has identified for further work to:
    - *"further develop applicable 2°C (or lower) transition risk scenarios and physical risk scenarios at the sector and geographic level and create industry-specific (financial and non-financial) guidance for preparers and users of climate-related scenarios;*
    - *further develop, and improve access to, methodologies, data sets, and tools that allow organizations to more effectively conduct scenario-based analysis of transition and physical risk at more granular industry, geographic, and temporal levels;*
    - *develop and refine accepted good practice for scenario-based climate-related financial disclosure and facilitate uptake by organizations in sectors most greatly impacted by climate change;*
    - *establish stronger norms for better, relevant disclosure around scenario analysis; and*
    - *develop methodologies and tools for investors to better understand and use disclosures around scenario analysis."*

  However, we feel that it is the domain of the TCFD to further this work in the immediate term in order to make these recommendations useful rather than rely on "*further work by industry groups, NGOs, and official bodies*."

5. Guidance and Industry/Issuer("user")-specific Materiality

The TCFD recommends that all preparers disclose Scope 1, Scope 2, and, "if appropriate", Scope 3 greenhouse gas emissions. As SASB writes in its Climate Risk Technical Bulletin, "*In fact, GHG emissions is likely to be a material disclosure in only 23 of 79 industries and, indeed, data from CDP indicates that only seven industries account for 85 percent of reported Scope 1 GHG emissions.*

For industries that indirectly contribute to greenhouse gas emissions through their use of purchased electricity, SASB does not recommend disclosure of Scope 2 emissions. Instead SASB recommends metrics related to understanding the amount, type (i.e., conventional or renewable), and source (i.e., if it is self-generated or purchased) of energy. SASB research and engagement has concluded that these measures provide a better understanding of potential material risks related to indirect emissions than a Scope 2 emissions figure does.

For industries that indirectly contribute to greenhouse gas emission upstream (e.g., from purchased materials processing and transportation), downstream (e.g., from distribution and usage sold products), or in other ways (e.g., from employee commuting and business travel), SASB does not recommend disclosure of Scope 3 emissions. Instead, where these emissions areas are likely to material, SASB recommends metrics directly related to performance in those areas."

We do note that the TCFD states in its recommendations "*Some of the Task Force's recommended disclosures are line item disclosures, and some involve an assessment of materiality*." We take the term "line item disclosure" to mean the disclosure of specified information regardless of materiality to an issuer.

If the TCFD is using the same or similar definition, then we believe it is very important to indicate. All users, preparers and beneficiaries of the disclosures (investors, creditors, insurers, etc.), will need to understand what the term "line item" means, as well as which of the recommendations are so-called line item disclosures and which "involved an assessment of materiality".

Specific to the disclosure of Scope 1, Scope 2, and Scope 3 emissions, we recommend the TCFD expand on the following areas:

- The TCFD writes "*The growing demand for decision-useful, climate-related information has resulted in the development of several climate-related disclosure standards. Many of the existing standards, however, focus on disclosure of climate-related information, such as greenhouse gas (GHG) emissions and other sustainability metrics. Users of such climate-related disclosures commonly cite the lack of information on the financial implications around the climate-related aspects of an organization's business as a key gap*." Given this statement, the TCFD may wish to include guidance for users on how to discuss the financial and operations risks associated with each scope of emissions.
- SASB agrees with the TCFD's statement that "*Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organizations with significant emissions are likely to be impacted more significantly by transition risk than other organizations. In addition, current or future constraints on emissions, either directly by emission restrictions or indirectly through carbon budgets, may impact organizations financially*." We request that the TCFD clarify that risks associated with emissions do differ by scope. Currently, many preparers and users of disclosure (i.e., investors), aggregate Scope 1 and Scope 2 emissions. In SASB's view, this results in conflating their risks. Significant Scope 1 emissions result in direct regulatory risks to issuers. Scope 2 and Scope 3 "emissions"—because they are indirect—carry different risks. Conflating the risks associated with Scope 1, 2, and 3 emissions is not helpful to issuers, investors, or for ultimately addressing global climate change.
- We suggest that the TCFD clarify if it considers Scope 1, Scope 2, and Scope 3 emissions to be "line item disclosures" that should be disclosed regardless of their materiality. With respect to Scope 3 emissions, we request the TCFD to clarify what the term "if appropriate" means.

Fundamentally, SASB's research and engagement with preparers and investors has indicated that it is an industry- and entity-specific determination of whether a scope of greenhouse gas emissions is material (and therefore warrants disclosure). Therefore, we are not supportive of the recommendation that all preparers disclose Scope 1, Scope 2, and Scope 3 emissions.

We suggest the TCFD clarify if it believes that all information, regardless of materiality, should be included in mainstream financial reports. In our view, information that is not material, absent regulatory mandate, should not be disclosed in mainstream financial reports. We do not believe that issuers listed on United States exchanges will disclose immaterial information in the Forms 10-K or 20-F, the primary mainstream financial reports in the US.

If the TCFD believes that certain information (e.g., immaterial Scope 1, Scope 2, and Scope 3 emissions) should be disclosed, we suggest that it recommend disclosure in other types of corporate reports (e.g., corporate sustainability report, integrated report, climate questionnaire response).

6. Other comments

In addition to the comments above, we offer the following additional comments on aspects of the TCFD's recommendations:

Financial Impacts

The TCFD's discussion of the financial implications of transition and physical climate risks and opportunities provides useful guidance to preparers. We suggest clarification on the following areas:

- In the area focused on expenditures the TCFD writes, "Lower-cost suppliers are likely to be more resilient to cost and demand changes in the market as a result of climate-related risks and opportunities and more flexible in their ability to address such risks and opportunities." We are unsure that this statement is substantiated, so we suggest that the TCFD provide an explanation and/or citation.
- In the areas focused on the balance sheet, we suggest that when using the term "reserves" the TCFD clarify that these are hydrocarbon, mineral, or other types of reserves.

Additional Industries

We are encouraged by the statement that "Because climate-related risks and opportunities are relevant for organizations across all sectors, the Task Force encourages other organizations to implement these recommendations as well."

SASB would like to remind the TCFD that our guidance addresses climate risk for 72 industries. We request that the TCFD reference SASB's industry-specific standards and Climate Risk Technical Bulletin as resources for preparers facing climate risks in industries not specifically addressed by the TCFD recommendations. To our knowledge, no other industry-by-industry guidance currently exists for the disclosure of climate-risks to investors through mainstream financial filings.

Investment/Financed Emissions

The TCFD notes in its recommendation report that "*preparers, some asset owners and asset managers expressed concern about reporting on emissions related to their own or their clients' investments given the current data challenges and existing accounting guidance on how to measure and report GHG emissions associated with investments. In particular, they voiced concerns about the accuracy and completeness of the reported data, which is mainly limited to listed companies, as well as data gaps for several asset classes, including non-corporate bonds, property/real estate, infrastructure, private equity, and alternative assets. They also noted issues related to methodology, including double counting of emissions and aggregating within an asset class and across multiple asset classes."*

In SASB's view, the TCFD should not discount this important input without a persuasive counterpoint. The TCFD presents no compelling rationale other than to "*acknowledges the challenges and limitations of* *reporting GHG emissions associated with investments, including that GHG emissions should not necessarily be interpreted as a risk metric. However, the Task Force believes reporting metrics that provide some visibility into the concentration of carbon-related assets is important. The Task Force views the reporting of GHG emissions associated with investments as a first step and expects disclosure of this information to prompt important advancements in the development of decision-useful, climate-related risk metrics.*"

If this is the sentiment of the TCFD, then in SASB's view this disclosure is not suitable for integration into mainstream financial reports. The TCFD may express its opinion that this type of emissions information has some value, but it should not recommend its inclusion in mainstream financial reports.

7. Industry Specific Comments

Please see the attachment to this document (Annex A) for specific comment on each disclosure recommendation for each industry. In addition, we offer the following comments:

- For the asset management industry, we suggest that the TCFD provide recommendations for any differences in the way companies should disclose climate risks to their customers (whose assets are under management) versus to their investors and creditors (who are invested in the asset manager's equity or hold its debt).
- We note that SASB maintains separate guidance for the iron and steel industry because, in our view, its sustainability risks differ from the metals and mining industry. Particularly relevant to climate disclosure: steel production can be done either through a blast furnace or an electric arc furnace. A blast furnace has far more direct emissions, but is often cheaper due to the relative price of coal to other power sources. An arc furnace uses electricity, and therefore the associated emissions are indirect. With respect to climate-related impacts, strategic investments in blast versus arc furnaces for production carry very different opportunities and risks (e.g., carbon capture and sequestration for blast furnaces versus renewable energy generation associated with electricity production/purchase for arc furnaces.) SASB's Iron & Steel Industry standard capture this risk in its energy management topic, which recommends electricity consumption (and percentage renewable) as well as fuel consumption (from coal, natural gas, or renewable sources). Addressing raw material extraction as well as steelmaking into the same Metals & Mining grouping may obscure some industry-specific risk factors.
- We suggest that the recommendation of specific metrics should be contained to either the section Metrics & Targets or the table "Illustrative Examples", but should not be duplicated in each area.
- We note that the TCFD recommends disclosure of "carbon risks" in several instances. We suggest that the recommendations focus more broadly on any and all climate-related risks and opportunities rather than relate to carbon risks (which is SASB's view is a subset of climate risk).
- We note that in several instances there are highly useful disclosure recommendations that are presented as "Supplemental Guidance" for a specific sector or industry that, in fact, could be more broadly applied as "Guidance for All Sectors" with slight modification. Doing so could provide valuable guidance to preparers in sectors that otherwise may not see these recommendations. Examples include:
    - **Supplemental Guidance for the Agriculture, Food, and Forest Products Group**
      Agriculture, Food, and Forest Products Group organizations should describe:
        - — The climate-related scenarios used, including the 2°C scenario, and the key assumptions and considerations underlying each climate-related scenario.
        - — For the 2°C scenario used, any adjustments/differences from publicly available 2°C scenarios.

— Whether climate-related scenarios with major disruptions (positive and negative) from business-as-usual (breakthroughs, breakdowns) were considered.
— Quantitatively and qualitatively the critical input parameters, assumptions, and analytical choices for the climate-related scenarios used.

- **Supplemental Guidance for the Transportation Group**
  Transportation Group organizations should consider describing the following:
  Income Statement
  — **Revenues** — Assumptions around emissions and fuel efficiency, including any internal carbon price applied, whether this is on an operational basis (i.e., the short-run marginal cost of carbon) or on a lifecycle basis (i.e., the long-run marginal cost of carbon), and their assessment of the potential impacts on the demand for their carbon intensive and low-carbon products.
  — **Expenditures** — The potential impacts of climate-related risks and opportunities on cost of supply and strategy for managing these impacts relative to market demand and competition. This may include discussions of R&D expenditures, adoption of new technology, and costs of key inputs.
  Balance Sheet
  — **Assets/Liabilities** — Existing and committed future activities, given that long-lived assets may require additional investments, restructuring, writedowns or impairment. Transportation Group organizations should consider describing their critical planning assumptions around legacy assets, for example strategies and timelines for changes to carbon-intensive facilities or infrastructure, or shifts to lower carbon/fuel intensive assets.
  — **Capital** — How climate-related risks and opportunities, particularly in the areas of GHG emissions and energy/fuel usage, are taken into account in capital planning and allocation. This could include a discussion of major acquisitions and divestments, joint venture requirements, and investments in technology, innovation and new business areas in light of changing climate-related risks and opportunities. Transportation Group organizations should also consider providing an assessment of their flexibility in positioning/re-positioning capital to address emerging climate-related risks and opportunities.

8. SASB Next Steps

SASB is committed to supporting the work of the TCFD and promoting its recommendations. Our goal is to harmonize SASB's standards with the TCFD's recommendations, such that disclosure to the SASB standards also fulfils the TCFD's recommendations. In order to assess the possibility of doing so, we will take the following steps throughout the remainder of 2017:

- SASB will continue to review the TCFD's recommended disclosures for each sector and industry to determine if there are any gaps between the TCFD's work and ours. Where warranted, we will suggest updates to the SASB standards to align with the TCFD's recommendations.
- We will review our approach as it relates to the TCFD's recommendations on governance, strategy, and risk management disclosures. Where warranted, we will suggest updates to the SASB standards to align with the TCFD's recommendations.
- Any updates to the SASB standards arising from alignment with the TCFD recommendations will be open to public comment as part of our planned public comment on the entire set of SASB standards, occurring in mid-2017.

Sector	Industry	Governance	Strategy	Risk Management	Metrics & Targets	Illustrative Example	SASB Comment
Financials	Banks	—	We suggest that disclosure of concentrations of credit risk should not be limited to "carbon-related assets" but should address concentrations of credit risk exposure in any	—	The recommendations focus perhaps too narrowly on "carbon-related" risks and/or they are discussed somewhat separately from physical and transition climate-related risks in this section.	—	—
	Asset managers	—	The recommendation to *"describe how climate-related risks and opportunities are factored into relevant products or investment strategies. Asset managers should also describe how each product or investment strategy might be affected by the transition to a low-carbon economy."* seems to be broadly applicable guidance. Except for use of the term "investment strategy", this recommendation could be apply to nearly any industry. We recommend that the TCFD	We recommend that the TCFD provide definitions of and/or a relevant list of categories for both "products" and "investment strategies".	The recommendation that, "Asset managers should describe metrics used to assess climate-related risks and opportunities in each product or investment strategy. Where relevant, asset managers should also describe how these metrics have changed over time. Where appropriate, asset managers should provide metrics considered in investment decisions and monitoring." seems to be broadly applicable guidance. Except for use of the term "investment strategy", this	—	—
	Asset owners	—	We note that it also may be important to understand risks in the context of in-house investment management as compared to the use of external managers.	We recommend that the supplemental guidance focus on any and all climate-related risks in addition to "carbon risks."	Where applicable, we recommend that disclosure should also relate to the metrics used by the asset owners to assess outsourced portfolio managers.	—	—
	Insurance	—	We note that use of the term "supporting quantitative information" may be confusing here because it would seemingly apply to disclosure of a metric (which we feel is better suited for the Metrics & Targets section).	Fundamentally, we recommend that the TCFD differentiate between climate risks that insurance companies face with respect to their underwriting and the risks they face with respect to their investing portfolios. Strategy, risk management, and targets used may differ substantially in those two segments.	We recommend that the TCFD provide additional technical guidance on how to calculate and disclose, "aggregated risk exposure to weather-related catastrophes of their property business (i.e., annual aggregated expected losses from weather-related catastrophes) by relevant jurisdictions."	—	We recommend that in addition to referencing SASB metric FN0301-17, that the TCFD reference SASB metrics FN0301-01 through FN0301-04 under the topic "Environmental Risk Exposure." These metrics, particularly FN0301 and FN0302, are much more relevant to the Supplemental
Energy	General	In SASB's view, it is unclear why the recommendation "Energy Group organizations should consider describing whether and how performance metrics for board and management, including links to remuneration policies, take into consideration climate-related risks and opportunities" is specific to energy group companies and does not apply more broadly to all Sectors. We recommend that the TCFD provide a rationale and/or clarification for its inclusion for this Sector.	We note that the recommendation on scenario analysis seems to be highly useful guidance that is generally applicable for all companies in all industries to follow. We recommend that this guidance be included as "guidance for all sectors" as opposed to limited to companies in the energy sector.	—	Revenues We suggest the TCFD define the term "low-carbon alternatives". Additionally, we suggest that the TCFD recommendations differentiate between capital flow devoted to enabling continued fossil fuel production (e.g., capital re-allocation from oil sands to natural gas projects, investments in CCS) from investments in zero-emissions alternatives (e.g., offshore wind, solar, biomass, etc.), as these relate different risks and opportunities	—	—
	Oil & Gas	—	—	—	—	A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions	We note that it will likely be technically difficult to calculate, "an indication of associated emissions factors to provide insight into potential
						Estimated Scope 3 emissions, including methodologies and emissions factors used.	We note that oil companies themselves are not likely in the best position to disclose Scope 3 emissions in a way that is decision-useful. We believe
						Percent water withdrawn in regions with high or extremely high baseline water stress.	We note that the reference "IF0101-06" should be
						Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared	We note that the reference "NR0101-01" should be corrected to "NR0101-02."
						A breakdown of reserves by type and an indication of associated emissions factors to	We note that SASB metrics NR0101-22 and NR0101-24 are also aligned with this
	Coal	—	—	—	—	A breakdown of reserves by type and an indication of associated emissions factors to	We note that the SASB references should be NR0201-16, 17, and 18.
						Percent water withdrawn in regions with high or extremely high baseline water stress.	We note that the reference "IF0101-06" should be

	Utilities	—	—	We recommend that the TCFD suggests disclosure specific to utilities around efforts to work with regulators to establish rates that mitigate climate risks and provide financial incentives for energy efficiency measures.	We recommend referencing the following metrics in the Energy Use/Efficiency area: IF0101-13 (related to smart grid) and IF0101-14 (related to user efficiency measures). In the Expenditures or Assets/Liabilities category we recommend referencing IF0101-03 (related to renewable portfolio standards).	Percent of electrical generation capacity by source (e.g., coal, gas, solar, wind, uranium)	In replace of, or in addition to this metric, we recommend IF0101-C "Total electricity generated, percentage by major energy source, percentage in regulated markets" where sources include: coal, natural gas,
						Total amount invested in renewable energy by type of technology and as a percentage of capital expenditures and acquisitions Capital expenditure planned	We note that these metrics risk misrepresenting performance due to the fact that a significant amount of renewable energy assets are not directly owned by utilities but the energy is instead
						Percent of electrical generation capacity based on hydroelectric generation in regions with high or extremely high baseline water stress	We suggest that the TCFD replace this metric with SASB metric "F0101-05, "(1) Total water withdrawn and (2) total water consumed, percentage of each in regions with High or
						Emissions intensity by asset	We recommend incorporating the approach we followed in metric IF0101-01 where we differentiate between assets
Transportation	General	—	We note that the recommendation on scenario analysis seems to be highly useful guidance that is	—	We suggest that the recommendation on expenditures to disclose, "Total fuel consumed and	—	—
	Air Freight	—	—	—	—	Sales-weighted average fleet fuel economy by region and weight or number of passengers transported	The air freight industry (by our definition) does not construct and sell airplanes. We suggest that the TCFD reference industry specific normalization
	Passenger Air	—	—	—	—	Sales-weighted average fleet fuel economy by region and weight or number of passengers transported	The passenger air industry (by our definition) does not construct and sell airplanes. We suggest that the TCFD reference industry specific normalization factors for fuel
	Marine	—	—	—	—	Sales-weighted average fleet fuel economy by region and weight or number of passengers transported	The marine transportation industry (by our definition) does not construct and sell ships. We suggest that the TCFD reference industry specific normalization factors
	Rail	—	—	—	—	Sales-weighted average fleet fuel economy by region and weight or number of passengers transported	The rail transportation industry (by our definition) does not construct and sell trains. We suggest that the TCFD reference industry specific
	Trucking	—	—	—	—	Sales-weighted average fleet fuel economy by region and weight or number of passengers transported	The trucking industry (by our definition) does not construct and sell vehicles. We suggest that the TCFD reference industry specific normalization
	Automakers	—	—	—	—	Total fuel consumed and percent renewable for road, rail, marine	This recommendation, in SASB's view, is unrelated to the automobiles manufacturing industry and we are unsure what "road, rail, and marine" refers to. In the rationale for inclusion, it is unclear what, "The
		—	—	—	—	Life cycle reporting of GHG emissions.	We suggest that the TCFD provides more technical guidance on this disclosure. At a minimum the TCFD should clarify if it is referring to cradle-
Materials/Building	General	—	We note that the recommendation on scenario analysis seems to be highly useful guidance that is	—	—	—	—
	Metals & Mining	—	—	—	—	Investments in low-carbon alternatives (e.g., R&D, technology, products and/or services)	We suggest that the TCFD reconsider this recommendation. We note limited examples of mining companies investing in R&D
						A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions.	We suggest further clarification on this metric. Is the TCFD recommending, for example, that a price on carbon may render certain mining assets uneconomic to produce? If so, this would be better captured in a metric
	Chemicals	—	—	—	—	Total fuel consumed – percentage from coal, natural gas, oil, and renewable sources	We note that this metric is a subset of SASB metric RT0101-05 as our metrics on energy do
						Investments in low-carbon alternatives (e.g., R&D, technology, products and/or services)	consider a revenues-based metric such as SASB's metric RT0101-14, "Revenue from products designed for use-phase resource efficiency" in
						Total energy intensity – by tons of product, amount of sales, number of products depending on informational value	We note that this is simply a normalized version of metric RT0101-05.
	Construction	—	—	—	—	Investments in low-carbon alternatives (e.g., R&D, technology, products and/or services).	We recommend reference to SASB metrics NR0401-11 and 12. We note that "Low-carbon alternatives" for the construction materials industry may be better understood as
						Total fuel consumed - percentage from coal, natural gas, oil, and renewable	We note that this metric is a subset of SASB metric RT0401-04 as our metrics on energy do
	Capital Goods	—	—	—	—	Investments in low-carbon alternatives (e.g., R&D, technology, products and/or	We note that this metric may be better formulated as revenue-based disclosure in
						Total fuel consumed—percentage from coal, natural gas, oil, and	We note that this metric is a subset of SASB metric RT0203-04 as our metrics on energy do
						Total energy intensity – by tons of product, amount of	We note that this is simply a normalized version of metric
	Real Estate	—	—	—	—	Total energy consumed, broken down by source (e.g., purchased electricity, alternative sources, and renewable sources)	We note that the percentage of portfolio floor area for which there is energy data coverage is an essential data point to have to understand energy consumption. We recommend disclosure of the
						Total fuel consumed—percentage from coal, natural gas, oil, and	We note that this metric is a subset of SASB metric RT0402-01 as our metrics on energy do
						Building water intensity (by occupants or square area)	We note that SASB metric IF0402-07 is aligned with this

Ag/Food	General	—	We recommend that the TCFD includes additional disclosure guidance for physical climate risks in the ingredient supply chain, as these may be some of the most significant climate risks to food and beverage companies. We suggest that Recommended disclosure c) include an identification and/or discussion of	We suggest that the TCFD expand its recommended Disclosure a) to encourage identification of principal crops and ingredients; identification of whether crops are sourced from owned farms, contracted farms, or spot markets; identification of the risks presented by climate change, including, but not limited to, availability of water, shifts in crop regions, pest migration,	Other disclosures that the TCFD may wish to consider include: Recommended disclosure a) Revenues: Average Crop yield or supplier average crop yield by crop type and region; and percentage of food/beverage ingredients certified to third-party environmental standard. Expenses: Amount of crop	—	—
	Beverages	—	—	—	The TCFD may wish to highlight risks associated with sourcing input materials from water stressed regions, such as	Total water withdrawn and total water consumed Percent of water withdrawn	We note the SASB metric CN0201-03 is the correct reference.
	Agriculture	—	—	—	The TCFD may wish to highlight risks associated with sourcing input materials from water stressed regions, such as through a metric like CN0101-23, "Percentage of agricultural raw materials sourced from regions with High or Extremely High Baseline Water Stress"	Total water withdrawn and total water consumed Percent of water withdrawn	The reference to CN0102-04 should be made in in the Packaged Food and Meats industry.
						Non-mechanical (Scope 1): Emissions from biological processes shaped by climatic and soil conditions or the burning of crop residues Land use change (Scope 1):	We note that there may be technical challenges with accurately disclosing these metrics. Furthermore, we recommend that the TCFD further expand on the channel of value impact from these
	Packaged Food & Meat	—	—	—	The TCFD may wish to highlight risks associated with sourcing input materials from water stressed regions, such as	Total water withdrawn and total water consumed Percent of water withdrawn	We note that these metrics are aligned with SASB metric CN0102-04.
	Paper & Forest Products	—	—	—	The TCFD may wish to consider recommendations on disclosure of ecosystem services (carbon sequestration) and climate adaptation efforts.	Investment in low-carbon/water alternatives (e.g., R&D, equipment, products, or services).	We suggest that the TCFD provide clarification on this metric as it pertains to the Paper and Forest Products industry. Is it meant to relate to equipment and products that companies use in
						Mechanical (Scope 1): Emissions from equipment or	We suggest removing the
						Non-mechanical (Scope 1): Emissions from biological processes shaped by climatic and soil conditions or the burning of crop residues	We note that there may be technical challenges with accurately disclosing this metric. Furthermore, we recommend that the TCFD further expand on the channel of value impact from these