RECOMMENDATIONS FOR IMPROVING DISCLOSURE OF CLIMATE-RELATED OPPORTUNITIES

C2ES CENTER FOR CLIMATE AND ENERGY SOLUTIONS

As companies increasingly measure, assess, manage, and report their climate-related risks in response to investor and customer inquiry, they are also being asked to disclose opportunities that arise from a changing climate and corresponding market and policy shifts.

Opportunities can include increasing one's market advantage by being prepared to meet and exceed regulatory changes, acquiring new business ventures to move into industries with lower greenhouse gas emissions, or reducing the greenhouse gas emissions associated with the manufacture and use of one's products. Examples include vehicle manufacturers developing zero-emissions; power companies investing in renewables, hydrogen, and other low-carbon fuels; and technology companies developing digital solutions that enable customers to increase their energy efficiency and use clean power.

Companies have been disclosing their opportunities related to climate change in their annual sustainability reports and reporting to CDP, one of the largest platforms for climate-related disclosures, for over a decade. Since recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) were first released in 2017, CDP has aligned with the TCFD's framework,[1] and specific questions on how companies were addressing opportunities arising from climate change are included in the CDP questionnaire.[2] In late 2021, the TCFD released revised guidance, *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*, providing more details, including potential metrics, on how different sectors could frame their climate-related opportunities.

The revised TCFD guidance arrives at a key moment. As of this writing, more than 2000 large global companies have set targets or are planning to set targets to achieve net-zero greenhouse gas emissions by 2050 or sooner. Financial institutions have begun committing to decarbonize their portfolios, with several institutions joining the Glasgow Financial Alliance for Net Zero (GFANZ), a global coalition of institutions committed to accelerating economy-wide decarbonization. As such, investors are increasingly asking companies to disclose not only their climate risks and opportunities, but also their transition plans for how they will address climate change.

Transition plans may include how companies intend to reduce their emissions to achieve their net zero targets, and, crucially, how they will manage their businesses—or transition their business models—to thrive in a low-carbon future. In October 2021, the TCFD released its *Guidance on Metrics, Targets, and Transition Plans*, where disclosure of transition risks and mitigation plans, and the strategies for why companies pursue certain opportunities, can serve as building blocks for robust transition plans.[3]

While there is increasing interest in opportunity disclosure and transition planning, guidance and best practices are still needed to help companies thoroughly and effectively assess and communicate the business opportunities from climate change—and how they plan to address climate change—internally and externally to customers, investors, and, increasingly, regulators. It is expected that companies will face growing requests from multiple stakeholders to demonstrate that their transition plans progress toward a low-carbon future to maintain credibility on their net-zero targets. In addition to how companies plan to decarbonize and/or support decarbonization, a better understanding of how companies can best communicate opportunities arising from their climate resilience is also needed.

These recommendations synthesize the TCFD's 2021 guidance on disclosing climate-related opportunities for select industrial sectors; compares the most recent disclosure guidance to companies' actual disclosure from 2021 CDP reports; and provides recommendations in alignment with, and in addition to, the TCFD for further enhancing disclosure of climate-related opportunities, especially for these sectors.

METHODOLOGY

In 2021, C2ES undertook research to better understand how companies were measuring, assessing, addressing, and then disclosing their climate-related risks and opportunities. C2ES interviewed companies, many of which belong to C2ES' Business and Environmental Leadership Council, representing energy, transportation, buildings, and heavy industry. These are high greenhouse gas-emitting sectors reflecting key actors in the U.S. economy that will all play a vital role in transitioning to a low-carbon future. Companies across sectors are in different stages of examining, integrating, and reporting their risks and opportunities, mostly using the TCFD framework. C2ES examined how a subset of leading companies from the four sectors in its study—including additional companies outside of the study—reported climate-related opportunities in their 2021 CDP reports. CDP is often the main climate disclosure platform for companies and includes a specific question asking companies how they are addressing their climate-related opportunities. Of note, the companies selected are considered to be industry leaders in sustainability, where many have net-zero emissions targets, and therefore, do not necessarily represent all large, publicly traded companies' climate disclosures.

C2ES then compared the opportunities companies disclosed in their 2021 CDP reports to the TCFD's *Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosure,* which provides supplemental guidance for disclosing both risks and opportunities.[4] *"Section E: Supplemental Guidance for Non-Financial Groups"* provides guidance for non-financial industries (and their related supply and distribution chains) more likely to be financially impacted than others due to their exposure to certain transition and physical risks from greenhouse gas emissions, energy, or water dependencies associated with their operations and products. These non-financial industries are grouped into energy; transportation; materials and buildings; and agriculture, food, and forest products. The comparison below focuses on the first three sectors that aligned with our study.

SECTOR	DISCLOSURE IN COMPANIES' 2021 CDP REPORTS CITING THE FOLLOWING CLIMATE-RELATED OPPORTUNITIES	TCFD GUIDANCE FOR DISCLOSURE: ELEMENTS TO CONSIDER AND INCLUDE IN DISCLOSING RISKS AND OPPORTUNITIES
Energy	For power and utility companies: • increased demand for electricity, resulting in large revenue opportunity • opportunity to take advantage of regulatory changes or government incentives (cap and trade, clean energy targets, credits) • increased energy efficiency • provide low-carbon goods/services (add renewables to mix for low emissions generation) • invest in R&D (smart grids, addressing methane leakage, energy storage, hydrogen) • respond to demand from customers for low-carbon options • enhance the resilience of the grid to better serve increasing demand for energy • voluntary customer participation in environmental programs designed to reduce emissions or energy use. Participating utilities disclosed additional metrics related to their opportunities: • reducing regulatory liability through minimizing gas compressor venting and other ways to reduce methane leakage from natural gas • percent of renewable energy deployed across customer base • detailed installment numbers of EV charging infrastructure to support vehicle electrification • partnerships with other companies and industries to advance vehicle electrification.	Disclosures should focus on qualitative and quantitative assessments and potential impacts of the following for electric utilities, oil, and gas sectors: • changes in compliance and operating costs, risks, or opportunities (e.g., older, less-efficient facilities or un-exploitable fossil fuel reserves in the ground) • exposure to regulatory changes or changing consumer and investor expectations (e.g., expansion of renewable energy in the mix of energy supply) • changes in investment strategies (e.g., opportunities for increased investment in renewable energy, carbon-capture technologies, and more efficient water usage). Energy Group organizations should consider providing additional industry-specific metrics. Examples of potential metrics include percent of water withdrawn in regions with high baseline water stress and amount of gross global Scope 1 emissions from (1) combustion, (2) flared hydrocarbons, (3) process. emissions, (4) directly vented releases, and (5) fugitive emissions/leaks. *The TCFD also recommends consulting, SASB, "Climate Risk Technical Bulletin," April 12, 2021, WBCSD and WBCSD, "TCFD Electric Utilities Preparer Forum," July 16, 2019* for more sector specific information.

SECTOR	DISCLOSURE IN COMPANIES' 2021 CDP REPORTS CITING THE FOLLOWING CLIMATE-RELATED OPPORTUNITIES	TCFD GUIDANCE FOR DISCLOSURE: ELEMENTS TO CONSIDER AND INCLUDE IN DISCLOSING RISKS AND OPPORTUNITIES
Transportation	For airlines: • fleet renewal and fuel efficiency • low-carbon fuels such as sustainable aviation fuel, battery, or hydrogen-powered options • explore and invest in offsets. • For automotive companies: • provide, develop, and expand low-carbon products & services for customers, such as EVs and autonomous vehicle technology • increase building efficiency (for plants and facilities) • take advantage of international emissions systems and regulations. Some transportation companies disclosed additional metrics related to their opportunities: • percent increase in fuel efficiency over time • anticipated increases in building efficiency due to investments • amount of investment in low-carbon technologies	Disclosures should focus on qualitative and quantitative assessments and potential impacts of the following: • financial risks around current plant and equipment, such as potential early write-offs of equipment and R&D investments or early phasing out of current products due to policy • constraints or shifts or the emergence of new technology • investments in research and development of new technologies and potential shifts in demand • for various types of transportation carriers • opportunities to use new technologies to address lower-emissions standards and increased fuel-efficiency requirements, including transport vehicles (cars, ships, planes, rail) that run on a range of traditional and alternative fuels. Transportation Group organizations should consider providing additional industry-specific metrics. Examples of potential metrics include sales weighted average fleet fuel economy by region and weight/number of people transported, Energy Efficiency Design Index (EEDI) for new ships, life cycle reporting of greenhouse gas emissions of transportation products (e.g., air, ship, rail, truck, auto).

SECTOR	DISCLOSURE IN COMPANIES' 2021 CDP REPORTS CITING THE FOLLOWING CLIMATE-RELATED OPPORTUNITIES	TCFD GUIDANCE FOR DISCLOSURE: ELEMENTS TO CONSIDER AND INCLUDE IN DISCLOSING RISKS AND OPPORTUNITIES
Materials and Buildings (in its comparison, C2ES included companies in the heavy industrial sector that produce materials and sectors with a large portfolio in the built environment since the TCFD guidance combines the two)	• provide, develop, and expand low-carbon products and services for customers • improve and innovate products and services through R&D • diversify business activities into low-carbon industries • support expansion of electrification • increased demand for materials for electrification, such as copper and nickel • increased demand for new chemical-based materials that enable greater decarbonization of other sectors (i.e., automotive). Some buildings, as well as some industrial, companies disclosed additional metrics related to their opportunities: • capital expenditures to improve energy efficiency	Disclosures should focus on qualitative and quantitative assessments and potential impacts of the following: • stricter constraints on emissions and/or pricing carbon emissions and related impact on costs • assess risks related to the increasing • frequency and severity of acute weather events or increasing water scarcity that impact their operating environment for the construction material and real estate sectors • opportunities for products (or services) that improve efficiency, reduce energy use, and support closed-loop product solutions. Materials and Buildings Group organizations should consider providing additional industry-specific metrics. Examples of potential metrics include building energy intensity by area; building water intensity (by occupants or square area); percent of fresh water withdrawn in regions with high or extremely high baseline water stress; and area of buildings, plants, or properties located in designated flood hazard areas.

INSIGHTS

Both companies' CDP disclosures and information shared from the project's interviews demonstrate that their disclosure of opportunities broadly align with the revised TCFD's sector-specific recommendations, which were released after C2ES conducted interviews in Summer 2021 and after companies' 2021 disclosures were published.

Generally, companies have framed their climate-related opportunities within one or more of the following parameters, according to short-term, medium-, and long-time horizons:

- clear, new market, or technological opportunities arising directly from a transition to a low-carbon economy, often due to increased customer and consumer demand
- opportunity to exceed regulatory requirements
- opportunities to outperform competitors on climate metrics, which may drive value in a low-carbon transition (e.g. building emissions intensity or vehicle emissions)
- opportunity to serve as an enabler of a low-carbon transition.

C2ES also observed that the following types of disclosure and/or metrics were generally not included and could be incorporated into companies' future disclosures:

- a view of the magnitude of their opportunities, including when they see the opportunities becoming substantial
- a fuller view of how the opportunities integrate within their broader strategic framework
- the relevance of opportunities under different climate scenarios, per the TCFD recommendations

- quantitative and/or qualitative metrics to align with the opportunities referenced in the TCFD recommendations, to the extent possible and practicable
- opportunities related to building climate resilience.[5]

RECOMMENDATIONS

In their disclosures, wherever possible, companies should provide context when describing how they are positioning themselves to benefit from climate-related opportunities. In doing so, companies who are transforming their operations and product or service offerings to succeed in a low-carbon economy can assist their investors and other key stakeholders understand how their climate-related investments compare to other investments across the entire company, and how broader market barriers and dynamics impact opportunities. Based on how some leading companies are reporting their climate-related opportunities compared to the guidance in the TCFD's 2021 *Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosure*, C2ES recommends the following measures to enhance disclosure of opportunities. These recommendations also align with specific TCFD *Recommendations* for non-financial industry sectors, as follows below. Additionally, C2ES provides a few nuances, building off the TCFD's recommendations, including that companies articulate the policies necessary for their industries to accelerate and adopt climate-related opportunities.

PROVIDE BROADER CONTEXT FOR COMPANIES' CLIMATE OPPORTUNITIES, INCLUDING INVESTMENTS IN LOW-CARBON SOLUTIONS

Where possible, companies should provide information on their climate-related opportunities contextualized across their own operations and externally for their sector, as well as in the context of the risks that they face. Companies should demonstrate how their opportunities not only create new revenue streams, but also how they meaningfully help the company pivot the business from high climate-related risks to opportunities where companies can benefit from a transition to a low-carbon economy. Examples of information that companies could disclose include: (1) the total percentage of a company's exposure to climate risk relative to its potential to benefit from climate opportunities (e.g., revenue or asset); and (2) the percentage of assets and/or product offerings dependent on fossil fuels versus those dependent on zero- or low- carbon fuels and the anticipated change over time, especially by 2030 and 2050 when many companies have set their net-zero targets. Of note, improving quantitative disclosures around information such as revenue, investment, capital deployment will likely require significant resources given much of companies' efforts could arguably be ones that are aligned with climate-related opportunities.

TO COMPLEMENT CONTEXTUALIZED DISCLOSURE, COMPANIES SHOULD ALSO REPORT CONSISTENTLY OVER TIME.

Context from TCFD

The TCFD's 2021 *Implementing the Recommendations* guidance include cross-industry, climate-related metrics[6] where "companies should **disclose the proportion of revenue, assets, or other business activities aligned with climate-related opportunities**. Using an amount or percentage, companies should disclose the proportion of revenue, assets, or business activities aligned with climate-related opportunities to provide insight into the position of organizations relative to their peers and allow users to understand likely transition pathways and potential changes in revenue and profitability over time. Regarding, **capital deployment, companies should disclose the amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities**. Using their reported currency, companies should disclose capital investment to give an indication of the extent to which long-term enterprise value might be affected."

According to the *Implementing the Recommendations* guidance, Appendix F, Fundamental Principles for Effective Disclosure,[7] "disclosures should be consistent over time to enable users to understand the development and/or evolution of the impact of climate-related issues on the organization's business."

PROVIDE COMPLETENESS AND RELEVANCE

Where possible, companies should provide a holistic view of how they are addressing their climate opportunities. Several of the participants in our study provided details on how they were positioning themselves to save costs, building market advantage by reducing emissions in operations and product lines, and partnering with stakeholders in new ventures. An integrated mapping, or description, of where companies are embracing multiple opportunities across their operations and services, outlining the greatest potential benefits, could provide a more complete picture of the extent to which companies are harnessing climate-related opportunities. Doing so can also enable better benchmarking across peer industries and assess the extent to which whole sectors are transitioning to a low-carbon future.

Context from TCFD

The TCFD's 2021 Implementing Recommendations provide cross sectoral guidance for non-financial companies in its Appendix F, Fundamental Principles for Effective Disclosure, which includes the following recommendations:[8]

- **Disclosures should present relevant information:** "The organization should provide information specific to the potential impact of climate-related risks and opportunities on its markets, businesses, corporate or investment strategy, financial statements, and future cash flows"
- **Disclosures should be specific and complete:** "An organization's reporting should provide a thorough overview of its exposure to potential climate-related impacts; the potential nature and size of such impacts; the organization's governance, strategy, processes for managing climate-related risks, and performance with respect to managing climate-related risks ***and opportunities***. To be sufficiently comprehensive, disclosures should contain historical and future-oriented information in order to allow users to evaluate their previous expectations relative to actual performance and assess possible future financial implications."
- **Disclosures should be comparable among organizations, within a sector, or portfolio:** "Disclosures should allow for meaningful comparisons of strategy, business activities, risks, and performance across organizations and within sectors and jurisdictions. The level of detail provided in disclosures should enable comparison and benchmarking of risks across sectors and at the portfolio level, where appropriate."

ASSESS OPPORTUNITIES AGAINST A 2 DEGREE C OR LOWER SCENARIO; WHERE POSSIBLE, SELECT A 1.5 DEGREE C SCENARIO

As companies conduct their own scenario analysis to identify risks and opportunities alike, the TCFD suggests they should articulate opportunities within the context of a 2 degree C or lower scenario to account for a low-carbon future that aligns with the goals of the Paris Agreement. However, the IPCC's Special Report on Global Warming of 1.5 degree C suggests that to avoid the worst effects of climate change, warming should be limited to 1.5 degree C, as opposed to well below 2 degree C. Though the policy requirements to meet a low-carbon transition are substantial, using a 1.5 degree C scenario could help inform a companies' own net-zero targets and can assist stakeholders in understanding the magnitude of company's opportunities in the most aggressive transition scenarios.

Context from TCFD

The TCFD's 2021 *Implementing the Recommendations* provides cross sectoral guidance for non-financial companies seeking to articulate risks and opportunities as part of a company's strategy: "Organizations with more than one billion U.S. dollar equivalent (USDE) in annual revenue should consider conducting more robust scenario analysis to assess the resilience of their strategies against a range of climate-related scenarios, *including a 2 degree C or lower scenario* and, where relevant to the organization, scenarios consistent with increased physical climate-related risks. Organizations should consider discussing:

- where they believe their strategies may be affected by climate-related risks and opportunities
- how their strategies might change to address such potential risks and opportunities
- the potential impact of climate-related issues on financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities)
- the climate-related scenarios and associated time horizon(s) considered."

HIGHLIGHT POLICIES NEEDED TO ADVANCE CLIMATE OPPORTUNITIES FOR A NET-ZERO, LOW-CARBON FUTURE

Building on the TCFD's recommendations for including parameters, assumptions, and choices in how companies disclose climate-related risks and opportunities, C2ES recommends that companies go one step further to include in their disclosures a brief narrative explaining existing constraints or limitations on the viability of making greater investments in low-carbon technologies and/or practices. Companies should explain where and why policy measures, including market instruments and incentives, are needed to help their sector advance toward a net-zero future. In C2ES' experience engaging large companies—including those in hard-to-abate sectors where climate technologies and solutions are not yet cost effective to be scalable, as well as those in sectors with readily available solutions that still need substantial deployment—many recognize the need for policy interventions if they are to achieve their own net-zero targets. Helping investors and other key stakeholders understand companies' perspectives on where policy can unlock new opportunities could help build support for ambitious climate policies across a broader constituency.

In discussing the implications of different assumptions, C2ES also recommends that companies provide additional context for what policy measures are needed for assumptions such as energy deployment, technology pathways, and other related market changes to hold true.

Context from TCFD

In assessing the climate-related risks and opportunities against their strategies, the TCFD's 2021 *Implementing the Recommendations* states that "organizations should consider discussing the implications of different policy assumptions, macroeconomic trends, energy pathways, and technology assumptions used in publicly available climate-related scenarios to assess the resilience of their strategies. For the climate-related scenarios used, organizations should consider providing information on the following factors to allow investors and others to understand how conclusions were drawn from scenario analysis:

- Critical input parameters, assumptions, and analytical choices for the climate-related scenarios used, particularly as they relate to key areas such as policy assumptions, energy deployment pathways, technology pathways, and related timing assumptions.
- Potential qualitative or quantitative financial implications of the climate-related scenarios, if any."

ALIGN DISCLOSURE OF CLIMATE-RELATED OPPORTUNITIES WITH TRANSITION PLANS

Disclosure of climate-related opportunities and information included in transition plans to a low-carbon future are intertwined and should be aligned and congruent, especially when disclosing in different contexts and for different audiences.

Context from TCFD

In the TCFD's 2021 *Guidance on Metrics, Targets, and Transition Plans,*[9] "the Task Force encourages organizations to disclose key information from their transition plans as part of their disclosure of climate-related financial information, including the following: current GHG emissions performance; impact on businesses, strategy, and financial planning from a low-carbon transition; and actions and activities to support transition, including GHG emissions reduction targets and planned changes to businesses and strategy."

CONCLUSION

As companies become more experienced with disclosing their climate-related risks and opportunities, they will be better positioned to respond to growing interest from investors, regulators, and the public to understand their role in a transition to a low-carbon economy. Disclosure of climate-related opportunities can provide greater clarity on how companies address their climate-related risks and adopt new approaches or ventures that can improve or benefit from decarbonization and resilience. Such information can also to be used to build or reflect forthcoming carbon transition plans, the next frontier of climate disclosure.

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ENDNOTES

1 "How CDP is aligned to the TCFD," CDP, last accessed February 22, 2022, *https://www.cdp.net/en/guidance/how-cdp-is-aligned-to-the-tcfd*

2 In CDP's 2021 climate change questionnaire, Section C2.4 included several questions on how companies were identifying, assessing and responding to their climate-related opportunities.

3 Task Force on Climate-related Financial Disclosures, Guidance on Metrics, Targets, and Transition Plans (TCFD, 2021), Page 43, *https://www.fsb.org/wp-content/uploads/P141021-2.pdf*

4 Task Force on Climate-related Financial Disclosures, Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD, 2021), Page 56, *https://www.fsb.org/wp-content/uploads/P141021-4.pdf*

5 While some companies provided information on how they are building their resilience to climate risks, more options exist to disclose on how improving resilience to climate change (especially the physical risks) relates to opportunities.

6 Task Force on Climate-related Financial Disclosures, Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD, 2021), Page 79, *https://www.fsb.org/wp-content/uploads/P141021-4.pdf*

7 Task Force on Climate-related Financial Disclosures, Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD, 2021), Page 70, *https://www.fsb.org/wp-content/uploads/P141021-4.pdf*

8 Task Force on Climate-related Financial Disclosures, Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD, 2021), Page 70, *https://www.fsb.org/wp-content/uploads/P141021-4.pdf*

9 Task Force on Climate-related Financial Disclosures, Guidance on Metrics, Targets, and Transition Plans (TCFD, 2021), Page 43, *https://www.fsb.org/wp-content/uploads/P141021-2.pdf*

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The Center for Climate and Energy Solutions (C2ES) is an independent, nonpartisan, nonprofit organization working to forge practical solutions to climate change. We advance strong policy and action to reduce greenhouse gas emissions, promote clean energy, and strengthen resilience to climate impacts.

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