

Guidance for Utilizing Climate-related Information to Promote Green Investment 2.0 (Green Investment Guidance 2.0)

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TCFD Consortium



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A. Purpose of This Guidance

More than four years have passed since the TCFD Recommendations were published. Since then, disclosure of climate-related information based on the recommendations has progressed in both quantity and quality. There is a growing number of organizations that support the TCFD recommendations, with more than 2,500 organizations worldwide, of which 504 are from Japan (as of September 27, 2021). In the future, it is expected that investors and other stakeholders (including asset owners, asset managers, banks, insurers, and other users of the information: hereinafter, referred to as “investors and other stakeholders”) will appropriately evaluate and utilize information disclosed by companies for their investment and loan decisions.

Disclosure based on the TCFD recommendations is progressing, and it is expected that this will foster investment to support corporate activities to address climate change, (green investment) using the information disclosed. Furthermore, many countries and companies have announced the goal of achieving carbon neutrality by the middle of this century, leading to increased emphasis on transition and innovation. This has brought about a change in the disclosure of companies that support the TCFD recommendations as well as in the attitude of investors and other stakeholders in their financing activities. As a result, engagement between companies and investors on climate change issues has become more important than ever. Under these circumstances, it would be useful to provide perspectives specific to investors and other stakeholders in evaluating and utilizing the disclosed information for the purpose of facilitating proactive disclosure by companies.

In that context, in order to facilitate green investment, this Guidance provides commentary on perspectives needed by investors and other stakeholders when understanding the information disclosed based on the TCFD recommendations. To help investors and other stakeholders better understand information disclosed, this Guidance also provides examples of investment practices utilizing that information as well as viewpoints on assessments that recognize industry-specific situations while considering the alignment between the TCFD Recommendations and discussions about current state of corporate disclosure such as integrated reporting.

B. Basic Approach

In light of the national “Long-term Strategy under the Paris Agreement” decided by Japan’s Cabinet in June 2019, this Guidance aims to realize a “virtuous cycle of environment and growth,” based on the following three perspectives.

The first perspective is to promote constructive dialogue (engagement) with companies, leading to enhanced corporate value. As a practice of investors and other stakeholders, it is more important to be engaged in dialogue with companies to facilitate their climate actions than to simply divest based on superficial criteria; engagement can lead to the enhancement of corporate value through improved efforts, thus increasing opportunities for investment.

The second perspective is to identify and assess the risks and opportunities posed by climate change. Climate-related information includes uncertainty, and the implications of climate change vary by industry. Considering their preconditions and characteristics, investors and other stakeholders will be better able to implement well-balanced corporate evaluation between risks and opportunities if they not only appropriately identify and assess risks but also evaluate their potentials for gaining opportunities through climate actions.

The third perspective is to promote innovation for decarbonization, and to create mechanisms for appropriate flow of funds. To promote climate action, funding needs to be provided appropriately for various innovations needed for companies to make the transition to a decarbonized society. If climate risks are being addressed appropriately, there could be greater opportunities for transition in industries that have higher emissions and countries and regions that have lower carbon efficiency.

C. Background on the revision of the Guidance

The revision of this guidance takes into account 3 major developments that have occurred in the approximately 2 years since the first edition of this Guidance was published in October 2019.

The first is the progress on social issues. Currently, achieving carbon neutrality is becoming a goal for many countries and companies [see Addendum A]. There are various approaches to achieve this goal, but it is a very far-reaching goal compared to the present situation, and it requires transition [see Addendum B] of corporate activities on a massive scale, as well as significant technological progress (innovation). Therefore, it has become more important for investors and other stakeholders to understand climate-related information of companies and engage with them, resulting in a need to improve the content of disclosure.

The second is progress on financial action. Efforts to reduce emissions from financial portfolios including indirect financing are gaining momentum through initiatives targeting international financial institutions related to climate change [see Addendum C]. In Japan in particular, indirect financing plays an important role in corporate financing, and banks and

companies maintain close and long-term relationship. Therefore, in order to reduce portfolio-wide emissions, it is necessary not only to understand information disclosed by borrowers, but also to take measures to encourage them to respond to climate change through long-term engagement.

The third is progress in corporate disclosure. In Japan, the revision of the Corporate Governance Code in June 2021 made TCFD disclosure virtually mandatory for companies to be listed on the Prime Market. The legislations on TCFD-compliant disclosure, particularly in Europe, has led to a marked increase in the number of corporate disclosure in Japan and abroad¹. In addition, more and more companies are using internal carbon pricing [see Addendum E] for quantifying future risks and opportunities. Also, as corporate contributions to society as a whole are being questioned, the importance of Scope 3 emissions, which provides information on contribution to reduction through the entire supply chain, is increasing. Information pertaining to these aspects will lead to better understanding by investors and other stakeholders. At the same time, investors and other stakeholders are also encouraged to consider such information taking into account its materiality in relation to their corporate activities.

Based on the above, this Guidance is revised as a two-part structure consisting of main text and addendums. While the main text reflects progress since the publication of the first edition of the Guidance maintaining its original structure, the addendums discuss topics and initiatives considered to be important for investors and other stakeholders to understand disclosed information. As described later, the addendums will be revised taking into account the latest situation.

D. Target Audience

The main target audience for this Guidance is investors and other stakeholders that utilize the information disclosed by companies for investment and lending decisions. The Guidance is also expected to assist them in their investment and lending decisions through their engagement with borrowers and investees, and the development of green financial products. Since it is necessary for companies to disclose information in ways that provide a common basis for discussions in order for investors and other stakeholders to implement effective engagement and make appropriate investment decisions, this Guidance is also expected to help companies better understand the perspective of investors and other stakeholders.

¹ In recent years, there have been active movements to establish standards for information disclosure. The International Sustainability Standards Board (ISSB) at the IFRS Foundation is developing standards that also incorporates the TCFD recommendations. In Europe, the Corporate Sustainability Reporting Directive (CSRD Directive) has been proposed. The proposed Directive concerns the mandatory disclosure of sustainability-related information, and requires assurance by an independent third party to ensure the reliability of the information.

E. Context of this Guidance

The ultimate purpose of this Guidance is to create mechanisms to smoothly provide funding to promote companies' efforts that facilitate the transition to a decarbonized society, thus promoting the virtuous cycle of environment and growth, by facilitating the appropriate evaluation of those efforts - through dialogue between companies and investors and other stakeholders - in terms of responding to climate-related risks as well as gaining opportunities through transition and innovation. As a starting point, this Guidance provides perspectives needed by investors and other stakeholders to interpret information disclosed by companies based on the TCFD recommendations and make their investment decisions. Therefore, it does not call for any disclosure by companies on top of the disclosure according to the TCFD recommendations, but intends to support companies that actively promote their climate actions through efficient dialogues also giving consideration to additional work required to provide such disclosure.

This Guidance and "Guidance on Climate-related Financial Disclosures 2.0" (TCFD Guidance 2.0) originally prepared by Japan's Ministry of Economy, Trade and Industry in 2018 and revised by the TCFD Consortium in 2020 are mutually complementary, with the former being for investors and other stakeholders who will use the information disclosed and the latter for companies engaging in disclosure. The TCFD Guidance 2.0 will be further upgraded and revised through future discussions within the TCFD Consortium.

This Guidance has been developed based on inputs from the members of the TCFD Consortium to further promote "green investment". Inputs and topics that have not been addressed this time will be reflected in future revisions of this Guidance along with future developments in green investment.

Chapter 2 Structure of This Guidance

This Guidance has been prepared with an emphasis on the use of insights accumulated to date through discussions on existing corporate disclosure frameworks. This section summarizes some key points in this Guidance by comparing the items recommended for disclosure by the TCFD with the International Integrated Reporting Council (IIRC) framework – a typical framework being used by companies, investors and other stakeholders around the world - and the “Guidance for Integrated Corporate Disclosure and Company-Investor Dialogue for Collaborative Value Creation”(Guidance for Collaborative Value Creation), which has been discussed recently mainly by Japanese practitioners (Figure 1)².

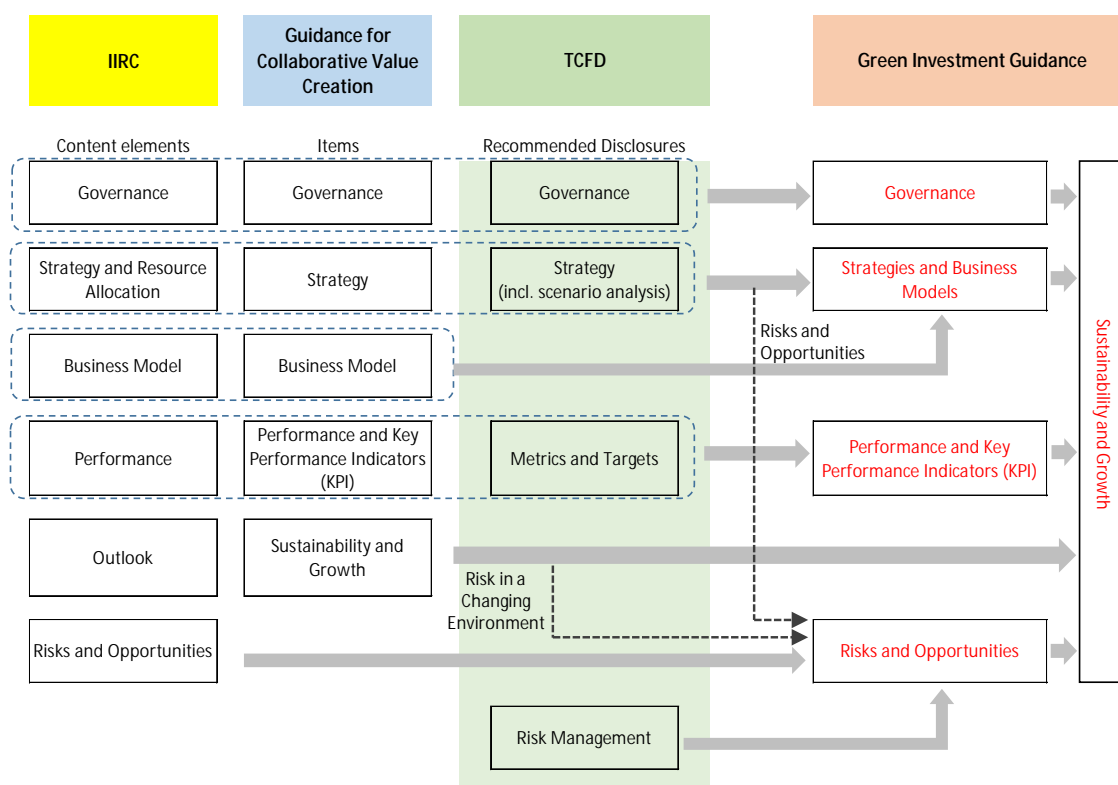


Figure 1 Relationship between this Guidance and Other Frameworks

The comparison shown in Figure 1 leads to the conclusion that all the frameworks have similar content for Governance as well as Metrics and Targets, suggesting that disclosure based on the TCFD recommendations can be considered and evaluated as an extension of past discussions relating to integrated reporting.

Strategy is also common in all the frameworks as well, but the TCFD recommendations differ

² On June 9, 2021, the International Integrated Reporting Council (IIRC) merged with the Sustainability Accounting Standards Board (SASB) to form the Value Reporting Foundation (VRF). The literature referred to as “IIRC” in this Guidance is the <IR> Framework.

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significantly from the other frameworks in that they recommend “scenario analysis” to develop Strategy, given the uncertainties relating to the medium- to long-term impacts of climate change. To understand the information that has been disclosed based on recommendation on Strategy in the TCFD recommendations, a deeper understanding of scenario analysis — which is a tool to identify potential influence of the climate change on business — and the appropriate evaluation of the results of the analysis will lead to a better understanding and evaluation of business models, which consist the basis of Strategy. Based on this thinking, therefore, this Guidance includes a section on Strategies and Business Models.

Risks and Opportunities, a content element in the IIRC framework, is addressed as a part of Strategy in the TCFD Recommendations. As stated in Chapter 1, in order to realize the “virtuous cycle of environment and growth,” it is important for companies to disclose both such risks and opportunities, and for investors and other stakeholders to incorporate them into their investment evaluation. Therefore, in this Guidance, Risks and Opportunities are treated as one distinct element. Under Risk Management, which is one of the core elements of the TCFD recommendations, companies are encouraged to explain their internal processes to identify, assess and manage risks. In this Guidance, Risk Management is dealt with under Risks and Opportunities as one of the perspectives for investors and other stakeholders to judge the adequacy of a company’s risk awareness.

Moreover, as for Sustainability and Growth, the “Guidance for Collaborative Value Creation” states: “For companies to grow their corporate value in a sustainable manner, it is essential not only that they have clear business models but also that their business models are sustainable and have growth potential,” then explains on the importance of being aware of ESG, maintaining relationship with key stakeholders, and disclosing information and having dialogue about risks relating to the change of business environment. This element of “Guidance for Collaborative Value Creation” is not explicitly included in disclosure under the TCFD recommendations, but investors and other stakeholders can ultimately determine whether companies satisfy the general concept of Sustainability and Growth, by checking each item of this Guidance. In other words, investors and other stakeholders can assess whether a company can realize its sustainability and growth in terms of climate by identifying Risks and Opportunities to understand the company’s long-term Strategy, confirming its Performance and KPIs, and checking to see if the company’s Governance is functioning to those ends.

Based on the above, Chapter 3 of this Guidance builds upon previous discussions in terms of four elements (1. Governance, 2. Strategies and Business Models, 3. Risks and Opportunities, and 4. Performance and KPIs) to explain what is needed from the perspective of investors and other stakeholders to look for sustainability and growth in the information disclosed by companies.

Upon revising, chapter 4 (Addendums) is newly added, dividing this Guidance into two parts: main text and addendums (Figure 2). The former provides commentaries on the discussions on corporate and investor engagement on climate change in Japan, as in the first edition of

the Guidance. The revisions reflect the key viewpoints on progressing the “virtuous cycle of environment and growth” between companies and investors which became apparent since the publication of the first edition.

The addendums focus on themes that still needs to be elaborated to be taken up on the main text. Specifically, themes such as carbon pricing and transition finance were selected due to its growing importance in understanding disclosed information by investors and other stakeholders. The addendums are included with an objective to deepen the mutual understanding of issues from the viewpoint of companies and investors and other stakeholders. Such viewpoints and issues, which are summarized at the beginning of each topic, is expected to change over time. Therefore, it is envisaged that revisions will be made according to the latest development in advance of any revisions in the main text.

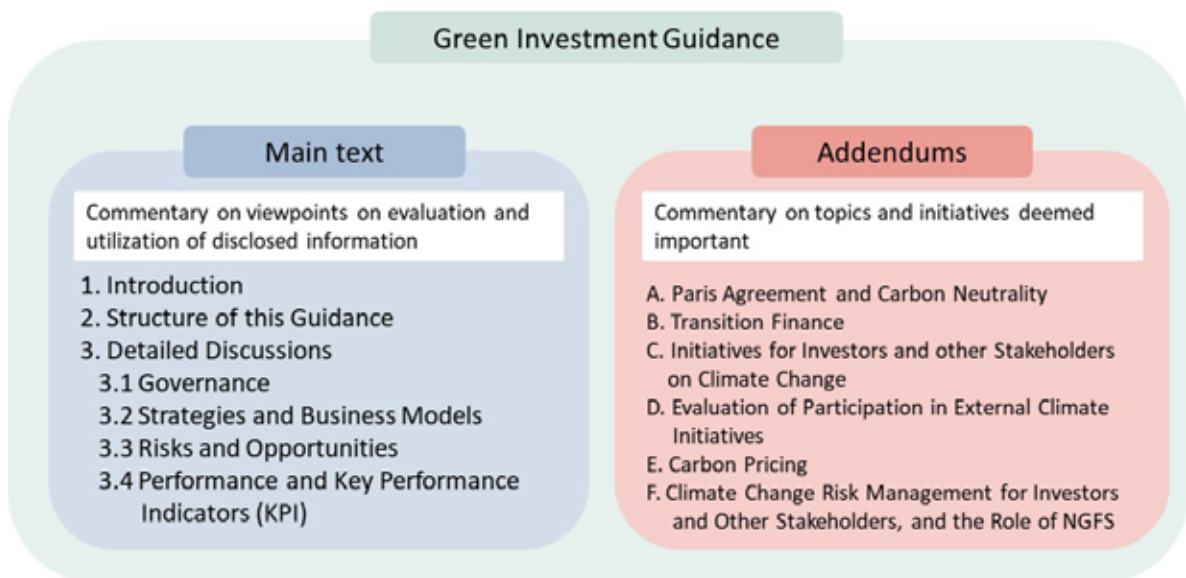


Figure 2 Structure of this Guidance

A. Governance

It is important for investors and other stakeholders to consider a company's organizational structure in terms of governance to address climate change, and also whether it is actually functional and effective to that end.

Governance, whether it relates to climate change or otherwise, is a critical factor for investors and other stakeholders to consider in building confidence and making decisions to invest in a company³. IIRC expects integrated reports to include “how the organization's governance structure supports its ability to create value in the short, medium, and long term,” and the TCFD recommendations state that understanding the corporate board of directors' oversight of climate-related issues and its role in assessing and managing climate-related risks and opportunities can help investors and other stakeholders evaluate the adequacy of company's governance⁴. In other words, as for governance, in addition to having well-structured organizational systems in place, those systems need to be functional and effective in terms of the roles of management.

Investors and other stakeholders identify the organizational structures and functions of corporate boards as well as environmental and sustainability committees, which include the management, and verify that board oversight of climate-related governance is being effectively implemented, or that the equivalent to board oversight is being ensured through reports to the boards from the relevant committees. This verification enables judgment of how the company is considering climate change and how it is reflecting that consideration in corporate management.

To this end, investors and other stakeholders are encouraged to understand the management structures related to governance, and also to verify their specific roles of each organizations and the management, as well as processes to reflect their deliberations in management. Dialogue with the company will provide the company a chance to improve its own governance, leading to the enhancement of corporate value, which will also be beneficial for investors and other stakeholders in the long term.

Examples of verification on governance through engagement by investors and other stakeholders are provided below.

³ Guidance for Collaborative Value Creation, p. 30: “6.01. It is imperative for investors that companies steadily execute the strategies that underpin their business models and possess appropriately functioning governance systems that exert discipline to grow corporate value in a sustainable manner. By confirming the functioning of corporate governance, investors can trust and invest in companies with confidence.”

⁴ TCFD Final Report, p. 19: “[investors and other stakeholders] are interested in understanding the role an organization's board plays in overseeing climate-related issues as well as management's role in assessing and managing those issues. Such information supports evaluations of whether climate-related issues receive appropriate board and management attention.”

Case 1 Verification of top management commitment

Investor A checks with the CEO of the investee company to identify any issues with governance related to climate change: for example, whether or not climate related issues are being addressed above the level of the company's environment-related departments. Through dialogue, the Investor checks whether the CEO provides specific instructions regarding policies indicated in the company's integrated report and other documents, and whether the CEO is committed to KPIs and strategies necessary for addressing issues.

Case 2 Verification of effectiveness

Investor B engages with different counterparts of a company depending on the topic of interest, seeking dialogue with the CEO to check the company's commitment to climate-related issues, but going to the director(s) responsible for specific implementation systems and their effectiveness. Through such engagement, the attitude of the whole company including management is changed, leading to the creation of an appropriate governance system, such as building climate-related organizational systems or bringing about discussions in board meetings.

Case 3 Verification of processes

For companies that have environmental committees, etc. attended by corporate management, Investor C checks how the decisions by the relevant committees are subsequently circulated within the company and put into practice. Through engagement, the Investor checks whether the governance is functioning by identifying the content of the deliberations at the committees and their subsequent reflection into management strategy, as well as the process of reporting to the board.

Case 4 Verification of management commitment

Investor D values the extent to which climate-related information is reflected in its management strategy. For this reason, when evaluating a company's ESG strategy, the Investor places emphasis on information on how the committee in charge of ESG and management work together.

Case 5 Evaluation of carbon neutral commitments

Investor E evaluates how the achievement of the stated carbon neutrality goal is governed, whether the management is committed, and whether there is a KPI such as an intermediate goal.

B. Strategies and Business Models

It is more important for investors and other stakeholders to check and assess the alignment between the decision-making processes that led to a company's strategies and the scenarios used as well as their appropriateness within the industry and the company's responses to the strategies it has developed, than the accuracy of scenario data and analytical results provided by the company.

For investors and other stakeholders, a company's business model is the most important blueprint in evaluating its sustainable profitability⁵. The TCFD recommendations state that strategy refers to an organization's desired future state, and establishes a foundation against which it can monitor and measure its progress in reaching that desired state. Strategy refers to a foundation for a company to set its medium- to long-term targets and manage its progress, in order to develop a business model that can address climate change⁶.

In order to address climate change, companies need to develop their strategies to ensure their sustainability with a medium- to long-term perspective. The TCFD recommendations encourage implementation of scenario analysis in developing strategies. It is important for investors and other stakeholders to understand and evaluate the persuasiveness and appropriateness of the scenarios as tools to upgrade a company's current business model and to develop strategies to enhance future corporate value and reduce risks in addressing climate change. Investors and other stakeholders are encouraged to consider disclosure related to scenario analysis not necessarily as the company's commitment based on the future forecast, but as a narrative for the company to consider a path toward its future business model based on its strategy,⁷ and to verify the context of the narrative through engagement. The "Guidance on Scenario Analysis for Non-Financial Companies" published by the TCFD lists the following as correct and incorrect understanding on scenario analysis (Table 1).

⁵ Guidance for Collaborative Value Creation, p. 9, 2.03: "Therefore, the business model is the most important blueprint for investors in evaluating the company's sustainable profitability."

⁶ IIRC, p.28-31: "... business model is its system of transforming inputs, through its business activities, into outputs and outcomes that aims to fulfill the organization's strategic purposes and create value over the short, medium, and long term", "... how its strategy and resource allocation plans relate to the organization's business model and ...are influenced by / respond to the external environment and the identified risks and opportunities"

⁷ TCFD Final Report, p. 25: "Instead, scenarios provide a way for organizations to consider how the future might look if certain trends continue or certain conditions are met."

Table 1 Comparison of key elements and misconceptions of scenarios

Scenarios Are Not:	Scenarios Are:
Predictions	Descriptions of alternative plausible futures
Variations of a single base case	Significantly different views of the future
Snapshots of endpoints	Movies of the evolving dynamics of the future
Generalized views of feared or desired futures	Specific decision-focused views of the future
Products of outside futurists	Products of management insight/perceptions
Normative	Exploratory

Adapted from Table C1, Figure C2 (p.16) and explanation in p.17 of TCFD, 2020, Guidance on Scenario Analysis for Non-Financial Companies

To this end, it is more important for investors and other stakeholders to check and assess the alignment between the decision-making processes that led to a company's strategies and the scenarios used as well as their appropriateness within the industry and the company's responses to the strategies it has developed, than the accuracy of scenario data and analytical results provided by the company⁸. The TCFD recommendations, anticipating that many companies will conduct qualitative scenario analysis, state that organizations with more significant exposure should undertake more rigorous qualitative or quantitative analysis⁹. However, given the current situation that the disclosure and use of such climate-related scenario analysis is in their infancy, investors and other stakeholders are encouraged to deepen their understanding of the company's strategies and business models through engagement¹⁰.

Investors and other stakeholders will be able to better understand the strategies and business models of a target company by identifying the following about the scenarios disclosed by the company:

- ÿ Context of the relevant scenarios selected and developed, and any assumptions behind the scenarios;
- ÿ Alignment of a company's underlying future vision with its business model;
- ÿ Expected timeframe and verification methods; and
- ÿ Risks and opportunities recognized through scenario analysis and processes to incorporate them into the company's strategy and financial plans.

In addition, such engagement is expected to lead companies to identify additional risks and opportunities related to climate change and review their strategies and business models,

⁸ TCFD Final Report, p. 25: "Scenarios are hypothetical constructs and not designed to deliver precise outcomes or forecasts."

⁹ TCFD Final Report, p. 27: "... for many organizations, scenario analysis is or would be a largely 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 with respect to key drivers and trends that affect their operations."

¹⁰ The importance of scope 3 emissions and contribution to emission reductions as a theme to understand strategies and business models is growing. This is discussed in chapter 3.4 "Performance and Key Performance Indicators (KPIs)"

which could lead to further enhancement of corporate value.

Meanwhile, investors and other stakeholders should note the following to understand the scenario analysis.

- Y In some cases, disclosures may be limited, and not all of the scenarios that have been used by that company for decision-making in strategy development may be disclosed¹¹.
- Y Climate-related information, such as IPCC scenarios and other existing scenarios,¹² inevitably includes uncertainty.
- Y One should not expect to see disclosures based on a unified scenario, because different companies face different national policies and business conditions, and diverse scenarios could be disclosed including those independently developed by a company¹³.

The most crucial issue for investors and other stakeholders in evaluating a company's strategies and business models is whether the scenarios are being utilized appropriately to derive persuasive and reasonable results of analysis, or narratives, and whether the companies have taken the necessary measures aligned with the narratives, rather than which scenarios have been used.

In particular, in the case of industries that do not currently have alternative technologies to achieve decarbonization and are aiming for "carbon neutrality", how they will make the transition will be an important factor in climate change measures. It is expected that the importance of promoting disclosure of information on such transition and to deepen understanding of it will grow [See Addendum B].

Examples of evaluation by investors and other stakeholders on the relationship of scenario analysis and strategies and business models of companies are provided below.

Case 1	Evaluation of strategies based on a long-term vision
Investor A requires a company to describe its long-term vision under the envisioned future market environment. As additional points of evaluation, it also looks at the extent to which management takes into consideration substantial uncertainty of the future market environment, as well as whether its narrative of value creation is persuasive and logical.	

¹¹ Since consideration of scenarios often includes the latest information related to the key points of a company's latest technology development strategy, companies do not always disclose all scenarios.

¹² In many cases, scenarios referred to include greenhouse gas concentration and socio-economic pathway scenarios by the Intergovernmental Panel on Climate Change (IPCC) and scenarios by the International Energy Agency (IEA), Network for Greening the Financial System (NGFS: see Addendum F) etc.

¹³ Note that TCFD encourages organizations to describe the resilience of their strategies based on consideration of various climate scenarios, including scenarios with warming of less than 2°C. It should also be noted that future envisaged in scenarios aimed at achieving carbon neutrality and stabilizing temperature increases to 1.5 °C by mid-century is diverse (see Addendum A).

Case 2 Scenario assessment, Example 1

Investor B is aware that scenarios should be understood as narratives based on multiple assumptions. What is important is not credibility of the results of analysis, but the responses to the expected futures, so in evaluation, it checks whether the companies have taken such measures.

Case 3 Scenario assessment, Example 2

Investor C focuses on processes toward scenario disclosure, to see whether they are reasonable or not. It realizes that long-term predictions for 2050, for example, are difficult, and does not require corporate commitments based on such predictions. It expects a company to show what it will be like in a society envisaged in its scenarios.

Case 4 Assessment of a company's own scenarios and continuous improvement through engagement

Investor D is aware that the corporate vision presented by a company is the result of its analysis using multiple scenarios. However, companies that focus on "complying" with disclosure requirements by presenting tidy narratives based on a given template or guidelines tend to end up with similar outcomes. Thus, Investor D gives a more favorable evaluation to companies that focus on "explaining" their own unique vision that is aligned with their corporate strategies.

While quantitative estimation of transition risks and opportunities using internal carbon pricing is becoming common, it is desirable for investors and other stakeholders to consider their use after understanding the assumptions and basis of the outcomes.

Carbon pricing refers to economic method of putting a price on greenhouse gas emissions and altering the behavior of the emitters. This includes policy instruments such as carbon taxes and emissions trading, as well as internal carbon pricing (ICP), which assumes a certain price internally. Carbon pricing as a policy measure is currently under discussion in Japan [see Addendum E]. However, the ICP can be useful for estimating the impact on corporate finance of not only these policy measures but also for considering various measures such as capital investment. The TCFD Recommendations state that "where relevant, organizations should provide their internal carbon prices"¹⁴.

Various scenarios including carbon neutrality have been published by institutions such as the International Energy Agency (IEA), and carbon pricing as a basis of their calculation is also indicated. ICPs used by companies may apply values shown in these documents, but it is desirable for investors and other stakeholders to grasp the assumptions and basis of the values and to use the information after understanding how the future image assumed by the companies relates to their business plans. In other words, ICP is also seen as a valuable engagement opportunity for investors and other stakeholders to deepen their understanding of strategies and business models.

Examples of evaluation by investors and other stakeholders on the ICP are provided below.

Case 1 Evaluation of ICP 1

Investor A looks into the relationship between ICP and the company's management strategy, long-term environmental vision and goal setting through engagement, while confirming the pricing process and how ICP is used in the company.

Case 2 Evaluation of ICP 2

Investor B uses ICP to confirm whether decarbonization is taken into account in facilities investment of companies to which it invests. The Investor considers that ICP is a form of corporate stress test, and uses the information in understanding how companies address decarbonization.

¹⁴ TCFD, p.9 and TCFD, 2021. Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans

Case 3 Quantitative analysis of ICP

Investor C conducts financial impact analysis (transition risk analysis) incorporating carbon prices in its ESG scoring, in addition to evaluating the utilization of ICP and carbon credits. The Investor evaluates disclosed information with respect to application of ICP, its pricing, as well as contribution to emission reductions and carbon credits. In addition, transition risk is analyzed by multiplying the Scope 1, 2 and 3 emissions disclosed by the company by the carbon price established in-house.

Case 4 Measurement of portfolio value using CVaR

Investor D quantifies the impact of climate change to its portfolio through the CVaR¹⁵ method which measures portfolio value of investments and loans by incorporating carbon pricing to transition and physical risks as well as to technological opportunities.

¹⁵ CVaR (Climate Value-at-Risk) refers to a method which calculates the present value of cost and profits from climate change, and analyzes how climate change affects the future corporate values.

C. Risks and Opportunities

It is important for investors and other stakeholders to have a balanced evaluation of a company's risks and opportunities, by understanding a company's efforts to address risks, while also actively evaluating the potential opportunities of climate actions.

Risks and opportunities caused by climate change could significantly influence a company's business model. The TCFD recommendations, therefore, encourage companies to disclose information on processes used to identify climate-related risks and opportunities as well as their influence on business, strategy, and financial planning¹⁶. As for risks, TCFD recommendations encourage disclosure of specific processes in which the companies identify, assess and manage the risks, and whether they are incorporated into their organizational risk management processes¹⁷. A "Risk Management" disclosure in the TCFD recommendations is interpreted as a disclosure of processes for identifying, assessing, and managing climate-related risks. The financial impact of risks identified as a result of "Risk Management" is classified into the items disclosed in "Strategy," and the organizational structure of the supervision/implementation of risk management in the management of the entire organization is classified into the items disclosed in "Governance"¹⁸. IIRC also encourages this disclosure: "What are the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term, and how is the organization dealing with them."¹⁹ Investors and other stakeholders, therefore, would be able to appropriately evaluate the impacts of climate change on a company's business model by understanding how it identifies and manages climate-related risks and how it takes advantage of opportunities.

Investors and other stakeholders are able to make investment decisions on the basis of ascertaining whether or not a company has secured the ability to create value in the medium to long term, by understanding the company's efforts to address risks and opportunities as well as its operational systems, organizational arrangements, and operational conditions relating to monitoring. Therefore, it is important for investors and other stakeholders to ask a company to appropriately identify, manage and disclose risks, and to engage in dialogue with the company regarding their impacts on corporate value. Meanwhile, from the perspective of gaining return on investment to a company that undertakes climate actions, investors and other stakeholders are encouraged to have a balanced evaluation of a company's risks and opportunities by also actively evaluating the potential opportunities of climate actions. The TCFD recommendations have introduced two types of climate-related risks: those related to transition to a low-carbon economy (transition risks) and those related to the physical impacts

¹⁶ TCFD Final Report, p. 14

¹⁷ TCFD Final Report, p. 14

¹⁸ TCFD Guidance 2.0, p.55

¹⁹ IIRC, p. 27

of climate change (physical risks). Transition risks include policy and legal risk, technology risk, market risk, and reputation risk, while physical risks include acute risk (e.g., increase of extreme weather events) and chronic risk (e.g., sea level rise)²⁰.

The TCFD recommendations also refer to resource efficiency, adoption of low-emission energy sources, and the development of new products and services, etc., as climate-related opportunities²¹. Opportunities through efficient use of resources and low-emission energy sources include CO₂ recycling and those using innovative technologies (e.g., CCUS²² or carbon recycling, and hydrogen and fuel cells). Opportunities from development of new products and services include those that would contribute to reducing risks of other companies from the lifecycle perspective through their value chains (e.g., supply of highly-efficient equipment and components) and those that would contribute to climate adaptation (e.g., technologies to reduce the impacts of extreme weather events, etc.).

Examples of evaluation by investors and other stakeholders on risks and opportunities are provided below.

Case 1 Evaluation of climate-related opportunities

Although many companies are concerned about a possible drop in their share prices due to disclosure of risk-related information, Investor A assesses not only risks but also opportunities from good practices implemented by companies. It understands that balance between risks and opportunities is important since such efforts lead to the enhancement of corporate value.

Case 2 Positive evaluation for risk information disclosure

Investor B positively evaluates companies that disclose their risk information. Although many companies are concerned with negative impacts of risk information disclosure, companies demonstrating in detail that they have properly identified and managed their risks can provide investors with more sense of security than those not doing so, when compared within the same industry.

Case 3 Facilitation of proactive disclosure of opportunities through engagement

Investor C is engaging not only with manufacturers of final products but also with those providing technologies and components that support the final products, to discuss their future revenue opportunities and social innovation opportunities. It has the view that enhanced corporate value will result if investors discover such opportunities and encourage their active disclosure.

²⁰ An example to reduce physical risks by companies is impact assessment of the climate change to address adverse effect to their business activities utilizing publicly provided natural disaster information (hazard maps etc.).

²¹ TCFD Final Report, p. 6

²² Carbon capture, utilization and storage technologies

Case 4 Corporate engagement to address risks

Investor D communicates to the management during its continuous dialogue process on its expectation that the company discloses how it addresses the change in business environment caused by transition to a low carbon / decarbonized society as well as management strategy on this issue. In addition, the Investor also pointed out that, as a global company, proactive disclosure and third-party evaluation can contribute to making a difference. This has led to a marked improvement in the quantity and quality of disclosure.

Case 5 Evaluation of opportunities through climate actions by companies seeking to reduce environmental impacts

Investor E not only assesses the environmental burdens of corporate activities such as GHG emissions from its business operations, but also positively evaluates climate actions by the company such as their R&D efforts for CO₂ capture and reuse (carbon recycling). For companies where increased commitment to address climate change has been confirmed, the Investor has advised on disclosure on the value of technologies contributing to transition as well as its competitiveness.

Case 6 Evaluation of competitive advantage

Investor F is of the view that, in addition to description of products and initiatives, description of their competitive advantage is necessary, and is promoting discussion of emphasizing patents regarding decarbonization and reduction of environmental burden. In relation to management, the Investor proposes that a more in-depth discussion is possible through disclosure on formulation and development of management and corporate strategies utilizing intellectual property.

It is important for investors and other stakeholders to recognize the importance of a company's efforts toward innovation as a climate action, and to positively evaluate the relationship between innovation and the company's long-term strategies, as well as organizational structure to promote innovation.

Innovation through efforts such as technology development, R&D and alliances is an important part of efforts by companies to take advantage of climate-related opportunities. It is anticipated that, as more progress is made with disclosure under the TCFD Recommendations, innovations on response to climate change will become more visible, and engagement with companies will help investors gain a better understanding of the issues, resulting in innovation-related information being more effectively utilized in investment decisions.

Innovation means not only efficiency improvements and new combinations of existing technologies, but also solutions associated with a long-term vision as well as those that may appear to be disconnected from or discontinuous with current business activities. It is useful for investors and other stakeholders to proceed with engagement on the attitude and intention of such companies that seek innovation, in order to improve understanding on their long-term strategies. Therefore, investors and other stakeholders are encouraged to confirm that a company's long-term strategies and underlying perceptions about the future business environment are aligned with the direction of its innovation efforts. In addition, regarding the management systems of a company engaged in innovation, it is also important to have dialogue on issues such as the commitment of its management organizational design, processes, and organizational culture.²³ Such dialogue will also serve as an opportunity for a company to objectively review its strategies for innovation.

The need for discontinuous innovation is also increasing as reduction targets set by companies become more ambitious in order to achieve carbon neutrality. In addition to support through policy, financing by the private sector such as investors and other stakeholders plays a major role in the implementation of future innovation. Advancing initiatives to support innovation through public-private partnerships can lead to a virtuous cycle of growth and the environment, and it is expected that appropriate evaluation will be conducted through the examination of mechanisms and financial methods to realize this cycle and through engagement²⁴.

Examples of evaluation by investors and other stakeholders relating to innovation are provided as follows.

²³ The international standard of "Innovation management system - Guidance (ISO56002)" was issued on July 15, 2019 for checking a management system of a company that creates innovation.

²⁴ Public-private collaborative efforts include Ministry of Economy, Trade and Industry's Zero Emission Challenge (https://www.meti.go.jp/english/press/2020/0707_004.html) and Green Innovation Fund Project (https://www.meti.go.jp/english/press/2021/0312_002.html) which are policies to support innovation with respect to climate change, and Keidanren's Challenge Zero (<https://www.challenge-zero.jp/en/>) which are efforts by the private sector.

Case 1 Evaluation of efforts to foster innovation

Investor A, upon engaging in and evaluating on a company's sustainability, focuses on the upside, i.e. solution of social problems resulting in increased profit opportunity. Specifically, it evaluates the company by considering its development of environment-friendly products and services, reform of business portfolio, and creation of innovation, while putting emphasis on the alignment of such efforts and the company's sustainable value creation strategy. In addition, the Investor values in a multifaceted way including corporate efforts to maximizing values which companies create to the society (impacts) such as Scope 3 emissions and environmental contribution through its products and services, taking into account climate change measures throughout the supply chain.

Case 2 Evaluation of strategic investment and innovation

Investor B is of the view that the most important aspect to take into consideration is whether innovation is incorporated into management strategy. Thus, when evaluating a company's long-term vision, The Investor looks at factors such as its readiness to make use of environment- or climate-related actions for product innovation, measures to reduce climate-related risks, and efforts to limit GHG emissions to a level consistent with the 2°C target in line with Paris Agreement.

Case 3 Proactive evaluation for disclosure of information related to innovation

Investor C pays special attention to information about how innovative technology, which can also contribute to a higher level of ambition, can be monetized. For example, Company A has not provided much information about technology development for addressing climate change because it is still at the demonstration stage. However, since the Investor wished to understand the prospects for such technology and evaluate the company's long-term readiness, it encouraged the company to proactively disclose more information. Furthermore, the Investor proposed to disclosing companies to include quantitative elements whenever possible, which led to an improvement in the quality of disclosure.

D. Performance and Key Performance Indicators (KPIs)

It is important for investors and other stakeholders to understand a company's rationale for establishing the specific KPIs that it manages and discloses, and confirm its alignment with the company's strategies.

Key performance indicators (KPIs) serve as metrics for a company to materialize its corporate philosophy and enhance corporate value, and are crucially important as information to be disclosed to investors and other stakeholders^{25,26}. In the TCFD recommendations, the relevance of a company's KPIs to its climate-related Risks and Opportunities is considered important in terms of targets to assess and manage²⁷.

Climate-related KPIs disclosed by companies need to be verified for consistency with the companies' long-term strategies. When the relationship is not clear between a company's strategies and business model vis a vis its KPIs and their rationale as disclosed by the company, it is important for investors and other stakeholders to seek an explanation through dialogue with the company, and to confirm an improvement in the alignment between the two. This will promote the reduction of risks and creation of opportunities, leading to an enhancement of corporate value. In addition, by checking not only the levels of KPIs but also their trends (level of improvement), investors and other stakeholders will have a better understanding of a company's climate-related efforts. The proactive efforts of investors and other stakeholders to check and evaluate KPIs for a company's climate actions (including the company's own management indicators) can strengthen the companies' motivation relating to climate action.

Examples of evaluation by investors and other stakeholders on alignment between KPIs and strategies are provided as follows.

Case	Verification of alignment of KPIs and strategies
	Investor A assesses climate-related KPIs set by companies from the perspective of both environmental and business advantages. In doing so, the Investor looks not only at increased revenues but also at what corporate value is created and what business benefits can be anticipated.

²⁵ Guidance for Collaborative Value Creation, p. 27: "5.02. ... it is beneficial for companies to set key performance indicators (KPIs) as benchmarks for growing corporate value throughout their businesses and as a yardstick to measure the achievement of their objectives and share the KPIs with investors."

²⁶ IIRC p. 8: "Quantitative indicators, such as KPIs and monetized metrics, and the context in which they are provided can be very helpful in explaining how an organization creates value and how it uses and affects various capitals."

²⁷ TCFD Final Report, p. 14: "Metrics and Targets: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material."

In comparative evaluation of KPIs, it is important for investors and other stakeholders to consider the relevant industry characteristics.

Investors and other stakeholders should note in evaluating KPIs that the calculation and disclosure methods of KPIs will vary by company due to differing business environments and conditions, and that this can sometimes make simple comparisons difficult²⁸.

GHG emissions are a typical climate-related KPI. As the mechanisms producing GHG emissions and efforts required for emission reduction vary by industry, investors and other stakeholders are encouraged to classify companies into smaller industry categories for comparative evaluation, taking into account the appropriateness of the targets to be compared²⁹. Meanwhile, the business portfolio of any given company may be involved in multiple industries, and in such a case, investors and other stakeholders are encouraged to evaluate the company by giving due consideration to that company's business model³⁰. In addition, total GHG emissions are an important metric to evaluate climate-related risks for industries and companies, though in order to understand factors such as a company's technological level or climate resilience, evaluations based on the emission intensity or total GHG emissions within a given industry can also be useful^{31,32}.

Examples of evaluation of KPIs by investors and other stakeholders in light of industry characteristics are provided as follows.

Case 1	Evaluation of KPIs in light of industry characteristics
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Investor A has set industry-specific metrics to evaluate four elements of the TCFD Recommendations, as a part of evaluating non-financial metrics, elaborating them by putting them into practice. Its industry analysts quantify the metrics based on their qualitative judgment in addition to disclosed information and the result of engagement, for comparison within the same industry, using them for part of their investment decision-making.

²⁸ For example, since GHG emissions resulting from consumption of electricity purchased externally depend on the utility that supplies the electricity, care must be taken when comparing GHG emissions resulting from electricity consumption (Scope 2). In addition, attention must also be paid on how the disclosed GHG emissions are derived (such as boundaries for calculation), as well as for difficulties in comparing Scope 3 emissions among different companies.

²⁹ Information on participating in and responding to external climate initiatives can be helpful in understanding companies' attitudes toward climate change measures. However, it is desirable to take into consideration not only apparent participation but also specific measures that suit the characteristics of the sector in the assessment Addendum D].

³⁰ Please refer to TCFD Guidance 2.0 p.61 "Disclosure Methods for Companies with Diverse Business Models" for further discussion.

³¹ With regard to emission intensities, it is recommended to gain an understanding through dialogue about companies' technology levels and ability to respond to climate change, while noting that simple comparisons within an industry may be difficult due to differences in product lineups and business portfolios.

³² It is also worth considering the use of indicators that indicate the state of industry responses to climate change and other sustainability issues, such as those developed by the Sustainability Accounting Standards Board (SASB) in the United States.

Case 2 Evaluation of KPIs in light of industry characteristics

Investor B conducts evaluation based on the understanding that climate actions are industry-specific. For example, in dialogues with the electricity and gas sector and the transportation sector where climate-related impacts on business continuity are considered to be larger, it asked companies that had not disclosed their efforts and policies for GHG emission reduction although they belong to industries with higher dependency on natural resources like water, forests, and fossil fuels, to establish guidelines or targets for emission reduction.

Case 3 Intra-sector comparison of KPI evaluation

To evaluate a company, Investor C looks at corporate advantage and competitiveness that is useful for gaining opportunities, hence puts more focus on a company's relative position within a sector rather than using one-dimensional information like GHG emissions.

Case 4 Precise evaluation through classification by subindustry

Investor D uses quantitative datasets to score not only GHG emission but several environmental categories such as supply chain, raw materials and land use, with an objective to identify the risk and opportunity of the company on an absolute basis. The Investor classifies their business into sub-industries for accurate assessment, though in some cases such as conglomerates, assessments are conducted on a company basis. The Investor considers it important that the most up-to-date and accurate information is obtained for the purpose of investment decision. Thus, the engagement with the companies plays an important role in the assessment.

Investors and other stakeholders are encouraged to evaluate companies by considering not only their GHG emissions through the entire value chain but also their contributions to emission reduction at the usage of their products and services.

A further point that investors and other stakeholders should note is that even within the same industry, GHG emissions through the entire value chain could differ by company due to different product line-ups and business portfolios, as well as reporting boundaries set by each company. For example, some products and services can contribute to a reduction in GHG emissions at the point of use (included in Scope 3 emissions) or at the point of installation, although their GHG emissions may be relatively higher at the production phase (Scope 1 and 2 emissions)³³. Demand for such products and services is anticipated to grow as the importance of climate actions increases.

Thus, Scope 3 emissions is useful in understanding the risks and opportunities throughout the entire value chain (including overseas component for some products and services). On the other hand, there is no definitive way of calculating Scope 3 emissions, and there is inherent uncertainty. Furthermore, the reason why a company's Scope 3 emissions are high may be due to emissions from the product itself or its lifetime, as well as the to the market expanded because the product is superior as a countermeasure against climate change. Therefore, the basis of its calculation as well as assumptions have significant implications. For this reason, it is desirable to conduct a comprehensive evaluation that takes into account the amount of reduction contribution when using products and services, in addition to Scope 3 emissions³⁴. In evaluation, investors and other stakeholders are encouraged to pay attention to intermediate products that would bring reduction contributions at a point of usage, and urge manufacturers and suppliers of such intermediate products to actively disclose information, while at the same time actively evaluating their contributions.

Examples of evaluation throughout the entire value chain by investors and other stakeholders are provided as follows.

³³ Scope 1 emissions are direct emissions due to fuel consumption, etc. Scope 2 emissions are indirect emissions due to electricity consumption, etc. Scope 3 emissions are other indirect emissions in the entire supply chain, including the procurement of raw materials, the use of products, and waste disposal, etc.

³⁴ One indicator in the TCFD recommendations is a description of "avoided GHG emissions," which have been avoided throughout the product life cycle. By disclosing GHG emission reductions when products and services are used, in contrast to a company's GHG emissions, it is possible to show how much the company has contributed to global GHG emission reductions through those products and services.

Case 1 Comprehensive evaluation through the entire value chain

Investor A considers it important to cover the entire value chain in evaluation, and evaluates companies with consideration of how their products are used downstream and why they are necessary. The Investor is of the view that how to evaluate life cycle assessment (LCA) which takes into account contribution to the entire value chain, i.e., not only greenhouse gas emissions but also incorporating addressing emission reductions, will be regarded as important.

Case 2 Evaluation for manufacturers of low-emission products

Upon evaluating manufacturers of GHG emitting products, Investor B evaluates positively on contributions through low energy consumption and CO₂ emissions at the time of use. Through extensive dialogue about both risks and opportunities as part of its engagement, The Investor analyzes how products contribute to GHG emission reductions throughout the entire product value chain.

Case 3 Evaluation on disclosure of Scope 3 emissions

Investor C is of the view that companies that disclose their Scope 3 emissions are likely to be capable of controlling risks throughout the supply chain, having enough capacity to address those risks when they become evident, since it considers climate actions along the entire supply chain.

Case 4 Evaluation on disclosure of emission reduction contributions

Investor D focuses on company's disclosure of emission reductions that would contribute to reduced GHG emissions for the society as a whole, even if the company's business expansion would increase emissions in its value chain (Scope 1, 2 and 3 emissions). The Investor considers that information on GHG emission reductions in society as a whole (outside of the company's Scope 1, 2, and 3 emissions) due to the company's efforts to let customers choose its high-efficiency facilities or low-carbon energy is useful for duly evaluating a company that is making an effort to reduce GHG emissions.

Case 5 Incorporation of Scope 3 emissions to ESG scoring

Investor E uses the ratio of emissions to the revenue of its investee companies as a measure of comparison within a sector in its ESG scoring. Presently, Scope 3 emissions are not included since the Investor views that data and public support towards disclosure are not yet adequate.

Case 6 Evaluation of Scope 3 disclosure

Investor F considers Scope 3 emissions and reduction targets as essential items for evaluation of companies with large Scope 3 emissions. On the other hand, the Investor is of the view that further discussion is necessary in determining the extent of value chain and the timeframe in calculating Scope 3 emissions.

Case 7 Use of auxiliary information

Investor G requests companies which have announced carbon neutrality targets by 2050 to disclose short- and medium-term greenhouse gas reduction targets up to 2050, current emissions intensity and emissions (Scope 1, 2 and major Scope 3 categories), as well as strategies and KPI such as green revenues earned during the course of achieving GHG targets.

About this chapter

In this chapter, topics that are considered to be important for investors and other stakeholders to understand disclosed information but for which interpretation and viewpoints have not yet been determined are identified and discussed. The topics are chosen on the basis of its importance as of present, based the activities of the TCFD Consortium and GIG Supporters. The topics have been attracting particular attention since the initial publication of the guidance, and it is desirable that both companies as well as investors and other stakeholders deepen their understanding in the future.

On the other hand, it is possible the issues taken up in this chapter is affected by the discussions that takes place in the future or by related topics. Therefore, though the perspectives and issues of investors are presented at the beginning of each topic as in Chapter 3, it should be noted that they may change in response to future discussions and trends in related topics.

A. Paris Agreement and Carbon Neutrality

In recent years, many countries and companies have adopted "carbon neutral" targets, but the futures envisaged are diverse. Investors and other stakeholders should keep in mind that there are various pathways to carbon neutrality and should understand the background of the scenario used as a reference for disclosure by companies.

The Prime Minister of Japan, in his policy speech of October 2020, has announced that "Japan will aim to reduce greenhouse gas emissions to net-zero, that is, to realize a carbon-neutral, decarbonized society.". The European Union has also committed to achieve carbon neutrality by 2050 at the latest, while the United States under the Biden administration has pledged to reach "net zero emissions economy-wide by no later than 2050". China, the world's largest emitter, has also pledged to become carbon neutral by 2060.

The Paris Agreement aims to "Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels" (Article 2) and to "achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century" (Article 4). In addition, the IPCC Special Report on 1.5 °C³⁵ published in

³⁵ IPCC, 2018: Global Warming of 1.5 °C. An IPCC Special Report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and effects to administer poverty

2018 described various emission pathways to limit the temperature increase to 1.5 °C, with the intermediate pathway achieving zero CO₂ emissions in 2050. Therefore, "achieving carbon neutrality and "stabilization at 1.5 °C" are presently used almost synonymously.

As shown below, the futures envisaged by "carbon neutrality in 2050" are very diverse (Figure 3).

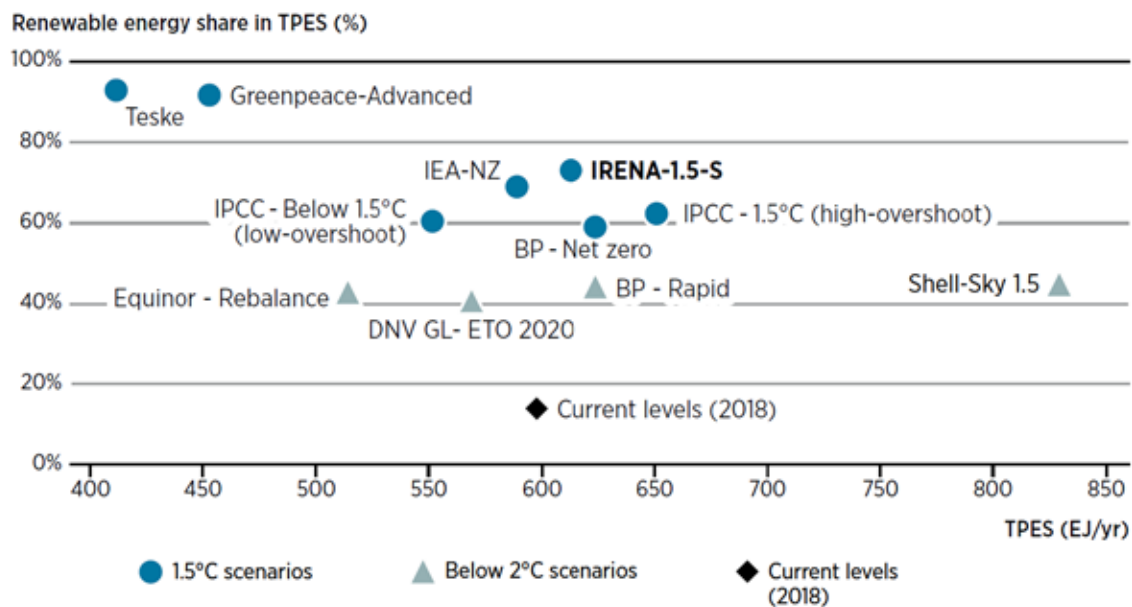


Figure 3 an overview of scenarios for decarbonization.

(Horizontal axis: Temporary energy supply (TPES: unit EJ), vertical axis: Renewable energy ratio in TPES)

Source) IRENA, 2021, World Energy Transitions Outlook: 1.5 °C Pathway, International Renewable Energy Agency, Abu Dhabi.

Some scenarios towards carbon neutrality depict a future which emissions are reduced to almost zero by enhancing renewable energy and energy conservation to the utmost limit, achieving the targets without the use of removal measures such as CCUS, while other scenarios reduce emissions only to about half current levels but remove emissions to a similar degree by forests, etc. The IEA's "Net Zero by 2050:" published in May 2021, depicts a scenario where energy-related CO₂ emissions are reduced to less than a quarter of the current levels through renewable energy and energy conservation, and achieving carbon neutrality through the recovery of emitted CO₂ and its removal from the atmosphere³⁶. NGFS [see Addendum F] also published several scenarios in June 2021³⁷. It should be noted however that scenarios should be identified based on regional and sectoral characteristics.

In recent years, an increasing number of companies are taking on carbon neutral targets, and investors and other stakeholders are also encouraged to align their investment and loan

³⁶ IEA, 2021, Net Zero by 2050: A Roadmap for the Global Energy Sector

³⁷ NGFS, 2021, NGFS Climate Scenarios for central banks and supervisors

portfolios to be carbon neutral. For these companies as well as investors and other stakeholders, the analyses on carbon-neutrality described above can serve as a reference for their own scenario development. It is desirable for investors and other stakeholders intending to understand the disclosed information and undertaking engagement to understand the background of the use of the scenarios used by companies, bearing in mind that there are diverse pathways leading to carbon neutrality.

Case 1 Evaluation of carbon neutral targets 1

Investor A believes that it is important not only to positively evaluate that a company has established carbon-neutral targets, but also to conduct detailed analysis and evaluate the contents, strategies, and likelihood of realization. Recognizing that it is difficult to completely eliminate emissions in some industries, the Investor is also paying attention to companies' efforts regarding carbon sequestration, reduction contributions, and utilization of carbon credits.

Case 2 Evaluation of carbon neutral targets 2

In its efforts to evaluate corporate carbon neutral targets, Investor B obtains an approximate grasp of the percentage that can be achieved by extending current efforts and those that require technical breakthroughs. After confirming the progress, the Investor pays attention to the content of the process to achieve it, its appropriateness, as well as their consistency with the future vision and business model of the company which forms the basis of evaluation.

Case 3 Use of models in engagement

Investor C has formulated a model that estimates the pathway to carbon neutrality in 2050 and uses it for engagement with companies. Specifically, GHG reduction process towards nationwide carbon neutrality by 2050 is modelled taking into account targets announced by the government which are compared with short- to medium- and medium- to long-term reduction targets of each company to analyze strategies towards carbon neutrality. In addition to the above, the Investor is holding continuous dialogues on issues that are essential to investment evaluation such as asset allocation consistent with decarbonization strategies, focusing on companies where impact is significant.

Case 4 Understanding carbon neutral targets 1

During the course of engagement with a company, Investor D noted that it has established a carbon-neutral target for 2050 and an intermediate target for 2030. However, since there were few descriptions of specific measures for CO2 reduction from 2030 to 2050, the Investor conducted interviews with a purpose to identify elements where likelihood of achievement is highest, and also to identify issues and responses on the remaining parts to evaluate on its achievability.

Case 5 Understanding carbon neutral targets 2

Investor E is aiming to shift to a portfolio that contributes to the realization of a decarbonized society. For investee companies that are large emitters, the Investor requests that they establish a target of achieving carbon neutrality by 2050 as well as an intermediate target for 2030. For companies with targets, the investor confirms whether specific efforts to achieve them have been formulated and considers the likelihood of achievement is high if specific efforts to reduce them are disclosed.

Case 6 Interpreting carbon neutral targets 1

Investor F interprets carbon neutral targets as corporate efforts to identify and address external diseconomies. The Investor is of the view that, by placing a cap on national emissions, emissions among industries is redistributed and is reflected in corporate value. During engagement, the Investor communicates on the significance of target setting, as well as on the minimization of risk and maximization of profit opportunity by addressing decarbonization at an early stage

Case 7 Interpreting carbon neutral targets 2

When undertaking environmentally rated investment, Investor G includes questions regarding carbon neutrality, which not only inquires on the targets but also strategic efforts to be taken to achieve them, such as business portfolio transformation, innovation creation, mid- and long-term GHG emission reduction targets. Furthermore, its overall alignment (integration with business planning such as mid-term management plans) is also taken into account in its evaluation.

B. Transition Finance

Transition finance is an important means for achieving carbon neutrality, and actively evaluating companies that demonstrate appropriate transition plans will lead to decarbonization of their investment and loan portfolios in the future.

Achieving carbon neutrality in 2050 is expected to require an annual investment of 4 to 5 trillion US Dollars³⁸. In addition to projects such as renewable energy that are already decarbonized, it is also important to take steps to transition in the long run perspective, such as through research and development for steady decarbonization and energy conservation in hard-to-abate sectors (industrial and energy conversion sectors that are currently deemed difficult to decarbonize). While many companies have set carbon neutral targets, investors and other stakeholders have a major role to play in assessing and funding these transitions.

In Japan, the "Climate Innovation Finance Strategy 2020"³⁹ announced in September 2020 by the Ministry of Economy, Trade and Industry stated that the government would promote financing for transition actions. Worldwide, countries such as Canada, Singapore and Australia are also examining transition policies taking into account regional characteristics. In December 2020, the International Capital Markets Association (ICMA) published the "Climate Transition Finance Handbook"⁴⁰ in order to share an internationally harmonized approach taking into account recent developments worldwide. Based on this, Financial Services Agency, Ministry of Economy, Trade and Industry, and Ministry of the Environment formulated the "Basic Guidelines on Climate Transition Finance"⁴¹ (hereinafter Basic Guidelines) in May 2021.

The Basic Guidelines state that "transition finance is determined not only by the Use of Proceeds of the funds raised, but also by the credibility of the strategies and practices of the fundraiser". In the sense that a strategy (transition strategy) for realizing long-term goals consistent with the Paris Agreement is explicitly required, financing is provided for entities that commit to more ambitious efforts towards the future. Therefore, transition finance is stated as being "an extremely important means for achieving a decarbonized society" similar to the issuance of green bonds and other instruments. Investors and other stakeholders can contribute to the realization of the Paris Agreement by engaging with and investing in and financing such enterprises, while earning returns from the investment and financing. In other words, it can be said that investments and loans to companies with transition strategies are consistent with the policy of decarbonizing investment and loan portfolios of investors and others in the future (even in sectors with high emissions at present).

³⁸ IEA, 2021, Net Zero by 2050: A Roadmap for the Global Energy Sector

³⁹ https://www.meti.go.jp/english/press/2020/0916_001.html

⁴⁰ <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/climate-transition-finance-handbook/>

⁴¹ https://www.meti.go.jp/english/press/2021/0507_001.html

In addition, the Basic Guidelines provide a summary of the basic concept of "transition" labeling and raising finance, and progress is being made in the development of sectoral roadmaps that can be taken into account when developing transition strategies and determining their suitability⁴². These roadmaps will be useful for investors and other stakeholders in engaging with companies. However, it should be noted that transition pathways are diverse, varying depending on the region, sector, and circumstance of individual companies. Therefore, investors and other stakeholders should keep in mind that they do not always appear to extend linearly to the future, and that various approaches are envisaged⁴³.

The TCFD's "Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans"⁴⁴ maintains that companies committed to reducing emissions, such as carbon neutral declarations, should disclose their transition plans and defines them as essential inputs for market participants to properly assess climate-related risks and opportunities and to understand long-term impacts. The disclosure items recommended are presented in line with the four TCFD recommendations, and are highly compatible with transition financing (the Basic Guidance also refers to TCFD-based disclosures for governance and scenarios).

Japan has a manufacturing industry with high technological capabilities, and many companies belong to high emitting sectors. On the other hand, given its position as a world leader in endorsing TCFD and disclosing according to its recommendations, the nascent market for transition finance is expected to expand as a mechanism for providing funds to companies that actively tackle climate change.

Case 1 Information on transition

Investor A has initiated dialogue on the sustainability strategy of companies, using transition as a starting point. In addition to appropriately grasping long-term business risks and opportunities, the Investor considers proposing financing and other solutions that will contribute to the realization of future strategies of companies aiming for transitions.

Case 2 Evaluation of transition 1

Investor B considers that making an investment decision based solely on the amount of emissions is a loss of profit opportunity, and therefore regards transition as important. In addition to analyzing and evaluating transitions and opportunities, the investor is also actively working on the development of transition-themed financial products.

⁴² Taskforce Formulating Roadmaps for Climate Transition Finance

⁴³ Basic Guidelines on Climate Transition Finance, p. 11 " (S)ince short- to mid-term targets will likely be set in consideration of various factors (including the starting point and track records of the issuer, timing of capital investments, economic rationality, cost-benefit analysis, and availability of technology necessary to achieve the targets), it is possible that the pathway may not necessarily be linear with the same slope at all times but may be nonlinear."

⁴⁴ TCFD, 2021. Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans

Case 3 Evaluation of transition 2

Through evaluation of corporate transition, Investor C affirms that investee companies' efforts to address anticipated climate-related risks and opportunities (fuel switch, introduction of innovation, process changes, development of new products / services, etc.) are explicit. Based on this, the Investor checks whether the measures are linked to the management strategy such as the medium- to long-term management plans, and whether the organizational system for evaluating and managing the efforts is established.

Case 4 Perception on utilizing transition-related information 1

Investor D is of the view that there are still major issues regarding how to utilize as information the corporate disclosure on its contribution to transition emission reductions for society and customers. Information on the financial goals of investee financial institutions is obtained mainly through individual dialogues with companies and is used for investment decisions after understanding the details.

Case 5 Perception on utilizing transition-related information 2

Investor E regards transition-related information as important in understanding corporate CO₂ reduction. The Investor looks into whether the emission reduction target is consistent with the objectives of the Paris Agreement, and uses them as information on the specific situation of the investee company.

Case 6 Utilization of disclosed information on transition

Investor F uses information on transition activities such as introduction of new breakthrough technologies (hydrogen, biofuels, ZEBs, ammonia, etc.) or replacement of existing facilities in analyzing how and when they will be reflected in corporate value. Such analysis is conducted both from the viewpoint of increased return by creating new business models as well as addressing risks.

Case 7 Investing in transition bonds

Investor G evaluated factors such as "recovery and its sustainability based on evaluation of current competitive environment" "financial policy" as well as "issuer's perception of ESG issues" and "framework of transition bonds", upon deciding on whether to invest in transition bonds. Since monitoring of transparency is also a crucial issue in matters regarding transition finance, the Investor believes that the issuer needs to constantly update and disclose its transition strategy to investors.

C. Initiatives for Investors and other Stakeholders on Climate Change

Initiatives to decarbonize portfolios of various investors and other stakeholders, including asset owners, asset managers, banks, and insurance companies are being launched. Under these circumstances, investors and other stakeholders are expected to engage in activities that include facilitating the transition of their investees and borrowers towards carbon neutrality.

In parallel to the advancement of corporate information disclosure, there is a growing trend for investors and other stakeholders which are in a position to utilize information to play an active role in reducing emissions through their operations (investment, financing and insurance underwriting). Initiatives for investors and other stakeholders are outlined below.

One type of initiative consists of investors and other stakeholders with an aim to decarbonize the investment and loan portfolio. The Net Zero Asset Owner Alliance (NZAOA)⁴⁵ for asset owners; the Net Zero Asset Managers Initiative (NZAM)⁴⁶ for asset managers; the Net-Zero Banking Alliance (NZBA)⁴⁷ for banks; and the Net-Zero Insurance Alliance (NZIA)⁴⁸ for insurance companies request supporting financial institutions to commit to align with targets such as becoming carbon neutral by 2050, and disclose their progress. The Principles for Responsible Investment (PRI), which aim to incorporate ESG factors into investment decisions, have made TCFD disclosure mandatory for signatory institutions since 2020. NZAM has also been requiring TCFD disclosure for its progress reports, therefore these initiatives are closely related to TCFD.

Another type of initiative is to help investors and other stakeholders standardize the quantification method of their portfolio Scope 3 GHG emissions. The Partnership for Carbon Accounting Financials (PCAF)⁴⁹, with involvement of NZAOA mentioned above, cooperates with organizations such as CDP and SBT, and formulated the Global GHG Accounting and Reporting Standard in November 2020. This offers guidance on how Scope 3 emissions is calculated for each of the six asset classes, including equity, corporate bonds, project finance, business loans, and real estate. Another example of such initiative is the CRO Forum, an initiative established in April 2020 to promote risk management in insurance companies, which developed a carbon footprint calculation method for underwriting portfolios that utilizes WACI (weighted average carbon intensity)⁵⁰. The TCFD recommends the importance of disclosure of Scope 3 emissions by investors and other stakeholders in the Proposed Guidance on Climate-

⁴⁵ <https://www.unepfi.org/net-zero-alliance/>

⁴⁶ <https://www.netzeroassetmanagers.org/>

⁴⁷ <https://www.unepfi.org/net-zero-banking/>

⁴⁸ <https://www.unepfi.org/net-zero-insurance/>

⁴⁹ <https://carbonaccountingfinancials.com/>

⁵⁰ <https://www.thecroforum.org/>

related Metrics, Targets, and Transition Plans, and recommends disclosure of portfolio GHG using the methods developed by PCAF and the CRO Forum.

Furthermore, in June 2020, the Network of Central Banks and Supervisors for Greening the Financial System (NGFS)⁵¹, established at the end of 2017 by central banks and financial supervisory authorities, published a guideline for addressing climate change risks in the financial sector for the purpose of appropriate management of climate change risks in the financial sector. Through developing risk scenarios and stress test guidances, it recommends the financial supervisors to grasp climate-related risks in the financial system. [See Addendum F].

As shown above, there is a growing demand to the investors and other stakeholders to identify and disclose climate change risks associated with their investment and loan portfolios, from the perspective of risk management. Under these circumstances, investors and other stakeholders are expected undertake engagement that include promoting the transition of investees and borrowers to carbon neutrality. It is also desirable for companies to conduct disclosure and dialogue with an understanding of the background of responses by investors and other stakeholders.

⁵¹ <https://www.ngfs.net/en>

D. Evaluation of Participation in External Climate Initiatives

An increasing number of companies are taking part in external climate initiatives. However, it is recommended that evaluations be made taking into account specific efforts rather than apparent characteristics such as participation or non-participation.

Recently, an increasing number of companies are declaring their participation in initiatives related to climate actions, such as RE100 and SBT (Science Based Targets), and setting targets based on such initiatives. Participation in them serves as an indicator for investors and other stakeholders to understand a company's stance regarding climate actions.

What is important for investors and other stakeholders is the future enhancement of corporate value. Therefore, an important perspective for evaluation is how a company is involved in such initiatives, how it has committed to its targets, and how the commitments relate to the company's strategies. In that sense, in evaluation, investors and other stakeholders are encouraged not only to look superficially at whether or not a company is participating in such initiatives, but also to consider factors such as the company's comprehensive strategies and specific efforts to achieve their long-term objectives (capital investment, R&D investment, and alliances, etc.).

It should be noted that even if they may not be participating in initiatives such as those mentioned here, many companies have given climate actions a priority in their management strategies. To evaluate such companies, it is helpful to look at Governance, Strategy, Risks and Opportunities, and Performance and KPIs, etc. in order to achieve the evaluation of their climate actions that goes beyond the superficial assessments. Such efforts by investors and other stakeholders will also serve as an opportunity for the target companies to continue reviewing their approaches to such initiatives.

Examples of external climate-related Initiatives are shown as follows.

Table 2 Examples of external climate-related initiatives⁵²

Name	Description
RE100	An initiative where companies are committed to sourcing 100% renewable energy for the power consumption necessary for their activities and reporting their progress. With the last target year in 2050, it requires the participants to increase their percentage of renewable energy to 60% by 2030, and more than 90% by 2040.
EV100	An initiative where companies make commitments including the replacement of their commercial fleets with electric vehicles by 2030.
SBT	An initiative where companies set, announce, and verify their scientifically consistent GHG emission reduction targets, in order to limit the global temperature increase to “well-below 2°C” or “1.5°C level.” The appropriateness of their targets is to be reviewed by SBT in light of specific standards.

⁵² RE100 website: <http://www.there100.org>

EV100 website: <https://www.theclimategroup.org/project/ev100>

SBT website: <https://sciencebasedtargets.org/>

E. Carbon Pricing

Various forms of carbon pricing are considered by the government, with an intention to introduce without hesitation those that contribute to materializing its growth strategies. Therefore, it is necessary to pay close attention not only to the trends of discussions related to carbon pricing, but also to the development of relevant rules and guidelines.

Carbon pricing is an economic method of altering the behavior of emitters by putting a price on carbon, and is attracting attention both in Japan and abroad due to increasing drive for carbon neutrality and changes in the way emission reductions is perceived. In order to achieve carbon neutrality in 2050, the Japanese government announced the "Green Growth Strategy through Achieving Carbon Neutrality in 2050" in December 2020⁵³. The Strategy states that, "As for economic instruments (e.g., carbon pricing) using market mechanisms, the Japanese government will introduce without hesitation those that contribute to materializing its growth strategies...to strengthen the industrial competitiveness and promote innovation and investment." and the government is also studying carbon pricing that contributes to growth⁵⁴.

Typical categories of carbon pricing (Figure 4) include not only carbon tax and emissions trading, but also energy taxes, internal carbon pricing (ICP) and voluntary credit trading.

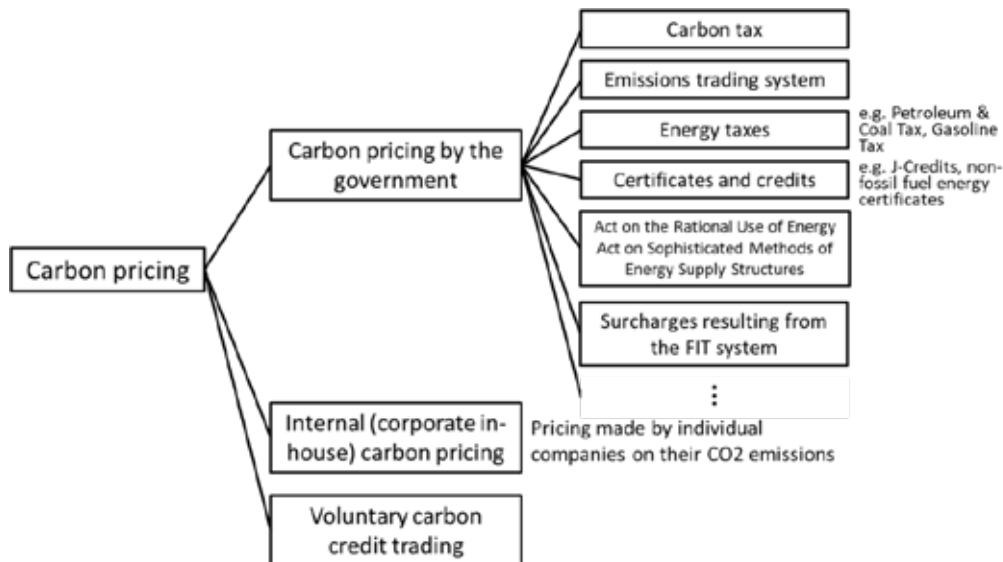


Figure 4 Categories of carbon pricing

Source) The Ministry of Economy, Trade and Industry, the Study Group on Ideal Economic and Other Approaches for Achieving Worldwide Carbon-neutrality

⁵³ A more detailed version of the Green Growth Strategy is published in June 2021.

⁵⁴ Study is ongoing in the Study Group on Ideal Economic and Other Approaches for Achieving Worldwide Carbon-neutrality established by the Ministry of Economy, Trade and Industry, and Subcommittee on Utilization of Carbon Pricing, established by the Ministry of Environment. An interim report by both bodies is published in August 2021.

https://www.meti.go.jp/shingikai/energy_environment/carbon_neutral_jitsugen/pdf/20210825_2.pdf (in Japanese)
<https://www.env.go.jp/council/06earth/setchukanseiri.pdf> (in Japanese)

As described in chapter 3.2 Strategies and Business Models, ICP is also mentioned in the TCFD Recommendations, and the number of companies adopting ICP is on the rise. According to a CDP survey, 864 companies in the world had adopted ICPs as of 2020, of which 118 are Japanese companies, which ranks Japan second in the world (No. 1 is the United States, No. 3 is the United Kingdom) a further 134 Japanese companies plan to introduce ICPs within two years⁵⁵. This indicates that internal carbon pricing is drawing attention in Japan, though there is not enough example of evaluation by investors and other stakeholders, and further discussions are needed on its treatment.

As regards carbon credits⁵⁶, some Japanese companies are already using them⁵⁷, and it is expected that efforts to reduce CO2 emissions will be accelerated by enhancing the market for credit transactions. Concrete measures to enhance the market such as the review of the non-fossil fuel energy value trading market, enhancing the J-Credit system, and improvement of the Joint Crediting Mechanism (JCM) are being considered⁵⁸. Regarding carbon credits, in a survey conducted by the TCFD Consortium, some financial institutions pointed out that while it is one of the important measures to achieve the reduction targets, clarification and development of rules concerning utilization and disclosure is desirable⁵⁹.

As one of the means to promote medium- to long-term behavioral change, there is a proposal to establish a framework in which companies that are making pioneering efforts on climate change measures are brought together and their emission reduction value is evaluated in the market. It is necessary to pay close attention not only to the trend of discussions on carbon pricing but also to the development of these rules and guidelines.

⁵⁵ CDP Website (<https://www.cdp.net/en/climate/carbon-pricing/carbon-pricing-connect>)

⁵⁶ A task force (Taskforce on Scaling Voluntary Carbon Markets (TSVCM)) was established to expand the market associated with carbon reduction value (voluntary credit) in the private sector. The TSVCM proposed the need to increase the market for carbon credits by more than 15-fold and proposed the Core Carbon Principles to ensure the quality of carbon credits.

⁵⁷ According to the questionnaire survey on TCFD disclosure and utilization (TCFD Consortium/FY 2021), 42% of corporate respondent have procured credits, and an additional 29% are considering procurement.

⁵⁸ Interim report, Study Group on Ideal Economic and Other Approaches for Achieving Worldwide Carbon-neutrality (in Japanese)

⁵⁹ Responses to the questionnaire survey conducted by the TCFD Consortium for its members ("Questionnaire on Disclosure and Utilization of TCFD by the TCFD Consortium in FY 2021").

Case 1 Comprehensive evaluation including carbon neutral targets

Investor A, in understanding the carbon-neutral target of the investee, checks not only the target itself, but also interim target (e.g. 2030 target) and specific measures and efforts to achieve it, as well as on the utilization of carbon pricing and carbon credits, and uses the information in a comprehensive manner.

Case 2 Evaluating internal carbon pricing

Investor B exchanges opinions on carbon pricing and carbon credits in the course of engaging with companies undertaking scenario studies, as well as discusses the direction of in-house management on these issues. However, actual values of ICP and its management is often a matter of corporate strategy and are confidential. Therefore, the Investor is of the view that comparability remains to be an issue, and thus considers that, as of present, it suffices to confirm the basic principles and future directions.

F. Climate Change Risk Management for Investors and Other Stakeholders, and the Role of NGFS

NGFS, a network of central banks and financial supervisors, maintains the view that climate change risks pose financial risks, and recommends incorporating climate change risks into financial supervision monitoring. Through these trends, it is expected that private sector financial institutions will be required to enhance addressing climate change risks and promote green investment.

Risk management of portfolios in investors and other stakeholders is defined within the global regulatory framework, and risk management is implemented at the level of each financial institution. Financial regulatory authorities and central banks in each country manage and supervise the activities of these financial institutions according to their respective mandates. At present, however, approaches for managing climate change risks in financial institutions are still under discussion.

Responding to the publication of the TCFD Final Recommendations, central banks and financial supervisors worldwide established the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) in 2017 as an international network to consider appropriate ways for the financial sector to manage climate change risk⁶⁰. NGFS has 95 members and 15 observers worldwide as of June 2021. From Japan, the Financial Services Agency joined in June 2018, and the Bank of Japan joined in November 2019.

In April 2019, NGFS released its First Comprehensive Report, summarizing its initial 3 points of work, namely 1) Supervising of climate and environmental risks, 2) analyzing the macrofinancial impact of climate change, and 3) scaling up green finance. The report provides six recommendations for central banks, financial supervisors, and policymakers to address climate change risks, as follows:

Table 3 Recommendations by NGFS (First Comprehensive Report published in April 2019)

1. Integrating climate-related risks into financial stability monitoring and micro-supervision
2. Integrating sustainability factors into own-portfolio management.
3. Bridging the data gaps.
4. Building awareness and intellectual capacity and encouraging technical assistance and knowledge sharing.
5. Achieving robust and internationally consistent climate and environment-related disclosure.
6. Supporting the development of a taxonomy of economic activities

Source) Network for Greening the Financial System, 2019, First comprehensive report, A call for action: Climate change as a source of financial risk

⁶⁰ <https://www.ngfs.net/en>

In order to build upon the recommendations presented in the Comprehensive Report, NGFS has published a number of guidance's and reports. The NGFS Climate Scenarios are examples of such publications. The purpose of this project is for central banks and financial supervisors to assess the impact of climate change on the economy and financial system, and takes into account progress in climate change policies of various countries in establishing assumptions. Eight scenarios were made public in June 2020, and six were made public in June 2021 as their integrated and updated versions.

The TCFD Recommendations advocates disclosure of "resilience of the organization's strategy, taking into consideration different climate-related scenarios" as a part of disclosure on strategy. For the six NGFS climate scenarios, substantial amount of data is made available, including not only greenhouse gas emissions and carbon prices, but also GDP and demographic trends, enabling economic analysis. NGFS is also making efforts to support investors and other stakeholders to conduct scenario analysis⁶¹, such as opening a portal site for these data⁶².

The TCFD is a framework for promoting engagement between companies that disclose climate-related information and investors and other stakeholders that make investments and loans based on the disclosed information. In the future, it is expected that the financial institutions throughout Japan will be required to address climate change risks through financial supervisors and central banks. In fact, Financial Services Agency established the Expert Panel on Sustainable Finance in December 2020 and released its report in June 2021⁶³. The report asserts that, in order to support the climate change response of borrowers, it is important to accumulate know-how and improve skills. In addition, it is considered appropriate to encourage Financial Services Agency to establish a system to manage climate change risk by promoting discussions with financial institutions on the utilization of scenario analysis. In July 2021, the Bank of Japan stated that "The impacts of climate change on economic activity, prices, and the financial system are highly uncertain and could greatly vary over time", and announced that, as part of its monetary policy, it would provide financial institutions that introduce a new fund-provisioning measure to financial institutions that disclose a certain level of information on their efforts to address climate change to support their efforts to address climate change, and to encourage financial institutions to enhance their disclosures, both qualitatively and quantitatively, based on the TCFD framework.

These represent a major development since the release of the first edition of this Guidance -progress on financial action - and indicate that financial institutions are now more actively promoting investment to support corporate behavior in response to climate change (green investment).

⁶¹ It should be noted that NGFS scenarios do not necessarily incorporate the full spectrum of regional and sectoral characteristics, and care must be exercised in selecting and using them.

⁶² <https://www.ngfs.net/ngfs-scenarios-portal/>

⁶³ Financial Services Agency, "Report by the Expert Panel on Sustainable Finance" Announced", <https://www.fsa.go.jp/en/news/2021/20210618.html>

Appendix 1 : References

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Appendix 2 : Members of the TCFD Consortium Steering Committee, List of GIG Supporters, Number of TCFD Consortium Members, revision history.

(1) Members of the TCFD Consortium Steering Committee

*In alphabetical order

[Chair]

Kunio Ito Director of Hitotsubashi CFO Education and Research Center, Hitotsubashi University

[Steering Committee member]

Takao Aiba Project General Manager, Environment Affairs & Engineering Management Div., CN Advanced Engineering Development Center, Toyota Motor Corporation

Takehiro Fujimura Member, Task Force on Climate-related Financial Disclosures (TCFD) General Manager, Corporate Sustainability & CSR Department, Mitsubishi Corporation

Yasunori Iwanaga Chief Responsible Investment Officer, Amundi Japan Ltd.

Masaaki Izumiya General Manager, Head of Environment Div., Nippon Steel Corporation

Naruyoshi Kuwata General Manager In Charge of Sustainability, Corporate Planning Department, Sumitomo Life Insurance Company

Masaaki Nagamura Member, Task Force on Climate-related Financial Disclosures (TCFD) Fellow, International Initiatives, Tokio Marine Holdings, Inc.

Manabu Shibata Director, ESG Global Action Promotion, Kao Corporation

Kazunori Takahashi Deputy General Manager, Sustainability Promotion Division, Hitachi Ltd.

Tatsuya Takeda General Manager, Corporate Sustainability Dept., Sumitomo Mitsui Banking Corporation

Keisuke Takegahara Executive Fellow, Research Institute of Capital Formation, Development Bank of Japan Inc.

[Chair of the Information Utilization Working Group]

Toru Terasawa Head of Responsible Investment Group Investment Div., Asset Management One Co., Ltd.

Hiroyuki Tezuka Fellow & General Manager, Climate Change Policy Group, Technology Planning Dept., JFE Steel Corporation

[Chair of the Information Disclosure Working Group]

Masaharu Tounai Environment General Manager, Corporate Management & Planning Unit ESG Office, Tokyo Electric Power Company Holdings Inc.

Toshihiro Yamauchi General Manager, Corporate Communications Dept., Sumitomo Chemical Co., Ltd.

(Note) Affiliation and position as of September 24, 2021.

(2) List of GIG Supporters

GIG Supporters are investors and other stakeholders that utilize or plan to utilize the Green Investment Guidance. Case studies of utilization of climate information disclosures that should be referred to in Japan and abroad were recommended in the preparation of the Green Investment Guidance 2.0.

1. BNP Paribas Asset Management Co., Ltd.
2. Amundi Japan Ltd.
3. Manulife Investment Management Co., Ltd.
4. Nomura Asset Management Co., Ltd.
5. Nikko Asset Management Co., Ltd.
6. Nippon Life Insurance Company
7. T & D Life Group
8. Mitsubishi UFJ Trust and Banking Corporation
9. Asset Management One Co., Ltd.
10. Resona Asset Management Co., Ltd.
11. Sumitomo Mitsui Trust Asset Management Co., Ltd.
12. BlackRock Japan Co., Ltd.
13. Sompo Asset Management Co., Ltd.
14. Tokio Marine Asset Management Co., Ltd.
15. Development Bank of Japan
16. Sumitomo Mitsui DS Asset Management Company, Limited
17. Meiji Yasuda Life Insurance Company
18. Dai-ichi Life Holdings, Inc.
19. Sumitomo Mitsui Financial Group, Inc.
20. Sumitomo Life Insurance Company
21. Mizuho Financial Group, Inc.
22. Mitsubishi UFJ Financial Group, Inc.
23. Invesco Asset Management (Japan) Limited
24. Sumitomo Mitsui Trust Bank, Limited
25. Tokio Marine & Nichido Fire Insurance Co., Ltd.
26. T. Rowe Price Japan, Inc.

(Total 26 companies, in random order, as of September 24, 2021)

(3) Number of TCFD Consortium Members

Total of 417 organizations (As of September 24, 2021)

(4) Revision history

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