



Basic Guidelines for **Disclosure and Evaluation of** **Climate-related Opportunities**

March, 2023



Table of Contents

Preface	2
Introduction	4
Purpose (assumed readers)	5
Contents	5
Chapter 1 Climate-related Opportunities	7
Section 1: Background	8
Section 2: Definition of climate-related opportunities	8
Section 3: Importance of climate-related opportunities and their relationship to risks ..	10
Section 4: Metrics to disclose and evaluate climate-related opportunities	14
Chapter 2 Avoided Emissions -metrics to assess climate-related opportunities	18
Section 1: Background	19
Section 2: Definition and Relation to climate-related opportunities	21
Section 3: Concept and guidelines for target goods and services	22
Section 4: Disclosure	24
Section 5: Evaluation	26
Section 6: Prospects	27
Conclusion	28
Appendix 1 : Glossary	29

Preface

To achieve a decarbonized society by 2050, it will be important to transform the entire economic and social system while accelerating existing efforts to reduce greenhouse gas (hereafter, “GHG”) emissions. To this end, companies’ efforts to reduce their own emissions alone is insufficient and **promoting efforts as solution (goods and services¹) providers that contribute to the decarbonization of society is crucial.**

To promote the widespread use of decarbonized goods and services, it is important to create a business environment in which these efforts can be appropriately evaluated by capital markets. However, conventional corporate evaluations of climate change focus on risk aspects, where emissions associated with business activities and efforts contributing to the reduction of companies’ own emissions. Whilst there has been little discussion regarding the evaluation of opportunities, an evaluation of impact through provision of decarbonization solutions and their positive effect on enterprise value, appropriate evaluation of climate-related opportunities is essential as it contributes to the decarbonization of society, supports **the company to capture new business opportunities**, and encourages the creation of innovation that contributes to the decarbonization of society. Financial institutions may also benefit financially by adequately evaluating companies that captures the opportunities rose by decarbonization.

The Working Group on Disclosure and Evaluation of Climate-related Opportunities was established as part of the efforts in FY2022 GX League, with a wide range of stakeholders, including corporations and financial institutions, as participants, in response to growing awareness of the importance of evaluating opportunities for the realization of a decarbonized society. Aiming to establish a mechanism

¹ Goods and services refer not only final products but also materials, intermediate products, related technologies and systems and other various items.



for appropriate disclosure and evaluation of climate-related opportunities, the Working Group organized the basic concepts and compiled them as basic guidelines.

This document defined climate-related opportunities as factors that contribute to the enhancement of enterprise value brought about through the creation of societal impact, and identified **investment, number of patents, green revenue, avoided emissions, and percentage of recyclable materials** as examples of metrics to assess climate-related opportunities. In particular, avoided emissions has been specifically addressed in the latter part of this document given the highest interest of the Working Group participants and international attention.

To ensure that climate-related opportunities are adequately assessed, this document provides a set of premises as guidelines, and lays the groundwork for **future discussions on climate-related opportunities and relevant metrics.**



Introduction

The gravity of the effects of climate change and the need for action have been widely recognized internationally, and efforts to achieve net-zero greenhouse gas emissions (hereafter, “Net Zero”) by around the middle of this century are gaining momentum to limit the global temperature increase to 1.5° C above pre-industrial levels.

To achieve Net Zero, companies are expected to reduce their own emissions and those of their supply chains, as well as contribute to the expansion of green markets and the reduction of emissions from the society through the supply of goods and services. Efforts of societal decarbonization through the supply of goods and services by companies include contributing to steady emissions reductions in the near term by supplying technologies with lower carbon emissions than others and striving to implement innovative technologies in society that will enable significant emissions reductions in the future.

Promoting such efforts will require the establishment of a mechanism in which companies disclose their efforts, financial institutions and others² utilize this information for their evaluations and provide necessary funds to such companies and efforts.

When it comes to corporate climate-related disclosures, it is increasingly common to base them on the final report of the Task Force on Climate-related Financial Disclosures (hereafter, “TCFD”). Moreover, since a framework for sustainability information disclosure has been presented by various organizations in recent years, the International Sustainability Standards Board (hereafter, “ISSB”) has been working on internationally uniform standards. The climate-related disclosure standards are expected to be developed based on the final recommendations of the TCFD.

The TCFD’ s final recommendations and the Exposure Draft (IFRS S2) published in March 2022 by ISSB call for climate-related risks and opportunities to be listed side by side, and for both to be identified and disclosed with their financial effects. However, there is no uniform interpretation of the definition of metrics for climate-

² Includes various financial institutions (financiers) and rating agencies.

related opportunities³. Although avoided emissions and green revenue are considered as metrics of opportunities, interpretation are left to the disclosing party, partly due to lack of clear provision in the guidelines.

As climate-related disclosure advances, the use of disclosed information in corporate evaluations by financial institutions have increased, particularly in terms of risk. On the other hand, the evaluation of climate-related opportunities that will increase future corporate profits, efforts such as contributions to emissions reduction through the supply of corporate goods and services and initiatives to implement innovative technologies in the future, is yet limited. Examples of current climate-related opportunity evaluation are the evaluation of technological opportunities based on patents on low/decarbonization technologies in the analysis of Climate Value at Risk (CVaR) and the evaluation of avoided emissions.

Purpose (assumed readers)

The purpose of this document is to develop a mechanism in which the opportunities of companies working on GX are appropriately evaluated. To this end, this document summarizes the basic concepts that companies and financial institutions should have in common when disclosing and evaluating climate-related opportunities, with the aim of raising awareness of their importance, whilst this document does not aim to establish detailed rules or standards for disclosure and evaluation methods.

Contents

This document is compiled by two chapters. Chapter 1 addresses the definition and importance of climate-related opportunities and set out a common concept. It also specifies examples of metrics that for climate-related opportunities which are specified according to the definition. These metrics are then classified based on their characteristics as each metrics represent companies' activities from different

³ A yardstick by which risks and opportunities are measured or evaluated. The term indicator is generally used, but in this document, it is defined as metrics from the perspective of including qualitative ones.

perspectives. In Chapter 2 “Avoided emissions” , an outcome metric with high market interest, is discussed in detail as one of the examples of climate-related opportunities’ metrics⁴, and basic approach for disclosure and evaluation are summarized.

The terms used in this document are compiled in the glossary in Appendix 1.

⁴ In preparing this document, avoided emissions was discussed in detail as an example of metrics for climate-related opportunities, however, avoided emissions is only an example, and it is advisable that the same discussion be held for other metrics.

Chapter 1

Climate-related Opportunities

Section 1: Background

Section 2: Definition of climate-related opportunities

Section 3: Importance of climate-related opportunities and
their relationship to risks

Section 4: Metrics to disclose and evaluate climate-related opportunities

Section 1: Background

Whilst various metrics are utilized in disclosure and assessment of climate-related opportunities, there has been little or no common interpretation or systematic view compared to climate-related risks. As a result, same metric may be disclosed as opportunity in one company, whilst others disclosed them as metrics to express their effort, making it unclear why these metrics are appropriate for the disclosure and evaluation of climate-related opportunities.

Therefore, this document defines climate-related opportunities and then divided it into two categories based on how opportunities affect a company's finances. Based on this definition, metrics that are assumed to represent climate-related opportunities are identified, and considerations for disclosing these metrics are organized in light of international discussions.

In addition, the relationship between climate-related risks and opportunities is sorted out in conjunction with the above, and the requirements for companies that disclose opportunities are compiled.

Section 2: Definition of climate-related opportunities

In this document, climate-related opportunities are defined as follows:

“Climate-related opportunities are factors that contribute to the increase of enterprise value through creating impacts, such as contributions to climate change mitigation and adaptation.”

This definition is based on TCFD⁵ and defined climate-related opportunities as factors that have a positive financial effect through corporate efforts to mitigate and adapt to climate change.

To develop a mechanism for evaluating climate-related opportunities, this document will further delve into this definitions and classified climate-related opportunities into the following two categories (see figure 1) depending on how they

⁵ The TCFD defines climate-related risks as “Potential negative impacts of climate change on an organization” whereas climate-related opportunities are defined as “Potential positive impacts related to climate change on an organization”

lead to increased enterprise value.

1) Risk reduction: Factors that contribute to the reduction of enterprise value deduction that would have otherwise occurred due to climate change.

It refers to efforts which reduces the expected adverse financial effect by taking measures against the physical and transitional risks indicated in TCFD.

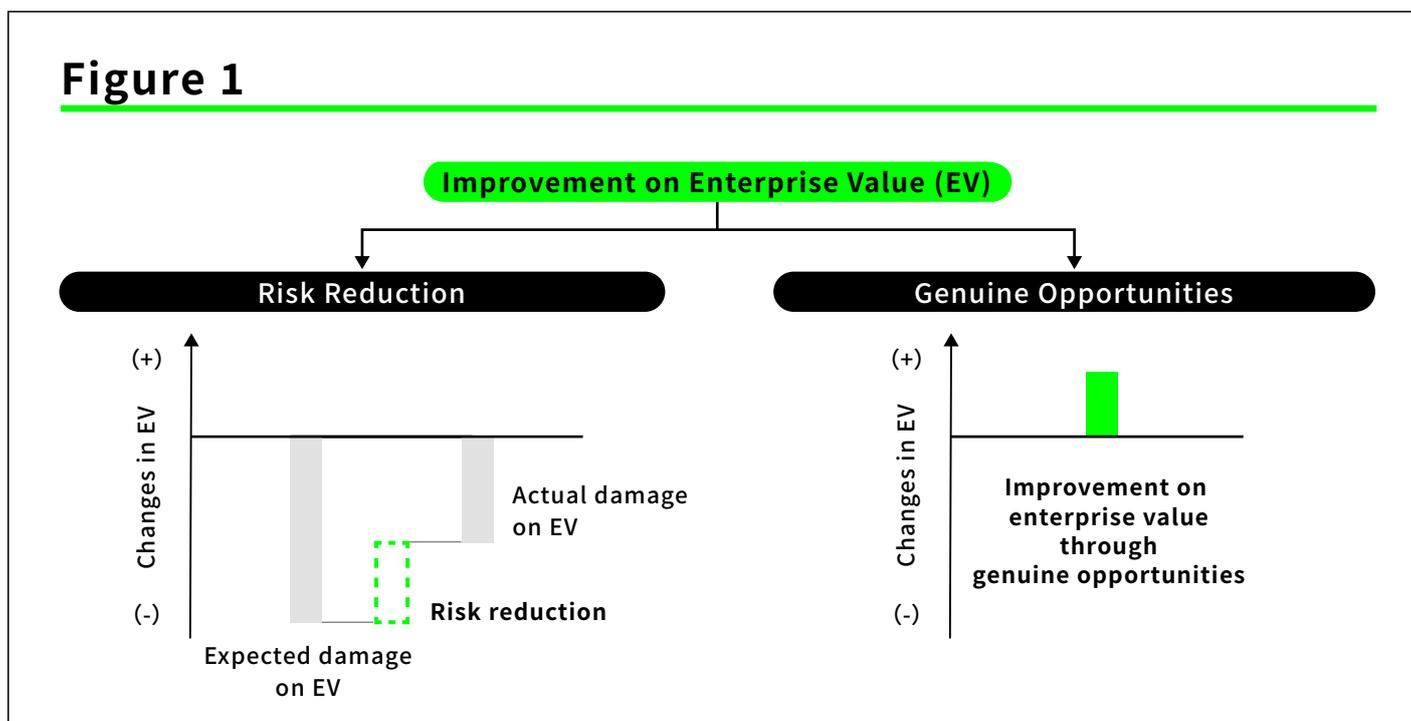
For example, manufacturers could switch their energy used from fossil fuels to renewable energy and other sources, thereby curbing the expected cost increase from carbon pricing and reducing the damage to enterprise value. The climate-related opportunity in this example is a shift to renewable energy as an approach to increasing costs from carbon pricing.

2) Genuine opportunities: Factors that contribute to additional enterprise value relative to the inherent enterprise value.

It refers to factors that contribute to the improvement of enterprise value through increased sales, by contributing to the decarbonization of society, such as encouraging others (users of goods and services) to reduce their emissions through the introduction of innovative technologies and the supply of goods and services for a decarbonized society.

For example, developing and providing ways of electrifying manufacturing process in a market where decarbonized products are preferred, are expected to increase sales of such products, resulting in higher profits. In this example, the climate-related opportunity is to develop and provide electrified manufacturing process which expects to increase future sales in a market where decarbonized products are preferred.

Figure 1



(Figure 1: Categories of Climate-related opportunities⁶)

This document mainly focuses on “genuine opportunities,” efforts that contribute to the increase of enterprise value through gained sales by contributing to climate change mitigation. This is because “risk reduction” has already seen progress in evaluation and disclosure in the context of measurements for climate-related risks.

Section 3: Importance of climate-related opportunities and their relationship to risks

To realize a decarbonized society, it is important for each company to work toward reducing its own emissions (Scopes 1–3) (“Risk reduction”) as shown in Figure 2, as well as to implement and promote efforts on the development and provision of goods and services for the decarbonization of society (“Genuine opportunities”).

On the other hand, as mentioned above, whilst international standards have been developed for risks, opportunities especially “Genuine opportunities,” is not as pervasive as the disclosure and evaluation of climate-related risks. Regarding GHG emissions, which are considered to be indicators related to the transitional risks, Scopes 1–3 emissions are calculated and disclosed based on GHG protocols, etc., and it

⁶ Figures in this document are produced based on discussions in the Working Group on Disclosure and Evaluation of Climate-related Opportunities.

is common to disclose targets and strategies for reducing them. These are efforts that contribute to “Risk reduction” as defined in Section 2.

However, under the existing evaluation framework centered on “Risk reduction,” companies that supply energy-saving goods and services that lead to emissions reductions for society are expected to see a temporary increase in their emissions in production and use phase as a result of the further spread of these goods and services. As a result, such companies could possibly be evaluated negatively in corporate evaluation centered on the existing risk perspectives. In addition, research and development aimed at social implementation of innovative technologies that contribute to the realization of a decarbonized society may lead to a reduction in emissions across society in the future, but it is difficult to evaluate such research and development under existing frameworks that focus on current emissions.

Encouraging disclosure and evaluation of climate-related opportunities that are currently not well understood would contribute to reducing emissions across society and support efforts to increase enterprise value through increased sales. It is also expected to lead to the expansion of goods and services that help reduce emissions and improve the resilience of society and the early implementation of innovative technologies.

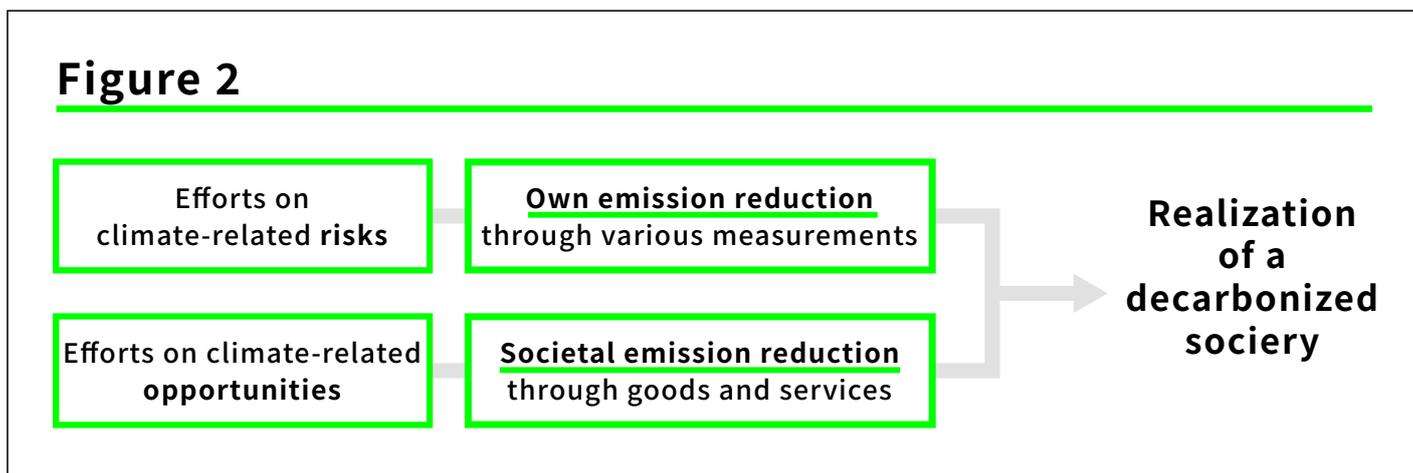
Since addressing climate-related opportunities in this way contributes to the improvement of enterprise value, the evaluation of climate-related opportunities by financial institutions and others can be one of the investment approaches that lead to the pursuit of targeted financial returns⁷.

Indeed, some have estimated that the \$2.1 trillion in benefits associated with capturing climate-related opportunities is greater than the \$970 billion in financial effects associated with climate-related risks⁸. Disclosure and evaluation of climate-related opportunities can be beneficial to both companies and financial institutions.

⁷ PRI, UN, generation, foundation, Freshfields Bruckhaus Deringer, “[Legal Framework for Investments That Make an Impact](#)” (May 2022)

⁸ CDP “[Major risk or rosy opportunity Are companies ready for climate change?](#)” (Last viewed in February 2023)

Figure 2



(Figure 2: Two Aspects of Decarbonization)

As Figure 2 shows, it is not enough for companies to reduce their own emissions (initiatives related to climate-related risks) to realize a decarbonized society. At the same time, it is essential to support companies' efforts as solution providers (on climate-related opportunities) that contribute to the decarbonization of society. However, it is not appropriate to engage only in activities related to climate-related opportunities and neglect those related to risks, since doing so could lead to delaying the realization of a decarbonized society and damage enterprise value. Accordingly, companies must be committed to reducing their own emissions⁹ for disclosing climate-related opportunities. Therefore, this document requires companies to meet the following requirements 1–3 for their emissions reduction efforts as a premise for disclosing climate-related opportunities.

1) Setting science-based emissions reduction targets

- Set 2050 carbon neutrality target and at least 2030 target for science-based mid-term target (short- to medium-term target¹⁰).

*Science-based targets are GHG reduction targets required for achieving the goals of the Paris Agreement, and it is assumed that reference will be made to scenarios developed by countries and international organizations to establish such targets.

*Targets scope basically refers to Scopes 1–3. Scope 3 targets should be set on best effort basis at the time or target setting and is required when it is material for the company.

⁹ Companies committed to reducing own emissions are not only those currently aligned with 1.5 degrees targets but also those set targets aimed for carbon neutrality, formulate a strategy and are in progress to be aligned.

¹⁰ Referring to the Financial Services Agency, the Ministry of Economy, Trade and Industry and the Ministry of the Environment "[Basic Guidelines on Climate Transition Finance](#)" (May 2021), the short- to medium-term targets refers to 3 to 15 years.

- [References]

- » Science-based plans set by governments or industrial organizations that are aligned with the Paris Agreement (e.g., the Ministry of Economy, Trade and Industry's Sectoral Technology Roadmap)
- » Nationally Determined Contributions (NDC)
- » Internationally recognized scenarios (such as the International Energy Agency's (IEA) Sustainable Development Scenario (SDS) and the Net Zero Scenario (NZE))
- » Science Based Target initiatives (SBTi), etc.

2) Developing a transition strategy to achieve targets and ensuring its viability

- Develop a transition strategy¹¹ to achieve set targets and develop a governance structure to ensure its viability

*It is also advisable to formulate an investment plan, etc. to ensure its effectiveness.

*When developing a transition strategy, it is advisable to incorporate and demonstrate consideration for a “Just transition.”

3) Disclosure of targets/strategies and their results

- Companies should develop targets and strategies and disclose them externally
- Disclose progress and results against various targets and strategies

*Scope 3¹² should be disclosed when it is material to the company. However, considering the methodologies are still in progress, companies may estimate using the best available information.

*Progress and results are not necessarily limited to quantitative figures but include qualitative information such as explanations on the implementation of demonstration experiments.

¹¹ Transition strategy includes the target year for achieving carbon neutrality, short-, medium- and long-term targets, and specific measures with timelines. Scenarios should be referenced when developing a transition strategy, and it is important to consider the characteristics of the industry and the region in which the business is conducted. For details, refer to the Financial Services Agency, the Ministry of Economy, Trade and Industry and the Ministry of the Environment “[Basic Guidelines on Climate Transition Finance](#)” (May 2021).

¹² Exposure Draft ([IFRS S2](#)) by ISSB requires disclosure of Scope 3. However, acknowledging issues on data availability and methodologies, Scope 3 calculation and disclosure should be done using most recent data available without undue cost or effort. For details refer to [Staff Paper \(3C & 4D\)](#) published in January 2023.

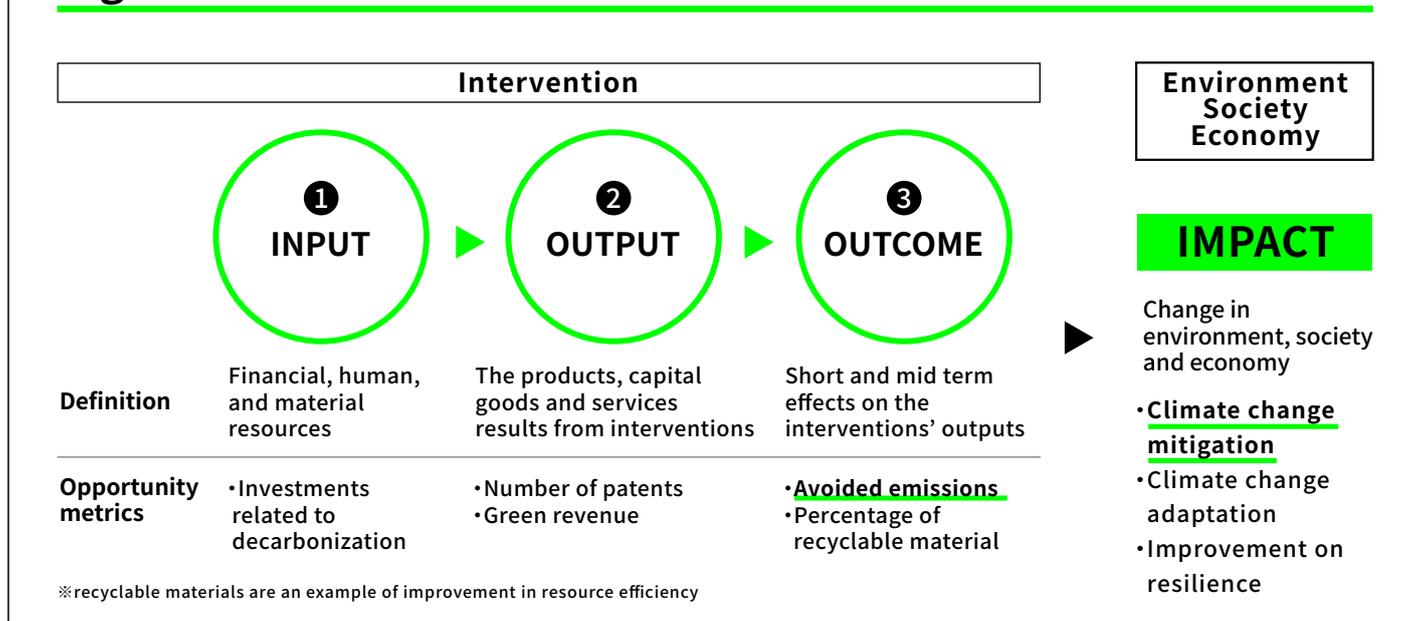
Section 4: Metrics to disclose and evaluate climate-related opportunities

This section identifies examples of metrics for climate-related opportunities based on Section 2. These metrics represent the extent to which efforts contribute to the future enhancement of enterprise value through an increase in sales when economic and social changes occur through decarbonization. Although qualitative metrics are not excluded as those representing climate-related opportunities, this document focused on quantitative metrics from the perspective of comparability.

The climate-related opportunities metrics illustrated in this document are related to business activities that lead to climate change mitigation and is classified into either input, output, or outcome. Figure 3 shows the classification of each metric. Input refers to resources (financial, human, and material resources) put into a project or business activity, and the direct result to the stakeholders is defined as output. Short-term effects achieved through output is defined as outcome, and long-term change on the environment, society and economy are defined as impact¹³. Input includes investment related to decarbonization, output includes the number of patents and green revenues, and outcome includes avoided emissions and the percentage of recyclable materials used. For example, when disclosing and evaluating the amount of investment, an input, they are disclosing and evaluating the amount of money invested to implement initiatives that contribute to climate change mitigation. In addition, when disclosing and evaluating avoided emissions, an outcome, it means they are disclosing and evaluating the results of companies' intervention on climate change mitigation.

¹³ Based on the logic model, impact is defined as a change to the environment, society and economy. However, in the context and practice of impact finance, the word outcome and impact may be treated the same.

Figure 3



(Figure 3: Examples of metrics for climate-related opportunities)

When companies disclose metrics to assess climate-related opportunities, it is important to be aware of disclosure considering existing climate-related disclosure frameworks and standards. Based on TCFD final report or the Exposure Draft (IFRS S2) which ISSB published in March 2022, this document summarizes the key points for climate-related opportunities disclosure as follows:

1) Disclose targets, strategies, and own emission reduction efforts

As indicated in Section 2 of Chapter 1, emission reduction efforts and those for societal decarbonization should both be encouraged. Therefore, companies are required to disclose their own emission reduction efforts when disclosing climate-related opportunities¹⁴.

2) Explain the relationship between climate-related opportunities and finance

Based on disclosed metrics to assess climate-related opportunities, companies are required to explain how efforts are expected to affect their finances. When explaining this, it is important to consider the companies' businesses (activities) and the changes in external environment. Companies' businesses (activities) refer to businesses activities that lead to an increase in enterprise value through environmental impact, such as the manufacture of products or research and development. Changes in the external

¹⁴ See Section 3 of Chapter 1 for specific disclosure details.

environment refer to physical events indicated by the TCFD, as well as events related to policy, technology, market, and reputation associated with transition. For example, the following explanation can be used to disclose the amount of investment that will contribute to decarbonization, with business activities being the development of CO2 separation and sequestration technologies and the external environment being the regulation on CO2 emissions.

Example: As a manufacturer of materials manufacturing equipment, the Company is investing in the development of technology to separate and sequester CO2 emitted during the production of materials. Given the high demand for such technologies with requirements to reduce CO2 emissions, the future implementation of such technologies is expected to increase demand for machinery of the Company.

3) Disclose financial effect

Indicate the degree of financial effect expected due to identified business activities and efforts. However, in cases where it is difficult to provide quantitative figures (e.g., when calculations are based on assumptions such as future sales growth), companies may disclose qualitative information.

4) Consider negative impacts

Consideration should be given to how efforts for climate-related opportunities may affect the environment and society beyond climate change. It is also important to disclose measures against negative impacts when such are expected. Examples of negative impacts include the depletion of resources and the reduction of employment due to the supply of goods and services.

5) Disclose with transparency

Disclosure that can effectively communicate with financial institutions is a disclosure that satisfies the four elements set out in TCFD; consistency, comparability, reliability, and clarity. Specifically, it means disclosing the same items on a continuous basis (consistency), using internationally accepted measurement methods (comparability) and objective data (reliability), along with methodologies and definitions (clarity).

However, given that international discussions on climate-related opportunities are still in progress, with standards and frameworks for disclosure and methodologies

may not necessarily be established, these should be met on a best-effort basis. It should be noted that small efforts, such as keeping the same disclosure locations, contribute greatly to the ease of evaluation by financial institutions.

Chapter 1 addressed the concept of climate-related opportunities. While this document deals with a wide range of climate-related opportunities, Chapter 2 focuses and addressed definitions and approaches on avoided emissions, an outcome metric with direct impact on climate change mitigation.

Chapter 2

Avoided Emissions

-metrics to assess climate-related opportunities

Section 1: Background

Section 2: Definition and Relation to climate-related opportunities

Section 3: Concept and guidelines for target goods and services

Section 4: Disclosure

Section 5: Evaluation

Section 6: Prospects

Section 1: Background

Avoided emissions is a metric that illustrates the extent to which the use of goods and services contributed to the reduction of society' s emissions¹⁵.

The definition, methodologies and disclosure methods for avoided emissions have been discussed both domestically and internationally, resulting in the development of multiple guidance. For example, the World Business Council for Sustainable Development (hereafter, the “WBCSD”) and the Institute for Climate Change and Adaptation (hereafter, the “ICCA”) presented ideas and methodologies for avoided emissions for the chemical industry in 2013. In addition, the World Resources Institute (hereafter, the “WRI”) published its views on avoided emissions in 2019.

In Japan, the Ministry of Economy, Trade and Industry published the “Guidelines for Quantifying GHG emission reductions of goods or services through Global Value Chain” in 2018, which presented a pan sectoral framework and fundamental principles for quantifying avoided emissions for all industries.

Although, avoided emissions has been discussed, there has not yet been a common international interpretation of its significance, definition, utilization, and detailed sector specific methodologies. Thus variations are observed in the market for its assessment. As a result, the use of avoided emissions is yet in its infancy.

However, in recent years, there has been a growing demand for companies to disclose and highlight the impact of their efforts. Financial institutions have also begun incorporating such information into corporate evaluations. These led to renewed discussions on avoided emissions as an metric to assess corporate efforts that lead to creating impacts (climate change mitigation). WBCSD has established a working group on avoided emissions and publish a guidance¹⁶.

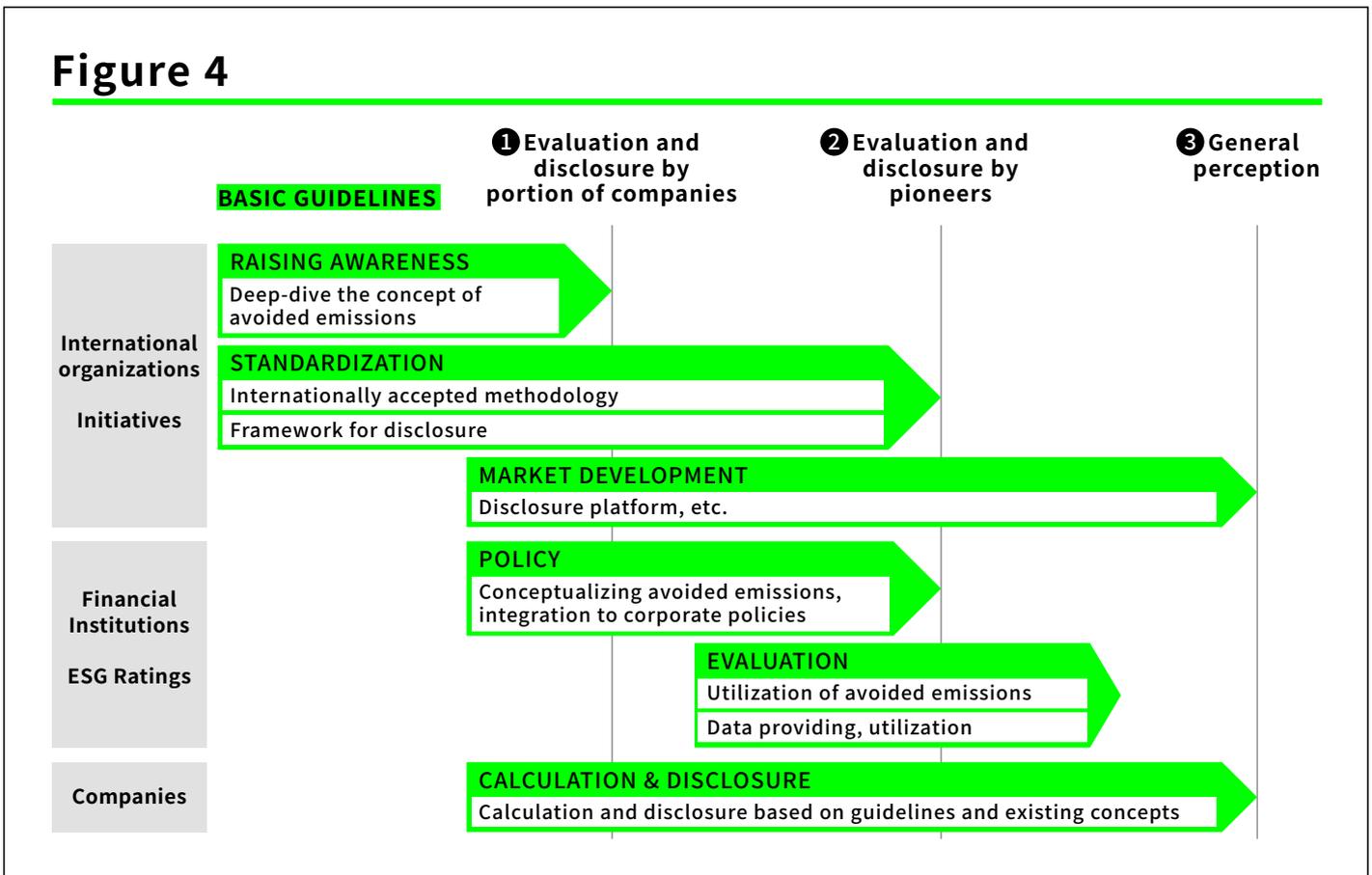
Encouraging common usage of avoided emissions cannot be done instantly, however, requires simultaneous efforts and multiple stages, as shown in Figure 4. First it is crucial to raise awareness of the importance of avoided emissions and then for companies to increase disclosure of avoided emissions and for financial institutions to incorporate them into their

¹⁵ Avoided emissions in this document includes both observed and potential (estimated future avoided emissions through the supply of goods and services not yet implemented) avoided emissions.

¹⁶ WBCSD “[Guidance on Avoided Emissions](#)” (March 2023)

corporate evaluations, as well as the development for standardized methodologies. These developments will allow for sophisticated and transparent corporate disclosures, hence more inclusion in corporate evaluations by financial institutions. In the process, it is also expected that information disclosure platforms and other market necessary platforms to be developed to facilitate the acquisition of corporate disclosure information on avoided emissions.

Based on the roadmap, this document focuses to raise awareness of its importance by addressing avoided emissions as metrics to assess climate-related opportunities and laying fundamentals on definition, methodologies and disclosure and evaluation.



(Figure 4: Avoided Emissions Roadmap)

This document does not set forth rules and standards on methodologies, disclosure and evaluation. For practical use, refer to various guidance, including existing publications on disclosures and methodologies, where consideration for industrial characteristics are important.

Section 2: Definition and Relation to climate-related opportunities

Avoided emissions is defined as follows, based on the definitions of climate-related opportunities in this guidance and definition of avoided emissions in existing guidance¹⁷.

Avoided emissions refers to the quantified contribution on climate change mitigation¹⁸ (“positive impact”) and is the difference between GHG emissions of conventional goods and services (baseline) and those of new ones.

As a characteristic of avoided emissions, the greater the difference in the intensity from conventional goods and services, the greater the value. For instance, the larger the difference in the intensity of goods and services, the lower the energy consumption required when using them. Thus, leading to energy-related cost savings for consumers. In addition, goods and services that can curb emissions and energy consumption above a certain level may reduce regulatory cost increases or receive more subsidies where regulations encourage emissions reductions.

When these benefits are recognized and substitution or new demand for the goods and services arose, the supplier of the products or services is expected to see an increase in sales. Which results in greater avoided emissions in total, as well as an increase in sales of the goods and services and ultimately an increase in revenue. Thus, avoided emissions can be regarded as an metrics that indicates the degree of contribution to climate change mitigation, as well as indirectly indicating the demand through replacement from other companies' products and the creation of new demand.

Moreover, in terms of the relationship between avoided emissions and enterprise value, companies with higher avoided emissions saw growth in revenues at an annual rate of 7%, approximately 20% higher than that of the average companies¹⁹.

Avoided emissions is expressed as the amount of GHG as GHG inventories, however, their concepts and subjects of measurement differ and must be clearly distinguished.

¹⁷ See ICCA, WBCSD “Addressing the Avoided Emissions Challenge” (October 2013), the Ministry of Economy, Trade and Industry “[Guidelines for Quantifying GHG Emission Reductions of Goods or Services](#)” (March 2018), and WRI “[Estimating and Reporting the Comparative Emission Impacts of Products](#)” (January 2019).

¹⁸ While some of those subject to the calculation of avoided emissions may overlap with Scopes 1–3, the “[Estimating and Reporting the Comparative Emission Impacts of Products](#)” (January 2019) published by the WRI clearly states that GHG inventories and avoided emissions evaluate a company' s efforts from different perspectives and that overlapping claims will not be an issue. This document also assumes that GHG inventories measured and disclosed in Scopes 1–3 and avoided emissions are separately disclosed and does not identify overlaps as an issue.

¹⁹ GIC and Schroders, “[A framework for Avoided Emissions analysis](#)” (November 2021)

GHG inventories are a list of emission sources and the associated emission quantified for a certain period²⁰. In other words, GHG inventories reflect companies' efforts to reduce their own emissions, including conversion to renewable energy from fossil fuels in manufacturing or installation of highly efficient manufacturing facilities.

On the other hand, avoided emissions is the difference between GHG emissions from the supply of goods and services and GHG emissions that would otherwise have been emitted (reference scenario)²¹. In other words, it measures the difference of societal GHG emissions compared to the reference scenario.

The reduction of own emissions by the company is reflected in GHG inventories and the reduction of emissions by society is reflected in avoided emissions are both essential in achieving carbon neutrality. Though, since these two measure emissions from different aspects, GHG inventories and avoided emissions must be reported separately.

Additionally, avoided emissions must not be used as a means for companies to achieve carbon neutrality. Although current methodologies and disclosure for GHG inventories may not adequately reflect corporate efforts to emission reduction²², avoided emissions must not be used as a offset. Distinguishing these two in the disclosure are essential to avoid misunderstanding from stakeholders.

Section 3: Concept and guidelines for target goods and services

To ensure the credibility of avoided emissions, this document lays the following eligibility criteria of goods and services for which avoided emissions may be calculated and disclosed. When calculating avoided emissions, goods and services must meet the following criteria:

1) Alignment to the achievement of carbon neutrality

- The goods and services must be in line with the targets of the Paris Agreement or latest climate science. Referring that company should demonstrate that the goods and services are aligned with the societal transition to carbon neutrality and does will not become

²⁰ Ministry of the Environment, "[Overview of Greenhouse Gas Inventories](#)" (Last viewed in February 2023)

²¹ Ministry of Economy, Trade and Industry, "[Guidelines for Quantifying GHG emission reductions of goods or services through Global Value Chain](#)" (March 2018)

²² Scope 1–3 measurements based on the GHG protocol may increase Scope 3 due to the sale of low-carbon and decarbonized products, which alone does not adequately evaluate the efforts of companies contributions to societal decarbonization.

stranded assets in the future.

*As decarbonization pathway vary by industry, region, and companies, goods and services should be optimal at the time (rational and scientific-based), and consider these characteristics.

*Those contribute to further decarbonization in comparison with conventional goods and services are eligible if they contribute to the current reduction of emissions and are based on the assumption of future decarbonization.

The following are examples of references to demonstrate the alignment with science-based carbon neutrality:

[References]

- » Sectoral Technology Roadmaps by the Ministry of Economy, Trade and Industry
- » EU Taxonomy
- » Certification standards for energy consumption efficiency and decarbonization performance, etc.

2) Goods and services have legitimacy in the reduction

- There should be a clear indication that the goods and services are related to reduction factors of emissions. Avoided emissions not only cover final products, but also the components. These components may calculate avoided emissions through a comparison of the performance of final products and services.

* Avoided emissions may not be disclosed for all components and technologies that consists of final goods and services, but only be calculated and disclosed for those directly contribute to the reduction that final products bring.

For example, if the energy-saving performance of Product X is improved by reducing the weight of Component α (component of Product X), the manufacturer of Component α may calculate and disclose avoided emissions. On the other hand, if Component β (another component of Product X) has the same performance as before and does not contribute to the emission reduction, the manufacturer of Component β cannot calculate or disclose avoided emissions for Product X.

Disclosing climate-related opportunities, requires companies to commit to emissions reduction efforts²³.

²³ See Section 3 of Chapter 1 for details.

Section 4: Disclosure

This section addresses “Principles” and “Recommended disclosure” from the perspective of corporate evaluation by financial institutions. As companies’ efforts to be evaluated appropriately, it is important that financial institutions establish a framework and that disclosures of companies’ avoided emissions provide effective information. Since they lack concrete rules or international consensus on disclosure framework, this document does not aim to provide set of rules or standards, but instead provide underlying “Principles” and metrics that should be disclosed from an evaluation perspective in “Recommended disclosure.”

At this point, as international discussions are still developing, the difficulty of satisfying all examples of items should be noted. Therefore, it is important²⁴ to continually disclose what can be disclosed through best efforts at the time of disclosure, and continuing and further improving disclosure without hesitation, even if all the points presented in this Chapter are not met, could also promote evaluation.

Principles

- **01 Clear distinction from GHG inventories**

Avoided emissions should not be deducted from GHG inventories to achieve carbon neutrality, and should be disclosed separately

- **02 Meeting eligibility**

Goods and services, for which avoided emissions are calculated, should meet eligibility, with companies commitment to their own emissions reduction

- **03 Consideration of negative impacts due to the supply of such goods and services**

The supply of such goods and services may also have impacts on the environment and society other than climate change. When disclosing avoided emissions, it is desirable to consider whether there be an impact on environment and society other than climate change (especially negative impacts), and to take measures if negative

²⁴ However, from the perspective of evaluation, it is advisable to explain the reasons and background for those that are difficult to disclose. As reasons for the difficulty of disclosure may include the lack of industry-specific calculation methods and common international interpretations.

impacts are expected.

Examples of negative impacts: Noise pollution to locals due to the supply of such products, significant ecological changes, etc.

● **04 Transparent disclosure**

For easier evaluation for financial institutions it is recommended that methodologies, disclosure locations be kept consistent. However, since methodologies and other frameworks are under development, any changes over time are recommended to be disclosed.

*For instance effective disclosures include, clearly stating “avoided emissions” and keeping the disclosure location consistent.

Recommended disclosure

Figure 5 shows the contents to be satisfied when disclosing avoided emissions. These details of disclosure are necessary ensure credibility of avoided emissions.

While each company is required to meet the following disclosure contents, disclosure examples are illustrative only, and this document does not required all these examples to be provided at the moment. Particularly at the stage of disseminating avoided emissions, it is more crucial for companies to disclose them rather than hindering the disclosure by trying to meet all the examples set below. Instead, companies may respond by explaining the reasons for the difficulty²⁵.

²⁵ Disclosure difficulty is expected in cases when standards are unavailable or information including commercially sensitive information which anticipates in leading to competitive disadvantage.

Figure 5

CONTENTS	EXPLANATION	DISCLOSURE EXAMPLE
GOODS & SERVICES	<ul style="list-style-type: none"> Details of eligible goods and services (its functions etc.) 	<ul style="list-style-type: none"> Goods and services % of the total revenue (entity level only)
ELIGIBILITY	<ul style="list-style-type: none"> Explanation of how goods and services meet the eligibility criteria. 	<ul style="list-style-type: none"> Explanation on what level in VC the goods and services contribute to the decarbonization (if possible, the entity may disclose contribution ratio) Alignment with the eligibility criteria
METHODOLOGY	<ul style="list-style-type: none"> Methodological explanation to ensure transparency and credibility of the results and disclosure. Since methodologies are not yet standardized (such as contribution ratio) is still being developed, calculation is to be based on currently available information and uncertainties or estimates are to be explained. 	<ul style="list-style-type: none"> Reference scenario and rationale Time period for calculation Methodologies and referred guidelines (explain if any modifications are made to methodologies based on individual circumstances)
RESULTS	<ul style="list-style-type: none"> Calculated results based on the methodologies. 	<ul style="list-style-type: none"> Calculated results
NAGATIVE IMPACTS	<ul style="list-style-type: none"> Explanation on whether negative impacts are considered. If an are expected, an explanation of measurements 	<ul style="list-style-type: none"> Whether negative impacts have been considered e.g.) It is confirmed that product A does not result in any negative impacts Measurements to mitigate negative impact (if applicable)
OTHERS	<ul style="list-style-type: none"> Whether or not a company received third party verification and explanation on anything to be noted by third parties. Third party verification is currently not a requirement as methodologies or verifications are not yet confirmed, however, clarifying whether verification is received by the entity is recommended. 	<ul style="list-style-type: none"> Third party verification e.g.) since verification methods are yet to be established for avoided emissions, we do not consider third party verification for now and instead provide calculations and estimates (see URL) for transparency.

(Figure 5: Recommended Disclosure)

Section 5: Evaluation

There are variety of ways in which the avoided emissions can be used by financial institutions. How financial institutions incorporate them in their own evaluation framework should be entirely left to the decisions of each financial institutions in accordance with their policies and objectives. For example, financial institutions may use avoided emissions to evaluate the impact of their investments and loans (such as climate change mitigation), or to evaluate enterprise value of fundraisers.

Section 6: Prospects

This document sorts out the underlying principles in consideration to corporate evaluation. Scope of this document for avoided emissions excludes methodologies and perspectives of industrial characteristics. When disclosing avoided emissions, it is expected that multiple references will be made to other guidelines along with this document, and it is expected that detailed methodologies rules and case studies be further discussed in the future.

Conclusion

To realize a decarbonized society, it is essential for companies to reduce their own emissions and also to develop new businesses and facilitate innovation. The disclosure and evaluation of climate-related opportunities are precisely the efforts to focus on such potential of companies, and encourage both decarbonization and economic growth.

In recognition of the above, the Working Group on Disclosure and Evaluation of Climate-related Opportunities has been conducting its deliberations with a view to encouraging appropriate evaluation and disclosure of climate-related opportunities.

To develop a common international understanding of disclosure and evaluation of climate-related opportunities, which is still in the process of development, it is crucial to build up examples of companies' calculation methodologies and disclosure as well as financial institutions' use of such information and hold a series of discussions based on these examples. In preparing this document, we valued practical point of view and have laid out definitions, concepts and underlying principles. It is expected that these details will be updated as necessary as examples of disclosure and evaluation continue to accumulate.

This document is hoped to be the impetus for further international discussions on climate-related risk mitigation and creation of opportunities and encourage corporate efforts through related disclosure and evaluation.

Appendix 1: Glossary

Outcome	Input refers to resources (financial, human, and material resources) put into a project or business activity.
Output	Output refers to the direct result to the stakeholders through projects or business activities.
Impact	Impact refers to long-term change on the environment, society and economy. This includes climate change mitigation and adaptation or increased resilience, but focus of this document is placed on climate change mitigation.
Input	Resources (people, goods and money) put into a project or business activity.
Enterprise value	Enterprise value refers to the total value of a company, the sum of the value of its equity (market capitalization) and net debt.
Climate-related risks	Climate-related risks are factors that cause enterprise value to decline due to changes in policies, laws, and technologies (transitional), acute weather events and changes in climate patterns (physical). (The definitions of transitional and physical risk refer to the TCFD report.)
Climate-related opportunities	Climate-related opportunities are factors that contribute to the increase of enterprise value through creating impacts, such as contributions to climate change mitigation and adaptation.
Just transition	Just transition is an attempt to ensure the wide sharing of virtual profits created through a transition to a green economy, as well as to support any party who will experience an adverse economic impact

(be it a country, a region, an industry, a community, a worker, or a consumer).

Metrics

Metrics is a standard for measuring or evaluating climate-related risks and opportunities. (In this document metrics include both quantitative and qualitative metrics)

Avoided emissions

Avoided emissions refers to the quantified contribution on climate change mitigation (“positive impact”) and is the difference between GHG emissions of conventional goods and services (baseline) and those of new ones.

Genuine opportunities

Genuine opportunities refers to factors that contribute to additional enterprise value relative to the inherent enterprise value.

Risk reduction

Risk reduction refers to factors that contribute to the reduction of enterprise value deduction that would have otherwise occurred due to climate change.

Acknowledgements

This document is based on the discussion of the Working Group on Disclosure and Evaluation of Climate-related Opportunities, which was established as part of the FY2022 GX League*, a public private partnership effort aiming for both decarbonization and economic growth.

Working Group on Disclosure and Evaluation of Climate-related Opportunities

Nomura Holdings, Inc., DAIKIN INDUSTRIES, LTD., Tokio Marine & Nichido Fire Insurance Co.,Ltd., Development Bank of Japan Inc., Panasonic Holdings Corporation, SUMITOMO MITSUI TRUST BANK, LIMITED, Asahi Kasei Corporation, AstraZeneca K.K., Azbil Corporation, EY Strategy and Consulting Co., Ltd., Iwatani Corporation, AGC Inc., NTN Corporation, ENEOS Corporation, MS&AD Insurance Group Holdings, Inc., OSAKA GAS CO.,LTD., ALL NEED Inc., OMRON Corporation, Owaririkuun.Co.Ltd, Carbon Free Consulting Corporation, Rating and Investment Information, Inc., Green Carbon Inc., Kurita Water Industries Ltd., Globe-ing Inc., Sustech Inc., Shimadzu Corporation, SUZUKI MOTOR CORPORATION, Sumitomo Corporation, Sumitomo Forestry Co., Ltd., Sampo Japan Insurance Inc, Taisei Corporation, Daiseki Co., Ltd., TAKEEI CORPORATION, CHUBU STEEL PLATE CO.,LTD., Chubu Electric Power Company, Incorporated, TEIJIN LIMITED, TEIJIN FRONTIER CO.,LTD., Deloitte Tohmatsu Group, DENTSU INC., TOKYO GAS CO.,LTD., Tokyo Electric Power Company Holdings, Inc., Toray Industries, Inc., TOZAKI INDUSTRY CORPORATION, West Japan Railway Company, Nikko Asset Management Co., Ltd., NIPPON SHOKUBAI CO., LTD., NYK Line, Association of Management Consultants In Japan, PIONEER CORPORATION, HARITA METAL Co.,Ltd, BASF Japan Ltd., Hitachi, Ltd., People,Dreams&Technologies Group Co.,Ltd., FUKUSHIMA GALILEI CO. LTD., Fujikura Ltd., Future Corporation, Mizuho Financial Group, Inc., Mitsui Chemicals, Inc., Mitsubishi Chemical Group Corporation, Mitsubishi Heavy Industries, Ltd., Hair Clinic Reve-21 Co.,Ltd., YASKAWA Electric Corporation, LIXIL Corporation, Resonac Holdings Corporation.

* GX is an abbreviation for Green Transformation. It refers to the transformation of the whole socio-economic system as a country to realize both 2030 GHG emission reduction targets and industrial growth by perceiving related efforts as an opportunity for economic growth. [GX League](#) was launched as a mechanism for a group of ambitious companies that actively engage in GX, together with government, academics, and finance, to discuss the transformation of the entire economic and social system and to put into practice the creation of new markets at the same time.

