Report by the Working Group on Financial Institutions' Efforts towards Decarbonization of the Economy

Recommendation (Guide) on financial institutions' works toward Net-zero

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Description

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Efforts towards the Decarbonization of the Economy
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1. Introduction

Since the Paris Agreement came into effect in 2016, many countries and regions have set targets for limiting global warming and have taken the actions to achieve Net-zero. In 2020, Japanese government announced its goal of carbon neutral by 2050, and numbers of public and private initiatives are actively working toward Net-zero.

Recently, energy prices have been rising recently, national security has become increasingly important as a result of the Russian invasion of Ukraine in 2022, and debate continues between those in favor and against ESG and green investment in some jurisdictions. However, many countries have continued to successively launch and implement policies to achieve Net-zero.[1]

In the United States, legislation has been passed to take policy measures to promote renewable energy. In the EU, emissions from motor vehicles will be reduced by 55% by 2030, and the sale of vehicles with internal combustion engine will be banned from 2035 with the exception of those using e-fuel. Japan has formulated the Basic Policy for Realization of Green Transformation (GX) in February 2023, accelerating discussions on ways to promote projects toward GX and cover the massive demand of finance.

Regarding sustainable finance, there are active discussions internationally, including those on climate-related disclosure at ISSB, regulation on funds and other sustainability-related financial products in several jurisdictions, and the promotion of Net-zero investment through collaboration between FIs and governments.

The major trend toward medium- to long-term decarbonization has been continuing and accelerating. As various decarbonization activities are being carried out by many industries both domestically and internationally, FIs are expected to play roles that go beyond the conventional frameworks of socially responsible investment and ESG investment, in line with the movements of the real economy toward Net-zero.

In the United States and Europe, the significance of finance, or the role of financers in leading and achieving Net-zero in the real economy, is widely recognized, and private-sector initiatives are accelerating, such as the GFANZ (Glasgow Financial Alliance for Net Zero) launched in 2021. Among

[1] Net-zero: In this report, Net-zero means to achieve net zero GHG emissions on a global or regional basis, combining the total emissions (gross) of each industry, etc. with the removals by forests, etc., or to set a target for this.

the various ESG (environmental, social, and governance) issues, climate change is an area where future risks and opportunities could particularly and realistically be expected for the FIs, and there are many FIs that are actively working on decarbonization, recognizing as a central issue for their management and investment.

In response to climate change issues, as seen in the EU "Taxonomy Regulation," there are efforts to classify various technologies and businesses as "green" (and non-green), and direct funds to the former through disclosure on corporations and financial products. In this case, projects classified as "green" can easily be funded, while those classified as non-green are less likely to be.

In order to decarbonize the whole society, it is necessary for many stakeholders who are tackling various issues toward the transition to Net-zero, such as the development and implementation of new technologies that are not currently available and the restructuring of manufacturing and sales, to cooperate for a long time frame.[2]

In order to achieve "transition" toward Net-zero, there are many difficulties, for example (a) it is necessary for a single company in its investment planning to assume society-wide infrastructure developments that the company by itself cannot control, (b) transition plans are long-term in their nature and entails considerable uncertainties including technological development, and (c) the planning requires considering the regional characteristics in terms of the environment and energy, etc.

Financial institutions (FIs) need to realize growth opportunities and reduce transition risks for their entire portfolio by responding to challenges faced by their customers. Strategic consideration of long-term "transition" for FIs and the ways to assess progress of the transition are, however, still in the process of trials.

Regarding the implementation of "transition" to Net-zero by FIs and the assessment of their progress, international private-sector alliances and initiatives have led discussions and produced many standards and guidelines. These include the Net-zero Banking Alliance (NZBA), a banking sector-

[2] In this report, the transition to a decarbonized society or net zero GHG emissions is referred to as "transition," and the provision of funds for the transition is referred to as "transition finance." In addition, bonds and loans that have received external verification (with labels) are referred to as "transition bonds" and "transition loans," respectively.

specific alliance under the GFANZ Group; the Partnership for Carbon Accounting Financials(PCAF), which develops methods to measure the GHG emissions associated with FIs' investment and loan portfolios; the SBT Initiative (SBTi)[3], which certifies and supports the consistency of companies' transition plans with the 1.5 degrees target; and the Transition Pathway Initiative (TPI), which provides information to investors on the targets of high-emitting companies and the assessment of their progress. These are different from the government-to-government approach or framework, which has traditionally been typical to financial regulation, supervision, or standard-setting. It is therefore essential for a government or related experts to periodically follow up, review, and disseminate the discussions related to Net-zero, through this report and other publications.

Based on this understanding, it will be important for both financial authorities and FIs to keep a close eye on the discussions among FIs, provide input to the agendas of these initiatives, and lead to private sectors' effective standard setting and extensive practice-sharing to support the transition of the real economy. Despite important progress made so far, the discussion on the standards and practices in international initiatives and other fora is still in the early stage, and there are still many challenges in applying them in practice.

As climate change is a global issue, in order to take actions such as the reduction of GHG emissions, it is essential that developed countries advance coordinated efforts toward ambitious targets. On top of this, it is necessary to expand effective efforts to broader regions.

In particular, Asia has strong geographical ties with Japan, and its population and energy demand are growing rapidly, while the area has certain challenges in terms of the processes of decarbonization, such as that it is necessary to take into account the geographical characteristics of each country in Asia.[4]

It is important to consider appropriate transition strategies and financing in accordance with the industrial structure and natural environment of each country and region. However, practical discussions on these points are still in

[3] See Table 2 on page 33.

[4] For example, in the Asia-Pacific region, it has been pointed out that the potential amount of renewable energy such as solar and wind power is not necessarily sufficient to meet the enormous energy demand, and that the scope and connectivity of the power transmission network is also an issue due to the insular geographical feature.

the process of materialization. Japan's experience in transition finance, which would share with other parts of Asia in the need to make appropriate transition strategies under individual energy and environmental constraints, may possibly serve as a useful reference for other Asian countries.

It is important for Japanese FIs and financial authorities to demonstrate their initiatives through trials and actions, while collaborating with other stakeholders in Asia. As similar discussions have already been conducted in Asia, for instance, on the consolidation of corporate data and the development of human resources, necessary collaboration with Asian private and public counterparts would be conceivable.

With these issues in mind, the Japan Financial Services Agency (JFSA) launched "the Working Group on Financial Institutions' Efforts towards Decarbonization of the Economy" under "the Expert Panel on Sustainable Finance" to encourage the cooperation between JFSA and FIs regarding discussions toward decarbonization. Since the Working Group was established in October 2022, it has held wide-ranging discussions on seven meetings with the participation of GFANZ, the PCAF, and others. This report summarizes those discussions on practical challenges for FIs aiming at decarbonization and issues in responding to them.[5]

It is important for the JFSA and other relevant organizations to disseminate the discussions in this report to overseas authorities and global initiatives of FIs from now on. In addition, to expand good practices to regional FIs, the JFSA is expected to cooperate with the Japan Chamber of Commerce and Industry[6], which also participated in the Working Group, as well as the Local Finance Bureaus[7] and other relevant local branch offices.[8]

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[5] Although sustainable finance relates to a wide range of social issues, including impacts on the environment, diversity, human rights, and society, this report focuses on climate change, particularly the transition of FIs to Net-zero.

[6] The Japan Chamber of Commerce and Industry (JCCI) is a network of comprehensive local economic organizations made up of the representatives of some 1.23 million member businesses nationwide, embracing everything from large and medium-sized corporations down to small firms and sole proprietors.

[7] The Bureaus supervise regional FIs along with the JFSA, and conducts broad research on local economies.

[8] Sustainable finance is fast and ever-changing area, and it is necessary for the government to update its websites in a timely manner so that related businesses can always access the latest information.

2. Role and Scope of this Report

In July 2022, the FSA published "Supervisory Guidance on Climate-related Risk Management and Client Engagement"[9], which states that as climate change impacts on broad areas including the global economic and social structure, it is necessary for FIs to take a forward-looking view of the opportunities and risks associated with climate change and to take strategic actions from the perspective that responses to climate change could have a significant impact on the future growth and sustainability of their businesses as well as their corporate clients. In particular, the Guidance states that it is important for FIs to provide the support to their corporate clients through purposeful and constructive dialogue (engagement).

However, there are many challenges for FIs to support their corporate clients' efforts to deal with climate change issues, including the implementation of smooth transition and specific approaches to engagement.

This report is based on the above-mentioned Supervisory Guidance published in July 2022, and summarizes the discussions at the Working Group, as a practical recommendation ("Guide") to identify and address challenges and issues for FIs' support for companies toward decarbonization, including recommendations of authorities' policy measures. The Guide is expected to be used as a reference by financial authorities and FIs in Japan and overseas in order to identify and address practical issues for FIs' effort to Net-zero. For FIs, the Guide is expected to be useful not only for those at the sustainability promotion departments and the management and planning department, but also for broader divisions involved in sustainable finance and decarbonization.

Large FIs that participate in international alliances and are already engaging in Net-zero have already been undertaking various initiatives and deepening their efforts. Issues they faced in their implementation need to be widely shared and related parties to cooperate to respond to the issues. Regional FIs share with large FIs the same basic approach to climate change, but they would unlikely be able to take exactly the same approach as large FIs since their main clients are small and medium-sized enterprises (SMEs)

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[9] Supervisory Guidance on Climate-related Risk Management and Client Engagement (July 12, 2022)
(Japanese)https://www.fsa.go.jp/news/r4/ginkou/20220712/kikouhendou_dp_final.pdf
(English)https://www.fsa.go.jp/en/news/2022/20220715/03.pdf

and they are needed to fully consider the circumstances of the regions they operate in.

Therefore, based on the premise that it is necessary to promote initiatives in accordance with the stages and circumstances of each FI, this report describes Chapter 4 to 6 mainly with the dialogue between large FIs and large enterprises in mind, and Chapter 7 particularly presents specific issues with the dialogue between regional FIs and regional enterprises (SMEs) in mind. The Working Group believes that Chapter 4 to 6 can be a guide for all FIs, including regional FIs that will consider and deepen their efforts in the future.

Although this report mainly focuses on banks and insurance companies, institutional investors such as asset owners are expected to play an important role in dialogues with companies, and the insight of this report can be used as a reference. It should be noted, however, that relations with customers would differ between when mainly investing in stocks and other assets and when primarily focusing on loans, and that some sections may not be applicable for asset owners.[10]

3. Current Status and Challenges of "Transition" Initiatives by FIs

Various actions have already been undertaken for transition towards Net-zero by FIs. Based on these actions, the Working Group held discussions on the transition of FIs and future issues to be solved.

Some FIs are taking active steps to cope with climate change issues; for example, considering banks' own management philosophy and purpose rather than focusing solely on short-term profit fluctuations, they are supporting their client companies' efforts to set targets for climate change and engaging with their clients so that they can achieve their own long-term growth and reduce risks from climate change.

However, as noted above, as there are many practical challenges that FIs need to address in order to strategically examine the transition process, support their customers in formulating transition plans, and monitor progress with engagement, discussions on approach to these issues are currently taking place among international FIs, such as follows:

[10] Organizations that represent the holders of long-term retirement savings, insurance and other assets, which include life insurance companies, public pension funds, corporate pension funds, and university funds.

(1) Current Status of Private Initiatives

(i) GFANZ

GFANZ is a strategic forum for FIs and investors to strengthen their initiatives in collaboration with sector-specific initiatives such as those targeting Net-zero by banks, insurers, and asset owners. Mark Carney[11], United Nations Special Envoy for Climate Action and Finance, announced its establishment in April 2021, and it was officially launched at COP26 held in Glasgow, UK in November of the same year. Today, more than 550 FIs are participating in GFANZ's initiatives, and they have committed to Net-zero of the portfolio as a condition of participation in each initiative (as of April 2023). This aligns with the "Race to Zero" campaign run by the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), as well as strengthens collaboration with seven independent initiatives in areas such as banking, insurance, and asset management.

Between June and November 2022, GFANZ published the following five reports on FIs' transition towards Net-zero, and Japanese FIs were actively involved in the discussions as members of the working groups to prepare these reports:

(a) Recommendations and Guidance on Financial Institution Net-zero Transition Plans
(b) Guidance on Use of Sectoral Pathways for Financial Institutions
(c) Expectations for Real-economy Transition Plans
(d) Measuring Portfolio Alignment: Driving Enhancement, Convergence, and Adoption
(e) The Managed Phase-out of High-emitting Assets

In particular, (a) "Recommendations and Guidance on Financial Institution Net-zero Transition Plans" is a report on transition plans that are central to FIs' efforts toward Net-zero. It was finalized in November 2022 after public consultation. It sets out five components (Foundations, Implementation Strategy, Engagement Strategy, Metrics and Targets, and, Governance) and 10 subcomponents necessary for the formulation and implementation of credible transition plans for FIs and 10 subcomponents, and recommends that FIs should implement these components according to their own business environments and policies. It also recommends four financing strategies to support the transition of the real economy to Net-zero: financing or enabling

[11] Former Governor of the Bank of England and Chair of the Financial Stability Board (FSB)

entities and activities that develop and scale climate solutions, financing or enabling entities that are already aligned to a 1.5 degrees C pathway, financing or enabling entities committed to transitioning in line with 1.5 degrees-aligned pathways, and financing or enabling the accelerated managed phase-out of high-emitting physical assets.[12]

(e) "The Managed Phaseout of High-emitting Assets" states that in order to achieve the 1.5 degrees target, providing funds is necessary to the early retirement of high-emitting assets, as well as those to the development of non- and low-emission assets and decarbonization of existing high-emitting sectors. It also stipulates, on the other hand, that the so-called "divestment"[13] from high-emitting assets may have unintended consequences. In other words, according to the report, in order to achieve Net-zero of the portfolio (Net-zero of financed emissions: discussed later), a responsible approach is not to simply sell high-emitting assets to other FIs or funds, but to reduce corporate clients' GHG emissions by themselves with maintaining and deepening business relationships with the clients through engagements. The initiative suggests that in order to achieve transition of financial system, economy, and society as a whole in an "orderly" manner, it is important to implement strategies to achieve Net-zero by engaging with high-emitting industries and committing to the managed phase-out of high-emitting assets[14] through corporate emissions reductions.

(ii) PCAF

The PCAF is an industry-led initiative to develop and implement a harmonized approach to assess and disclose the GHG emissions associated with FIs' loans and investments (financed emissions: FE). Founded in 2015 by a group of Dutch FIs, the PCAF expanded its operations in North America in 2018 and then globalized in 2019. In 2021, the PCAF also established its

[12] This represents a target set out in the Paris Agreement to strive to limit the increase in global average temperature to "1.5 ° C" below pre-industrial levels by keeping it well below 2 ° C and at 1.5 ° C.
[13] Reducing the exposures to certain asset or company by withdrawing or selling invested funds, suspending new loans, etc.
[14] The report says high-emitting assets encompasses (such as coal mines, fossil-fuel power stations, oil fields, and gas pipelines), assets in industrial sectors (such as steel mills, ships, and cement plants), and assets in the consumer sector (such as vehicles).

Japanese coalition, PCAF Japan. Today, more than 390 FIs are members of the PCAF, with total assets of more than $ 90 trillion (as of May 2023).[15]

The standards published by the PCAF show how much investments and loans made by FIs and investors affect the GHG emissions of investee companies in terms of the provision of funds. They show how FIs measure so-called financed emission, scope 3 category 15 emissions.[16]

Non-financial company's emissions are being standardized separately under the "GHG Protocol"[17] and other protocols. The PCAF standards provide estimates of the financial contribution of each financial institution to emissions associated with seven asset classes: listed equities and corporate bonds, business loans and unlisted equities, commercial loans, project finance, commercial real estate, mortgages, motor vehicle loans, and sovereign debt, based on emissions calculated by companies.

For all asset classes, financed emissions are basically calculated by multiplying the ratio between the FI's outstanding investment or loan amount and the total equity and debt of the financed company or project (attribution factor) by the amount of GHG emissions of the financed company or project. Depending on the asset class, the denominator and numerator of the attribution factor and the scope of GHG emissions are defined differently. For example, in the case of project finance, GHG emissions are captured on a project-by-project basis rather than on a borrower basis.

Financed emissions of FIs are calculated as the contribution of loans or investments by FIs to scope 1 and scope 2 emissions, out of the total GHG emissions of investee companies, and are disclosed on an absolute basis(see Table 1 on page 29).[18]

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[15] While most of the members of the PCAF in GFANZ are large FIs, a relatively wide range of companies are members of the PCAF, including major regional banks.

[16] Scope 1: Direct emissions from owned or controlled sources
Scope 2: Indirect emissions from the generation of purchased energy
Scope 3: All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream

[17] Standard for accounting and reporting of greenhouse gas emissions by businesses, covering not only direct but also indirect emissions.

[18] Scope 3 emissions of borrowers or investee companies are not normally included in the calculation of financed emissions for these companies. On the other hand, the PCAF and others have indicated that sequentially Scope 3 emissions of borrowers or investee companies are to be included into the calculations of financed emissions. In addition, some members of this Working Group have pointed out that the Scope 3 emissions of non-financial companies will be an important factor when formulating and supporting the companies' transition plans toward decarbonization.

The PCAF also stipulates that FIs should disclose emission removals related to borrowers or investee companies when appropriate methodologies become available. For projects such as renewable energies, they may also disclose avoided emissions. Both emission removals and avoided emissions, however, shall always be separately disclosed from the Scope 1, 2, and 3 of FIs.

In addition to financed emissions, which are associated with investments and loans, discussions on sector-specific emissions are also proceeding. Specifically, standards for insurance-associated emissions have been published, and standards for facilitated emissions, which are emissions associated with underwriting and M&A advisory, are scheduled to be published.

Regarding data quality, which is the basis of calculation, the PCAF has adopted a five-grade scoring based on factors such as the extent to which estimates are included in the calculations and whether or not the estimates are published by companies themselves. The lack of high-quality data has been pointed out as a major issue in financed emissions measurement in Japan and others. Even estimates are useful for identifying industries and companies with particularly large emissions in the portfolio. Also, even where only low-quality data is available, the PCAF recommends using available highest-scoring data, clearly indicating its limitations, and gradually improving its quality, rather than refraining from using estimates.

(iii) Initiatives of Each Alliance

As noted above, the GFANZ collaborates with seven sector-specific alliances. Below, we introduce initiatives in the NZBA and NZAOA businesses that were presented to the Working Group.

(a)NZBA

The Net Zero Banking Alliance (NZBA) is an international alliance of private banks established in April 2021 under the support of the United Nations Environment Programme Finance Initiative (UNEP FI) with the goal of achieving Net-zero GHG emissions through their investment and loan portfolios by 2050. It is one of several industry-specific alliances in GFANZ, and currently has over 100 FIs participating, including six Japanese banks (as of March 2023).

In line with the "NZBA Guidelines for Climate Target Setting for Banks," banks participating in the NZBA are required to set emissions targets

(financed emissions by FIs) for 2030 (or sooner) and 2050 and interim targets for every five years from 2030, within 18 months from joining the NZBA for priority sectors such as high-emitting industries and within 36 months for other sectors, and to disclose their progress on an annual basis. The NZBA, through its guidelines and other instruments, will indicate the principles that member banks should apply in setting such reduction targets, and will support the transition of the real economy to Net-zero.

To this end, several working groups have been established under the NZBA to discuss solutions to various issues, formulate guidelines, and provide support for reducing emissions by industry sector.

Japanese FIs are actively participating in these discussions and are taking a leading role in international discussions. For example, one Japanese FI is chairing the Financing & Engagement Work Track Group, which discusses FIs' support and engagement for transition. The Group has published the "Guidelines for Transition Finance" (published in October 2022), which formulated principles that FIs can refer to when engaging in transition finance, and made policy proposals necessary to expand transition finance.

Japan has led discussions on transition finance in both the public and private sectors for several years. It is important for Japanese FIs to continue to actively participate in international discussions in order to contribute to the formulation of global guidelines and viewpoints, promote effective collaboration between industry and finance in each country, and take actions based on the characteristics of each region.

(b)NZAOA

Launched in September 2019 by UNEP FI and the United Nations Principles for Responsible Investment (PRI), the Net Zero Asset Owner Alliance (NZAOA) is an alliance of asset owners committed to decarbonizing their investment portfolios and achieving Net-zero emissions by 2050. Like NZBA, it is one of several GFANZ sector-specific alliances, and currently has 86 member institutions, including five Japanese asset owners (as of May 2023). In NZAOA, standards for setting targets have been established.

A) Setting targets of portfolio emission reduction within a certain reduction levels;

B) Setting targets for each industrial field for high-emitting industries.

C) Setting targets for engagement with high-emitting investee companies

D) Reporting the amount of financing and investment related to the transition to the Alliance.

Member institutions are encouraged to develop at least three of these four goals within one year after becoming a member.

Under the umbrella of NZAOA, working groups have been established to examine specific initiatives. The working groups regularly revise the aforementioned standards for setting targets, formulate guidelines for new asset classes, engage with asset management companies, and promote blended finance to provide funds to emerging countries.

(2) Current status of initiatives by large FIs toward Net-zero

Major Japanese banks and life insurers that have joined GFANZ have actively participated in discussions on the formulation of guidelines for their respective alliances and have set their own Net-zero targets.

As an example, a large bank of NZBA member has positioned climate change-related opportunities and risks as one of the most important management issues. The bank is strengthening support for its customers through engagement and provision of climate change-related solutions with the aim of achieving Net-zero of their own (scope 1 and scope 2) emissions by 2030 and Net-zero of financed emissions associated with its portfolio by 2050. In addition to setting a total amount target for sustainable finance the bank is also providing its solutions to its customers, such as supporting 100% renewable energy of contracted electricity, promoting proposals for carbon offsets[19], and helping target-setting based on TCFD[20] disclosure and SBT.[21]

Furthermore, as pointed out at the Working Group, some FIs are actively tackling social issues such as climate change as part of their management philosophy. Although management philosophy and policies are truly up to each FIs' individual decision, FIs are reconsidering their philosophy from a broad perspective such as building a sustainable economic society.

As another example, a major life insurer that is a member of NZAOA has set a goal of achieving Net-zero emissions from its investment and loan portfolio

[19] Carbon offsetting is a system in which while companies measure their own GHG emissions and make efforts to reduce them on their own initiative, and for the amount of emissions that is difficult to reduce, companies offset them by purchasing credits for emissions reductions or emission reduction achieved elsewhere.

[20] Task Force on Climate-related Financial Disclosures

[21] For example, the following initiatives were introduced at this Working Group:
(Japanese) https://www.fsa.go.jp/singi/decarbonization/siryou/20221013/02.pdf

(financed emissions) by 2050. It has set an interim reduction target every five years and is working to clarify specific steps toward targets. To this end, it has announced its policy on transition finance, which is to achieve the transition of the real economy. The basic policy of the insurer is to promote constructive engagements with investee companies, including internal fund managers as well as business partners, regarding the formulation of strategies necessary for the transition and to pay attention to the characteristics of each industry in these engagements. The insurer will actively support companies' efforts toward the transition based on its policy.

Seen in those example, it is important to share and understand practical knowledge for setting targets and implementing them through discussions on alliances of FIs that set targets consistent with the Paris Agreement and promote initiatives toward Net-zero, and to effectively support the real economy's activity toward Net-zero through ongoing dialogues with companies. Further discussions and initiatives should be continued.

Furthermore, with the aim of achieving carbon neutrality by 2050, the government has launched many policies and support measures. This Working Group believes that FIs' initiatives are extremely important, as supporting client companies' actions to climate change can lead to the reduction of risks for FIs themselves. From the perspective of the financial system and the overall economy, by reducing risks of the real economy, proactive climate change actions by FIs would likely contribute to the reduction of their financial risks associated with climate change risks (physical risks and transition risks), improve the sustainability of the financial system, reduce systemic risks, create new investment opportunities, and promote economic growth.

Regarding mitigation of financial risks associated with the real economy, as stated in the "Guidance" published in 2022, JFSA and the Bank of Japan (BOJ), in collaboration with international organizations, are conducting pilot scenario analyses associated with climate change with major banks and major non-life insurance companies in order to identify the risks and how to cope with those risks; physical risks and transition risks at individual FIs. Scenario analyses are also being actively conducted by U.S. and European authorities. The outline of the scenario analyses by the JFSA and the BOJ is

summarized in the analysis results and issues published in August 2022, therefore this report does not cover specific details on FIs' risk management.[22]

(3) Current Status of Initiatives by Regional FIs to Support Regional Enterprises

In order to achieve carbon neutrality, the government has emphasized that it is important to decarbonize SMEs, which play important roles in the supply chains of large enterprises, not just large enterprises in each industry. SMEs account for 10-20% of Scope 1 emissions, 40% of GDP, and more than 70% of employees. They will play important roles in the transition to a decarbonized society. Although few regional FIs have set Net-zero targets of likes of financed emissions, they are making progress in analyzing and responding to climate opportunities and risks. For example, 61 regional banks have declared support for the TCFD recommendations. In addition, as described in the "Guidance" published last year, various efforts are being made by regional FIs to provide support services to their client companies as follows.[23]

- Providing consulting services for the client companies that are working to reduce GHG emissions
- Matching FIs' client companies with other companies that have technologies to reduce emissions
- Providing sustainability-related financial products to the client companies (more than 70% of regional banks are providing financial products related to sustainable finance such as green loans)
- Supporting client companies for their TCFD support (providing advice on specific measures necessary when intending to endorse TCFD)
- Supporting client companies to generate and trade carbon credits, such as support for the development and certification of carbon sinks and absorption
- Creating regional networks for decarbonization together with local governments, regional economic organizations, and regional businesses

[22] JFSA and BOJ, "Pilot Scenario Analysis Exercise on Climate-Related Risks Based on Common Scenarios," August 2022.
(Japanese) https://www.fsa.go.jp/news/r4/ginkou/20220826-2/20220826.html
(English) https://www.fsa.go.jp/en/news/2022/20220826.html

[23] Member banks of the Regional Banks Association of Japan (62 banks in total)

By accelerating these efforts, it will be important to provide effective support to promote decarbonization, including for SMEs, which account for the majority of the outstanding balance of loans of regional banks.

4. Current status and challenges of companies' efforts toward Net-zero

(1) Current status and examples of companies' efforts toward Net-zero

Companies are making multiple efforts toward the transition to a decarbonized society. Financing that specifies the use of proceeds as sustainability-related is increasing, such as Transition, Green, and Sustainability-Linked bonds / loans. The use of sustainability-related bonds / loans in Japan are on an expanding trend, increasing from around JPY 1 trillion in 2019 to around JPY 5 trillion in 2022.[24]

In particular, it is becoming more common for companies to clarify their strategies for transition to Net-zero and raise funds through transition bonds / loans based on their own transition plans. Transition bonds / loans are financing methods for the steady transition to a decarbonized society, aiming to achieve long-term targets consistent with the Paris Agreement. They are bond issues or loan procurement that specify the use of proceeds for the issuer company's GHG emissions reductions, including energy conversion, as well as its construction of new businesses and research and development to achieve transition. Transition bonds / loans are attracting attention as a way of financing projects for decarbonization of high-emitting industries, and the domestic amount of outstanding bonds / loans has been increasing in recent years.

At this Working Group, a company that issued transition bonds in 2022 explained how it determined and correlated its issuance with the four elements (Strategy and Governance, Materiality, Scientific basis, and Transparency) stipulated in the "Basic Guidelines on Climate Transition Finance"[25] published by the FSA, the METI, and the MOE in 2021. The company also explained how its transition strategy and the use of funds would be consistent with the sector-specific "Technology Roadmap"[26] established by the METI based on the Basic Guidelines.

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[24] Data from JSDA survey (https://www.jsda.or.jp/sdgs/hakkou.html) and JFSA research.

[25] (Japanese) https://www.fsa.go.jp/news/r2/singi/20210507_2.html
(English) https://www.fsa.go.jp/en/news/2021/20210524.html

[26] (Japanese)

At the same time, it was pointed out that issuing the transition bond was a chance to publicize the company's ESG strategy externally and it provided opportunities to challenge new initiatives and raised the motivation of its young employees. On the other hand, the company faced some difficulties in issuing the bond, such as the burden by tightening of guidelines and the deepening of the contents of the framework. Cooperating among relevant divisions within the company was also an issue.[27]

(2) Challenges for non-financial companies' transition

During the discussion at this Working Group, several challenges were raised for non-financial companies to progress the transition.

First of all, when formulating a transition plan, it is important for a company to consider its general management policies and business strategies, how it would achieve a long-term transition and increase the growth and sustainability of its businesses. In particular, in many high-emitting industries that require technological development, it is necessary for the company to make a transition by appropriately combining both capital investments that have significant effects over an extremely long period of time but are highly uncertain, and technologies that are relatively easy to develop.

Particularly in industries where decarbonization cannot be achieved with existing technologies alone, it is necessary for the company to implement technologies that will have large decarbonization effects through long-term capital investments. Presenting sufficient evidence for the development and practical application of such technologies, however, is not an easy task, thus showing the reliability of the transition neither.

It would therefore be a difficult task for FIs to support and evaluate the formulation of their borrower's or investee company's transition plan that would earn market reliability, while taking into account its individual circumstances, including is technical characteristics. While some companies have set 2050 Net-zero targets, quantitative interim targets including Scope 3 emissions targets are not necessarily set, partly due to a lack of data, making it technically difficult for FIs to follow up.

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https://www.meti.go.jp/policy/energy_environment/global_warming/transition_finance.html
(English)
https://www.meti.go.jp/english/policy/energy_environment/transition_finance/index.html

[27] (Japanese) https://www.fsa.go.jp/singi/decarbonization/siryou/20230228/02.pdf

Especially, when looking at the entire supply chain, it is pointed out that even if companies are able to calculate their own emissions, there are major challenges involved in data collection by subcontractors and sub-subcontractor companies. This would potentially make it difficult to comprehensively understand the current emissions status, which is a prerequisite for setting emissions targets. As the methodologies on the follow-up of transition progress by FIs is described in Chapter 5 of this Report and in the "Transition Finance Follow-up Guidance"[28] published by the Study Group for Discussing Development of Environment for Climate Transition Finance, substantial information disclosure by non-financial companies is essential for a FI to effectively support their decarbonization. It is therefore desirable for a FI to proactively engage to appropriately support the companies' management of transition progress. As a part of this, it would be beneficial for a FI to confirm its client companies of their entire supply chain's emissions, and when obtaining the emission data of the supply chain is difficult, cooperate with other FIs to approach the client companies' subcontractors and sub-subcontractors in the supply chain.

In addition, since transition bonds have not much been issued yet in other countries, global institutional investors seem to be exploring ways to understand and evaluate transition bonds. As a result, some transition bond issuers are stating that the level of so-called "Greenium"[29] and other advantages for the issuers of the bonds are not sufficient compared to the burden of preparing documents for the bonds. Although transition bonds are still in the process of market penetration compared to green bonds and sustainability-linked bonds, they are extremely important as a specific finance method to support the transition of high-emitting companies. Therefore, further penetration measures by the public and private sectors are essential. For this purpose, it is necessary for companies to disclose information on the progress of the transition as needed, such as early efforts by companies with a track record of issuance of transition bonds and the reduction of greenhouse gases. It is also necessary for the government and FIs to promote understanding by utilizing the actual examples of transition finance.

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[28] (Japanese) https://www.fsa.go.jp/singi/transition_finance/siryou/20230428/01.pdf
(English) https://www.meti.go.jp/english/press/2023/pdf/0616_003a.pdf

[29] Greenium refers to a phenomenon in which green bonds become higher in price and lower in yield than regular bonds with the same issuance conditions, or their spread.

Furthermore, paying attention to the carbon budget (the amount of GHG emissions that are estimated to be cumulatively emitted to limit global warming to 1.5 C°, etc.) is also important. Although the emissions trajectory of transition plan required for individual companies cannot necessarily be calculated automatically (see page 34), as the world needs to proceed transition at early stages of years up to 2030, it is necessary for companies to understand the rationality of the transition strategy, including timelines toward their targets.

As mentioned above, promoting international understanding of transition finance is an essential issue. In GFANZ and elsewhere, there are discussions on the significance of continuous engagement and transition to decarbonization taking into account the characteristics of industries and regions where immediate decarbonization is difficult to achieve. The importance of engagement and transitions is now more understood among global stakeholders, partly due to the contributions to the international discussions by Japan's FIs.[30]

On the other hand, "transition" as one of the labeling to financial methods to achieve such real economy transition, is yet to be well known globally. Partly because it is difficult to technically understand the strategy and progress for achieving the transition over the long term, the global issuance and origination of "transition bonds/loans" have not progressed sufficiently. Outside Japan, there are cases where KPIs of sustainability-linked bonds are set related to the progress of "transition," and the sustainability-linked bonds are functioning effectively as similar as "transition bonds."[31]

In order for companies to take advantage of decarbonization to achieve mid- to long-term growth and reduce risks, it is important to obtain necessary funding from FIs and promote the transition through dialogues and other means. Also, in order to gain wider recognition and understanding of the importance of transition finance that supports the transition of high-emitting assets, it is necessary to ensure the effectiveness (contribution to the reduction of emissions in the real economy) and reliability of transition finance, and to communicate to the international community through the government, authorities, FIs, and business companies all together.

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[30] For example, Japan is small relative to its population and has few flat areas, so its solar PV development potential is said to be relatively low.

[31] Debt securities that have the potential to undergo both financial and structural changes depending on how well the issuer achieves its pre-set sustainability and ESG goals.

The transition and financing methods for achieving it, including the use of sustainability-linked bonds, are approaches that do not only capture current emissions, but also dynamically capture projected emissions in the future. Therefore, it is important to strategically work from present towards interim targets such as 2030.

As described below (see following page, from 32), it will be necessary to take steps to accurately obtain the progress of the transition, and then to appropriately consider individual emissions trajectories, by taking into account the characteristics of each industry, region and the status of existing facilities, as well as the consistency with global or regional targets related to decarbonization. It will be important for companies in their transition plans to have both feasibility based on the characteristics of each region, industry and company, and ambition in line with the Paris Agreement, so that the effectiveness of the transition can be accurately understood internationally and transition finance will not be misunderstood simply as "delaying decarbonization."

5. Roles that FIs should play toward Carbon Neutrality (engagement)

(1) Importance and challenges of engagement

Proactive efforts by FIs to build a sustainable economy and society, including the promotion of sustainable finance, are important, and they are expected to play an important role. In addressing climate change, given the extremely wide range of transition risks and physical risks faced by the economy, society and financial system, it is necessary to move toward Net-zero by FIs' collaboration.

One of the most important roles expected of FIs is engagement (purposeful dialogue). As indicated in the "Supervisory Guidance on Climate-related Risk Management and Client Engagement," when FIs make the transition, it is vital that they make effective efforts to reduce emissions at investee companies, given that the financial sector is inextricably linked to the real economy, meaning that the realization of climate change opportunities and the reduction of risks by corporate clients are also opportunities and risks for FIs.

It is important for FIs to accurately understand the environment surrounding client companies, the importance of the transition for each company and the stage of what clients are doing for Net-zero. Moreover, FIs

are expected to provide engagement and support for reducing emissions in accordance with the stage of the company.

As stated in the report of GFANZ (see page 7), when FIs "divest" from the viewpoint of portfolio emissions management, and sells assets such as loans to high-emitting industries to investors and funds that are not active on tackling climate issues, this will not lead to decarbonization of the overall real economy, realization of opportunities or reduction of risks. Therefore, first it is important to engage with companies toward Net-zero.[32]

It is important for FIs, while taking into account the relationship between the transition and their business objectives[33], to deepen dialogues with their customer about the significance of the transition for the customer business and to seek its understanding towards formulating its transition plans. Given that there are many cases where multiple FIs provide financing and investment to a single company, collaborative engagement is also effective way, particularly for direct finance. The Working Group also pointed out that there should be discussions on whether or not to relax the Antitrust Law and other regulations related to collaborative engagement.[34]

Furthermore, although decarbonization projects can present significant opportunities for companies, including changes in production and business models, there are many cases in which many costs would occur at an early stage. In such cases, in addition to reducing risks, there was an opinion that it is important to have a dialogue to discuss and examine which way is desirable from the viewpoint of ensuring business growth and sustainability in the medium to long term.

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[32] It should be noted that the lending policies of FIs, including the medium- to long-term investment asset selection policy, are determined by each private FIs.

[33] As a specific example of incorporation into management targets, there is a case where quantitative ESG performance items are incorporated in the executive remuneration policy. Specifically, the achievement of sustainability-related long-term targets, including responses to climate change, is reflected in executive compensation.

[34] The Japan Fair Trade Commission (JFTC) has published its basic views and assumptions on the grounds that, except in cases where activities of enterprises, etc. have solely anti-competitive effects to restrain fair and free competition among enterprises, the activities of enterprises, etc. toward the realization of a green society are basically unlikely to pose problems under the Antimonopoly Act most of the time.
(Japanese) https://www.jftc.go.jp/houdou/pressrelease/2023/mar/230331/bessi2.pdf
(English) https://www.jftc.go.jp/file/230331ENGreenGuidelinesSummary.pdf

(2) Specific engagement methods and challenges

Engagement has already been widely implemented in investments and loans not limited to issues related to decarbonization, and dialogue between investors and companies is a key in the Stewardship Code. In the decarbonization field, for example, it has been shown by the Working Group that major life insurance companies are actively engaging, and further promotion should be encouraged.

Regarding specific engagements that FIs can undertake, it is important to first understand the current situation, and it is advisable to support the visualization of emissions. Measuring emissions is important as the first step in considering the transition plan for decarbonization. Based on that, it will lead to dialogues on business strategies such as energy conservation and development of new production methods and technologies. When business strategies are formulated, they may undergo target verification, such as SBT certification, to see if the strategies are in line with the national and industrial targets for decarbonization.

In particular, with regard to the transition of large enterprises, it is important to formulate concrete transition plans which include the overall mid- to long-term management policy on how to achieve a transition path toward decarbonization through what financing methods to choose and how to penetrate SMEs, which are business partners and customers of the large ones. On top of it, in general, it is important to innovate new technology through collaboration with companies and startups to achieve decarbonization, not limited in industries where existing technology cannot achieve Net-zero. When engaging in dialogue toward Net-zero, it is important to fully consider the needs for new technologies and innovations, as well as how dialogue and finance could promote these.

Some of the communications between FIs and client companies are difficult to disclose to the public, therefore even if other FIs and companies are willing to learn from leading examples of dialogue, it is not easy to do so. Some points out that as the transition does not capture emissions at a single point in time, but is dynamic over mid- to long-term time horizons, it is more cumbersome to understand the appropriateness of individual transition planning than to recognize individual projects in green taxonomy[35]. For this reason, FIs need to accumulate considerable knowledge so that their salespeople in charge of

[35] For example, a list of businesses that contribute to the EU's 2050 carbon neutrality target.

relationship with individual companies can support the formulation of transition plans while taking into account the business circumstances of these companies. The "First Steps toward Decarbonisation" published by the Japanese Bankers Association in January 2023 is considered useful not only for management but also for salespeople tackling the climate issues of customers when they take the first step.

In the decarbonization field, it is pointed out that even large companies still lack human resources, and support and consulting by FIs are considered to be benefitable. It is important to widely develop human resources to promote the transition in cooperation with the authorities and industry associations. Sustainable finance is being incorporated into some private-sector qualification examinations, such as the Qualification Examination for Sales Representatives of Japan Securities Dealers Association, but further expansion of the scope is needed. At the Working Group, for example, there was a proposal to temporarily transfer young staff who are interested in decarbonization and SDGs to environment-related ministries and agencies or organizations. However, there was also an opinion that such personnel exchanges have already been conducted to a certain extent, and that the strategic nature of resource allocation by each financial institution is important in the end.

6. Challenges for FIs which have committed to Net-zero to address climate risks

Based on the initiatives taken to date, various challenges have emerged in terms of Net-zero initiatives. The Working Group summarizes these challenges and points to keep in mind, as well as policy direction by government as follows.

(1) Importance of Portfolio Net-zero and Direction of Discussion

The emissions of FIs themselves (Scope 1 and Scope 2) are mainly from the use of energy and the maintenance of office buildings, and their share in society is not very large. If FIs are to make efforts to decarbonize the society and economy while taking into account the risks of climate change, the emissions of the companies they finance (financed emissions), namely portfolio composition, are more important than their own emissions.

The goal of each FI to reduce the emissions of its investments and loans to Net-zero by 2050 (portfolio Net-zero) would be considered an ambitious goal, consistent with the Paris Agreement. Considering that many large FIs in Japan and overseas are participating in initiatives towards Net-zero and are engaging many companies in dialogues, if all providers of funds have reduced Scope 3 emissions to Net-zero, the whole economy would be much closer to achieving Net-zero.

(2) Points towards portfolio Net-zero

The following is a summary of the recommendations (guides) that FIs should consider when proceeding the transition, including the challenges mentioned.

<Guide 1> How to Understand the Transition of FIs
~ In addition to financed emissions, various indicators should comprehensively be taken into account for understanding the transition of FIs and companies ~

(i) Current status of emissions measurement at FIs

Regarding the transition, it is necessary to carry out the transition over a long period of time under uncertainty, and it is difficult to foresee the development of production technology related to emission reduction. When FIs consider their own transition plans with referring to government policies and international debates, it is important to have a basic understanding of how each industry is trying to achieve the transition.

Based on this, it is necessary to examine the key points, eligibility, and progress of the transition plan for each client company. However, these can change greatly depending on the environment and characteristics of each client company, thus it is not an easy task for FIs.

At present, Scope 3 Category 15, so-called financed emissions of FIs, is a key indicator for setting targets for FIs participating in GFANZ, and its significance is increasing, as the ISSB (International Sustainability Standards Board) (see Column 1) discusses the establishment of disclosure standards for financed emission. Typical indicators that capture the progress of transition of FIs are absolute financed emissions and carbon intensity. Absolute financed emissions are a relatively straightforward and easy-to-understand indicator in that they capture the ratio of exposure of a FI to investee companies or borrowers, and the absolute amount of emissions

(Scope 1 and Scope 2) of the companies/borrowers at each point in time. Carbon intensity is characterized by being neutral to the economic growth and able to evaluate the business growth of a company in comparison with other companies even in cases either businesses grow due to environmental improvement effects.

There is also a related indicator or concept called "avoided emissions," which captures the amount of reduction in the overall economy compared to the case where a company's products, technologies, or services do not exist. It evaluates the contribution to reductions of emissions made by client companies through the development and sales of technologies and products which enable reductions of emissions.

Regarding avoided emissions, the relationship with Scope 3 Category 11 (emissions by the products and services of the client companies) and the fact that measurement method for the amount is not established should be noted, but avoided emissions are expected to be utilized in the disclosure by FIs. In addition, as indicators for engagement activities by FIs, not only Scope 3 emissions of companies and their own, but also the acquisition of SBT certification by client companies are exemplified by GFANZ as indicators for assessing the transition status of FIs. The characteristics of these indicators are summarized in Table 1.

(ii) Considerations on how to understand the transition of FIs

Regarding the transition of FIs, the Working Group made several points. First, regarding absolute financed emissions, it was pointed out that global targets and impacts of climate change will eventually depend on the absolute amount of emissions, and in this sense absolute financed emissions are fit and easy to understand. Taking into account the view that the transition risks to a company will increase in proportion to its total amount of GHG emissions, there were opinions in the Working Group that it is important to manage the total amount of emissions toward the Net-zero in 2050, and it is extremely important to for a FI to grasp and disclose its absolute amount of financed emissions.[36]

[36] Under the pilot program of portfolio carbon analysis, a project implemented by the Ministry of the Environment to support FIs' FE measurement, its 2022 decarbonization practical guidance support report was published.
(Japanese) https://www.env.go.jp/press/press_01444.html

In addition, regarding avoided emissions, it was pointed out that both FIs and non-financial companies should evaluate the technological development and innovation that will lead the emissions reductions not only for themselves but also for various bodies in society, and that the figure will be an incentive to encourage investment for this purpose. Therefore, it would be important to evaluate avoided emissions that contribute to the final goal of achieving emissions reductions for the society.[37]

On the other hand, it was pointed out that avoided emissions are estimated amount of emission reductions – comparing case between where there were no technologies of reduction and where the technologies were implemented or utilized, – that therefore avoided emissions are different from the absolute amount of emissions and carbon intensity in nature, and that FIs should be carefully considering avoided emissions in the context of an emission reduction target. It is also pointed out that if avoided emissions are added to or deducted from emissions of FIs or non-financial companies, it will become difficult to measure the total increase or decrease in global emissions[38]. FIs and non-financial companies need to clarify their strategies, and explain and disclose in a careful manner, in order not to cause misunderstandings, by taking into account international guidelines that state avoided emissions shall not be offset Scope 1, 2, and 3.[39]

Based on this, the Working Group pointed out that it is important to support target setting by client companies in a reasonable and appropriate manner in accordance with the characteristics and stages of companies and industries, taking into account the various quantitative indicators. In addition, it was

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[37] The relationship between the avoided emissions and corporate / social emissions can be considered in various ways. For example, when technologies and products that reduce emissions are newly developed and provided, other companies can reduce emissions by procuring and using that technologies and products (the avoided emissions will increase). On the other hand, the total emissions of companies that provide that technologies or products may increase as total production increases.

[38] It was also pointed out that it may not be possible to appropriately capture the situation where companies from countries with strict GHG emission regulations relocate their production bases and investment targets to countries with lax regulations, resulting in an increase in global emissions (so-called carbon leakage).

[39] At the international level, the World Business Council for Sustainable Development (WBCSD) and the United States Environmental Protection Agency (EPA) are trying to establish measurement methods. The former established guidelines on "avoided emissions" in March 2023, pointing out that avoided emissions are helpful and important for the development of products that contribute to innovation and for dialogue with investors, and presenting strategic goals for companies on climate changes, along with other points to keep in mind, such as disclosing them separately from Scope 1,2 and 3.

pointed out that it is important not to place too much emphasis on the technical aspects of these indicators, but rather to see whether the transition of the real economy is proceeding and emissions are decreasing as a whole. For example, if immediate divestment is carried out because of too much concern about short-term increases / decreases of financed emissions, it will not lead to decarbonization for the real economy, and FIs may miss growth opportunities for themselves and their customers.[40]

In light of the above, emissions targets measured and managed using financed emissions are reasonable as basic target indicators, and are easy to understand as indicators for measuring the extent to which commitments are being made and the degree to the progress is being made. At the same time, not limited to the financed emissions, it is necessary to look at various indicators at the same time with regard to whether or not the transition of FIs and non-financial companies is making steady progress. The management approach itself could be diverse as long as maintaining comparability.

In this regard, it was pointed out that FIs could take various measures. For example, FIs could disclose accurately the status of financed emissions that they set as their targets, taking into account discussions on ISSB and the PCAF. Then they could show the "effects" that could be said to have been achieved through their investment, while also using avoided emissions, in order to show the effects (impacts) of emissions reductions that they would achieve through new investment to decarbonize and collaboration with other companies. They could also show the status of consideration of the entire company, not the mechanical total amount of emissions, by quantitatively summarizing the rough progress of consideration of the transition at client companies *.[41]

(*) As an example, actions observed at Japanese and global FIs are:

- Classify the status of client consideration into the following stages: (i) emissions are being measured, (ii) emissions reduction targets are being

[40] The JFSA, METI, MOE, and other organizations are participating in the Sub-Working Group on Financed Emissions to Encourage Transition Finance in the Public and Private Sectors. The Sub-Working Group is also discussing the limitations of current calculation methods and the calculation and disclosure method of financed emissions to promote transition finance.

[41] As part of their engagement activities, FIs provide support to investee companies/borrowers to increase their contribution to GHG reductions through their products and services (avoided emissions). This is highly significant. It should be noted, however, that the contribution to avoided emissions is different from the GHG emissions of FIs.

set, (iii) strategies are being formulated to achieve these targets, and (iv) investment and financing projects aimed at achieving these strategies are being specified and implemented. Explain the number of companies in each stage and the amounts of financing as well as financed emissions.

· By disclosing the status of companies that have obtained certifications from external organizations, on the rationality of their emissions reduction plans, such as the SBT, in terms of the number of companies that have obtained the certification and the unit of emissions, FIs will be able to demonstrate the certainty of progress in their transition plans.

In addition, the G7 Minister of Finance Statement of May 13, 2023, states that "We encourage the public and private sectors to enhance availability and credibility of science-based, transition-related information, including through transition plans supported by credible pathways, which would help promote investment that is aligned with an orderly net-zero transition by enabling assessment of the progress on transition in a forward-looking manner and accounting for the trajectory of financed emissions that are associated with real economy emission reductions."

In any case, it is important for FIs to evaluate the overall picture of clients' strategies based on various technological backgrounds. For example, if emissions increase or stop decreasing, the reasons for such increase or stop should be examined. It is also important for FIs to explain such evaluation results to related parties and seek their understanding. Although this report summarizes the discussions from the viewpoint of FIs' initiatives including engagement with their clients, in order to make such engagement constructive and effective, it is essential and important for client companies to make disclosure and engage in dialogues. Therefore, two-way efforts are expected.

It should be noted that the decarbonization figures are one of a number of indicators to evaluate the management strategy and client response of FIs and should be strategically utilized by FIs. The Working Group discussed a scenario in which, as an extreme example, if FIs prioritize the achievement of their financed emissions targets in the short term, financing are not provided for long-term business development, and funds are withdrawn from high-emitting industries from a broader perspective of the financial system. If FIs engage in dialogues with their client companies and jointly consider to take actions based on strategies and technologies to reduce emissions in the

real economy, it is assumed that such extreme fund mobilization and materialization of risks are basically unlikely to happen.

Table 1: Various indicators and characteristics of emissions and transition

	Formula	Examples of application/status of discussion	Explanation
(1) Absolute FE	$\sum_c \left[\frac{\text{Outstanding amount of financing}_c}{\text{Total equity + debt}_c} \times \text{Emissions}_c \right]$ **Attribution Factor**: the proportional share of lending or investment in the borrower/investee GHG emissions of borrower/investee $_c$	✓ Target setting of banks as to the oil/gas sector, etc. ✓ Target setting of asset owners	➢ Absolute FE illustrates how much GHG emissions are reduced, including the effect of the scale of economic activity. ➢ Absolute FE of a FI might temporarily increase when the FI provides "Transition finance"
(2) Carbon Intensity (CI)	$\sum_c \left[\frac{\text{Scope 1}_c + \text{Scope 2}_c}{\text{Economic or physical activity volume c}} \times \text{Outstanding amount of financing}_c \right]$ Total amount of financing to the sector	✓ Target setting of banks as to the power generation, iron and steel, and, transport sector, etc.	➢ CI has the advantage that it is neutral to the scale of economic activity. However, Absolute FE might increase while CI decreases. ➢ The impact of new capital expenditure depends on the situation of the sector and the Capex. For example, even electrification would not decrease CI when the electricity was generated with fossil fuels. ➢ CI would not increase so much by the provision of Transition Finance, compared to Absolute FE.
(3) Figures represent qualitative target (e.g. SBTi approval)	$\frac{\text{Total exposure of firms with SBTi-approved NZ target}}{\text{Total exposure}}$	✓ Target setting of food production /retailing sector (international), or electrical appliance, and, construction sectors(in Japan), etc.	➢ FIs/Corporates are able to set KPIs, manage and evaluate the target, according to the strategy and situation of each. ➢ The number of Japanese companies which got approval of SBTi has increased to a certain extent.
(4) Avoided Emission	Baseline (reference) Scenario Emissions − Emissions with the products/services/solutions subject to assessment	✓ WBCSD issued guidance (in March) ✓ Application framework is under discussion at GX League in Japan	➢ Useful to engagement with investors to enhance new technologies for decarbonization. ➢ The method/scope of calculation are still in the process of being debated. There are multiple methods to measure the contribution to Avoided Emission. (e.g. double counting within the supply chain) ➢ Absolute FE might increase even when Avoided Emission increases. WBCSD suggested to separate reporting of inventory (scope 1-3) and avoided emissions, and ensure company strategies are aligned with the latest climate science and global climate goals, etc.

<Guide 2> Developing GHG emissions data
~ The importance of GHG emissions data is increasing, and improvement on a global scale is needed ~

In addition to measuring financed emissions, it is important to compile data on emissions in order to discuss decarbonization strategies with client companies, taking into account the entire picture of business partners and their value chains. For example, it is difficult to set interim targets without knowing the current emissions amount.

As a FI supports clients to formulate their transition plans, it is important for both the FI and client companies to understand the Scope 3 emissions of the client companies (emissions including those of the client companies' business partners). In this regard, Scope 3 emissions of non-financial companies, such as manufacturers and retailers, in particular, need to be calculated and estimated by tracing back the commercial flow (supply chain) for each product and service traded. However, there are considerable practical and technical challenges*, and it is not easy to calculate or aggregate high-quality data. In particular, it is more difficult to calculate and understand Scope 3 emissions including those of unlisted companies.

(*)For example, the following issues should be considered.

- When a product is manufactured by procuring similar parts from different suppliers, the Scope 3 emissions of the same product will differ depending on the supplier, even if it is the same product, and the emissions derived from each product will be measured separately.
- The methods for calculating emissions are specified in the GHG Protocol. However, the detailed methods differ in accordance with the industry and company, and much of the way of calculation depends on the originality and ingenuity of each company. This imposes costs on each company that measures emissions, and data quality control is a big challenge for companies and FIs that consolidate data.
- Data from SMEs such as subcontractors is important in order to capture the entire picture of supply chain emissions. However, because the data formats and calculation methods are not unified, responding to business partners requirements imposes a considerable burden on SMEs, and large enterprises cannot not make excessive data requests either.
- As a framework for efficiently aggregating the emissions measured at each company has not yet been developed, there are challenges in

aggregating data. In addition, when estimating the emissions of companies, databases used for the estimation is divided by region and country, and thus data has not yet been aggregated.

- In reality, the data of emissions of business partners are obtained individually among companies using questionnaires, which takes time and may lead to errors in the verification and consolidation process.

In the PCAF framework, data quality is classified into five categories (see Chapter 3(1)-(ii)). However, as mentioned above, there are many challenges in data measurement and aggregation, and efforts are still in progress. FIs should first confirm and hold dialogues with large enterprises, including the challenges of ensuring the reliability of measurement, and also support SMEs by introducing businesses that visualize GHG emissions and simple calculation sheets by the Japan Chamber of Commerce and Industry.

On the other hand, in addition to the wide-ranging issues described above, emission calculation is a highly specialized field that requires industry-specific knowledge, making it one of the areas where it is difficult for FIs to accumulate know-how. In particular, it was pointed out that only about 10% of regional FIs' customers were able to measure their emissions. As the PCAF has pointed out, rather than placing the highest priority on the quality of data, we may be on the stage to first standardize and share data and move forward with measurement efforts.

Discussions on data platforms are taking place internationally[42], mainly in GFANZ, and the Japanese stakeholders should make active contributions to the discussions. The Working Group pointed out the need for a platform to promote visualization of emissions in Japan as well, particularly for SMEs to save labor and accumulate and share know-how. The creation of a platform is also expected to prevent a perception mismatch between those who require and those who submit data. There is also room for consideration of a mechanism to measure emissions using a common platform for each production process and supply chain that is the core of Scope 3 calculations.

It was also pointed out that in order to attract investments and loans, it is important to show how much GHG emissions have been reduced through transition finance with the impact reports.

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[42] Launched in 2022 by UN Special Envoy Bloomberg and French President Emmanuel Macron, the Climate Data Steering Committee, which includes public and private sector officials and data providers mainly in the financial sector, is discussing the construction of the Net-zero Data Public Utility (NZDPU).

<Guide 3> Suitability of Emission Trajectory for Pathways (Transition Planning)

~ Understanding the characteristics of various pathways and improving the reliability of emission trajectory of transition plans~

(i) What is a pathway?

As transition plans involve the long-term mobilization of various technologies and the improvement of production processes, it is extremely important to evaluate future (forward-looking) projections of when and how emissions reductions will be proceeded.

While there are cases where the planning and implementation of emissions reductions over a long time is appropriate based on technical assumptions, the greenhouse effect will accumulate and become apparent more if it takes longer. There are various estimations (pathways) on a global and industrial scale as to what level of emissions is acceptable within each year from the target setting of "a temperature rise of 1.5 C°or less".

When FIs and non-financial companies are formulating transition plans, the emission trajectory in the transition plan, namely the future outlook of emissions reductions by the companies from the current emissions to decrease to Net-zero, is key to understanding the eligibility for the transition and the consistency with the goals of the Paris Agreement, and is also gathering international attention.

Pathways and the emission trajectories of each company based on the pathways are usually explained by plotting the X-axis on the time and the Y-axis on the emission volume (absolute volume or intensity). In addition to the volume on the Y-axis (emissions at one point in time), the area (accumulation of emissions at each point in time) is also notable from the viewpoint of the so-called carbon budget (see Chapter 4(2)). There are also discussions on the certainty of emission reductions described even in the same form of trajectories; such as the certainty of emission reduction trajectories written in the transition plans and availability of technologies for achieving reductions in the future. The issue would be how to develop "eligible" emission trajectory and associated transition plans, considering these issues holistically.

There are various pathways that can be used to formulate individual emissions trajectory (see Table 2). Basically, emissions of pathways are

calculated for each country or region through back-casting using scientific methods with the aim of achieving carbon neutrality by 2050 or and limiting global warming to 1.5 C°. For example, the International Energy Agency (IEA), which is a representative body of formulation of climate change-related scenarios, uses several scenarios, including a scenario in which Net-zero is achieved globally by 2050, and a scenario in which warming is limited to 1.5 C°, to calculate the absolute value(amount) or carbon intensities of emissions required by specific countries or regions, while taking into account current emissions, transaction volume and projected economic scale changes. As shown in Table 2, NGFS and UTS also perform the similar calculations. Furthermore, the TPI provides evaluation information for investors by calculating and presenting benchmark emissions trajectories. This information includes how individual companies should prepare under the scenarios (including rough emission trajectories that need to be achieved) based on country- and industry-specific pathways prepared by the IEA, and whether each company's emissions reduction projections are consistent with the benchmark emissions trajectories. In addition, the SBTi and CBI, basically go through the same calculation process to present and certify that individual companies' strategies are “Science-Based” with the 2050 Net-zero and limiting global warming to 1.5 C°.

Each pathway calculates the pace at which GHG emissions should be reduced for each industry by calculating carbon budget backward from the targets of the Paris Agreement and "limiting the temperature rise from the pre-industrial period to 1.5 C°."

Table 2: Examples of major pathways[43]

Type of pathway	Overview of models and pathways
IEA "Net-zero Emission by 2050 (NZE)"	The well known and most widely used pathway internationally, incorporating models used in the World Energy Outlook and Energy Technology Perspectives, with a timeline to 2050 consistent with the 1.5 C° target.
NGFS (Network for Greening the	Three models with different structures, assumptions and sectors to be covered for the purpose of making information publicly available for the risk management

[43]Compiled based on the Research Report on Internationally Reliable Decarbonization Transition at FIs (commissioned by the Financial Services Agency).

Financial System)	of FIs. Consistent with the 1.5 C° target, with a timeline to 2100.
UTS "One Earth Climate Model (OECM)"	Compiled by the University of Technology Sydney (UTS) on behalf of NZAOA. No "removals" of CO2 from unproven technologies are assumed (assumed in IEA and NGFS). Consistent with the 1.5 C° target, with a timeline to 2050.
SBT (Science Based Targets)	SBTi, an initiative of CDP, WRI (World Resources Institute), WWF (World Wide Fund), and UNGC (United Nations Global Compact), developed and provided SDA (Sectoral Decarbonization Approach), which provides pathway forecasts for 13 sectors based on the IEA model (including those not finalized as of January 2023).
TPI (Transition Pathway Initiative)	An initiative involving U.S. and European asset owners and asset management companies. Based on the models of the SDA (see above) and the IEA, 10 sectoral pathways were published to assess the targets of companies in high-emitting sectors.
CBI (Climate Bonds Initiative)	An NGO in the United Kingdom that offers a certification scheme to be used for green bonds. It covers assets and entities as well as special-purpose bonds. Based on models such as the IEA, it offers four high-emitting industrial pathways and other industry-specific pathways.

(ii) Issues related to pathways and emissions

Although there are various pathways as described above, the carbon budget to calculate allocation of each country and industry requires other estimates based on various matters including the size of the economy, and there is no agreed estimate for each. In addition, the IEA and other organizations provide estimates for each country or industry, but do not provide an industry-specific carbon budget in each country.[44] In this context, it is difficult to provide a

[44] There are examples of regional models of pathways provided, like real estate decarbonization pathway based on climate change risk assessment by the Carbon Risk Real Estate Monitor (CRREM).

clear and single derivation of whether the emission trajectory of individual company is in line with the country- or industry-carbon budgets, as there are many assumptions.

While the estimates of TPI are presented in an easy-to-understand manner by simplifying them by, for example, fixing the share of transactions within the industry, it is necessary to understand that they are not calculated or certified by taking into account corporate strategies and growth potential. Even if the emissions trajectory is within the pathway, it is beneficial to promote initiatives as early as possible with the carbon budget in mind, from the viewpoint of solving global issues and the competitive advantage of individual companies.

In Japan, the METI have prepared "Technology Roadmaps" for major high-emitting sectors. These are roadmaps for technologies that can be used to achieve 2050 carbon neutrality, and broad emissions reduction scenarios under these roadmaps. While these are merely reduction scenarios and companies are not required to reduce emissions in line with these roadmaps, these serve as basic guidelines for companies to reduce emissions. The roadmaps are unique and useful in that they present country-and-industry-projections as well as specific technologies that would be implemented in the projected timeframe. The roadmap for the automotive sector was added to the list of roadmaps at the end of March 2023, and other improvements are being made. Their growing international recognition and further improvements, such as the estimation of emissions (Y-axis) in specific fiscal years would be essential for businesses and FIs to elaborate and expand their emissions trajectories and transition plans.

Given the above, it is important for FIs to support the formulation of transition plans for companies, including ambitious and effective emission trajectories, through dialogues with companies while referring to the pathway framework and incorporate them into their own transition plans. Banks' models should accordingly be improved to be more practical through the use of such pathways. In addition, as stated in the “Basic Guidelines on

Climate Transition Finance", FIs should request the transition plan of the client companies to be properly positioned in their management strategies.[45][46]

While the initiatives of individual FIs and companies are important, the government is also required to coordinate the decarbonization of the entire economy from the viewpoint of the carbon budget. Furthermore, as the emissions of companies are not limited to one country due to the progress of globalization, it is necessary for the government to monitor the situation of the carbon budget on a global basis toward Net-zero by 2050.

<Guide 4> Expansion of Investments and Loans in Asian Countries
~ Active contribution to the Asian GX projects towards the Net-zero ~

Climate change is a global issue, and the transition in Asia presents essential challenges, in that for example China and India are the world's first and third largest emitters of CO2, respectively, while Southeast Asian countries are expected to grow in the future.

On the other hand, while FIs from developed countries are participating in international Net-zero initiatives, limited numbers of FIs are participating from Asian countries. The preconditions for energy facilities and environments, including renewable energy, are different in Asia from in other areas such as the United States and Europe, and international stakeholders including Japanese FIs and authorities are expected to actively contribute to the formulation and implementation of long-term and strategic plans for Net-zero, taking into account these idiosyncratic differences.

The Asian Transition Finance Study Group, which is led by Japanese FIs, is promoting the transition by presenting technical lists and making recommendations to ASEAN countries. Along with further progress in such a framework, it would be important to proceed specific projects and disseminate them as reference cases. For this purpose, establishing a forum, or a consortium, for FIs and businesses to exchange information would be of pragmatic importance.

[45] On this occasion, it was pointed out that even in cases where there is no existing pathway that fits into one's portfolio, it is important not to give up the use of existing pathways but to use them in estimations to the extent possible.

[46] Basic guidelines on climate transition finance "Transition strategies and plans need to be highly reliable in terms of their effectiveness. Therefore, it is desirable to have transition strategies and plans that are linked to management strategies and business plans such as medium-term management plans."

In GFANZ[47], there have been moves toward establishing Asian bases, such as the announcement in May of the establishment of its Japanese Chapter. Going forward to Net-zero, it will be important to collaborate with a wide range of FIs around the world. In PCAF, which focuses on emission calculation rules, FIs in China and other countries are also participating in discussions. As climate change is a global issue, works require broad engagement.

Even though emerging countries, including those in Asia, should likely to experience economic growth in the future and have a large demand for finance for transition, according to various estimates, most of this demand for finance has not yet been fulfilled. One of the reasons for this would be; when FIs in developed countries try to invest in new facilities in Asia that contribute to transition, local investee companies developing and operating those facilities would tend to have higher emissions and carbon intensity than companies in developed countries. Therefore, financed emissions of these investor or FIs would likely to increase in both absolute and intensity terms, which in turn would possibly disincentivize the FIs to invest in Asia.

It is difficult to take effective climate change actions in the world without achieving decarbonization in Asia. In these countries, it is essential not only to invest in green projects such as wind power generation, but also to promote financing for the transition from high-emitting facilities to high-efficiency facilities in many projects. However, investment or understanding for the investment is not necessarily widespread enough at present, and promoting and implementing transition projects is of urgent importance. Until now, there have been some technical assistance related to energy development such as those in ammonia, hydrogen and CCUS under the support of Japanese government. Also, some Japanese banks have participated in projects in Indonesia and Vietnam to promote the introduction of renewable energy by JETP[48], especially the managed phase-out (replacement within a shorter period of use than initially assumed) of coal-fired power plant. Further promotion of these projects would be desirable.[49]

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[47] While FIs from around the world are participating, participation from Asian countries is limited to a few countries, such as Japan, South Korea, and Australia.

[48] Just Energy Transition Partnership

[49] However, it has been pointed out that, while the price of electricity from renewable energy sources is declining, some people may not understand, for example, the issue of ammonia co-firing.

In addition, as energy facilities in Asian countries have relatively long durable lives, if these facilities are to be managed to be phased out, financial losses will be incurred due to the disposal of assets with the long remaining life. International understanding for the certain amount of funds that would be required for this asset replacement, however, is not necessarily sufficient. Furthermore, in this case there is a possibility that the financed emissions of FIs who provided funds will increase, which would further be a challenge for the FIs on how to meaningfully explain this increase to shareholders and other stakeholders. In order to obtain the understanding of stakeholders, it will be important to provide a careful explanation of the transition strategies and the rationality of investments, as well as the actual situation such as on the nature of exposure for the increase in financed emissions. It will be necessary to create an environment in which FIs can easily support the managed phase-out of high-emitting assets, including improving the understanding among international stakeholders of the demand for financial support for the managed phase-out.

As one of the measures to cope with financial losses in the case of managed phase-out, studies on “carbon credit” are presently undertaken. The credit in this context refers to the amount of emissions that can be restrained by replacing assets in advance through managed phase-out. The certification and issuance of the “carbon credit” would make it easier for companies to replace their facilities and for investors and FIs to provide funds for managed phase-out.

At the same time, collaboration among financial authorities, in particular, should be encouraged in terms of organizing authorities’ basic views on FIs' actions to climate change and promoting efforts on risk management, including scenario analysis. The above-mentioned "Guidance" on FIs’ climate actions formulated in July 2022 would preferably be a basis for the dialogues among authorities.

In addition, it is important to encourage countries that have not declared the 2050 Net-zero to set targets. One of the ways to help the countries to progress the steps would be for governments and FIs overseas including Japanese to improve their support, for example, by disseminating energy-saving technologies in energy and other many fields, and by providing technical assistance to replace existing inefficient facilities with highly efficient ones.

<Guide 5> Increasing funds and other equity investments to GX
~ Need to expand the variety of products to accelerate GX investments ~

Since decarbonization is a challenge for the entire world, while it is extremely difficult to determine beforehand the success or failure of technologies contributing to decarbonization, there is a possibility of significant business expansion if the technologies are successfully mobilized into practical use. In this case, equity financing, in which an investor could earn large profits at the time of success but with higher uncertainties, rather than loan or bond financing, in which fixed amount of payment would be made under a more certain loss ratio, would be sometimes preferable.

In addition, from ESG-product perspective, particularly when start-ups develop new technologies and businesses, these companies do not have existing operations or emissions. Rather than committing to emissions reductions through so-called "transition" labeled finance, they may adopt an investment method that focuses on the "effects" of emissions reductions on other companies through new businesses. In this regard, approaches such as so-called "impact investment" are important, as more and more cases could be seen recently such as those operated by PE funds (private equity funds) and VC funds (venture capital funds).

Furthermore, as the number of large-scale projects is projected to increase over the long term, "blended finance" is expected to play an important role, which is a scheme to share finance and risks among entities with different risk appetites and tolerances, such as between public and private FIs, as well as among private FIs.

From the perspective of marketability of the products, it is important to expand the range of ESG products with equity characteristics, in addition to the conventional labeled bonds. For example, it would presumably be feasible to raise funds by issuing labeled products such as corporate bond-type preferred shares, convertible bonds, and subordinated bonds. There is also a certain need for hybrid securities with equity characteristics from investors, since the purpose of use of common shares cannot be limited.

An example familiar to individual investors is investment trusts. The amount outstanding of ESG investment trusts in Japan is small compared to that in Europe and the United States, and regulations such as disclosure are being implemented to respond to so-called "Green-washing" around the world as well as in Japan, those amounts in Japan and others should not hope for

an easy increase at present. However, awareness of environmental and social issues is increasing year by year among a wide range of individuals. In Japan ,the new NISA to be launched in January 2024 will have a growth investment quota to take over general NISA, and the annual investment quotas has been substantially expanded.[50] In other countries, there is a proposed scheme in French government, for example, to provide and promote savings and investment products for households that accumulate long-term savings in fixed amounts, the proceeds of the funds would be allocated to environmental investment, nurturing future generations from the perspective of both long-term investment returns and long-term environmental improvement effects. At the Working Group, there was a comment that such domestic and international momentum would be good opportunities to encourage financial institutions to develop a variety of products and to promote varieties of product transactions, with careful customer explanations.

As the supply of equity progresses as described above, governance and engagement to investee or borrower companies from both equity investor and creditor would supposedly work.

7. Accelerating decarbonization in local SMEs

(1) Actual status of local SMEs[51]

As noted in Chapter3(2), to achieve Net-zero, it is necessary to expand various initiatives to the local economies and industries and to encourage local SMEs to take action toward decarbonization, which account for more than 90% of Japanese companies and 10-20% of Scope 1 emissions. They are key players for measuring emissions and applying new technologies for the production processes in the supply chain.

There are, however, important issues for Net-zero in the local economies. In the survey conducted by the Shoko Chukin Bank in July 2021, while more than 70% of SMEs responded that "progress in achieving Net-zero will have an impact on their business," approximately 10% responded they were

[50] In March, the JFSA issued “Comprehensive Guidelines for Supervision of Financial Instruments Business Operators (Financial Instruments Business Operators (FIBOs),etc.” regarding ESG investment trusts, which are expected to expand the market by increasing their transparency and reliability.

[51] Some pointed out the importance of educating not only SMEs but also consumers on the demand side and encouraging them to purchase green products.

"implementing," and another 10% told they were "considering" their action plans to achieve carbon neutral, while other 80% said they were "not considering any plan on this topic". As for obstacles for actions, or reasons for not taking actions, SMEs pointed out "no regulations or rules in place" and "little information or less examples on this topic."[52]

According to a survey to SMEs in the western part of Shizuoka Prefecture by the Shinkin Economic Research Institute, approximately 66% of SMEs are "not taking action" to Net-zero, with 73.6% of them answered that they "do not know what to do," as reasons for not being able to respond to the carbon neutral. According to a survey by the Japan Chamber of Commerce and Industry, approximately half (48.2%) of SMEs are "not taking action" to Net-zero, followed by "do not know what to begin with" (22.4%), "collecting information" (15.2%), and only 8.4% answered "measuring and assessing GHG emissions".

The JFSA also commissioned a survey of SMEs[53]. 22% of respondents "do not take any actions," 28% "do not take actions very well," and 32% "cannot say either way," and 17% "take some actions." The motivations for addressing climate change was "to fulfill our social responsibility as a corporate" (45%), followed by "cost reduction (through energy conservation)." The most common reason for not addressing climate change was "understand (the necessity) but unable to take action for some reasons" (31%), with about half of respondents answered "lack of information and human resources."[54]

In order to further understand and clarify the issues SMEs are facing, the secretariats of this Working Group visited local SMEs of high emissions sector and had dialogue about their concerns and challenges toward decarbonization. Through the dialogue with the SMEs the secretariat received comments such as "Energy-saving efforts are relatively easy to start for us (SMEs), since they have direct effects on business operations"; "Beyond energy-saving, the next step would be to convert the energy resource from fossil fuels to renewable energy such as hydrogen, ammonia, biomass and biogas. But it would be very difficult for SMEs because those infrastructure have not been developed and

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[52] Shoko Chukin, Survey of Attitudes toward Carbon Neutrality among SMEs (July 2021 survey).

[53] Assessing the Current State of SMEs' Climate Change Responses in Local Communities and Support from Financial Institutions
(Japanese)https://www.fsa.go.jp/common/about/research/20230407/20230407-2.html

[54] For the next fiscal year, it was pointed out that case studies should be collected from Shinkin banks and a questionnaire survey should be conducted on retailers and SMEs in regions other than the "Taiheiyo Belt" as commissioned research.

the cost of renewable energy is rising"; "We (SMEs) cannot afford to prepare internal system or resources that are necessary to examine the introduction of new technologies, procurement strategies and cost management"; and "it would be quite a tough task for SMEs to pass the additional cost incurred for decarbonization onto other parties including individuals."

Moreover, while many SMEs pointed out that "subsidy programs by the national and local governments are powerful and effective supports for SMEs," they also pointed out that "subsidy by governments needs operational improvement such as i) extending application periods, ii) providing sufficient information in advance to deciding all the application details, and iii) reducing the costs for application by omitting application forms and materials. The SMEs maintained that since subsidies are often paid against certain percentages of new equipment or technologies, the use of subsidies entails design, order, or negotiation on the equipment, or even the rethinking business strategies of the SME, which usually takes longer than the application periods.

It was also observed that SMEs are acceleratively pressed from a business partner to measure their GHG emissions: "Since around 2022, inquiries on GHG emissions from business partners, including domestic companies, have rapidly increased"; "It is necessary to calculate emissions not only for the whole company but also for each product delivered. We are allocating GHG emissions on each product based on the use of machinery but since there is no widespread standard and we are not sure this would be fair and accepted methodologies"; and "Many methodologies for calculating emissions are ambiguous, for example there is no solidly accepted way to calculate GHG emissions for raw materials imported from overseas."

In addition, many SMEs pointed out that the financial sector and society in general should pay attention not only to the volume of emissions by companies themselves, but also to the various contributions of companies, such as the efficient use of resources throughout the entire life cycle of products, the reduction, reuse and recycling and the use of renewable resources, and the reduction of GHG emissions by other companies using their own technologies.

At the Working Group, its members suggested, for example: that there are numbers of SMEs making progress, but their examples and practices are not well shared with other local SMEs, that at least they could try to start from

measuring GHG emission, and that there are substantial differences, and we have to understand the differences, among industries and sizes of SMEs. It was also pointed that public supports including human resources are essential for many SMEs as they need to deal with a wide range of business issues with a small number of people, such as rising energy prices, procurement of materials, human resource development, product development, etc. In particular, it was pointed out that at businesses with 20 or fewer people, one person tends to be in charge of everything from personnel affairs to general administration and sales, and that governments need to push an SME to use their supports rather than waiting for an SME to apply and use for the supports.

(2) Challenges faced by regional FIs

Given those environment, the expectations and roles of regional FIs for regional decarbonization are becoming more and more important. They are expected to provide advice tailored to diverse SMEs while SMEs are facing different challenges from those of the major customers of large FIs. It should be noted that it would be particularly difficult for SMEs to generate and supply energy by themselves; SMEs are basically users of energy and their efforts are in general limited to improve their energy-usage efficiency or choose an energy source from given sets of provision and constraints. Therefore, there are challenges that are difficult for FIs to address alone, and it is important for regional FIs to cooperate with local governments, local chamber of commences, economic organizations, major manufacturers and energy companies.

While the JFSA's Guidance issued in July 2022 provides various types and examples of initiatives, the Working Group identified the following as challenges for the whole stakeholders in the local economies, when regional FIs try to effectively support client companies engaged in decarbonization.

i. Issues regarding client companies

[Understanding the importance of Net-zero]

As SMEs are facing various issues, and it is important for each SME and related parties including central and local governments and FIs to clarify the significance and benefits of decarbonization.

[Measuring and standardizing calculation methodology of GHG emissions]

As more companies are conducting surveys about GHG emissions to business partners, measuring GHG emissions becomes an important issue. This would encourage energy-saving and energy conversion since GHG emissions are basically proportional to the energy use. Services on GHG emissions calculation by tech companies are expanded nationwide and the government and industry associations are making efforts to set calculation standards [55]. Using these services, it is important to measure GHG emissions in an efficient and purposeful manner.

ii. Issues to be solved through cooperation between the public and private sectors

[Mitigation of the Negative Impacts on the Regional Economy]

While it is important to realize growth of the economy through decarbonization, "GX", which is significant transformation of production and energy utilization, may possibly have a significant impact on individual companies and regional economies, such as they need to relocate production machineries, etc. Therefore, repeated consultations and discussions from early stages throughout the region to strategically examine how to develop and improve the regional economies and employments in the world of Net-zero would be essential.

[Just Transition and Involvement of Related Parties]

Just transition requires cooperation by local and related stakeholders. For example, in order to enhance solar power generation, it is necessary to consider not only the expansion of facilities but also the operators of systems. Whether or not companies including SMEs can properly pass on the costs of additional equipment and research related to decarbonization largely influence whether and how local economies could achieve carbon neutral. As just transition is recognized as an important issue globally, international experiences and examples would be a good reference.

[Alleviate the cost on SMEs]

Since decarbonization costs a lot on SMEs in terms of financial stability and knowledge, it is necessary to reduce the burden on SMEs, such as enhancing the provision of information toward Net-zero through public-private

[55] For example, the METI and the MOE have developed carbon footprint guidelines.
(Japanese)
https://www.meti.go.jp/shingikai/energy_environment/carbon_footprint/20230331_report.html
(English) https://www.meti.go.jp/english/press/2023/0331_005.html

cooperation, in addition to public support on finance and human resource.

iii. Expectations for regional FIs

[Cooperation with organizations related to i. and ii. above]

It is important for FIs to understand the whole picture of regional issues such as i. and ii. above, and cooperate with related organizations. FIs are expected to play key roles such as engagement, consulting, debt governance and working as a regional hub based on a wide network of corporations, industrial organizations, universities. In some regions, frameworks for cooperation centered on national institutions including local finance bureaus. In other region, cooperation are built through bilateral or small meetings.

[Participation in Regional Councils]

To achieve Net-zero in the region, it is important for regional FIs to participate in regional consultations and discuss the best plan and the path to the transition for the regional economy and society in cooperation with relevant organizations.

[Enhancement of support for SMEs]

The METI and the MOE are promoting the measurement of SMEs' GHG emissions with subsidies along the process of "know, measure, and reduce" emissions. It is important for FIs to enhance specific support measures and consulting services that are fit with the situation of each SME. There are also high expectations to reduce information gaps in general, including the status and schedule of subsidies. Providing financial supports such as sustainability-related loans are important but they need to be accompanied by dialogue with borrower companies in clarifying reasoning for decarbonization[56]. Also, FIs would need to build their capacity and knowledge related to sustainability, in order to provide effective support and information to SMEs.

[Cooperation among regional FIs]

As SMEs are facing similar issues in technology, production, distribution in the same industry in the different area, it is conceivable to make transition

[56] SMEs often face resource constraints and need to reduce the time and cost of acquiring the third-party authentication. FIs are taking steps to control costs through collaboration with local governments and the use of group companies.

plan and take actions through collaboration among regional FIs. For example, in the aviation industry, there is a case in which rival companies cooperate with each other in technological development. The Fair Trade Commission has been clarifying the application of the Antitrust Law to a certain extent in the field of climate change. Furthermore, there is a field where different industries can collaborate, such as new technologies application of the introduction of biomass. There would be room for utilizing nationwide networks by major banks, public financial institutions, as well as among regional FIs.

[Estimating and Visualizing the Physical Risks]

In addition to transition risks that require business transformation due to changes in industrial structures, physical risks, such as the risk of natural disasters caused by climate change or temperature rises, are also important and the latter risks differ between regions. The MEXT, the MLIT and the JFSA are making efforts to visualize the amount of the physical risk and scenario for individual companies, using the research results from the government. It is recommended to provide information and promote understanding of SMEs for utilizing those data as well.[57]

[Sustainability-related DX and human resource development]

For regional FIs, there are challenges to develop human resource for the climate change to understand the issues of regions and providing the services to SMEs. Also, the field of sustainability is compatible with DX because those are both relatively new theme. Many cloud computing companies have already launched service in the field of GHG emissions measurement and reduction support. It is important for FIs and SMEs to use those cloud computing service.[58]

iv. Requests to the national and local governments

[Clarify the outlook of policy for GX]

As stated in the "Basic Policy for the Realization of GX", it is important to clarify the mid- to long-term policy outlook and communicate it in an easy-to-understand way.

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[57] Scenario data for assessment of climate change risks and opportunities Advisory Group on Relevant Organizations
(Japanese) https://www.fsa.go.jp/singi/scenario_data/index.html

[58] DX (Digital Transformation) refers to the establishment of a competitive advantage by utilizing digital technology to transform services and business models based on customers and social needs.

[Blended finance]

Decarbonization requires huge investments. This is not limited to large enterprises and large-scale industrial areas. Small-scale renewable energy facility construction and other various fund demands are expected to rapidly materialize in the near future. Since many of GX investments need to be financed as a long-term contract, it is important to promote blended finance by combining loan, investment and debt guarantee by public institutions and government-affiliated financial institutions.

[Visualize/Utilize Support Policy Plan]

There are a wide range of policy plans taken by central and local governments for Net-zero, and SMEs are paying much attention to them. However it is difficult to understand the detail of the policy and support with taking at a glance for SMEs. Therefore, in addition to examine and enhance the content of policy projects, it is important to improve usability by, for example, clarifying and improving the searchability of the requirement of subsidies, including those related to environmental technology, as well as improving the application period and publicity.[59]

[Creating Local Industries]

Regional FIs are taking steps to support start-ups tackling to decarbonization. Investments in regional start-ups might be able to have good effect of creating local industrial bases by focusing on impact of the investments. Although it depends on the FIs to make those investments or not, it would be important for multiple FIs to cooperate and spread their framework as for decarbonization.

(3) Approaches to Resolving Issues

Regarding the penetration of support service for decarbonization of SMEs by regional FIs, in the survey of SMEs commissioned by the JFSA, 46% of SMEs responded that they "did not know that regional FIs provide such services." Regional FIs are offering a variety of services, but many SMEs have not understood those significance and the contents.

The Tsu Local Finance Office of the Tokai Local Finance Bureau, in cooperation with the Mie Prefectural Association of SMEs Owners, held a "Decarbonization Seminar" for business operators and employees of FIs in

[59]In this regard, some said that the creation of a portal site on subsidies and support measures might be considered.

Mie Prefecture, with a large number of participants. Seen from this example, it is important to combine several approaches, such as providing information widely to interested companies, or actively approaching companies facing significant issues for Net-zero.

In order to expand the range of initiatives undertaken by SMEs, including visualizing GHG emissions, business matching and engagement coordination among client companies would be useful. The leading company in supply chain is expected to measure, control, and reduce Scope 3 emissions throughout the supply chain, and thus is expected to take the lead to clarify its strategies for the entire supply chain. From the perspective of supply chain, we have to define how to calculate GHG emissions for each product as mentioned above. In this sense, it is important for asset owners and large FIs to engage a dialogue with the leading company in supply chain on emissions reductions, including Scope 3, and collaborate with the governments and various companies involved in the supply chain. Support from the public sector and cooperation between the public and private sectors will also be important, including sharing information and bottlenecks. The Tokai Local Finance Bureau holds "Carbon Neutral Support Liaison Conference between the Automobile Industry and Financial Institutions" to establish a framework for information sharing and support automobile parts suppliers. The Chugoku Local Finance Bureau also holds "Chugoku Local Sustainable Finance Council" to provide information including international trends. In addition to the participation of FIs in various initiatives, it is important for the JFSA and Local Finance Bureaus to provide information to regional FIs.

As decarbonization is a fast-moving field, it is important to share information through a variety of channels, such as central-regional and region-regional. In addition, SMEs' initiatives are also an issue internationally, and sharing information and referable case globally are also meaningful.

In terms of human resource development, regional FIs have more clients than large FIs[60], but their resources are limited compared to large FIs. It is necessary to improve the skills of staffs and to employ them mid-career, as well as to cooperate with the government and business organizations.

As it is not easy to identify and promote prospective energy conversion and

[60] According to data, about half of enterprises use regional / second tier regional banks as their main banks.

technology introduction that go beyond cost-cutting initiatives, it would be important to gain the knowledge through information sharing. In the short term, it would be easier to improve the efficiency of energy use that causes cost reduction, and connect this to the decision making for long-term initiatives.

Coordination between central and local governments are essential, including for local economies, thus it is important for Environmental Offices, Bureaus of Economy, Trade and Industry, Local Finance Bureaus, and other relevant local branch offices, local governments to cooperate in taking area-wide efforts. The JFSA and Local Finance Bureaus should actively have discussion with regional FIs.

In particular, with regard to subsidy, the JFSA and other relevant ministries have been working to enhance "policy maps" and pamphlets on subsidies for decarbonization. These cross-ministry efforts should be welcomed, and providing information on related policy, in some case with the use of AI, needs to continue to ease sales staffs at regional FIs.[61]

In the "Basic Policy on for the Realization of GX" decided by the Cabinet in February of the year, the government announced that more than 150 trillion yen would be needed in GX investment by public and private sectors over the next 10 years. The government is required to provide more specific information, such as expanding the Technology Roadmaps and clearly disseminating information as mentioned above. As for debt guarantee by the government, the GX Promotion Bill was enacted in the 211 session of the Diet, and the GX Promotion Office of the Cabinet Secretariat and other organizations are planning to examine specific schemes for debt guarantee by the GX Promotion Organization.[62]

[61] https://www.meti.go.jp/policy/energy_environment/global_warming/SME/index.html
[62] https://www.meti.go.jp/press/2022/02/20230210004/20230210004.html

Column 1: ISSB discussions on Scope 3

In November 2021, the International Financial Reporting Standards (IFRS) Foundation announced the establishment of the International Sustainability Standards Board (ISSB). Since then, ISSB has been engaged in discussions toward the establishment of disclosure standards related to sustainability. In Japan, the Sustainability Standards Board of Japan (SSBJ) has compiled and disseminated domestic opinions.

ISSB conducted public consultation in March-July 2022 on General Requirements for Disclosure of Sustainability-related Financial Information (S1) and Climate-Related Disclosures (S2), and ISSB plans to finalize them in June 2023. The standards will be effective for the annual reporting period starting from January 2024.

The ISSB Standards set disclosure requirements based on four components of the TCFD (governance, strategies, risk management, and metrics and targets), with some additional or enhanced disclosures. The key features of the ISSB Standards' climate-related disclosures compared to the TCFD are following.

First, as cross-sectoral indicators, in addition to Scope 1 and 2, companies are required to disclose GHG emissions in Scope 3, which contain the activities (categories) included in the calculation of emissions and the measurement methods of companies in the value chain. However, as for Scope 3, responding to the concerns about the availability and quality of data, temporary exemption from disclosure will be taken for at least one year from the effective date of the climate-related disclosure standards, and additionally ISSB plans to provide a guidance for Scope 3 disclosure to help companies.

Second, as for sector-specific indicators, the Appendix B of the standards that shows the details of the disclosure of each industry, has decided to be implemented as optional at this moment, with the condition of being mandatory in the future. Regarding financial industry, on the other hand, as the most part of emissions of FIs fall into the Scope 3 category 15, asset management and custody activities, commercial banks, and insurance are required to disclose their financed emissions.

The ISSB Staff Paper states that attention should be paid to facilitated emissions from investment banking and brokerage, associated emissions from underwriting in the insurance and reinsurance industries, and emissions

intensity as areas for future consideration, although disclosure of intensity is not required at present. It also states that avoided emissions may become an area for future consideration.

<Column 2> Trends in sustainability disclosure such as TCFD and PRI

The Task Force on Climate-related Financial Disclosures (TCFD) is a private sector organization established by the Financial Stability Board (FSB) in 2015. The TCFD published its final report, the TCFD Recommendations, in June 2017. The TCFD disclosure, which is information disclosure based on TCFD Recommendations, encourages companies to disclose four pillars (governance, strategies, risk management, and indicators and targets) regarding climate-related risks and opportunities. Countries including Japan are developing disclosure rules in line with the four pillars of the TCFD, and the TCFD have played a central role in climate-related disclosure.

In addition to operating companies that are in a position to actually disclose information, various organizations, such as FIs, industry associations, rating agencies, stock exchanges, and governments that support corporate information disclosure, have expressed their support for the TCFD's goal of actively disclosing climate-related financial information. Among 4,342 companies and organizations have declared their support for the TCFD globally, 1,252 are those based in Japan, the largest numbers in in terms of organizations that supporting the framework.[63]

In Japan, the TCFD Consortium was established in May 2019, consisting of General Meeting, Planning Committee, two Working Groups, and Round Tables, in order to discuss effective initiatives to ensure that effective corporate disclosure and disclosed information lead to appropriate investment decisions by FIs. The TCFD Consortium is developing guidance for effective information disclosure and how to use disclosed information.

Meanwhile, The Taskforce on Nature-related Financial Disclosures (TNFD) has been discussing disclosures in the area of natural capital. The TNFD aims to bring resilience to the global economy by redirecting investments to activities that conserve and restore nature and enable nature and people to thrive. The TNFD is developing a framework for the management and disclosure of nature-related risks and opportunities. Since its first beta version of framework release in March 2022, the framework has been updated several times and a final version is scheduled to be released in September 2023. The draft framework proposes the disclosure of nature-related risks and opportunities based on the four pillars of the TCFD Recommendations.

[63]As of March 22, 2023

One of the factors behind the progress in sustainability-related disclosure is the increase in the number of institutions that are signatories to the Principles for Responsible Investment (PRI). The PRI are providing six action guidelines and principles for promoting responsible investment by institutional investors, and they set forth standards for ESG investment as of May 2023. Specifically, Principle 3 requires entities in which investment is made to appropriately disclose ESG issues. Being a signatory to the PRI is one of the pressures for companies to disclose sustainability-related items.