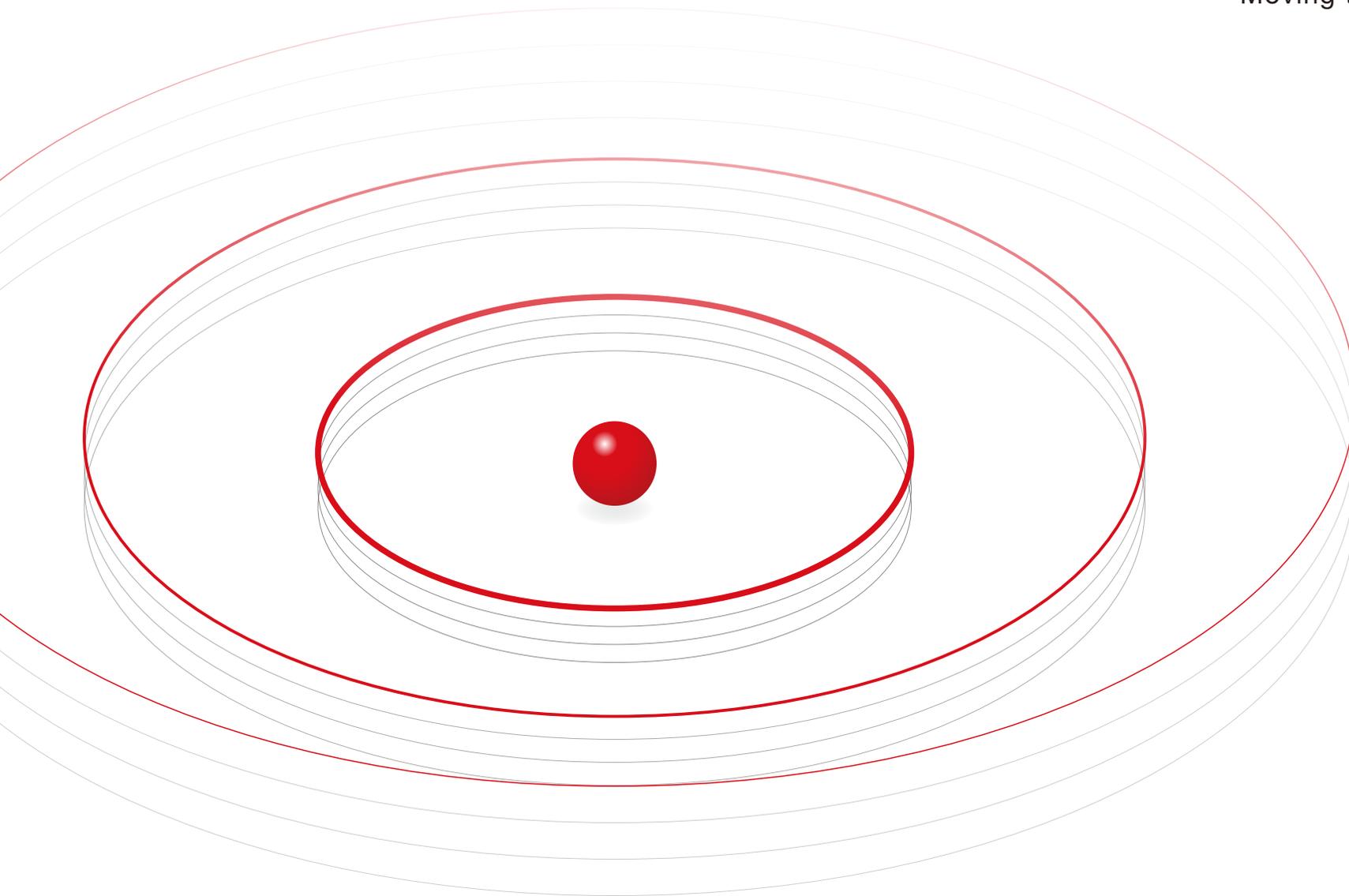


# MUFG Progress Report 2023

Moving towards Carbon Neutrality

April 2023



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- In April 2021, we defined our purpose as being “Committed to empowering a brighter future.” Since then, we have been implementing our medium-term business plan, led by a heightened commitment to helping resolve environmental and social issues. To better contribute to building a sustainable environment and society, MUFG has selected 10 priority environmental and social issues. One of the priorities we especially focus on is climate change measures and environmental protection.
- We have always been proactive in addressing climate change and environmental protection issues. It included formulating the MUFG Environmental and Social Policy Framework for assessing and managing the risks associated with our business activities as well as setting sustainable finance targets. During this period, the movement to combat climate change gained tremendous global momentum and we have taken another step forward by announcing the MUFG Carbon Neutrality Declaration in May 2021. Guided by this declaration, MUFG is implementing group-wide environmental measures globally, aiming to achieve net zero GHG emissions from the financed portfolio by 2050 and net zero GHG emissions from our own operations by 2030.
- In FY2022, we first published the *MUFG Progress Report* in April to inform a wide range of stakeholders about MUFG’s initiatives. Since then, the environment surrounding decarbonization has been undergoing tumultuous change, with the global energy crisis intensifying and domestic discussions on clean energy strategy and the implementation of GX (green transformation) processing. These circumstances have not slowed MUFG, and we will continue to promote its initiatives tirelessly. We have not only supported our customers through financing and other means, but have also actively communicated our views globally through the *MUFG Transition Whitepaper*, which was published in October and summarized the decarbonization efforts of Japanese companies as well as the energy policy of Japan.
- Through sharing the concept of MUFG’s initiatives in detail, we hope to work together with wide range of stakeholders to achieve a sustainable environment and society. In addition, we will continue to further promote our efforts this year and plan to publish a transition plan for MUFG’s decarbonization by the end of FY2023.

## Purpose: Committed to Empowering a Brighter Future.

### Medium-term Business Plan

Corporate transformation

||

Digital transformation (DX)

×

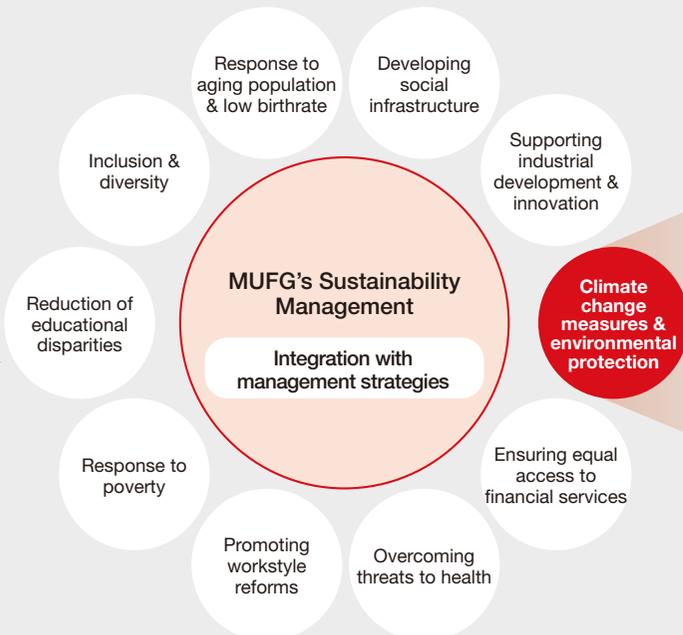
Contributing to resolving environmental and social issues

×

Transforming our corporate culture

Identify areas of high affinity between world expectations and our business operations

### 10 Priority Environmental and Social Issues That MUFG Must Address



### MUFG Carbon Neutrality Declaration

Net zero GHG emissions from our financed portfolio by 2050

Net zero GHG emissions from our own operations by 2030

Milestones

	2019	2020	2021	2022	...	2030	...	2040
<b>1 Net Zero GHG Emissions from the Financed Portfolio</b>								<b>NEW</b> (year)
Power: Interim Targets for 2030 (emission intensity)	328gCO <sub>2</sub> e/kWh	307gCO <sub>2</sub> e/kWh	299gCO <sub>2</sub> e/kWh			156-192 gCO <sub>2</sub> e/kWh		
Oil & Gas: Interim Targets for 2030 (emission reduction rate)	84MtCO <sub>2</sub> e	81MtCO <sub>2</sub> e	76MtCO <sub>2</sub> e (From FY2019 -9%)			-15% - -28%		
Real Estate: Interim Targets for 2030 (emission intensity)								
Commercial Real Estate		65kgCO <sub>2</sub> e/m <sup>2</sup>				44-47kgCO <sub>2</sub> e/m <sup>2</sup>		
Residential Real Estate		27kgCO <sub>2</sub> e/m <sup>2</sup>				23kgCO <sub>2</sub> e/m <sup>2</sup>		
Steel: 2030 Interim Target (emission reduction rate)	22MtCO <sub>2</sub> e					-22%		
Shipping: 2030 Interim Target (PCA Score <sup>1</sup> )			PCA +0.6%			PCA ≤0%		
<b>2 Decarbonization through Financial Services</b>								
Sustainable Finance (Total since FY2019)	3.7 trillion yen (including 2.2 trillion yen for the environment)	7.9 trillion yen (including 3.6 trillion yen for the environment)	14.5 trillion yen (including 5.4 trillion yen for the environment)	19.4 trillion yen through the first half (including 6.6 trillion yen for the environment)		35.0 trillion yen (including 18.0 trillion yen for the environment)		
Credit balance targets for coal-fired power generation								
Project finance (FY)	USD 3.58 billion	USD 3.77 billion	USD 2.95 billion			From FY2019 50% reduction		Zero
Corporate finance (FY)		Approx. 120 billion yen	Approx. 90 billion yen					Zero
<b>3 Net Zero GHG Emissions from Own Operations</b>								
			Shifted to 100% renewable energy for electricity procured domestically by the Bank, the Trust Bank, and the Securities HD	Shifted to 100% renewable energy for electricity procured at all domestic consolidated subsidiaries for their own contracted electricity		Domestic GHG emissions 2/3 reduction from FY2020 (FY2025)	Group and global GHG emissions 50% reduction from FY2020 (FY2026)	Net zero GHG emissions from own operations
<b>4 Decarbonization Initiatives as an Asset Manager</b>								Reduce GHG emissions per economic intensity by 50% from 2019 for 55% of assets under management

1. A measure of consistency that indicates the difference from the required level across the portfolio. Calculates the Vessel Climate Alignment (VCA) of individual vessels providing financing as a weighted average of the percentages in the loan portfolio

## 2030 Interim Targets

- MUFG joined NZBA in June 2021 after announcing the Carbon Neutrality Declaration. NZBA members share a common goal: net zero financed portfolios by 2050. They are also required to set interim targets for 2030 or earlier using a science-based approach.
- We are committed to helping achieve the goals of the Paris Agreement by achieving carbon neutrality by 2050, and at the same time, supporting a smooth transition to a decarbonized society through our financial services, and proactively contributing to creating a sustainable society by fostering a virtuous cycle between the environment and the economy. We recognize that the processes for achieving these targets vary depending on the characteristics of each region and business. We are also aware that our business is greatly affected by geopolitical risks and other factors, so we will share issues that we find through engagement (dialogue) with customers and support them to help resolve these issues.
- Innovations which are still in the conceptual stage is another indispensable element for the world to achieve decarbonization. We believe that there is a gap between the real world and the goal that is yet to be materialized. Therefore, our aspiration is to further contribute to the changes where the world advances more towards decarbonization by developing research on new technologies for implementation.
- To reflect our stance mentioned above, our basic approach is to set ranged interim targets. At the same time, we have set interim targets without using ranges for some sectors in order to take into account the characteristics of the sectors and the uniqueness of our portfolio for those sectors. In either case, we will work together with our stakeholders to achieve net zero GHG emissions by 2050.

### Four Approaches to Setting the Interim Target

#### Science-based

- Following the NZBA Guideline, MUFG will ensure that the interim target for 2030 is scientifically “well below 2°C, preferably to 1.5°C,” as agreed in the Paris Agreement.
- As a benchmark for 1.5°C, we will refer to scientific scenarios published by IEA and others.

#### Highly standardized and transparent

- MUFG believes that targets should be set from a global perspective using widely accepted and transparent methods. We participate in various initiatives, collecting insights and reflecting them in the targets we set.
- We will proceed with target setting, incorporating guidelines and rules developed by NZBA, PCAF, PACTA, and SBTi etc., as well as the outcomes of the global working groups which we participate in.

#### Data quality

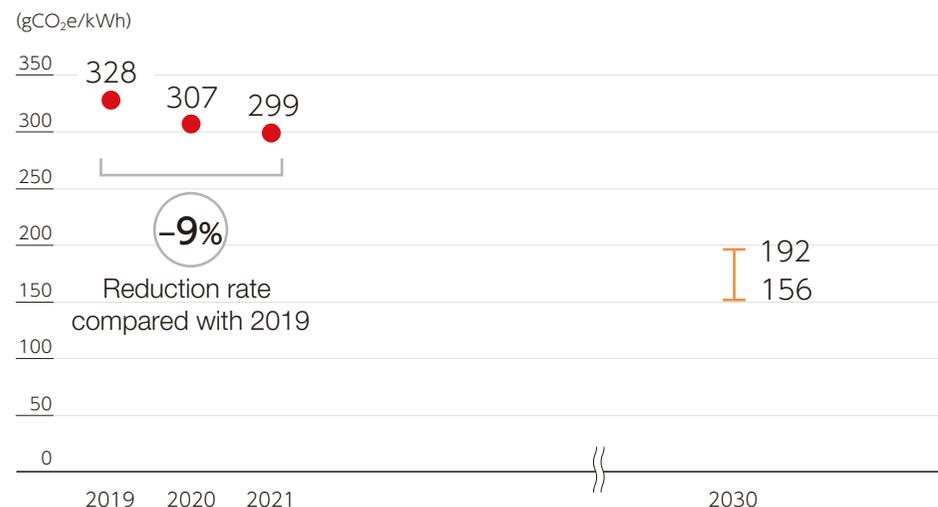
- We use the best available data to set targets. However, there are limits to the amount and quality of data currently available, so we will use the PCAF data quality score to check the quality of emissions data disclosed by MUFG. [Click here for reference page](#)
- When data is updated or new data is disclosed, improvements in accuracy and quality will be reflected. MUFG will also contribute to improving data accuracy by being highly transparent when disclosing information.

#### Sector-specific

- Pathways and the methods to achieve carbon neutrality vary by sector, so for each sector we will take into consideration the characteristics of the business, the guidelines and the targets set by each customer.
- By taking this approach, MUFG will identify issues in each sector and support customers' efforts for achieving carbon neutrality.

## Power Sector Results

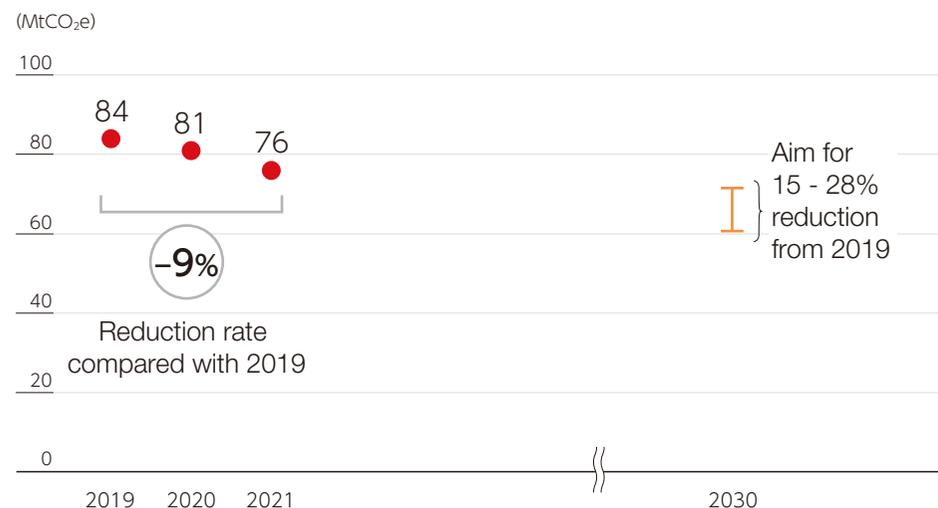
- For the power sector, we have set a target of 156-192gCO<sub>2</sub>e/kWh GHG emission intensity in 2030.
- As of March 2022, the emission intensity of the power sector was 299gCO<sub>2</sub>e/kWh, a decrease of about 9% from 328gCO<sub>2</sub>e/kWh in the base year of 2019. This is due to the progress in decarbonization of our customers.
- MUFG will support our customers' initiatives for green, transition, and innovation to achieve the 2030 target, and will contribute to the promotion of renewable energy etc. as a leading company in sustainable finance.



\*Revised 2019 results from 349g CO<sub>2</sub>e/kWh to 328g CO<sub>2</sub>e/kWh due to more precise measurements

## Oil & Gas Sector Results

- For the oil & gas sector, we have set a target of a 15-28% reduction in absolute GHG emissions by 2030 compared with 2019 results.
- As of March 2022, the oil & gas sector's absolute GHG emissions were 76MtCO<sub>2</sub>e, a decrease of about 9% from 84MtCO<sub>2</sub>e in the base year of 2019. This is due to progress made in repayment of loans upon due date. However, subsequent changes in the external environment due to the situation in Ukraine etc. may affect future results.
- MUFG will support customers' efforts to reduce GHG emissions through engagement to achieve the 2030 target. We also believe that it is essential for both oil & gas sector (supply-side) and the industries (demand-side) to simultaneously accelerate decarbonization. Therefore, we will contribute to the world to further advance toward decarbonization.



\*Revised 2019 results from 83Mt CO<sub>2</sub>e to 84Mt CO<sub>2</sub>e due to more precise measurements

## Characteristics of the Real Estate Sector

- The real estate sector is a carbon intensive sector that accounts for 8% of global GHG emissions, and 75% of the emissions in this sector come from building utilisation. Therefore, the key to decarbonizing the real estate sector is to improve building energy efficiency, install renewable energy equipments, promote electrification, and improve the emission factor for electricity used in buildings.
- In particular, the real estate sector has strong regional characteristics influenced by the location of properties including climate conditions, as well as the degree of electrification and energy mix in each country. MUFG's portfolio is focused largely on Japan, thus it is important for MUFG to support the initiatives in the Japanese real estate sector and the policies of the Japanese government.

## Interim Targets for 2030 for the Real Estate Sector

- Following NZBA and SBTi, we scope in the emissions from building utilisation, which account for almost 80% of the emissions from this sector. For commercial real estate, these are emissions from the use (including leasing) of properties (i.e. Scope 1, 2, and 3-13) owned by corporate customers such as real estate developers, REITs, SPVs<sup>1</sup>, etc.. For residential real estate, these are emissions from the use of properties (i.e. Scope 1 and 2) that are collateralised to secure mortgage loans (including apartment loans).
- Real estate plays an indispensable role in our daily lives and economic activities. Since it is necessary to support the increase in demand associated with economic growth whilst promoting decarbonization, we chose emission intensity (kgCO<sub>2</sub>e/m<sup>2</sup>) as the target metric for both commercial and residential real estate.



### Interim Targets for Commercial Real Estate

- The 2030 interim target (emission intensity) is 44-47kgCO<sub>2</sub>e/m<sup>2</sup>.
- We will achieve 47kgCO<sub>2</sub>e/m<sup>2</sup> by engaging with our clients to meet their own emissions targets. 47kgCO<sub>2</sub>e/m<sup>2</sup> is well below 2°C level of the CRREM scenario for 2030.
- In addition, by further contribution to the decarbonization of the emissions from tenancy as well as the power sector, we aim to achieve 44kgCO<sub>2</sub>e/m<sup>2</sup> to reach 1.5°C level of the CRREM scenario for 2030.

### Interim Target for Residential Real Estate

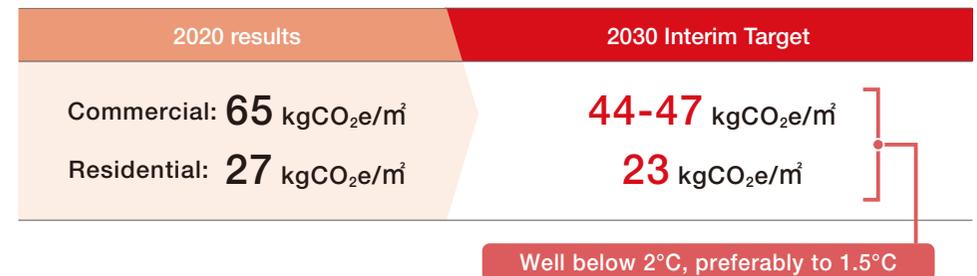
- The 2030 interim target (emission intensity) is 23kgCO<sub>2</sub>e/m<sup>2</sup>.
- In addition to providing support for energy efficiency and renewable energy solutions for existing collateralised buildings whilst pursuing decarbonization of the power sector, we expect to increase the volume of our ZEH transactions in line with predicted growth of ZEH in the market. Through these measures, we aim to achieve 23kgCO<sub>2</sub>e/m<sup>2</sup> to reach 1.5 level of CRREM scenario for 2030.

1. Special purpose vehicles for real estate securitization

<b>Target scope</b>	Value Chain: Building utilisation Emission Scope: Scope 1, 2 and 3-13* of developers, REITs and SPVs, Scope 1 and 2 of mortgage borrowers *Emissions from assets leased to others
<b>Asset scope</b>	Loan amounts (including undrawn-committed amounts)* As of March 31, 2021 *More than 70% of the exposure is included in the calculation. (For residential real estates, the most recent loan amounts are used due to date availability)
<b>Target metric</b>	Emission intensity (kgCO <sub>2</sub> e/m <sup>2</sup> )
<b>PCAF score</b>	Average PCAF score: (Commercial) 2.1 (Score 1: 38%, Score 2: 45%, Score 5: 16%) (Residential) 5.0 (Score 5: 100%)* *Emissions from properties subject to real estate securitization and mortgage collateral are estimated using loan amounts
<b>Data source</b>	Information disclosed by each customer and statistics from various external sources

### CRREM [Click here for reference page](#)

An initiative that calculates and provides scenario benchmark values for 2°C and 1.5°C by building types and regions covering 28 countries across Europe, Americas, and APAC including Japan.



## Characteristics of the Steel Sector

- The steel sector is a carbon intensive sector that accounts for 7% of global GHG emissions, and 77% of the emissions in this sector come from steel production. Decarbonization of the steel sector will be driven by decrease in blast furnace production and increase in scrap reuse, the development of low-carbon manufacturing technologies, and the implementation of CCUS to collect non-reducible carbon.
- As the Japanese steel sector is expected to play a central role in responding to the increasing demand for high-quality steel, it will be necessary to confront the long-term challenge of developing technologies such as hydrogen reduction in blast furnaces, 100% hydrogen direct reduction processes, and large electric furnaces. With about 90% of MUFG's steel portfolio being comprised of major Japanese companies, we are committed to supporting them with these efforts toward decarbonization.

## Interim Target for 2030 for the Steel Sector

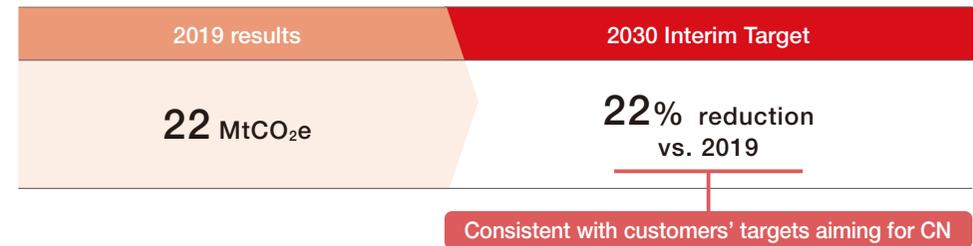
- Following SBTi and PACTA, we scope in the emissions from steel production, which accounts for almost 80% of the emissions from this sector (i.e. Scope 1 and 2 of steel manufacturers).
- We have chosen to use absolute GHG emissions as the target metric as this is the metric used by the majority of the customers in our portfolio, thereby enabling us to directly follow the progress of customers in reducing their GHG emissions.
- We used 2019 as the baseline year for this sector, as emissions fell significantly in 2020 as a result of cutbacks in steel production due to the significant impact of COVID-19.



### Interim Target

- The interim target (absolute emissions) for 2030 is 22% reduction from 2019. Whilst major Japanese companies account for around 90% of our portfolio, the IEA scenario does not provide a country-specific scenario, making it difficult for us to directly confirm alignment with the 1.5°C level. However, each customer has already announced their declaration for 2050 carbon neutrality with ambitious targets to achieve, and MUFG's interim target is in line with these customers' reduction targets. MUFG will continue to support our customers in their efforts and challenges to achieve their targets towards decarbonization.

<b>Target scope</b>	Value chain: Steel production Emission Scope: Scope 1 and 2 of steel manufacturers
<b>Asset scope</b>	Loan amounts (including undrawn-committed amounts) As of March 31, 2020 <small>*Around 90% of the exposure is included in the calculation</small>
<b>Target metric</b>	Absolute GHG emissions (MtCO <sub>2</sub> e)
<b>PCAF score</b>	Average PCAF score 1.9 (Score 1: 7%, Score 2: 93%)
<b>Data source</b>	Information disclosed by each customer, CDP, Bloomberg, etc.



## Characteristics of the Shipping Sector

- The shipping sector is a carbon intensive sector that accounts for 2% of global GHG emissions, and 98% of emissions in this sector come from shipping operations (i.e. fuel consumption). Therefore, the key to decarbonization is to switch to LNG fuel and implement measures to save energy and improve operational efficiency during transition period, and ultimately introduce zero-emission fuel vessels (i.e. green hydrogen/ammonia/methanol, biofuels, etc.).
- Whilst available type of fuel is limited by the type and size of vessels, each vessel is used for specific purposes and it is not easy to substitute one vessel type with another. Therefore, it is important to consider operational efficiency and smooth decarbonisation pathways for each types of vessel, and new fuel development and early implementation of technological innovation is our next challenge.
- MUFG joined the Poseidon Principles in March 2021. Under this framework, MUFG has disclosed its ship finance portfolio climate alignment starting from 2021.

### Poseidon Principles

[Click here for reference page](#)

A framework for calculating, assessing and disclosing ship finance portfolios of financial institutions in order to achieve the International Maritime Organization’s (IMO) GHG emission reduction targets. The degree to which the annual average carbon intensity for each vessel in the financial institutions portfolio deviates from its respective trajectory based on the scenarios referenced by the Poseidon Principles will be assessed using the Vessel Climate Alignment (VCA) and the Portfolio Climate Alignment (PCA)

## Interim Target for 2030 for the Shipping Sector

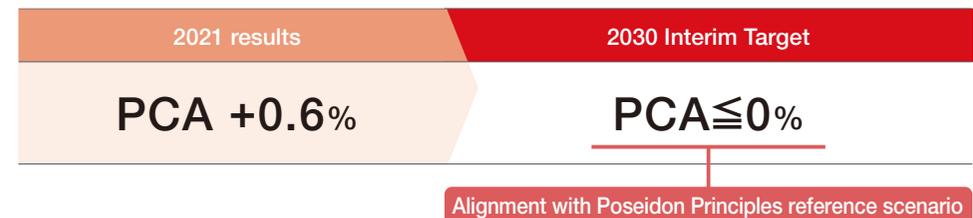
- In line with the guidance from Poseidon Principles, we scope in the emissions from operation, which accounts for more than 90% of emissions from this sector (i.e. Scope 1 of shipping operators).
- Following the Poseidon Principles, we chose to use emission intensity-based PCA as our target metric.
- PCA score for 2021 was +0.6%, which means a deviation of +0.6% from the Poseidon Principles reference scenario (i.e. IMO scenario aiming for 50% GHG reduction by 2050 from 2008).



### Interim Target

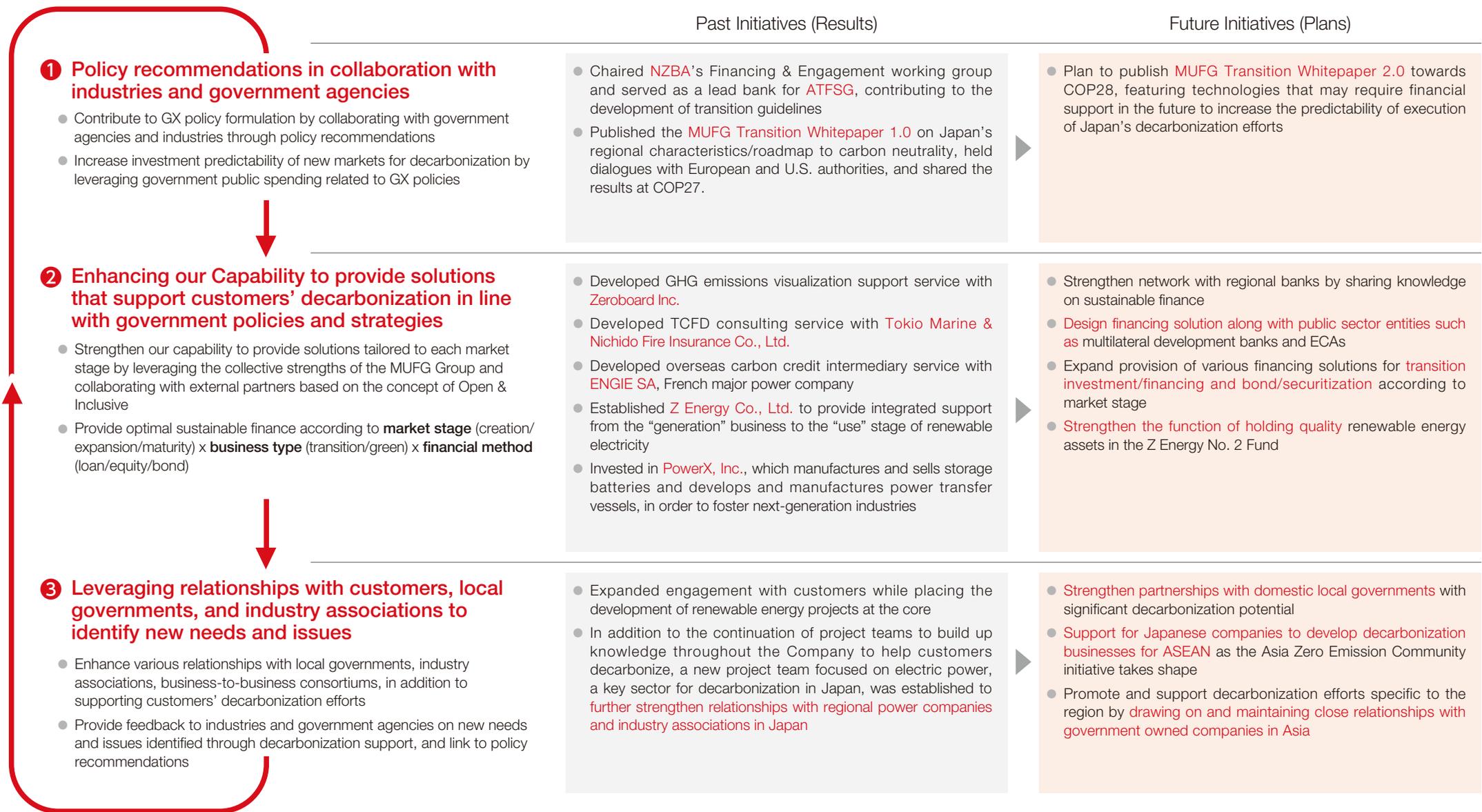
- The 2030 interim target (PCA) is 0% or less. This means that the intensity of vessels financed by MUFG, at the portfolio level, will be consistent with the IMO scenario which aims to reduce total GHG emissions by 50% from 2008 baseline (by 2050).
- MUFG aims to achieve this goal by proactively supporting decarbonizing initiatives promoted in the shipping sector, such as implementing measures to save energy and improve operational efficiency, promoting the use of biofuels, developing hydrogen and ammonia vessels, and switching to LNG fuel during transition period.
- The Poseidon Principles have already announced its adoption of a framework that aligns with the 1.5°C target towards net zero by 2050. MUFG will follow the Poseidon Principles and revise the benchmark scenario to 1.5°C accordingly.

<b>Target scope</b>	Value chain: Operation (fuel consumption) Emission Scope: Scope 1 (TTW*) of shipping operators <small>*Tank to Wake: CO<sub>2</sub> emissions from the ship’s fuel tank to the exhaust</small>
<b>Asset scope</b>	Ship finance tied to vessels under purview of IMO* <small>*Emissions data reporting rate (as of December 2021): 71.4%</small>
<b>Target metric</b>	Portfolio Climate Alignment (PCA)
<b>PCAF score</b>	Average PCAF score: 1.0 (Score 1: 100%) <small>*All emission intensity data for vessels have been certified by Class NK</small>
<b>Data source</b>	Information disclosed by each customer (IMO Data Collection System (IMO DCS) data)



## MUFG's Approach to Supporting Decarbonization

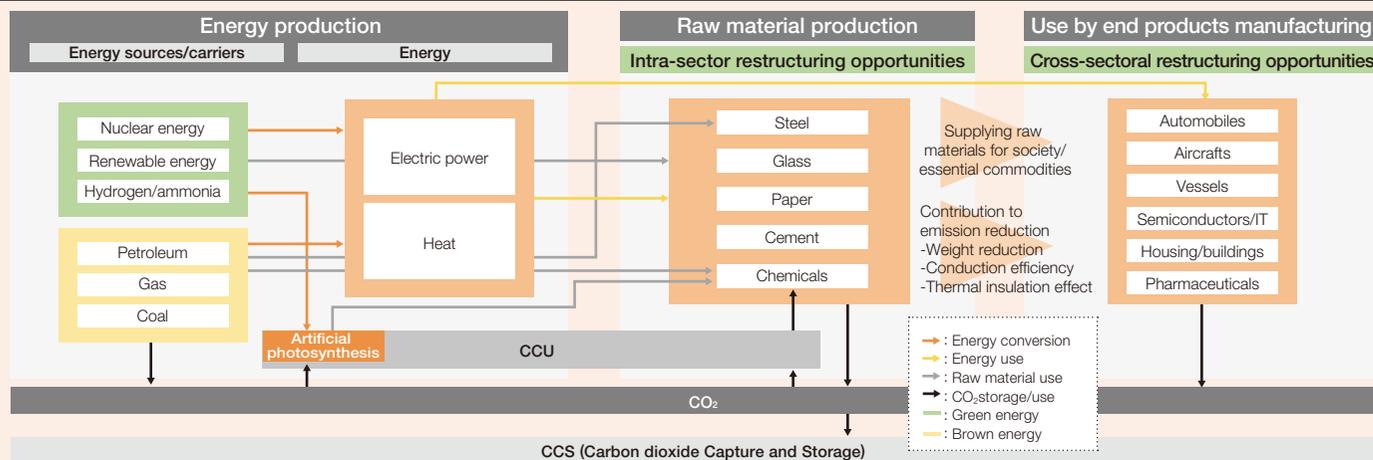
- MUFG will continue to identify new needs and issues through the provision of solutions while making policy recommendations in collaboration with industries and government agencies. While strengthening our relationships with customers, local governments, and the industry as a whole, we will provide feedback to industries and government agencies on new needs and issues for decarbonization, and will accompany our customers in a responsible manner in their efforts toward decarbonization.



## Overview of MUFG Transition Whitepaper 1.0

- MUFG is committed to reducing financed emissions to net zero by 2050 through “real economy decarbonization”, not via divestment. Thorough client engagement and facilitation of clients’ transition to net zero will allow MUFG to pursue its transition strategy.

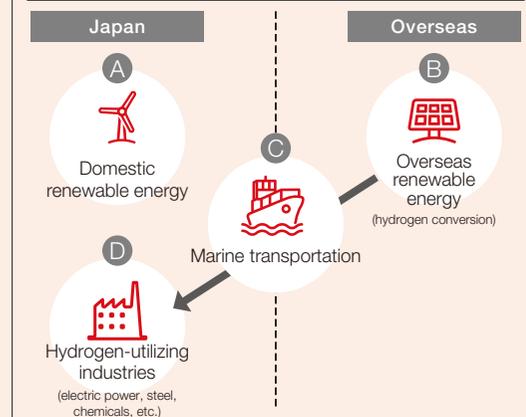
### Japan’s Green House Gas Emission Cross-Sectoral “Interdependency”



- We analyzed Japan’s industrial structure and regional characteristics against Europe and the U.S. and concluded that the energy transition strategy to achieve carbon neutrality would be different due to key four drivers (energy sources, connectivity<sup>1</sup>, energy security, and socio-political factors).
- By comparing data such as electric power and gas pipeline connectivity and the composition of existing infrastructure, we explained that the starting point and strategy to pursue carbon neutrality in each country differs due to regional characteristics.
- Through engagement with customers in the “high-emitting” raw materials sectors (steel, cement, chemicals, paper, and glass) and the power sector, which provides essential products in the value chain, we concluded that carbon neutral cannot be achieved without engaging with other sectors. This finding allowed us to pursue our net zero taking into consideration of the cross-sectoral interdependencies of emissions, especially the associated emissions from electricity, heat, and the carbon recycling.
- MUFG Transition Whitepaper 1.0 outlines the need to maximize the use of renewable energy produced in Japan and overseas, and to create a new supply chain, while promoting transitions that take into account the regional characteristics of Japan, such as renewable energy potential and transmission line/grid connections, which helped stakeholders outside of Japan to understand the nature of challenge Japan is facing.

1. Availability of grid connections with other countries and natural gas pipelines

### Approach to Maximizing Renewable Energy in Japan



- In order to maximize the usage of renewable energy, a multi-layered approach is necessary connecting domestic and international supply chains.
- A** Maximizing the development of domestic renewable energy,
- B** Expand overseas renewable energy development, taking into account Japan’s limited renewable energy resources and high costs compared to overseas,
- C** Import “green” hydrogen and/or ammonia produced overseas using renewable energy sources to Japan via shipping,
- D** Achieve decarbonization through the use of “green” hydrogen and/or ammonia in various industries, including electricity steel, and chemicals, etc.

## Publication of MUFG Transition Whitepaper 2.0 prior to COP28

- Conducted taxonomy analysis of four regions (EU, the U.S., China, and ASEAN) to gain a better understanding of the background and strategic intent of each region’s decarbonization policies and regulatory designs
- Whitepaper 2.0 (focus on a positive “clean technology” list) will feature the technologies and supply chains that are critical for promoting carbon neutrality of Japan’s electricity and heat sources. In addition, by showcasing the progress of Japan’s carbon neutrality journey from the previous year, we will present Japan’s transition plan and investment opportunities ahead of us.

## Customer Engagement and Support –Activities in line with the Customer Service Model<sup>1</sup>

- MUFG has enhanced its engagement activities in line with the UNEP-FI Customer Service Model. We have extended our engagement activities to around 1,500 companies to provide ongoing support to our customers while steadily expanding our climate change business.



### Engagement Activities in Japan

**Supported customer measurements and disclosure**  
**Visualization support for GHG emissions:**  
 Linked 300 companies to Zeroboard Inc., 100 companies registered as partners of Zeroboard Inc.,  
**TCFD consulting services:**  
 Proposed to 85 companies, signed contracts with 11 companies  
**Accumulated sector knowledge through dialogue with key customers**  
**Continuation of EXPT<sup>2</sup> (from November 2020):**  
 An internal group established to identify GX policy trends and customer needs and issues. 70 target companies  
**Establishment of a new Electricity PT (December 2022):**  
 EXPT subcommittee specializing in electric power

**Review and propose financing solutions**  
 Discussions and proposals for introducing new ESG financing (approx. 120 companies)  
 -Assisting customers in developing internal frameworks to fulfill transition finance requirements

Category	FY2019-H1	FY2021	FY2022	Total
Renewable energy project finance, etc.	0.4	0.3	0.4	1.1
Underwriting green bonds	0.5	0.4	0.2	1.1
Corporate loans for environment-related businesses	0.8	0.4	0.4	1.6
FA for environment-related businesses	0.6	0.0	0.0	0.6
Other	0.2	0.0	0.0	0.2
<b>Total</b>	<b>2.5</b>	<b>1.4</b>	<b>1.4</b>	<b>5.3</b>

**Transition bonds/transition-linked bonds:**  
 19 bonds, total amount underwritten: 108.1 billion yen (April-December 2022)

**Follow-up with customers for whom we provided financial assistance**

- Trial launch of a framework to deepen understanding of customers' transition progress in FY2022, with the aim of leading to effective engagement
- Monitoring the achievement of targets and KPIs set for each deal for sustainability-linked loans/bonds and transition-linked loans/bonds, which are linked to interest rates and other loan terms and conditions

### Engagement Activities Overseas

**Understanding policy through analysis of foreign taxonomies**  
 Conducted taxonomy analysis of four regions: Europe, the Americas, China, and ASEAN. Deepened understanding of regulatory designs based on policy intent  
**Promote decarbonization through active engagement with key industries and public sectors**  
 ESG promotion teams in each region participated in forums and events and held thematic discussions to accelerate discussion and action towards decarbonization (more than 40 events).  
**Diversification of ESG related products**  
 Diversified ESG-related financial product lineup including deposits, trade finance, carbon credit-related products, etc.

**Design and propose financing solutions**  
 Designed and proposed financing solutions to support clients' short and mid-to-long term financing needs for their transition strategy through active discussion and engagement (approx. 960 companies)  
 -APAC: approx. 360 companies, the Americas: approx. 350 companies, EMEA: approx. 250 companies

Category	FY2019-H1	FY2021	FY2022	Total
Renewable energy project finance, etc.	1.6	1.1	0.8	3.5
Underwriting green bonds	1.2	0.8	0.2	2.2
Corporate loans for environment-related businesses	0.4	0.8	0.8	2.0
FA for environment-related businesses	0.8	0.0	0.0	0.8
Other	0.1	0.0	0.0	0.1
<b>Total</b>	<b>4.1</b>	<b>3.0</b>	<b>3.0</b>	<b>10.1</b>

1. Source: Leadership Strategies for Client Engagement: Advancing climate-related assessments  
 2. Energy Transformation Strategy Project Team

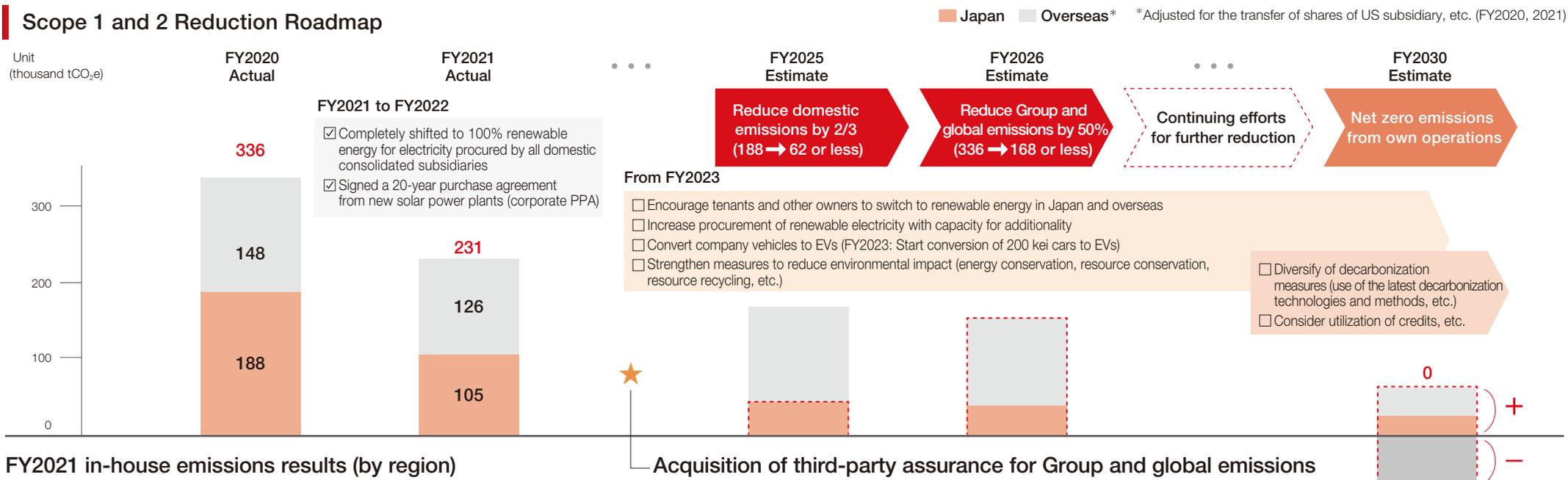
## Initiatives for Net Zero GHG Emissions from our own operations

- In FY2022, we completely shifted to 100% renewable energy for electricity procured by all domestic consolidated subsidiaries. In addition, we have now set a new interim target to accelerate our efforts to achieve net zero emissions from our own operations by 2030. In order to achieve the following interim targets, from FY2023 onward, we will begin encouraging tenants and other owners to switch to renewable energy in Japan and overseas, converting company vehicles to EVs, and strengthening measures to reduce our environmental impact.

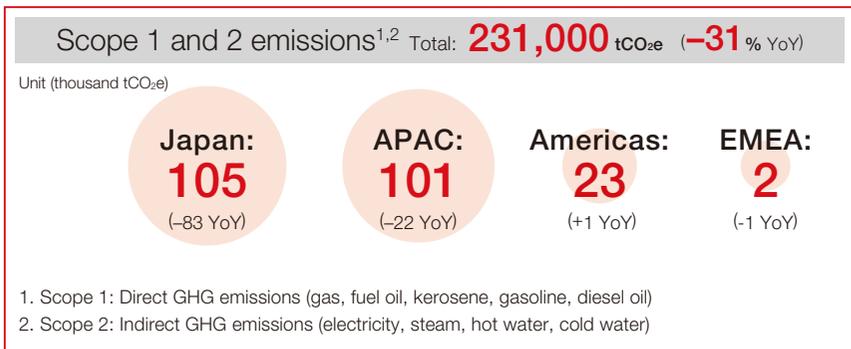
**<Interim Target> FY2025: Reduce domestic GHG emissions by two-thirds from FY2020**  
**FY2026: Reduce Group and global GHG emissions by 50% from FY2020**

- In addition, to further improve the reliability of our GHG emissions, we aim to obtain third-party limited assurance for our emissions in FY2022 on a Group and global basis.

## Scope 1 and 2 Reduction Roadmap



### FY2021 in-house emissions results (by region)



Only the residual emissions that cannot be reduced after maximum reduction efforts are considered for offsetting by carbon credits as a supplemental measure.

## Decarbonization Initiatives as an Asset Manager

- MUFG’s subsidiary asset management company is working on initiatives that continuously enhance value of the investee companies and resolve various ESG issues through managing investment portfolio. As part of our decarbonization efforts, we announced our NZAM interim target for 2030 in October 2022. To achieve the interim target, we are working to establish a Sustainable Investing Policy as well as to strengthen our systems. In addition, we are working to materialize our stewardship strategy and develop products that contribute to net zero emissions.

### Announcement of NZAM Interim Target (2030)

Reduce GHG emissions per economic intensity by 50%, compared to the year of 2019 for 55% of assets under management

#### Initiatives to Expand Sustainable Investment

- **Establishment of Sustainable Investing Policy**

MUFG AM has established a new vision for sustainable investing philosophy, “Investing for Our Sustainable Future,” and established the MUFG AM Sustainable Investing Policy to strengthen its sustainable investment initiatives.

- **Strengthening our systems**

As of April 1, 2023, the Sustainable Investment Division was established to lead the sustainable investment activities of the five MUFG AM companies under the organizational name of MUFG AM Sustainable Investment.

By consolidating MUFG AM’s specialized experts and bringing external experts, we will accumulate global-level expertise and promote sustainable investment through expansion of our products and services.

#### Engagement and Product Development Initiatives

- **Materializing the stewardship strategy**

The following criteria have been established to implement engagements that encourage investee companies to realize their transition strategies.

- **Selection criteria for targets of engagement**

Approximately 50 target companies will be selected based on GHG emissions and investment amount.



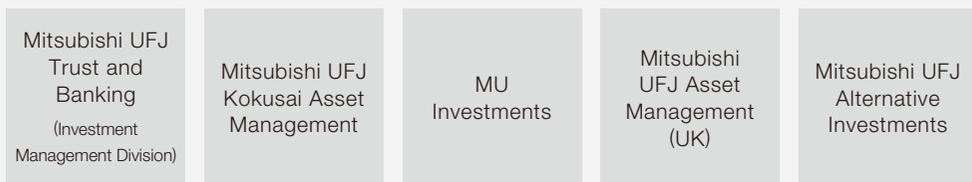
- **Engagement stage criteria**

Five stages are set to measure the progress of engagement. We will demand improvements for companies that are not taking sufficient actions for decarbonization.

- **Development of products that contribute to net zero**

We have developed an iSTOXX MUTB Climate Change Index, which consists of companies with goals aligned with the Paris Agreement. We assess each company’s transition and physical risks, a reduction plan of GHG emissions by 2050, and proportion of businesses that contribute to a decarbonized society.

#### MUFG AM Sustainable Investment



## Initiatives for Carbon Credits

### Initiatives for Forest Fund Investments

- We believe it is important to contribute to the expansion of the carbon credit market, given the growing expectations for the use of carbon credits in addition to emission reduction efforts by companies.
- At the Bank, we are considering investing in forest funds. The objective is to receive carbon credits for GHG absorption by forests in addition to earning a financial return through investments in forests.
- MUFG intends to lead the growth and development of the market in sustainable investment, using our investment in forest funds as a catalyst. In addition, through the trading of carbon credits received from forest fund investments, we will contribute to the establishment and development of a carbon credit market in Japan and to the revitalization of the global market.



### Launch of Referral Service for Carbon Credits Provided by ENGIE SA

- ENGIE SA has extensive experience in renewable energy projects and has a long history of carbon credit creation and trading, and can therefore provide quality carbon credits.
- The Bank has launched a fee-based business matching service to introduce Japanese customers to carbon credits offered by ENGIE SA. This enables us to provide carbon credits in line with our customers' strategies toward carbon neutrality.

## Initiatives of Partner Banks

### Initiatives of Krungsri



Krungsri has been enacting measures to realize the commitments proclaimed in the Carbon Neutral Vision announced in 2021

- **Social and Sustainable Finance target by 2030**

Krungsri has committed to growing the Social and Sustainable Finance portfolio by 50,000 - 100,000 million baht by 2030, basis of 2021. As of 2022, their social and sustainable finance portfolio increased by 44,204 million baht, reaching a total 154,594 million baht, and are steadily progressing to realize their target

- **Decarbonization of Own Emissions by 2030**

Krungsri's Race to Net Zero Action Plan was established, which entails digital transformation, efficient resource management, and greater use of renewable energy as the key pillars to decreasing GHG of own emissions

- **Decarbonization of Financial Services by 2050**

The Solar Roof Lending Program was launched in 2022, which provides financial support to customers in installing solar panels in their factories, offices, and homes to promote decarbonization in a wide range of customer segments

### Initiatives of Bank Danamon



Bank Danamon has been promoting initiatives to realize a sustainable environmental and social society

- **Sustainable Finance<sup>1</sup> Target**

Bank Danamon established a target to increase their Sustainable Finance (SF) loan portfolio ratio<sup>2</sup> to 25% by 2026. In 2022, the SF loan portfolio ratio has increased to 21%, and are steadily progressing to realize their target

- **Contribution to Realizing MUFG's Commitment of Decarbonizing Own Emission by 2030**

Installed solar panels in branches to promote decarbonization of own emissions

- **Expansion of Environmental and Social Policy Framework**

Expanded Bank Danamon's Environmental and Social Policy Framework in alignment with MUFG through prohibition of financing directly related to coal-fired power generation projects<sup>3</sup>, and addition of Oil and Gas Sectoral Guideline

1. Aligned with local regulations 2. Ratio of Sustainable Finance in the overall portfolio

3. Excluding projects equipped with environmentally friendly technologies

## Measurement of Financed Emission (FE) by Sector in TCFD Recommendations for Disclosure

- FE measurement was conducted for corporate and project finance, using the PCAF methodology, by sectors recommended for disclosure in the TCFD (based on March 31, 2022). Going forward, FE measurement results may change significantly as the availability and accuracy of data improves due to expanded disclosure by customers and advances in estimation methodologies.
- In addition to data disclosed by our customers, we use emission factors from the IEA World Energy Outlook and emission intensity (intensity per revenue and intensity per loan balance) published in the PCAF database to estimate FE. Please refer to our website for details on prerequisites and measurement methods. [Click here for reference page](#)

<b>Applicable assets</b>	Corporate and project finance
<b>Applicable balance</b>	Loan amounts (including undrawn-committed amounts)
<b>Applicable FY</b>	Fiscal year ended March 31, 2022
<b>Data source</b>	Emissions: Bloomberg, each customer’s disclosed information Financial information: internal data, Bloomberg
<b>Calculation method</b>	Classification of sectors recommended for disclosure in TCFD based on GICS industry codes

<b>Basic calculation formula (PCAF score 1-4)</b>	$FE = \text{Attribution factor} \times \text{GHG emissions}$ <ul style="list-style-type: none"> <li>• Attribution Factor Loan amount ÷ Debt + equity of each customer/project</li> <li>• GHG Emission Customer Scope 1, 2, 3 values disclosed are used; if not available, estimated values are used</li> </ul>
<b>Basic calculation formula (PCAF score 5)</b>	$FE = \text{Loan amount} \times \text{Emission factor per asset value taken from the PCAF database}$

	Energy			Transportation					Materials & Buildings					Agriculture, Food & Forest Products			
	Oil & Gas	Coal	Electric Utilities	Aviation	Maritime Transportation	Rail Transportation	Trucking Services	Automobiles & Components	Metals & Mining	Chemicals	Construction Materials	Capital Goods	Real Estate Management & Development <sup>1</sup>	Beverages	Agriculture	Packaged Foods & Meats	Paper & Forest Products
<b>Scope1+2 (MtCO<sub>2</sub>)</b>	34	0.2	85	4	8	0.4	0.5	3	23	9	3	2	1	0.3	2	5	2
<b>Scope3 (MtCO<sub>2</sub>)</b>	97	0.4	29	2	4	0.5	4	73	27	25	2	93	1	2	1	11	3
<b>FE scope of measurement balance (Billion USD)</b>	49	0.4	61	11	11	13	14	63	26	35	4	53	80	7	2	16	6
<b>Measured coverage<sup>2</sup></b>	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>PCAF score (Scope 1+2)</b>	3.2	2.7	2.8	2.4	2.9	3.6	3.8	2.2	2.1	2.4	2.2	2.2	3.7	2.2	4.1	3.5	3.1
<b>PCAF score (Scope 3)</b>	3.3	3.2	3.1	2.5	3.0	3.7	3.8	2.2	2.2	2.4	2.2	2.6	3.7	2.3	4.5	3.5	3.5

1. Excluding mortgages 2. For power and oil & gas upstream business PF, measurement was conducted only for completed construction details

Terms and abbreviations	Official name	Remarks
<b>ATFSG</b>	Asia Transition Finance Study Group	Based on the Asia Energy Transition Initiative (AETI) proposed at the Special Meeting of ASEAN Ministers on Energy in June 2021, the Asia Transition Finance Study Group was launched in October 2021 to “present and disseminate the concept of an Asian version of transition finance.”
<b>CCS</b> <b>CCU</b> <b>CCUS</b>	Carbon dioxide and Storage Carbon dioxide and Utilization Carbon dioxide Capture, Utilization and Storage	CCS is a carbon-capture and storage technology that separates out CO <sub>2</sub> emitted from power plants, chemical plants, etc. from other gases, collects them, then stores or injects the CO <sub>2</sub> deep underground. CCU refers to technology that separates, recovers, and reuses CO <sub>2</sub> for fuel, while CCUS refers to technology that recovers, effectively uses, and stores CO <sub>2</sub> .
<b>CDP</b>	—	CDP (a nonprofit organization) run by a coalition of institutional investors and with an office in London that calls on companies with high market capitalization in major countries to disclose their environmental strategies and greenhouse gas emissions.
<b>CO<sub>2</sub>e</b>	CO <sub>2</sub> equivalent	Carbon dioxide equivalent (examples: methane and nitrous oxide, etc.) figures
<b>COP</b>	Conference of the Parties	Conference of the Parties to the United Nations Framework Convention on Climate Change. The 27th Conference (COP27) was held in November 2022 in Sharm El Sheikh, Egypt.
<b>FE</b>	Financed Emission	A concept that indicates the portion of GHG emissions from each customer or PJ in which a financial institution invests and finances that are deemed to be attributable to the financial institution through financing.
<b>GHG</b>	Greenhouse Gas	Gas, such as CO <sub>2</sub> or Methane, etc., that cause greenhouse effect
<b>GX</b>	Green Transformation	Transformation of the entire economic and social system to achieve emission reductions and increase industrial competitiveness by viewing efforts to achieve 2050 carbon neutrality and 2030 national GHG emission reduction targets as an opportunity for economic growth.
<b>IEA</b>	International Energy Agency	International organization within the Organisation for Economic Co-operation and Development (OECD) that publishes scenarios (SDS, APS, NZE, etc.) for achieving the goal of limiting the increase in global average surface temperature.
<b>IMO</b>	International Maritime Organization	Specialized agency of the United Nations to promote international cooperation on maritime issues, including ship safety and the prevention of marine pollution from ships.
<b>IMO DCS</b>	IMO Data Collection System (IMO Fuel Oil Data Collection System)	Regulations on the reporting of fuel consumption adopted at the 70th session of the IMO Marine Environment Protection Committee in October 2016.
<b>NZAM</b>	Net Zero Asset Managers initiative	Formed voluntarily in 2020 by asset management companies, this initiative calls for becoming net zero by 2050 as well as limiting, through investments, the increase in global average surface temperature to 1.5°C.
<b>NZBA</b>	Net-Zero Banking Alliance	Established by the United Nations Environment Programme Finance Initiative (UNEP FI) in April 2021, this initiative commits banks to net zero GHG emissions in their financed portfolios by 2050.
<b>PACTA</b>	Paris Agreement Capital Transition Assessment	A tool to analyze the alignment of portfolios with climate change scenarios, led by 2° Investing Initiative, a French thinktank.
<b>PCA</b>	Portfolio Climate Alignment	A measure of consistency that indicates the difference from the required level across the portfolio. Calculates the Vessel Climate Alignment (VCA) of individual vessels providing financing as a weighted average of the percentages in the loan portfolio
<b>PCAF</b>	Partnership for Carbon Accounting Financials	Launched in 2015 with the goal of standardizing GHG measurements and the disclosure of financed GHG emissions.
<b>PCAF score</b>	PCAF Data Quality Score	PCAF’s own five-point scale scoring system that indicates the quality of the disclosed data. Scores are determined according to the degree of estimation. Score 1 is the highest rank.

Terms and abbreviations	Official name	Remarks
PPA	Power Purchase Agreement	A system in which businesses rent the roofs of facilities or idle land owned by companies and municipalities, install power generation equipment free of charge, and use the electricity generated at their facilities, thereby reducing electricity costs and CO <sub>2</sub> emissions.
SBTi	Science Based Targets initiative	Established by the United Nations and other organizations to encourage the private sector to set GHG emission reduction targets based on climate science. Certification can be obtained by meeting SBTi's goalsetting guidelines.
Scope 1, 2 and 3	–	Scope 1: Direct GHG emissions by the reporting company itself (e.g., fuel combustion, industrial process); Scope 2: Indirect GHG emissions from using electricity, heat, or steam supplied by others; and Scope 3: Indirect GHG emissions other than Scope 1 and Scope 2 (GHG emissions by others related to the company's activities).
SPV	Special Purpose Vehicle	In securitization or project finance projects, those established only for limited purposes, such as securitization or liquidation of bonds or real estate.
TCFD	Taskforce on Climate-related Financial Disclosures	Taskforce set up by the Financial Stability Board (FSB) in 2015 to develop a consistent approach to disclosing climate change-related financial risks.
UNEP-FI	United Nations Environment Programme Finance Initiative	A global partnership established between the United Nations Environment Programme (UNEP) and the financial sector. Promotes action to align economies with sustainable development throughout the financial system.
VCA	Vessel Climate Alignment	The degree of climate alignment of individual vessels for which financing is being provided. Calculated by dividing the difference between the CO <sub>2</sub> emissions intensity of each ship and the required level for each ship type for each year by the required level for each ship type for each year
ZEH	Net Zero Energy House	Housing with a highly insulated exterior layer and high-efficiency energy-saving equipment, with net-zero or negative annual primary energy consumption due to renewable energy, etc.

### What is the PCAF Data Quality Score (PCAF score)

○ We score the quality of emission data by each customer/project according to the categories shown below, and aggregate the average score for the sector as a whole by weighted average of loan amount.

	Quality	Category	Summary
High ↑ ↓ Low	Score 1	Disclosed information	● Verified emissions data of each customer/project
	Score 2		● Unverified emissions data of each customer/project
	Score 3	Estimated value (based on physical metrics)	● Estimation based on energy consumption data of each customer/project
	Score 4		● Estimation based on production data of each customer/project
	Score 5	Estimated value (based on financial metrics)	● Estimation based on the sales of each customer/project and the sectorial emission benchmarks per sales
	● Estimation based on loan balances of each customer/project and sectorial emission benchmarks per asset		
	● Estimation based on loan balances of the each customer/project, sectorial emission benchmarks per revenue, and asset turnover ratio per sector		

Source: created by MUFG based on The Global GHG Accounting & Reporting Standard for the Financial Industry

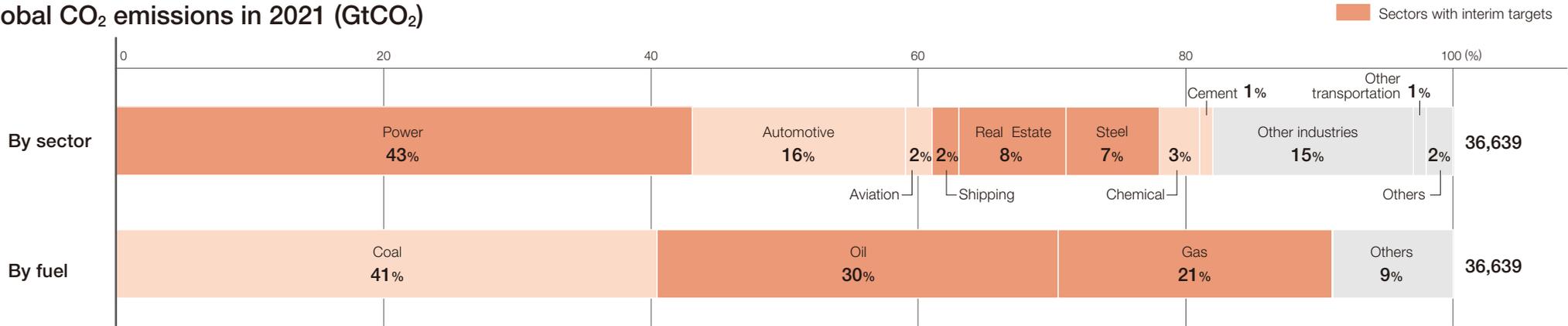
Publication date	Guideline/Report	Summary
May 2021	<i>MUFG Carbon Neutrality Declaration</i>	<ul style="list-style-type: none"> <li>● Declaration of carbon neutrality by MUFG. We are committed to achieving net-zero GHG emissions from our financed portfolio by 2050 and our own net-zero GHG emissions by 2030.</li> </ul> <a href="#">Click here for reference page</a>
Apr. 2022	<i>MUFG Progress Report</i>	<ul style="list-style-type: none"> <li>● In addition to presenting MUFG's quantitative results and targets, the report provides an overview of the approach to achieving carbon neutrality and our thought process on which this is based.</li> </ul> <a href="#">Click here for reference page</a>
Sept. 2022	<i>MUFG Sustainability Report 2022</i>	<ul style="list-style-type: none"> <li>● This report summarizes MUFG's most recent initiatives on sustainability, focusing on policies, systems, and measures to achieve a sustainable environment and society as well as sustainable growth.</li> </ul> <a href="#">Click here for reference page</a>
Sept. 2022	<i>MUFG TCFD Report 2022</i>	<ul style="list-style-type: none"> <li>● This is the latest version of MUFG's climate change-related risks and opportunities disclosure report based on Governance, Strategy, Risk Management, and Indicators and Targets.</li> </ul> <a href="#">Click here for reference page</a>
Oct. 2022	<i>MUFG Transition Whitepaper</i>	<ul style="list-style-type: none"> <li>● Taking the six sectors of materials and power (steel, cement, chemicals, paper, glass, and power) as examples, this report summarizes the path to carbon neutrality in Japan, including background information, such as regional characteristics.</li> </ul> <a href="#">Click here for reference page</a>

## References:

- **ATF Guidelines (ATFSG, issued September 2022)** [Click here for reference page](#)  
Provide practical guidance, mainly by organizing the process and key points for financial institutions when considering transition finance, and by using case studies to illustrate the guideline's concepts.
- **ATF Activity Report (ATFSG, issued September 2022)** [Click here for reference page](#)  
This report summarizes the ATFSG's members and activities, as well as recommendations for public sector support necessary for transition finance initiatives.
- **NZBA Transition Finance Guide (NZBA, issued October 2022)** [Click here for reference page](#)  
Defines principles that can be referred to in addressing transition finance and also provides policy recommendations for expanding transition finance.

## Sector Overview

### Global CO<sub>2</sub> emissions in 2021 (GtCO<sub>2</sub>)



## Formula for Calculating Emissions from the Financed Portfolio (by Sector)

### Emission intensity for the power sector

$$\sum \left( \text{GHG emission intensity of each customer/project (gCO}_2\text{e/kWh)} \times \frac{\text{Loan amount to each customer/project}}{\text{Total of loan amount to each customer/project}} \right)$$

### Absolute GHG emissions from the oil & gas sector

$$\sum \left( \text{Attribution factor (MUFG's credit share against debt + equity of each customer/project)} \times \text{GHG emissions from each customer/project} \right)$$

### Emission intensity for the commercial real estate sector

$$\sum \left( \text{GHG emission intensity of each company (developers & REITs) & NRL properties (kgCO}_2\text{e/m}^2) \times \frac{\text{Loan amount to each company (developers & REITs) & NRL}}{\text{Total of loan amount to each company (developers & REITs) & NRL}} \right)$$

### Emission intensity for the residential real estate sector

$$\sum \left( \text{GHG emission intensity of each property used to secure mortgage (kgCO}_2\text{e/m}^2) \times \frac{\text{Loan amount to each mortgage}}{\text{Total of loan amount to each mortgage}} \right)$$

### Absolute GHG emissions from the steel sector

$$\sum \left( \text{Attribution factor (MUFG's credit share against debt + equity of each customer)} \times \text{GHG emissions from each customer} \right)$$

### Method for calculating PCA for the shipping sector

$$\text{Portfolio Climate Alignment (PCA)} = \sum \left( \text{VCA} \times \frac{\text{Loan amount to each vessel}}{\text{Total of loan amount to each vessel}} \right)$$

Vessel Climate Alignment (VCA)

$$\text{VCA} = \frac{\text{emission intensity of each vessel (gCO}_2\text{/dwt-nm}^3) - \text{Required trajectory value by vessel type}}{\text{Required trajectory value by vessel type}}$$

## Financing Results and Case Examples

### Renewable energy support



- Financing support for one of **the world's largest** offshore wind projects Bank Trust Securities
- Green loan for a mega solar project, **the largest single financing solar project ever in the U.S. to date** Bank Trust Securities
- First green loan for offshore wind power project **in APAC** (Taiwan) Bank Trust Securities
- Climate bond initiative certified solar project in Egypt Bank Trust Securities
- Expanding the base of renewable energy investors through the **Renewable Trust**, which invests in loans to renewable energy companies (currently accumulated over 10 billion yen, and will increase the number of issues from April 2023) Bank Trust Securities
- Supporting **all offshore wind projects** in Japan Bank Trust Securities

### Support to launch decarbonization initiatives



- Collaborated with Zeroboard Inc. and Japan Credit Rating Agency Ltd. to develop a sustainability-linked loan framework for NAGASE & CO., LTD. to encourage the calculation, disclosure, and reduction of GHG emissions throughout the supply chain
- Selected as a model case for the 2022 Green Finance Model Case Creation Project by the Ministry of the Environment

#### Enhanced collaboration with Zeroboard Inc.

- Partnered with startup Zeroboard Inc. in November 2021
- Beginning with its use as a customer engagement tool, the partnership with Zeroboard Inc. has expanded to include the first sustainability-linked loan scheme contract and overseas expansion through the partnership with Krungsri
- Invested in Zeroboard Inc. in February 2022 to further strengthen collaboration

### Transition support



- Underwriting of transition bonds issued by JERA Co., Inc. (**First in the Japanese power industry**) Total amount of issuance: **20 billion yen** Bank Trust Securities
- Underwriting of transition bonds issued by Idemitsu Kosan Co., Ltd. (**First in the Japanese petroleum industry**) Total amount of issuance: **20 billion yen** Bank Trust Securities
- Underwriting of transition bonds issued by Mitsubishi Heavy Industries, Ltd.: Total amount of issuance: **10 billion yen** Bank Trust Securities
- Underwriting of transition-linked bonds issued by ENEOS Holdings, Inc. (**first in Japan**): Total amount of issuance: **100 billion yen** Bank Trust Securities
- Origination of a transition-linked loan to Japan Airlines Co., Ltd. (**First in the Japanese airline industry**) Total amount: **Approx. 26.5 billion yen** Bank Trust Securities
- Origination of a transition-linked loan to Kirin Holdings Company, Limited (**first in the Japanese food industry**): **50 billion yen** Bank Trust Securities
- Commenced handling of **Japan's first** money trust for individuals with green finance certification for loan claims against Tokyu Fudosan Holdings Corporation Bank Trust Securities
- **First** green loan for a biogas power generation project using cattle manure as feedstock **in Japan**: **3.5 billion yen** for Kabuto Bio Farm, LLC. Bank Trust Securities