Mizuho Avoided Emissions Focus Report 2026

Unlocking a Sustainable Future with Avoided Emissions

Mizuho Financial Group
Mizuho Bank
Mizuho Trust & Banking
Mizuho Securities
Mizuho-DL Financial Technology
Asset Management One

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MIZUHO

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Preface: On publication of Mizuho Avoided Emissions Focus Report 2026

Publications that provide a structured overview of the concept of **avoided emissions** from the perspective of financial institutions remain relatively limited. In response to feedback from our clients indicating that there was a need for such materials, Mizuho published this report for the first time in October 2024, and we are now pleased to release its third edition. We are deeply grateful for the insightful feedback and valuable suggestions we have received from many of you so far.

Since our founding, Mizuho's mission has been to anticipate the needs of the times from a fair and open perspective, utilizing the power of finance to contribute to the prosperity of our clients, economic growth, and the sustainable development of society. For us, corporate management is not merely about pursuing short-term earnings; rather, it is a continuous endeavor to create social value grounded in our corporate philosophy and to translate that value into sustainable growth.

In this sense, avoided emissions serve as a vital metric. Against the broader backdrop of sustainability initiatives and climate action, they enable Mizuho to leverage its core strengths in supporting the creation of positive impact and the acceleration of the energy transition. We are confident that this metric, which reflects contributions to greenhouse gas (GHG) reductions across society as a whole, will become increasingly important in the years ahead.

Since the release of last year's report, global rule development for avoided emissions has advanced steadily, as seen in the ongoing revision of the GHG Protocol and the development of supplemental guidance by the Partnership for Carbon Accounting Financials (PCAF). Furthermore, according to Mizuho's proprietary research, disclosures of avoided emissions by Japanese companies have increased significantly year on year. Given these developments, efforts related to avoided emissions by both companies and financial institutions are expected to expand and deepen further going forward.

Against this backdrop, Mizuho, as a comprehensive financial group with diverse capabilities including commercial banking, trust banking, securities (investment banking), asset management, and research and consulting, is strategically addressing avoided emissions by drawing upon its unique ability to propose optimal solutions across the group to meet client needs and address social issues.

Mizuho Avoided Emissions Impact Finance, launched by Mizuho Bank in October 2025, has made a promising start, with the recording of four transactions totaling JPY 40 billion as of the end of March 2026. In addition, Mizuho Research Institute [*1] leverages its extensive expertise and track record in avoided emissions to provide broad-ranging support for calculation and disclosure. Furthermore, Mizuho Financial Group utilizes avoided emissions to assess the transition progress of clients, Mizuho Securities applies them to framework development and sustainable finance initiatives, and Asset Management One incorporates them into the assessment of investee companies' disclosures. These initiatives represent practical examples originating from the front lines of Mizuho's operations, a tangible demonstration of how we translate our corporate philosophy into concrete value.

Guided by our corporate identity and founding DNA, Mizuho remains committed to steadily advancing together with our clients toward the realization of a sustainable society and economy by offering financial and non-financial solutions that leverage avoided emissions.



21 October 2026



Senior Managing Corporate Executive
Group Chief Sustainability Officer (Group CSuO)
Mizuho Financial Group, Inc.

*1: On April 1, 2026, Mizuho Research & Technologies, Ltd. merged with Mizuho Bank, Ltd. and changed its name to Mizuho Research Institute. Mizuho Research Institute is the name of an internal organization of Mizuho Bank, Ltd.

Executive summary

1. Global trends in avoided emissions: p. 3

- Avoided emissions are a metric that complements GHG emissions accounting and can be utilized to evaluate climate-related opportunities, positive impacts, transitions, and other key areas.
- Currently, momentum is building around the revision of various standards and the development of sector-specific guidance, accelerating initiatives by both companies and financial institutions. In addition to reports on avoided emissions published by multiple organizations, calculation and disclosure platforms are also being developed, particularly in Europe and Japan.

2. Disclosure of avoided emissions by Japanese companies (FY2025): p. 24

- In FY2025, 146 Japanese companies in the TOPIX 500 and 98 companies outside the index disclosed avoided emissions. Compared to FY2024, the number of disclosing companies increased significantly (+22% for TOPIX 500 companies and +36% overall), demonstrating the continued expansion of avoided emissions disclosures among Japanese companies following strong growth seen in FY2024.

3. Significance of avoided emissions in sustainability disclosure and their utilization by financial institutions: p. 32

- As sustainability disclosures become increasingly mandatory worldwide, mandatory and voluntary disclosures exist in a complementary relationship, and financial institutions continue to show strong demand for voluntary disclosures such as avoided emissions. Considering avoided emissions, which are highly correlated with net sales and other key financial indicators, helps clarify the connectivity between this sustainability information and financial information as well as corporate value, leading to more sophisticated evaluations of companies by financial institutions. Furthermore, the economic value of avoided emissions can be calculated by applying carbon pricing.
- In sustainability disclosure, combining entity-level (corporate-level, organization-level) evaluation with solution-level (project-level, product-level) evaluation is desirable, given the nature of the information. Beyond its use by institutional investors in evaluating investee companies, avoided emissions, which are primarily calculated and disclosed at the solution level, also align well with sustainable finance, where emphasis is placed on granular, solution-specific information.
- Financial institutions utilize avoided emissions in a wide variety of ways, including as (1) metrics and targets for finance, (2) evaluation metrics for investees, (3) management metrics for investment and lending portfolios, and (4) themes for engagement.

4. Mizuho's achievements in avoided emissions area: p. 41

- Mizuho has established a framework that contributes to the broader use of avoided emissions, supporting clients through calculation and disclosure support as well as finance execution. Mizuho boasts an extensive track record in sustainable finance, consulting, and other services related to avoided emissions.

5. Toward further promoting and expanding use of avoided emissions: p. 54

- Key initiatives driving the further adoption and expansion of avoided emissions include (1) solution development and expanded disclosure by companies, (2) development and implementation of evaluation methods and financing schemes by financial institutions, and (3) knowledge sharing and development of a common platform that connects companies and financial institutions.

Mizuho's Strengths

- ✓ **Identity that has contributed to the development of industry and business since its foundation**
- ✓ **Expertise on industry, environment, society and technology**
- ✓ **Liaison with diverse stakeholders and comprehensive financial capabilities to support them**

In this report, new slides for FY2026 edition are marked with **2026** in the upper right corner of each slide, and slides that are reused from the FY2025 edition are marked with **2025**.

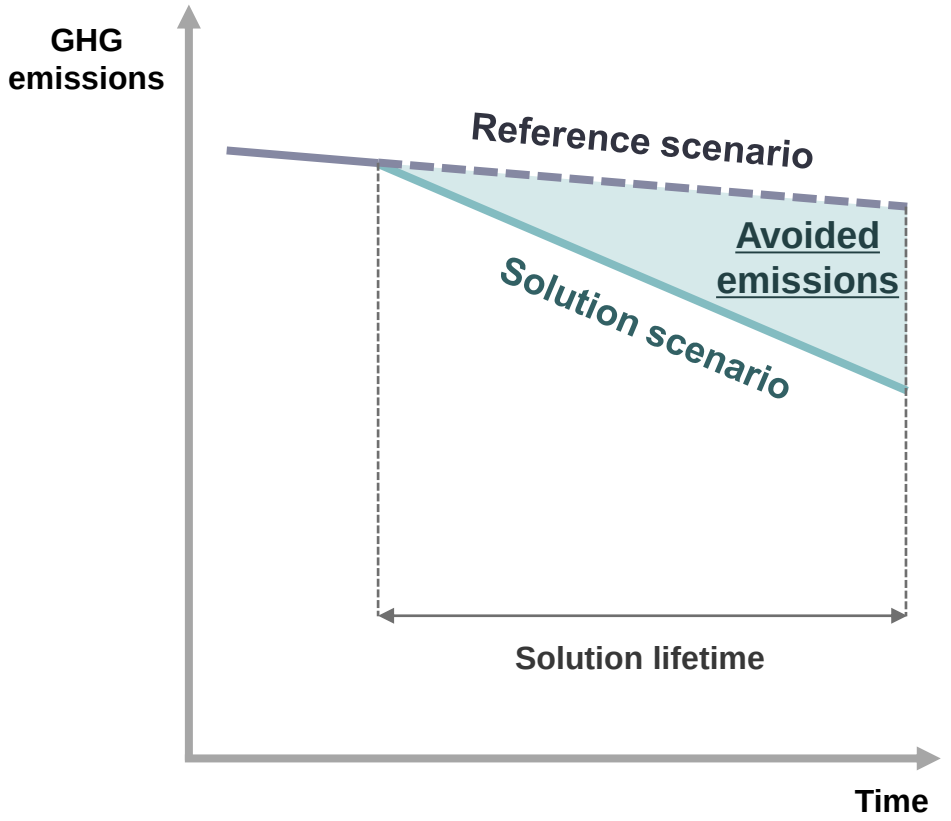
1. Global trends in avoided emissions

What are avoided emissions?

- **Avoided emissions (AE) are a metric that quantifies and evaluates the contribution to reducing greenhouse gas (GHG) emissions across society through the provision of solutions (products, services, etc.) by companies.**

Definition of avoided emissions

- **"Avoided emissions"** refers to the amount of GHG emissions avoided by introducing a solution (like a product, service, technology, or project for which avoided emissions are calculated), in other words it is the estimated difference in total life-cycle GHG emissions between the **reference scenario** where the solution is not introduced and the **solution scenario** where the solution is utilized.
- Therefore, avoided emissions can also be considered to be **the reduction in overall societal GHG emissions (positive impact)** resulting from the introduction of solutions.
- Avoided emissions enabled by solution providers, such as companies, are also calculated in terms of the reduction of direct emissions by solution users.
- The reference scenario represents the event or state that is most likely to occur when there is no solution for which the avoided emissions are calculated, and it is the scenario to be compared with the solution scenario when calculating the avoided emissions enabled by the solution. A reference scenario is sometimes referred to as a counterfactual scenario or baseline.



Sources: WBCSD (2025). *Guidance on Avoided Emissions: Helping business drive innovations and scale solutions toward Net zero*.

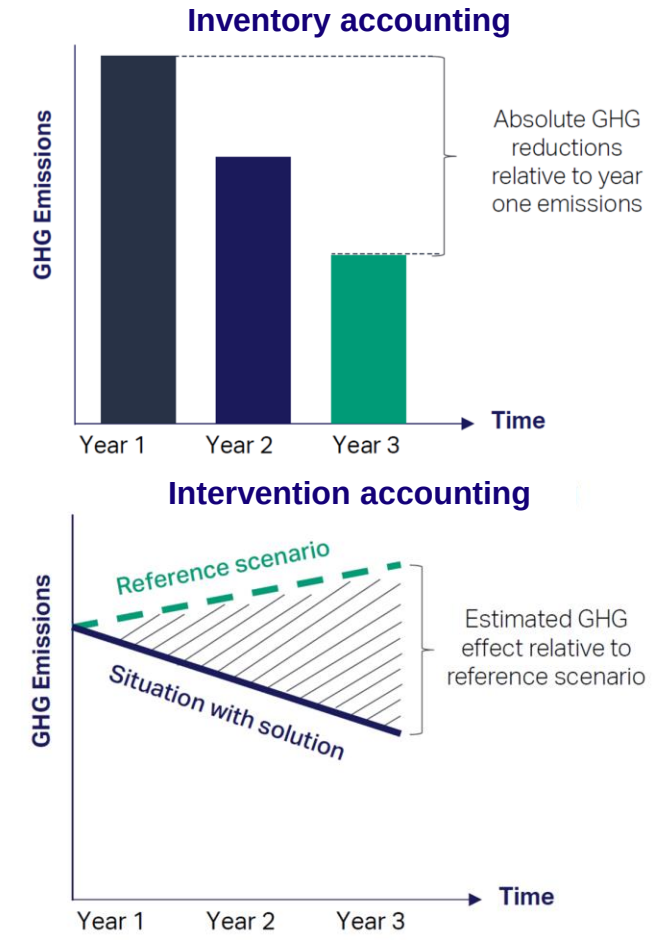
Difference between inventory accounting and intervention accounting

- **The concept of GHG emissions (Scope 1, 2, 3) in inventory accounting differs from that of AE in intervention accounting.**

Difference between inventory accounting (GHG emissions) and intervention accounting (avoided emissions)

Category	Inventory accounting (GHG emissions)	Intervention accounting (Avoided emissions)
Scope	GHG emissions from a company's activities	GHG emissions in society
Principle	An assessment of annual absolute emissions from a company and its value chain	An assessment of the GHG impact of a solution provided by a company, compared to what would have occurred if the solution wasn't used (e.g., standard market solution)
Time	An assessment is made between two chronological points in time	An assessment is also made between two points in time, but made by comparing the solution's use to a hypothetical situation within the same time period
Reference	GHG emissions reductions are quantified against actual absolute emissions in a historical base year	Avoided emissions are quantified against a reference scenario
Certainty	The reference (historical base year) is real and accurate	The reference scenario is model-based, fictional and thus not verifiable per se
Reality	Emissions reductions compare the variation of a company's reported emissions over time	Avoided emissions compare the climate impact of a solution (what has happened or is expected to happen) and a reference scenario (what would have occurred without the solution)

Difference between inventory and intervention accounting



Sources: WBCSD (2023). *Guidance on Avoided Emissions: Helping business drive innovations and scale solutions toward Net zero*.

Global standards, guidelines, and guidance for calculating and disclosing avoided emissions

2026

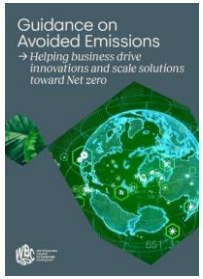
- **The WBCSD [*1] Guidance on AE, the PCAF [*2] Standard, and the GHG Protocol are currently being revised during the 2025-2028 period.**
- **Following these revisions, initiatives by companies and financial institutions regarding AE will progress and accelerate.**

Global standards, guidelines, and guidance for calculating and disclosing avoided emissions

Companies

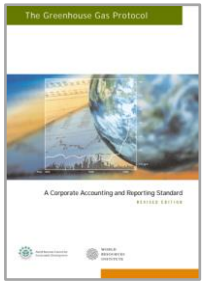
Financial institutions

WBCSD Guidance on Avoided Emissions



WBCSD released the Guidance on Avoided Emissions v1.0 in March 2023. Following a public consultation from November 2024 to January 2025, WBCSD published the Guidance on Avoided Emissions v2.0 in July 2025.

1 GHG Protocol



The introduction of avoided emissions is being considered for the GHG Protocol, which is currently undergoing revision with the final standard scheduled for publication in the fourth quarter of 2028.

2 PCAF Standard



In December 2025, the PCAF Standard was revised to include new supplemental guidance on Financed Avoided Emissions (FAE). The scope of FAE calculation was expanded from renewable-energy project finance alone to all asset classes, including corporate finance.

Companies are expected to advance and accelerate the calculation and disclosure of avoided emissions. Financial institutions are expected to develop and accelerate engagement on avoided emissions and the provision of financial and non-financial solutions to companies.

*1: World Business Council for Sustainable Development. *2: Partnership for Carbon Accounting Financials.

Sources: WBCSD (2025). *Guidance on Avoided Emissions: Helping business drive innovations and scale solutions toward Net zero.*, GHG Protocol (2004). *A Corporate Accounting Reporting and Standard.*, PCAF (2025). *Financed avoided emissions & forward-looking metrics.*

GHG Protocol: Workstreams and timeline for GHG Protocol revision

- **The revision of the GHG Protocol has been proceeding across four workstreams.**
- **Among these, Actions and Market Instruments is the workstream most directly related to avoided emissions, and the final standard is scheduled for publication in the fourth quarter of 2028.**

Background of GHG Protocol revision

- Since the publication of Corporate Accounting and Reporting Standard (2004), Corporate Value Chain (Scope 3) Standard (2011), Scope 3 Calculation Guidance (2013), and Scope 2 Guidance (2015) in the GHG Protocol, there have been many significant developments in the field of GHG accounting and reporting.
- Between November 2022 and March 2023, a public consultation was conducted to solicit feedback on existing corporate standards and guidance, as well as proposals regarding whether to maintain the status quo, revise the existing standards, or develop new supplemental guidance. This consultation covered the Corporate Accounting and Reporting Standard, the Scope 2 Guidance, the Corporate Value Chain (Scope 3) Standard, and related documents, and was used to help determine the scope and nature of the revisions to be made to the GHG Protocol.
- As with all standards under the GHG Protocol, the development of any revisions or additional guidance will be subject to an inclusive, global, and diverse multi-stakeholder decision-making process involving participants from companies, NGOs, academia, and governments worldwide.
- In addition to a new Steering Committee (SC) and Independent Standards Board (ISB), the GHG Protocol secretariat has announced the members of Technical Working Groups (TWGs) that will support the process of revising and updating standards and guidance for companies. The Land Sector and Removals Standard has already been published in January 2026, and revision work on the GHG Protocol is currently proceeding across the following four workstreams:

Workstreams and timeline for GHG Protocol revision

1. **Corporate Standard**
2. **Scope 2**
3. **Scope 3**
4. **Actions and Market Instruments**

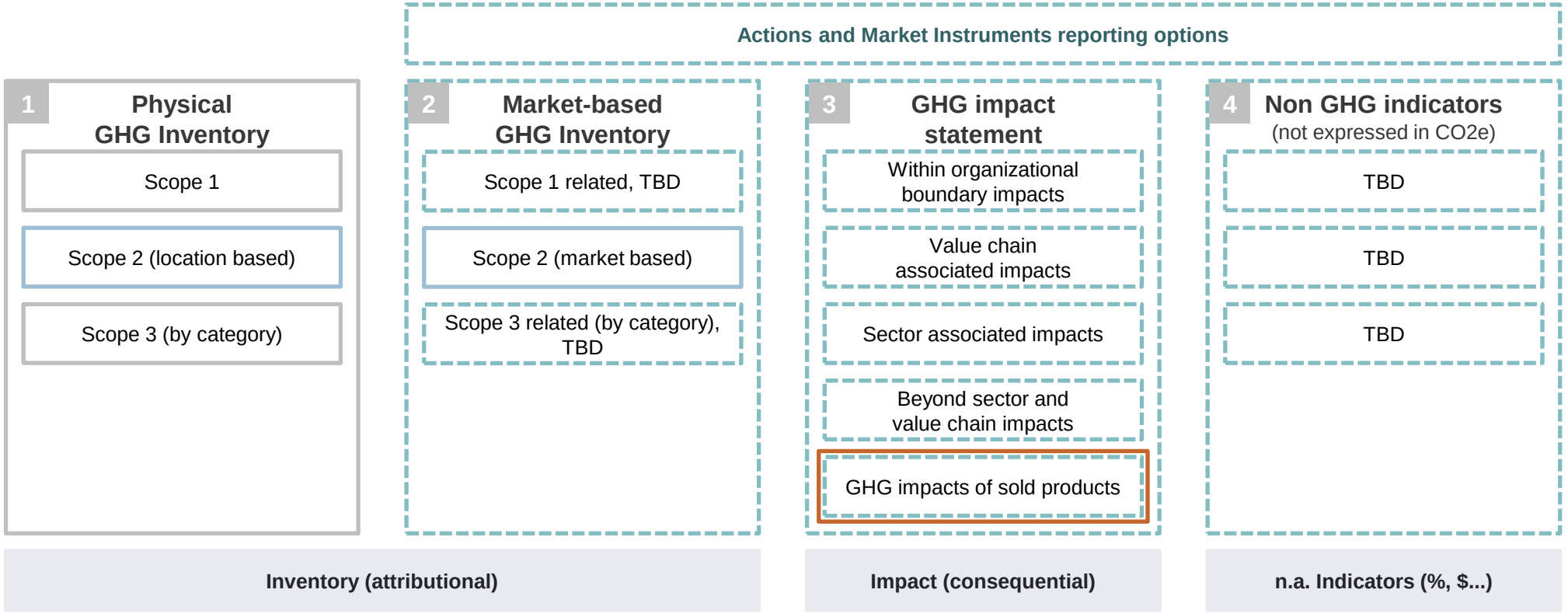
- The four areas will be integrated and **<u>ultimately published as a single standard in the fourth quarter of 2028.</u>**
- Meanwhile, guidance for each area is scheduled to be released on an individual basis following the publication of the final standard.

Sources: GHG Protocol website., GHG Protocol (2026). *Corporate Accounting and Reporting Standard (Corporate Standard), Version 3.0 Standard Development Plan*.

Actions and Market Instruments Phase 1 Progress Update White Paper: Overview and definition of avoided emissions

- The GHG Protocol secretariat issued a Request for Information (RFI) on **Actions and Market Instruments** from March to June 2026.
- Among the four proposed reporting statements, avoided emissions are expected to be addressed under the GHG Impact Statement. The GHG Impact Statement uses consequential accounting methods to quantify the impact of actions, such as specific projects, interventions, investments, or the production, sale, purchase, and consumption of products, as the difference relative to a baseline.
- In particular, avoided emissions are exemplified in this White Paper as “GHG impacts of sold products.” However, this serves merely as an initial concept at the White Paper stage, and the definition as well as the scope of application for avoided emissions may be revised and expanded during future discussions and the development of formal requirements.

Four reporting statements presented in the Actions and Market Instruments Phase 1 Progress Update White Paper *1



*1: Solid gray lines indicate current elements included in final or draft standards/guidance that have already been published. Elements with green dashed lines represent potential future elements that are to be decided and are subject to change. Elements in blue are currently addressed in the Scope 2 Guidance.

Sources: GHG Protocol (2026). *Actions and Market Instruments Phase 1 Progress Update White Paper VERSION 3 - REQUEST FOR INFORMATION*.

- **Financed avoided emissions (FAE) are the AE of a financial institution's portfolio and are calculated in the same way as financed emissions (FE).**
- **Financial institutions can use FAE to evaluate the impact and opportunities associated with their portfolios.**

Overview of financed avoided emissions and advantages for financial institutions

Financed avoided emissions: Avoided emissions through financial activities (portfolio avoided emissions)

- Similar to financed emissions, financed avoided emissions are the avoided emissions in the investment and loan portfolio attributed based on the holding ratio of financial institutions, using avoided emissions which are disclosed by companies and estimated by the financial institutions.
- **Financial institutions are expected to use them to measure the impact and opportunity (future earning/return) relating to their investment and loan portfolios.**
- In particular, avoided emissions can facilitate climate action in the financial sector, as they provide financial institutions with a way to approach climate-related opportunities in addition to the current risk-centered perspective on climate action. By using avoided emissions, financial institutions can evaluate the environmental performance of decarbonization technologies as well as their direct footprint (GHG emissions) in their portfolios and consider investing in and financing these technologies as a contribution to decarbonization.
- **Calculating and disclosing financed avoided emissions is also expected to advance and accelerate financial institutions' engagement with companies regarding the calculation and disclosure of avoided emissions, as well as their provision of financial and non-financial solutions.**
- If stakeholders can further advance and align practical guidance on technical/methodological frameworks, allocation rules, asset classes/instruments and terminology of avoided emissions, industries and financial institutions can strengthen their partnership in decarbonization through avoided emissions.

Standard formula for financed avoided emissions of investment portfolio

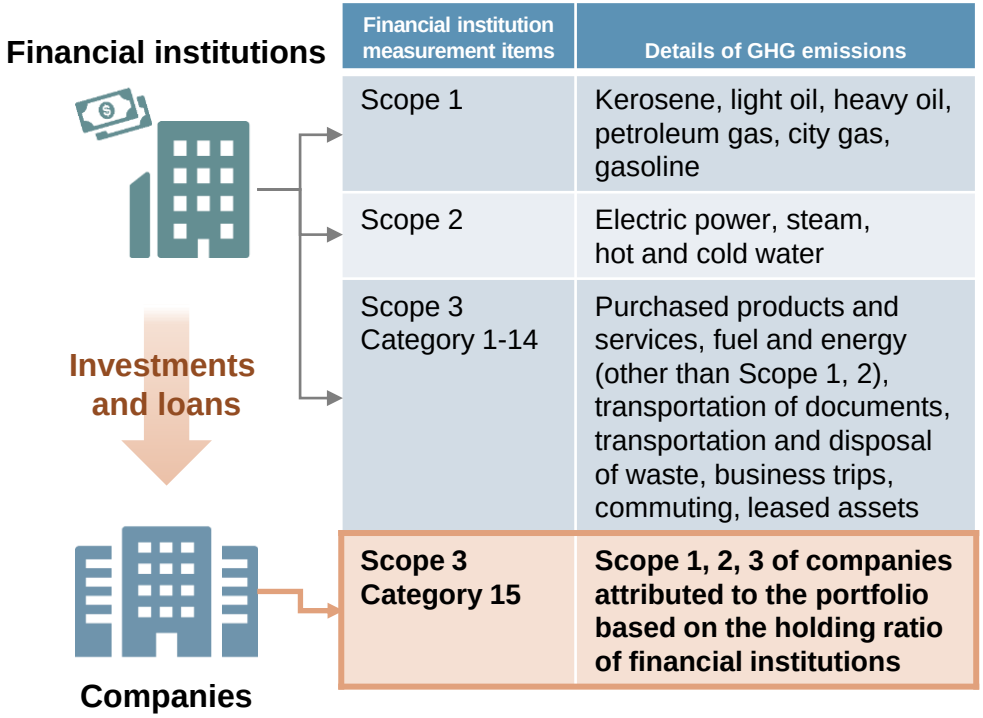
$$Financed\ Avoided\ Emissions = \sum_i \frac{Investment_i}{Investee\ Equity_i + Investee\ Debt_i} \times Avoided\ Emissions\ of\ Investee_i$$

Sources: PCAF (2024). *PCAF Standard Part A: New guidance and methods for public consultation*.

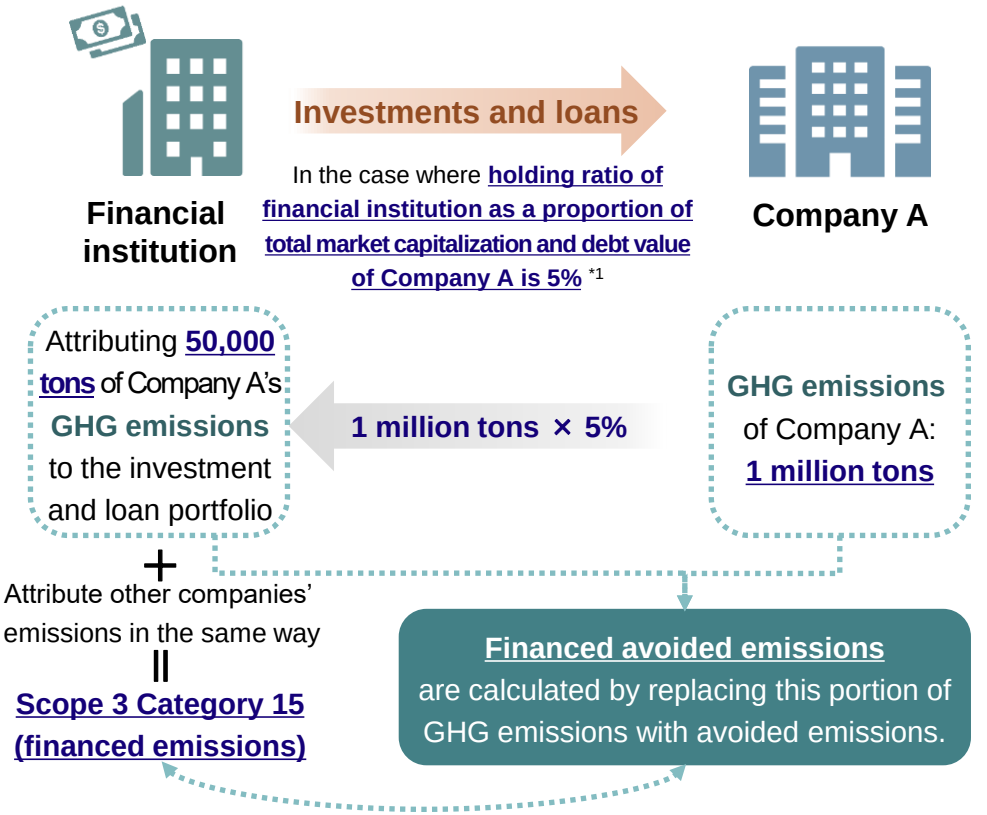
PCAF Standard: Scope 3 Category 15 (financed emissions) and financed avoided emissions

- **Scope 3 Category 15 (FE) is the most important category of GHG emissions for financial institutions.**
- **FAE are a metric that replaces the GHG emissions component in the formula for FE with AE.**

GHG emissions measured by financial institutions



Financed emissions and financed avoided emissions



Among the GHG emissions measured and disclosed by financial institutions, **Scope 3 category 15 (FE), to which GHG emissions of companies are attributed based on the holding ratio of the financial institution**, is the most important.

Financed avoided emissions are a metric that replaces the portion of GHG emissions of the companies in the financed emissions formula with avoided emissions.

*1: For example, if the total market capitalization, debt (book value), and non-controlling interests (book value) of Company A (EVIC) amount to USD 100 million, and a financial institution invests in Company A shares of USD 2 million and Company A bonds of USD 3 million (or makes a USD 3 million loan to Company A), then the financial institution's holding ratio is 5% = (USD 2 million + USD 3 million) / USD 100 million.

Sources: Mizuho Financial Group.

2 PCAF Standard: Supplemental guidance on financed avoided emissions (1/2)

2026

- **In December 2025, PCAF published revisions to Part A and Part C of the PCAF Standard.**
- **Additionally, PCAF developed new supplemental guidance on financed avoided emissions and forward-looking metrics.**

The Global GHG Accounting and Reporting Standard for the Financial Industry (PCAF Standard)

Part A: Financed emissions





Newly developed

Part B: Facilitated emissions



Part C: Insurance-associated emissions



Overview of supplemental guidance on financed avoided emissions

- As financial institutions place increasing importance on understanding and quantifying the climate impact of their investments and loans, PCAF has expanded its supplemental guidance on financed avoided emissions (FAE) and forward-looking metrics. In particular, regarding avoided emissions, WBCSD has published guidance for companies, and PCAF has established consistent supplemental guidance tailored to financial institutions, drawing on the WBCSD guidance.
- **FAE refers to avoided emissions attributable to a financial institution when it provides capital through its investments and loans to support projects, companies, products, or services that contribute to emission reductions.** While reporting on FAE under the previous PCAF Standard was limited to renewable power projects, this supplemental guidance expands the reporting scope to all asset classes and sets out detailed methodologies for reporting FAE.
- **Reporting FAE is optional** because avoided emissions still present numerous challenges at this stage, such as data availability, aggregation methods, and concerns regarding double counting. However, if financial institutions choose to disclose FAE, they must report FAE separately from regular financed emissions inventories to enhance data transparency and credibility.

Sources: PCAF (2025). *Financed avoided emissions & forward-looking metrics*.

PCAF Standard: Supplemental guidance on financed avoided emissions (2/2)

Key contents of financed avoided emissions supplemental guidance

Item	Main content
Methodology	• Avoided emissions of counterparties shall be calculated using a credible methodology and a conservative counterfactual scenario.
Timeframe requirement	• The time period over which financed avoided emissions (FAE) are reported shall be consistent with the timeframe used to assess the counterparty's emissions that form the basis for financed emissions (FE). If emissions are reported using a flow-based approach (e.g., Scope 3 Category 11), avoided emissions shall also be assessed using a flow-based approach. If reported using a stock-based approach (e.g., Scope 3 Category 13), avoided emissions shall also be assessed using a stock-based approach.
Calculation and estimation methods	• FAE shall, in principle, be reported based on direct counterparty data or calculated from primary physical activity data. Estimating avoided emissions using economic intensities (e.g., input-output models) is not permitted because of the high uncertainty involved. • Financial institutions shall assess reported avoided emissions from counterparties to ensure that the calculation methodology is adequately disclosed and aligns, at a minimum, with the timeframe requirement of this guidance.
Boundary of assessment	• Financed avoided emissions from general corporate finance shall be accounted for only when they occur outside of the counterparty's value chain. Emission reductions within a counterparty's value chain shall not be treated as a financial institution's FAE.
Attribution factor	• Portfolio-wide FAE is calculated by multiplying the avoided emissions of each asset by the relevant attribution factor for the applicable asset class and summing the results.
Attribution method	• The counterparty's avoided emissions shall be attributed using the same method as for absolute emissions based on the applicable PCAF Standard asset class. For example, for listed corporates, general corporate instruments use EVIC as the denominator, whereas specific corporate instruments attribute emissions at the project, product, or service level.
Reporting requirements	• Avoided emissions metrics may be reported but shall be disclosed separately from, and be additional to, absolute emissions and, where appropriate, emissions removals' disclosure. FAE cannot be compared with FE or deducted from it. • Avoided emissions from climate solutions shall be disclosed separately from those associated with enabling activities [*1].
Data quality score	• Data quality scores for FAE range only from 1 (highest) to 3 (lowest). Reported avoided emissions provide the highest data quality (Scores 1–2), followed by estimates based on primary physical activity data (Scores 2–3). Scores 4 and 5, which are based on economic intensities and appear in FE methodologies, do not apply to FAE. • Financial institutions shall establish, and may disclose, a data quality assurance policy for avoided emissions.

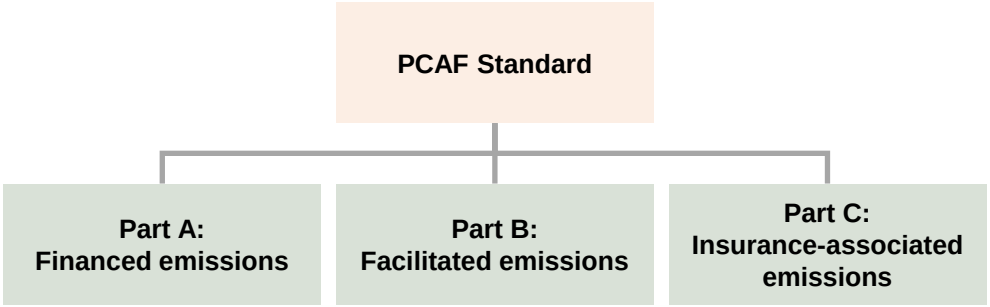
*1: While a "solution" refers to a product or service that directly reduces GHG emissions, an "enabler" refers to a product or service that supports the development, manufacture, installation, or operation of a solution without being the direct agent of reduction. (It contributes to GHG reduction indirectly through the solution and is necessary and uniquely critical to its deployment.)

Sources: PCAF (2025). *Financed avoided emissions & forward-looking metrics*.

- **PCAF is a global initiative to standardize methods for measuring and disclosing GHG emissions from financial activities.**
- **Mizuho Financial Group is a Core Team member of PCAF Global and chairs the PCAF Japan coalition.**

Overview of PCAF

- PCAF (Partnership for Carbon Accounting Financials) was established in the Netherlands in 2015 as a global initiative to standardize methods for measuring and disclosing GHG emissions from financial activities.
- As of October 2026, 798 financial institutions around the world are signatories of PCAF, and the total assets of signatories amount to USD 99.2 trillion.
- Since its establishment, PCAF has developed methods for measuring and disclosing GHG emissions from financial activities. In November 2020, it released the “The Global GHG Accounting and Reporting Standard for the Financial Industry” (PCAF Standard).
- The PCAF Japan coalition was established in November 2021. **Since then, the PCAF Japan coalition has been chaired by Mizuho Financial Group.** As of October 2026, 30 Japanese financial institutions had joined PCAF Japan coalition.



PCAF Global Core Team

- The Core Team consists of members selected from signatories, and it leads the development of the new PCAF Standard. **Among Japanese financial institutions, only Mizuho Financial Group is a member of the Core Team.**
- Working groups under the Core Team review the details of each area of the new PCAF Standard.

Core Team Members

	Financial institution	Category	Headquarters
1	Apollo	AO/AM *1	United States
2	BAC	Financial group	Costa Rica
3	Banco de Sabadell	Commercial bank	Spain
4	Commonwealth Bank of Australia	Commercial bank	Australia
5	Crédit Agricole	Financial group	France
6	EIG	AO/AM	United States
7	HSBC	Commercial bank	United Kingdom
8	ING	Commercial bank	Netherlands
9	Mizuho Financial Group	Financial group	Japan
10	NBIM	AO/AM	Norway
11	PIMCO	AO/AM	United States
12	Standard Bank	Commercial bank	South Africa
13	Standard Life	Insurance	United Kingdom
14	Swiss Re	Insurance	Switzerland
15	Union Bank of India	Commercial bank	India

*1: Asset Owner / Asset Manager.
Sources: PCAF website.

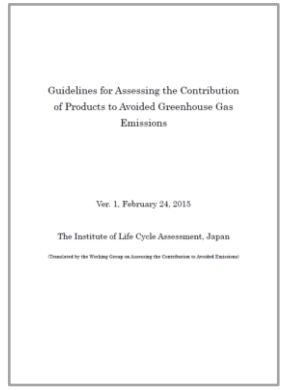
Standards, guidelines, and guidance for calculating and disclosing avoided emissions in Japan

2026

- **Examples of key standards, guidelines, and guidance for avoided emissions in Japan include the Guidelines for Assessing the Contribution of Products to Avoided Greenhouse Gas Emissions by The Institute of Life Cycle Assessment, Japan (ILCAJ), as well as the Basic Guidelines for Disclosure and Evaluation of Climate-related Opportunities by the GX League.**

ILCAJ: Guidelines for Assessing the Contribution of Products to Avoided Greenhouse Gas Emissions

- The Institute of Life Cycle Assessment, Japan (ILCAJ) formulated the Guidelines for Assessing the Contribution of Products to Avoided Greenhouse Gas Emissions in February 2015 and published the second version in March 2022. These guidelines present a framework for quantifying the extent to which products, parts, and materials contribute to GHG emission reduction across their overall life cycle compared with conventional or alternative products.
- The background to their development was that while quantification methods were being established in sectors such as chemicals, electrical and electronic equipment, as well as by local governments, methodologies and allocation approaches were not standardized across industries. The guidelines address climate change, covering the seven GHGs [*1] including CO2 agreed upon at COP17/CMP7 [*2], while allowing other GHGs to be included as necessary. Quantification requires compliance with ISO 14040/14044 and related standards, with comparisons based on Life Cycle Assessment (LCA) as a key prerequisite. The guidelines are intended to be used by companies in product development and sustainability strategies, as well as to serve as a foundation for national and local governments and industry associations when designing policy systems and regulations or developing guidance.



GX League: Basic Guidelines for Disclosure and Evaluation of Climate-related Opportunities/Case Studies on Avoided Emissions

- From 2023 to 2024, the Working Group on Disclosure and Evaluation of Climate-related Opportunities within the GX League promoted initiatives to increase and expand the adoption of avoided emissions, publishing basic guidelines related to avoided emissions alongside case studies for financial institutions and disclosing companies.
- The Basic Guidelines for Disclosure and Evaluation of Climate-related Opportunities, published in March 2023, define climate-related opportunities as factors contributing to the enhancement of corporate value through the creation of societal impact. The guidelines position avoided emissions as one of the metrics representing climate-related opportunities and set out recommended disclosure content.
- Furthermore, the working group published Leveraging Avoided Emissions: Financial Institution Case Studies in December 2023 and Hypothetical Cases for Avoided Emissions Disclosure in May 2024, as collections of case studies on avoided emissions for financial institutions and companies.



*1: Carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorinated carbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3).
*2: The 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP17) and the 7th Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP7), held in 2011.
Sources: ILCAJ (2015, 2022). *Guidelines for Assessing the Contribution of Products to Avoided Greenhouse Gas Emissions*., GX League (2023, 2024). *Basic Guidelines for Disclosure and Evaluation of Climate-related Opportunities/Case Studies on Avoided Emissions*., *Leveraging Avoided Emissions: Financial Institution Case Studies*., *Hypothetical Cases for Avoided Emissions Disclosure*.

List of sector-specific guidelines and guidance for calculating and disclosing avoided emissions

2026

Sector-specific guidelines and guidance for calculating and disclosing avoided emissions (international)

Sector/field	Title of guideline/guidance	Issuing organization	Date
Chemicals	Avoiding Greenhouse Gas Emissions The Essential Role of Chemicals	ICCA [*1], WBCSD	Published: Oct 2013 Revised: Dec 2017
Agriculture & Food	Avoided Emissions in the Agriculture & Food Sector	WBCSD	Published: Sep 2025
Construction & Real estate	Avoided Emissions in the Built Environment	WBCSD	Published: Sep 2025
Electrical & Electronics	IEC 63372	IEC [*2]	Published: Jan 2026

Sector-specific guidelines and guidance for calculating and disclosing avoided emissions (Japan)

Sector/field	Title of guideline/guidance	Issuing organization	Date
Chemicals	Guidelines for Calculating the Reduction in CO2 Emissions	JCIA [*3]	Published: Feb 2012
Construction & Real estate	Draft Methodology for Measuring Avoided Greenhouse Gas Emissions in the Built Environment Sector	Nikken Sekkei	Published: Jun 2025
Electrical & Electronics	Approach to Calculating the Contribution Ratio of Semiconductors and Electronic Components to the CO2 Emission Reduction Contribution of Products	JEITA [*4]	Published: Sep 2012
Electrical & Electronics	Guidelines for Quantifying the Contribution of Semiconductors and Electronic Components to Product-Level CO2 Emission Reductions	JEITA	Published: Jan 2016 Revised: Jul 2022
Bearings	Guidelines for Quantifying CO2 Emission Reduction Contribution of Bearings	JBIA [*5]	Published: Jun 2022 Revised: Jun 2026
Automotive parts	Guidelines for Quantifying Environmental Impact Reduction by Automotive Parts	JAPIA [*6]	Published: Mar 2024
Gas	Guidelines for Quantifying GHG Avoided Emissions in the City Gas Industry	JGA [*7]	Published: Mar 2024
Local Government	Guidelines for Quantifying Avoided Emissions Outside the City	Council for the Promotion of Kawasaki Carbon Neutral Brand	Published: May 2012 Revised: Mar 2025
Local Government	Guidelines for Quantifying Avoided Emissions through Products and Services in Shiga Prefecture	Shiga Prefectural Government	Published: Mar 2013

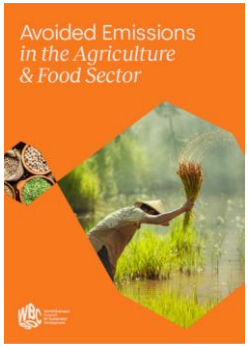
*1: International Council of Chemical Associations. *2: International Electrotechnical Commission. *3: Japan Chemical Industry Association.
*4: Japan Electronics and Information Technology Industries Association. *5: Japan Bearing Industry Association. *6: Japan Auto Parts Industries Association. *7: Japan Gas Association.
Sources: The respective guidelines and guidance.

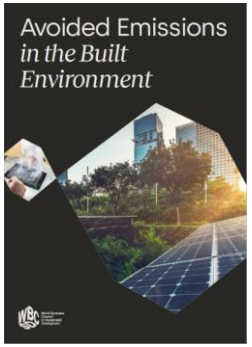
Sector-specific guidelines and guidance for assessing and disclosing avoided emissions (international) 2026

- **As the development of sector-specific guidelines and guidance for calculating and disclosing avoided emissions progresses internationally, WBCSD has developed guidance targeting avoided emissions in the agriculture & food and built environment sectors, while the IEC 63372 has been developed for electric and electronic products and systems.**

WBCSD sector-specific guidance (agriculture & food, built environment)

- In September 2025, WBCSD published sector-specific guidance for the agriculture & food sector and the built environment sector to enable credible calculation and disclosure of avoided emissions.
- The agriculture & food and built environment sectors account for approximately one-third and about 40% of global GHG emissions, respectively, making them critical sectors for achieving decarbonization.
- For each sector, this guidance specifically explains the definition of avoided emissions, the setting of calculation scopes, validation checks, and information disclosure approaches. For the agriculture & food sector, it presents examples such as low-carbon feed, precision agriculture, bio-stimulants, bio-based plastic packaging to reduce food loss and waste, and plant-based protein. For the built environment sector, it presents examples such as heat-shielded insulated double glazing, heat recovery ventilation, low-carbon concrete, BEMS, recycled materials, and solar PV with battery storage.
- These sector-specific guidance documents are also useful for companies' product development, sales and marketing, utilization by financial institutions, and policy evaluations.





IEC 63372

- In January 2026, the international standard IEC 63372, "Quantification and communication of carbon footprint, GHG emission reductions and **avoided emissions** from electric and electronic products and systems - Principles, methodologies, requirements and guidance," which had been **developed under Japan's leadership**, was published by IEC/TC 111 (the technical committee that develops environmental standards for electric and electronic products and systems).
- This standard outlines principles and methodologies, specifies requirements, and provides guidance regarding the quantification and communication of product carbon footprints (CFP), GHG emission reductions, and avoided emissions for electric and electronic products and systems. The quantification of GHGs, including that related to CFP, is based on Life Cycle Assessment (LCA) methodologies.
- Furthermore, this standard functions as a horizontal standard (a standard with a horizontal function applicable to other IEC standards) that specifies basic and mandatory requirements, establishing a foundational framework for GHG evaluation common to electric and electronic products and systems as a whole. It will be utilized as a foundation when individual IEC technical committees develop standards for specific relevant product groups or products. Additionally, if no applicable product standard exists, this standard can be applied directly to the product.

Sources: WBCSD (2025). *Avoided Emissions in the Agriculture & Food Sector*., *Avoided Emissions in the Built Environment*., IEC website.

WBCSD: “Avoided Emissions: Focus on the investment case” report

2026

- **On May 12, 2026, WBCSD published the “Avoided Emissions: Focus on the investment case” report.**
- **It also hosted a related roundtable at Ecosperity in Singapore on May 21.**

“Avoided Emissions: Focus on the investment case” report

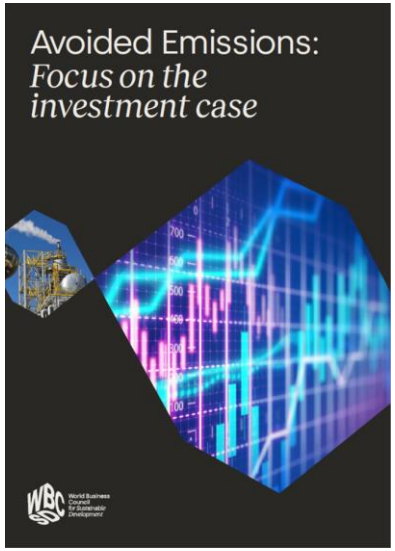


Table of contents

1. Introduction
2. Option theory and avoided emissions
3. Applying real options to avoided emissions investments
4. The capital providers’ view
5. Avoided emissions and valuation
6. Conclusion

Executive Summary

- For financial institutions and companies, investing in climate solutions is essential for both accelerating decarbonization and mitigating risk. However, the lack of consistent assessment methodologies across solution types and asset classes makes investment decisions challenging.
- Avoided emissions complement a company’s emissions inventory (which reflects its own footprint) and serve as a metric to evaluate the impact of solutions that drive cross-sectoral systemic change. Consequently, **avoided emissions are gaining importance as a tool for financial institutions and companies to identify high-potential decarbonization solutions and strengthen transition finance efforts.**
- Although progress has been made in recent years toward standardizing avoided emissions through initiatives and organizations such as PCAF, ICMA *1, ISO/IEC, and WBCSD, the frameworks across finance and the real economy are not fully aligned. As a result, financial institutions and companies cannot conduct evaluations or disclosures based on shared assumptions, leading to challenges in ensuring comparability.
- This report aims to enable the use of avoided emissions as a decision input metric in capital allocation and investment assessment. To achieve this, it specifically applies options theory (real options) to help companies better understand the prioritization and decision-making approaches of financial institutions, while also providing financial institutions with a practical framework for incorporating avoided emissions assessments into identifying and structuring investment opportunities.

*1: International Capital Market Association.
Sources: WBCSD (2026). *Avoided Emissions: Focus on the investment case*.

- **In April 2026, the Japan Electrical Manufacturers' Association (JEMA) published the JEMA-GX Report 2025.**
- **This report outlines the electrical machinery industry's initiatives toward establishing rules and enhancing visibility for avoided emissions, as well as the progress made by member companies in calculating and disclosing avoided emissions.**

JEMA-GX Report 2025

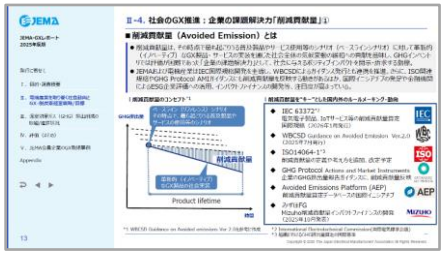
- JEMA has been publishing the JEMA-GX Report since FY2023 with the following objectives and expectations. In April 2026, JEMA released its third edition, the **JEMA-GX Report 2025.**
  - **Follow-up:** Assess the Green Transformation (GX) status of the electrical machinery industry and member companies, while measuring progress against the JEMA Carbon Neutrality Roadmap *1.
  - **Benchmarking:** Enable member companies to understand their relative positioning and boost their motivation toward driving GX forward.
  - **Communication & Evidence:** Serve as a communication tool to accurately convey the electrical machinery industry's efforts to stakeholders, while using it as evidence when making policy proposals and requests to governments and policymakers.
- To evaluate the GX status across the industry and among JEMA regular member companies, this report conducts a survey on key performance indicators (KPIs) unique to the sector. In the area of decarbonization management, it offers a global consolidated group-level evaluation and analysis regarding regular members' target setting and certification acquisition for Science Based Targets and similar frameworks, **quantification of avoided emissions**, actual Scope 1, 2, and 3 emission cuts and reduction rates, energy consumption, and other related areas.
- **Regarding avoided emissions, the report emphasizes that the electrical machinery industry plays a vital role not only in reducing its own direct emissions but also in reducing emissions across society as a whole through GX products and technologies. It highlights the importance of disclosing and promoting avoided emissions as a positive-impact metric of a company's ability to solve social issues, thereby visualizing the transition opportunities and technological advantages that were previously underrepresented in standard GHG inventories.**
- Furthermore, the report details JEMA's leadership in developing and publishing the IEC international standard (IEC 63372) for the calculation and communication of avoided emissions from electrical and electronic products, services, and systems. It outlines the progress of companies calculating avoided emissions and discusses their alignment with financial capital markets. As a case study of stakeholder collaboration, the report features Mizuho Avoided Emissions Focus Report and the development of the Mizuho Avoided Emissions Impact Finance framework.

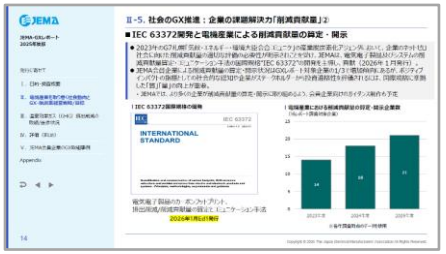
JEMA-GX Report URL:

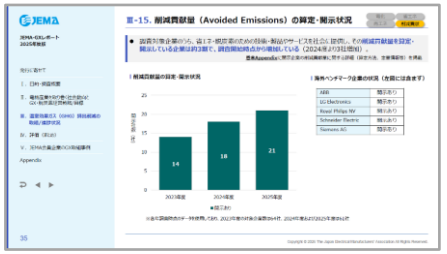
Japanese version: https://www.jema-net.or.jp/sustainability/jemagx/report.html

English version: https://www.jema-net.or.jp/sustainability/jemagx/pdf/JEMA_GXreport2025ESr_GB.pdf









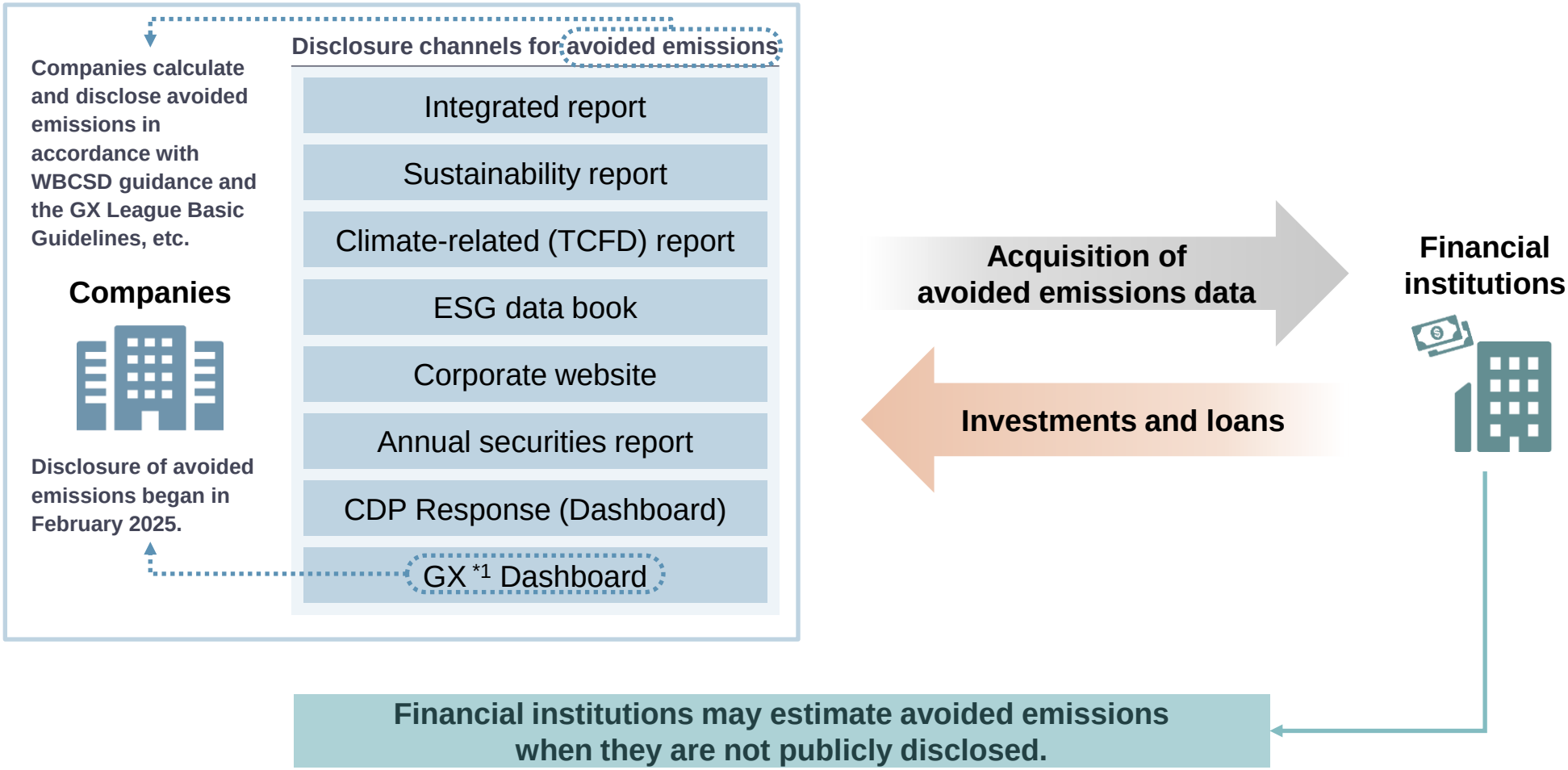
*1: JEMA's strategic plan outlining technological innovations and stakeholder collaborations required to achieve carbon neutrality by 2050 in the electrical machinery industry.

Sources: Japan Electrical Manufacturers' Association (2026). *JEMA-GX Report 2025*.

Methods for financial institutions to acquire avoided emissions data

- **As few ESG data providers currently offer avoided emissions data, financial institutions often acquire such data directly from company disclosures. In cases where the avoided emissions data is not disclosed, financial institutions may estimate it themselves.**

Methods for financial institutions to acquire avoided emissions data

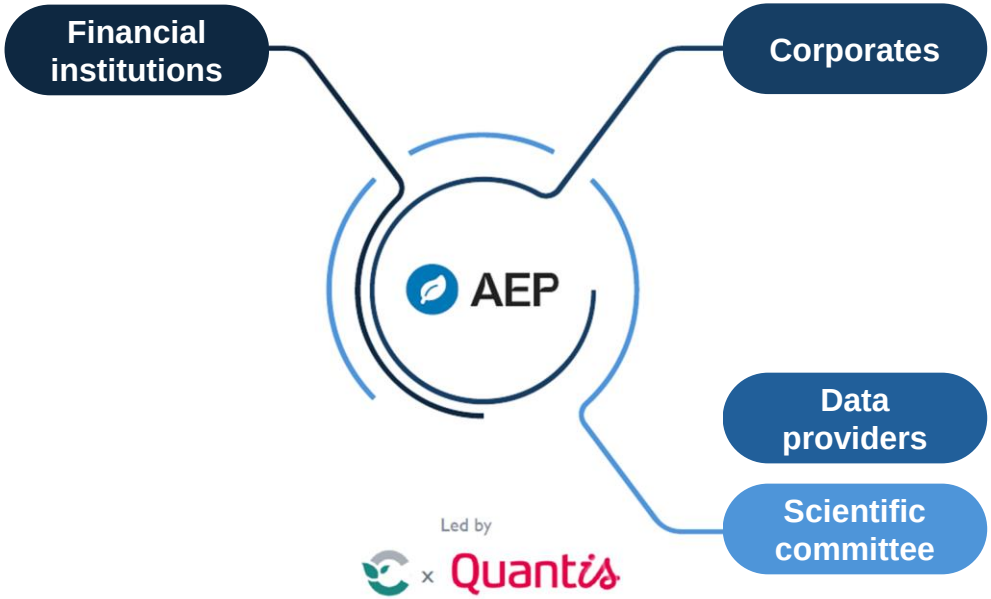


*1: Green Transformation.
Sources: Mizuho Financial Group.

- **The Avoided Emissions Platform (AEP) has been built through a collaborative approach initiated by European financial institutions and supported by corporates, data providers and a scientific committee.**

Overview of AEP

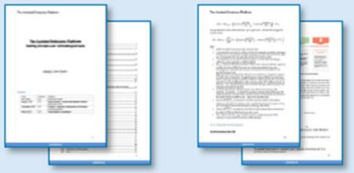
- AEP includes the following three deliverables to harmonize the calculation of avoided emissions.



1 Robust methodology

AEP is built on

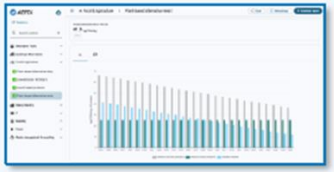
- A general methodology explaining the assumptions (published online).
- Sector-specific methodologies.
- A corporate protocol giving recommendations for using avoided emissions factors at the company level.



Methodology

2 Calculator of avoided emission factors

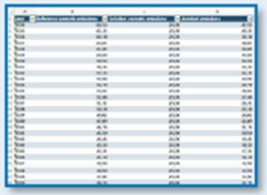
AEP offers a web browser-based calculator that allows users to customize the climate solutions through a set of parameters and calculate the associated avoided emissions.



Web-browser calculator

3 Database of avoided emissions factors

AEP includes a curated database of default avoided emission factors for products, services and technologies that are critical for the low-carbon transition.



Sources: AEP (2026). *The Avoided Emissions Platform General presentation*.

Avoided Emissions Platform（2/3）

2026

- **The AEP database contains avoided emission factors for more than 60 climate solutions as of today.**
- **In 2026, new solutions are scheduled to be added, and the database will be expanded.**

Climate solutions contained in AEP database

Power	Mobility	Building & Real estate	Alternative fuels	Heavy industry	Waste	IT	Food & Agriculture
Onshore wind	Type of vehicle: • Heavy-duty trucks • Light-duty trucks • National electric trains • Buses & coaches • Metro • High-speed trains • Electric cars	Relamping	Hydrogen: • Blue • Green • Pink	Ammonia: • Green • Blue	Recycling of plastics	Energy-efficient data centers	Low-carbon fertilizers
Offshore wind		Renovation/Retrofit			Anaerobic digestion		Plant-based meat
Nuclear power		Insulation: • Glass wool • Stone wool	Biogas: • From manure • From biowaste • From maize	Concrete: • Fly ash substitution • Limestone fines substitution • GGBFS *1 substitution	Energy recovery		Plant-based dairy: • Cheese • Milk • Yogurt
Hydroelectricity							
Geothermal electricity	Cobalt production	Residential construction	SAF: • From forest residues • From short rotation forests				Insect-based products: • Oil • Proteins
Gas with CCS	Nickel production	Heat pumps: • Air/air • Air/water		Cement: • Low-clinker • Alternative fuel • CCS			
Solar power	Lithium production						
Electricity storage	Battery manufacturing		Biomethane	Steel: • Scrap • Green H2 DRI *2 • CCS			
Power transmission and distribution	EV charging station						
	Shift to lightweight transport			Recycled plastics: • HDPE • LDPE • PET • PP • PS			
	Transport optimization						

+3 transversal solutions

- Energy efficiency
- Electrification of usages
- Material efficiency

Already available on the platform

Will be available in 2026

*1: Ground Granulated Blast Furnace Slag.
*2: Direct Reduced Iron.
Sources: AEP (2026). *The Avoided Emissions Platform General presentation*.

Avoided Emissions Platform（3/3）

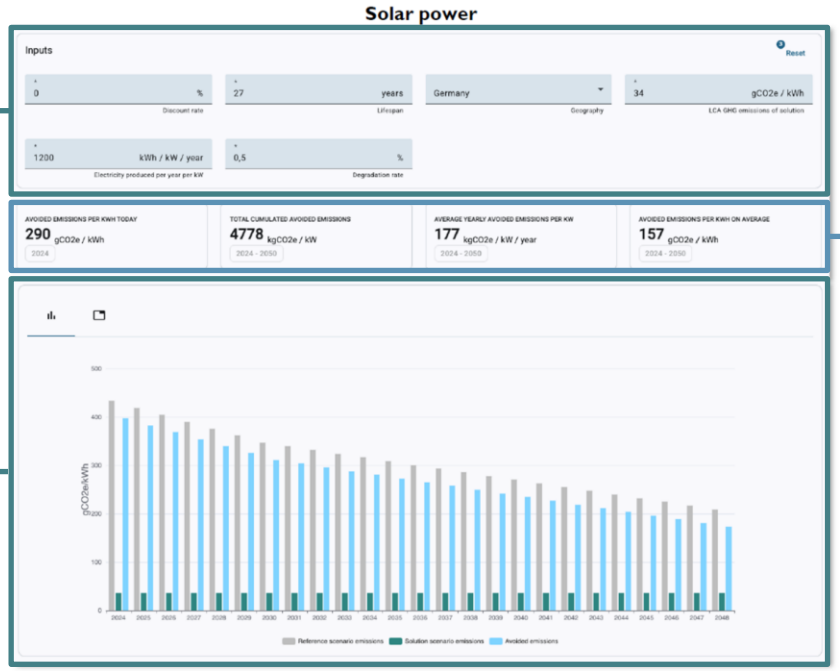
2026

- **Each climate solution can be customized on the platform to reflect its specific characteristics.**
- **AEP is available through a free-access website and a license-based platform.**

Customization feature for climate change solutions

Adjustable parameters

Key figures for calculated avoided emissions

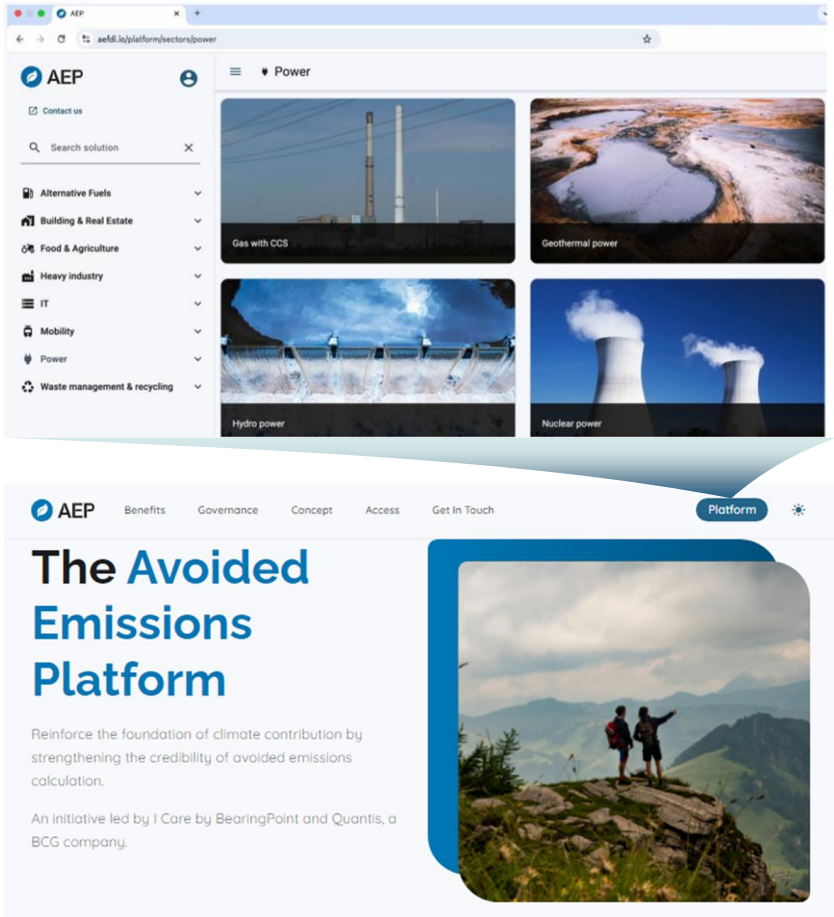


Year-on-year visualization of:

- Total emissions in reference scenario
- Total emissions in solution scenario
- Total volume of avoided emissions

Configuration of AEP

License-based platform



https://aefdi.io/

Sources: AEP (2026). *The Avoided Emissions Platform General presentation*.

Disclosure of avoided emissions on GX Dashboard

■ **AE are disclosed on the GX Dashboard, the information platform for the GX League, although their disclosure is voluntary. The disclosure of AE through a unified information platform is a world-leading initiative, and broader use of AE is expected.**

Overview of GX Dashboard

GX Dashboard

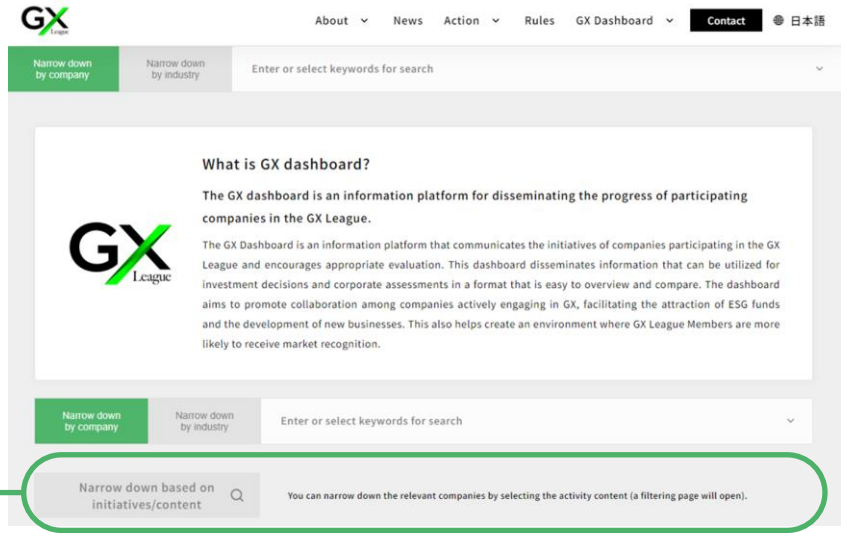
- The GX Dashboard is **an information platform that communicates the status of GX League participants' initiatives and encourages appropriate evaluation.**
- **It disseminates information that can be used for investment decisions and corporate evaluations in a format that is easy to list and compare.**
- By improving the user interface, etc., it will increase the frequency of reference, promote collaboration among companies working on GX, in areas like attracting funds from financial institutions and developing new businesses, and create an environment in which **GX League participants can more easily receive evaluation from the market.**
- The GX Dashboard also plays **a role in enhancing the effectiveness of GX-ETS as a pledge-and-review framework.**

In the "Narrow down based on initiatives/content" section of the GX Dashboard, if you check the "Applicable" box for "Avoided Emissions" and "Basis for Avoided Emissions," you will see companies that have disclosed their avoided emissions.

Disclosure of avoided emissions on GX Dashboard

■ Items related to avoided emissions on the GX Dashboard (No. 65, 66)

- Companies that calculate their own avoided emissions can disclose the avoided emissions (voluntary disclosure).
- If companies disclose avoided emissions, the URL of the existing disclosure showing the basis for calculation will also be posted.
- For disclosure of avoided emissions, please refer to the "Basic Guidelines for Disclosure and Evaluation of Climate-related Opportunities" (published in March 2023).



Sources: GX League website., GX League (2023). *GX Dashboard Disclosure Guidelines*.

2. Disclosure of avoided emissions by Japanese companies (FY2025)

Summary of survey results on disclosure of avoided emissions by Japanese companies (FY2025)

2026

This section surveys the disclosure status of avoided emissions in integrated reports and other sustainability-related reports released in FY2025, focusing on Japanese companies in the TOPIX 500. The results show that **the number of Japanese companies disclosing avoided emissions in FY2025 increased significantly**, continuing the trend observed in FY2024. The summary of the survey results is as follows:

- **Number of Japanese companies disclosing their avoided emissions has increased significantly.**
  - In FY2025, 244 Japanese companies (146 from the TOPIX 500 and 98 from outside the index) disclosed their avoided emissions. **Compared with FY2024, the number of Japanese companies disclosing avoided emissions increased by 22% in the TOPIX 500 and by 36% overall, showing a significant increase and indicating that the disclosure of avoided emissions by Japanese companies is expanding.**
  - The WBCSD, one of the convening bodies of the GHG Protocol, published the Guidance on Avoided Emissions in March 2023, followed by the publication of a second version in July 2025. Additionally, in March 2023, GX League published the Basic Guidelines for Disclosure and Evaluation of Climate-related Opportunities. These efforts are thought to have broadened awareness of avoided emissions and deepened the understanding of calculation and disclosure methods, leading to increased disclosure of avoided emissions by Japanese companies.
- **An increasing number of small and medium-sized companies and unlisted companies have also disclosed avoided emissions.**
  - **Compared with FY2024, there has been a noticeable increase in disclosure of avoided emissions by TOPIX Large70 companies, as well as by smaller (TOPIX Small 2) and unlisted Japanese companies in FY2025.**
  - In terms of the number of companies disclosing avoided emissions by listed market, Prime Market companies, which have been required to make climate-related disclosures under the pre-revision Corporate Governance Code and will face a phasing-in of mandatory sustainability disclosures in annual securities reports starting from the fiscal year ending March 31, 2027, account for approximately 80% of the total, while the number of unlisted companies disclosing avoided emissions is also increasing.
  - As an increasing number of unlisted companies are disclosing their avoided emissions, a key challenge is that identifying the disclosure medium and publication locations for unlisted companies is more difficult than for listed companies, requiring thoughtful approaches to ensure data collection and comparability.
- **Among the Tokyo Stock Exchange 33 (TSE 33) sectors, *Electric Appliances* continued to rank first in terms of the number of companies disclosing avoided emissions in FY2025, as they did in FY2023 and FY2024. Meanwhile, sectors such as *Construction* showed high growth rates in the number of companies disclosing avoided emissions.**
  - **Among companies in the TSE 33 sectors, *Electric Appliances* remained in first place (39 companies) in terms of the number of companies disclosing avoided emissions.** Driven by the recognition that Scope 3 Category 11 (use of sold products) has a high GHG emission volume, the industry as a whole is working to promote and expand avoided emissions as a complementary metric. Under Japanese leadership, the International Electrotechnical Commission (IEC) published IEC 63372, an international standard for quantifying avoided emissions, in January 2026, which is expected to support the development of practical calculation and disclosure frameworks going forward. *Construction* ranked second with 24 companies, followed by *Chemicals* in third with 23 companies.
  - The rate of increase in the number of companies disclosing avoided emissions in FY2025 (compared with FY2024) is high in the sectors such as *Construction*, *Wholesale Trade*, *Machinery*, *Information & Communication*, and *Other Financing Business*.
  - Looking at the proportion of each sector within the overall total, that of *Construction*, *Wholesale Trade*, *Machinery* and *Information & Communication*, which saw a significant increase in the number of companies disclosing avoided emissions in FY2025 compared with FY2024, rose. On the other hand, the proportion of *Electric Appliances* and *Electric Power and Gas* remained flat, while that of *Chemicals* declined due to a more modest growth in the number of companies disclosing avoided emissions.

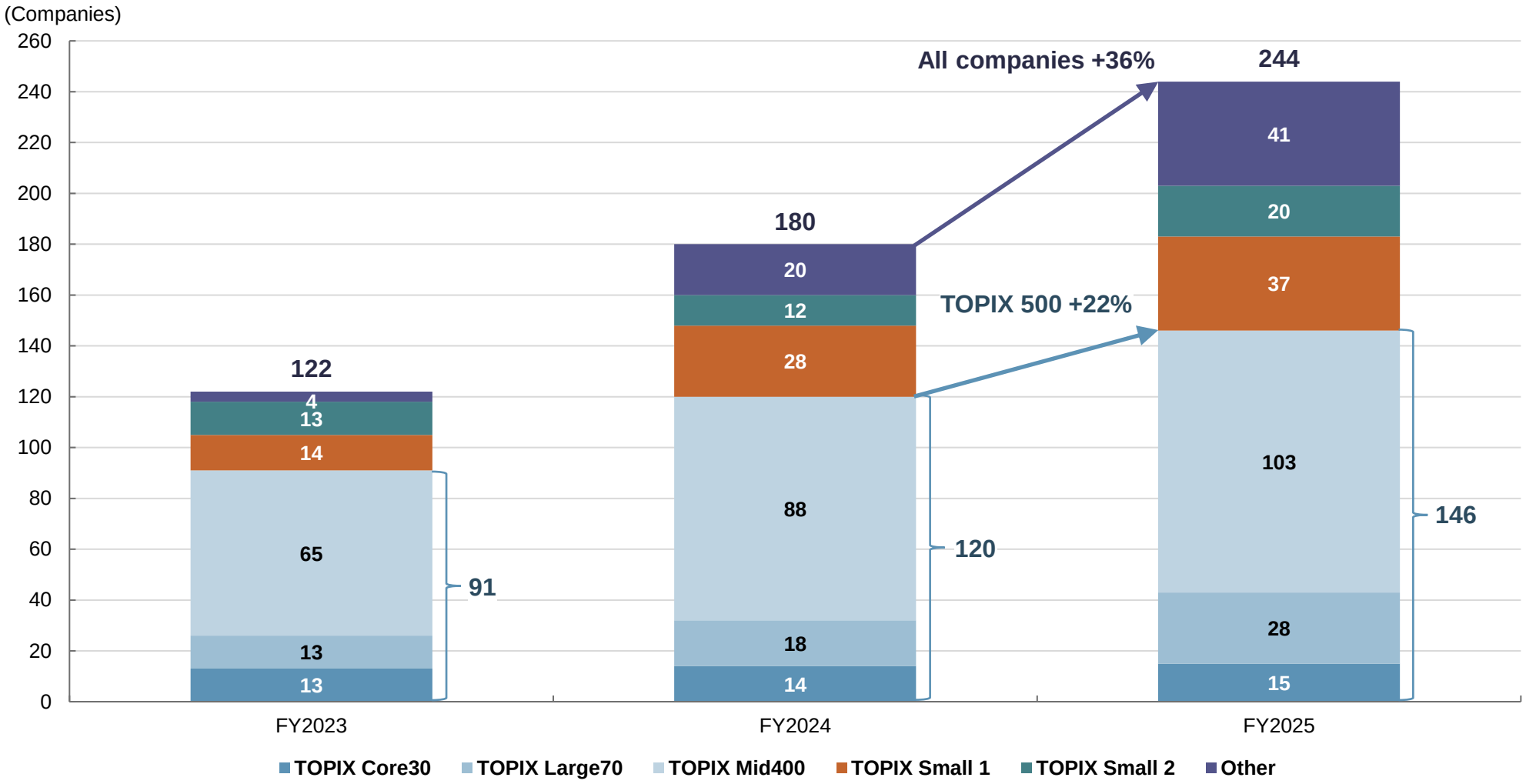
Sources: Mizuho Financial Group.

Number of Japanese companies disclosing avoided emissions (by company size)

2026

- **Mizuho surveyed Japanese companies mainly in the TOPIX 500 *1 for disclosure of AE in their reports, etc. in FY2025 *2.**
- **146 companies in the TOPIX 500 and 98 other companies made disclosures. The number of firms doing so has been continually increasing since FY2023.**

Changes in number of Japanese companies disclosing avoided emissions (by company size)



*1: TOPIX 500 stocks, size categories, and listed markets as of the end of March 2026. *2: Avoided emissions disclosed from April 2025 to March 2026.
Sources: Each company's disclosures.

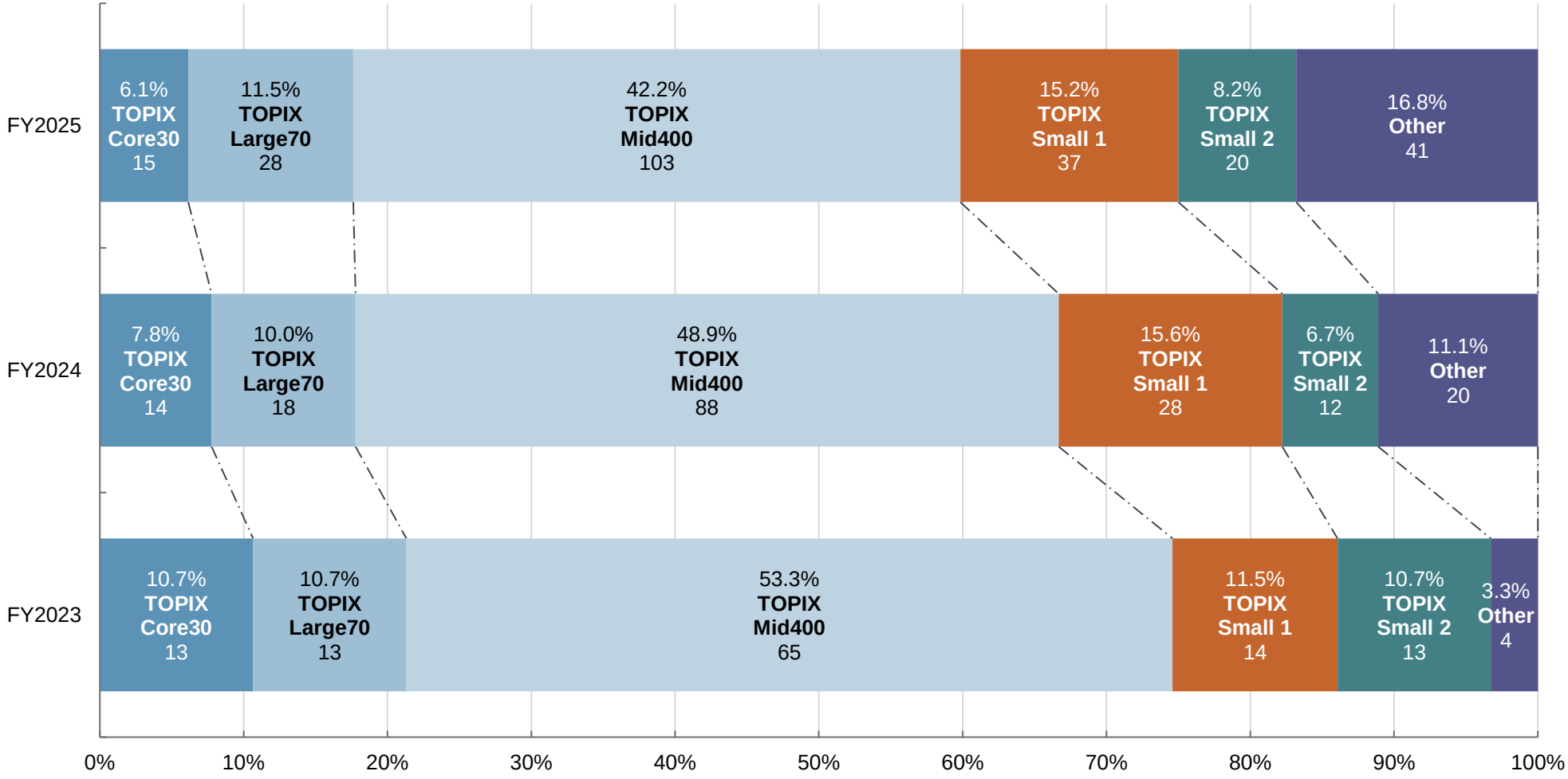
Distribution of Japanese companies disclosing avoided emissions (by company size)

2026

- **Compared with FY2024, FY2025 saw a noticeable increase in the disclosure of AE by TOPIX Large70 companies, as well as by smaller and unlisted Japanese companies.**
- **In Japan, recognition of AE is gradually spreading and the number of companies disclosing AE is expanding.**

Changes in distribution of Japanese companies disclosing avoided emissions (by company size)

(FY2023: N=122, FY2024: N=180, FY2025: N=244)



Sources: Each company's disclosures.

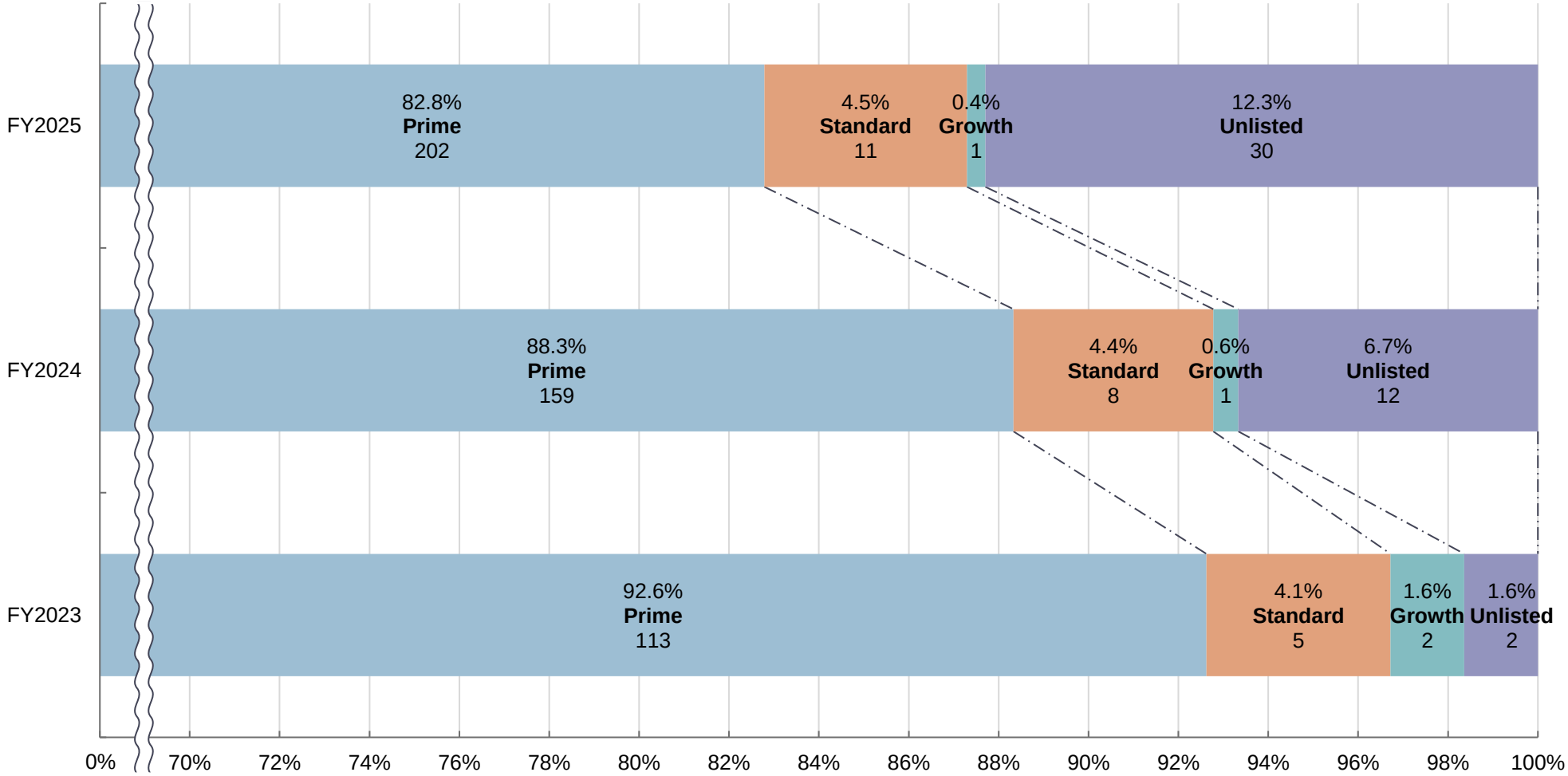
Distribution of Japanese companies disclosing avoided emissions (by listed market)

2026

- **The Prime Market where climate-related disclosures are required by regulations accounts for about 80% in FY2025.**
- **While disclosure of AE by unlisted companies is increasing, finding their disclosures and exact publication locations is more difficult than for listed companies, which remains a key challenge.**

Changes in distribution of Japanese companies disclosing avoided emissions (by listed market)

(FY2023: N=122, FY2024: N=180, FY2025: N=244)



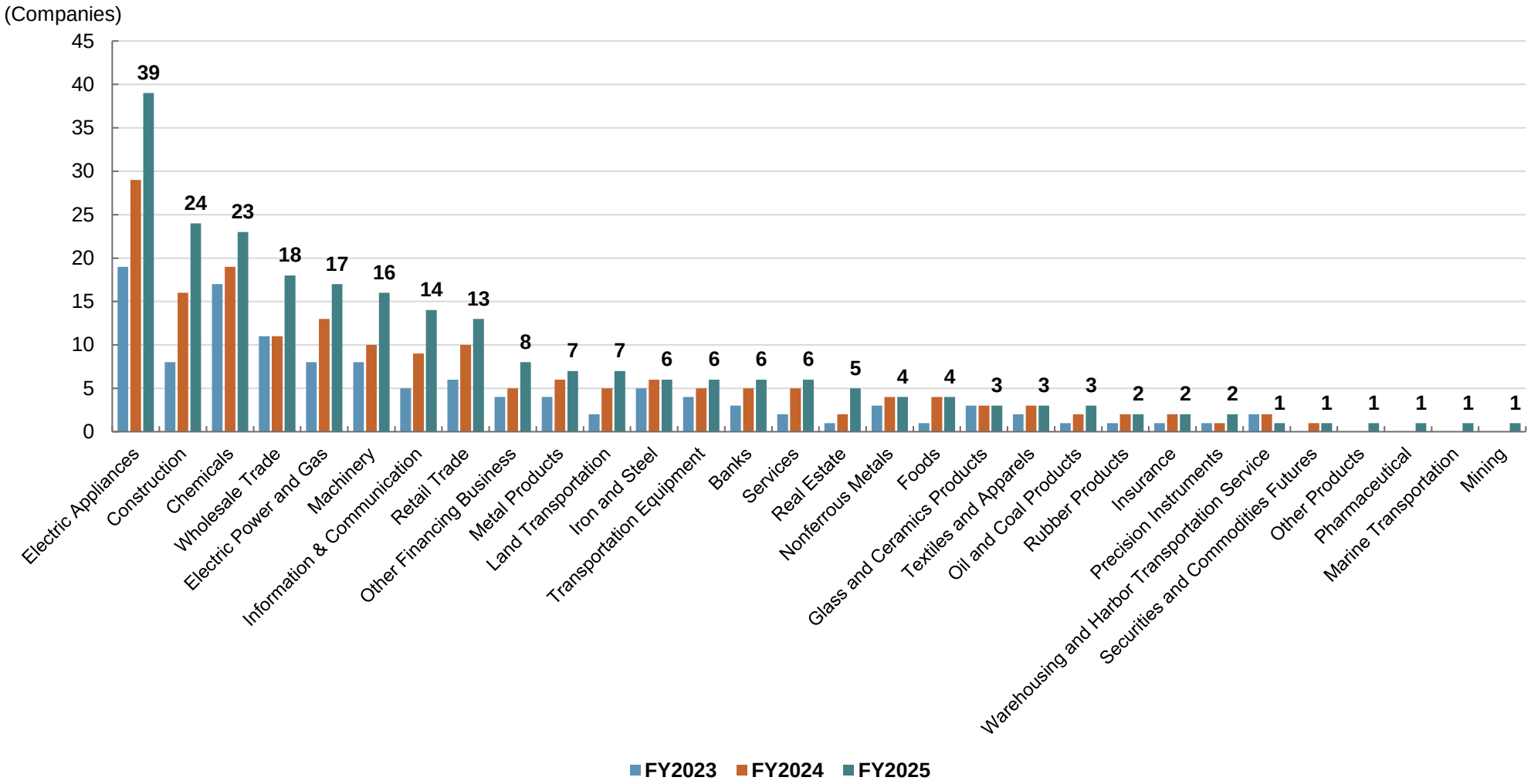
Sources: Each company's disclosures.

Number of Japanese companies disclosing avoided emissions (by sector)

2026

- **Among TSE 33 sectors [*1], *Electric Appliances* ranked first with 39 companies, *Construction* second with 24 companies, and *Chemicals* third with 23 companies.**
- **The rate of increase in FY2025 (compared with FY2024) was high in the *Construction*, *Wholesale Trade*, *Machinery*, *Information & Communication*, and *Other Financing Business* sectors.**

Changes in number of Japanese companies disclosing avoided emissions (by sector)



*1: TSE 33 sectors as of the end of March 2026. Sectors of unlisted companies are determined by Mizuho Financial Group with reference to sectors of listed companies with similar businesses.
Sources: Each company's disclosures.

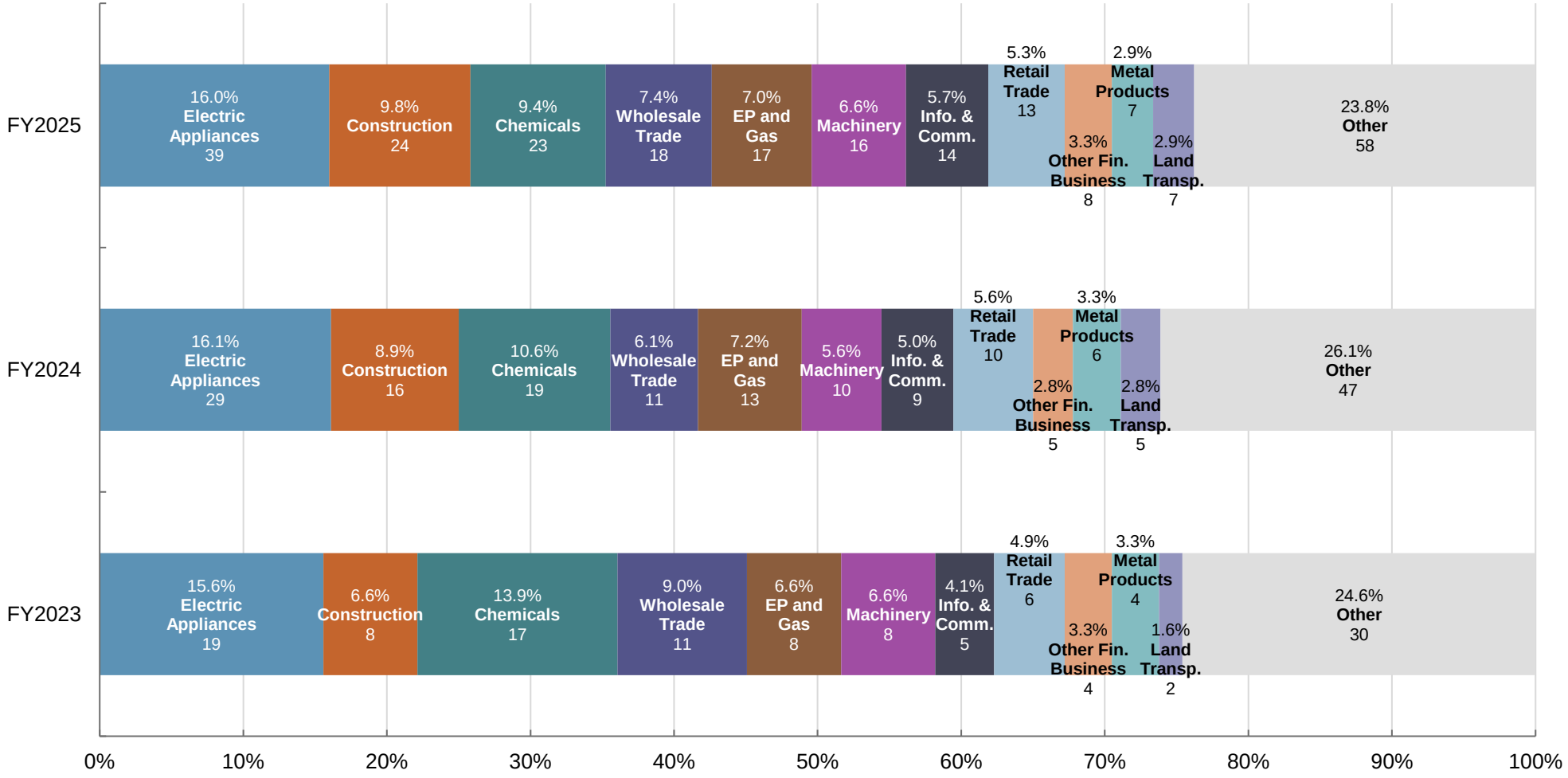
Distribution of Japanese companies disclosing avoided emissions (by sector)

2026

- **In FY2025, the proportion for *Construction*, *Wholesale Trade*, *Machinery*, and *Information & Communication,* where the number of disclosing companies increased significantly, rose.**
- **On the other hand, the proportion for *Electric Appliances* and *Electric Power and Gas* remained flat, while that of *Chemicals* declined due to a more modest growth in the number of disclosing companies.**

Changes in distribution of Japanese companies disclosing avoided emissions (by sector)

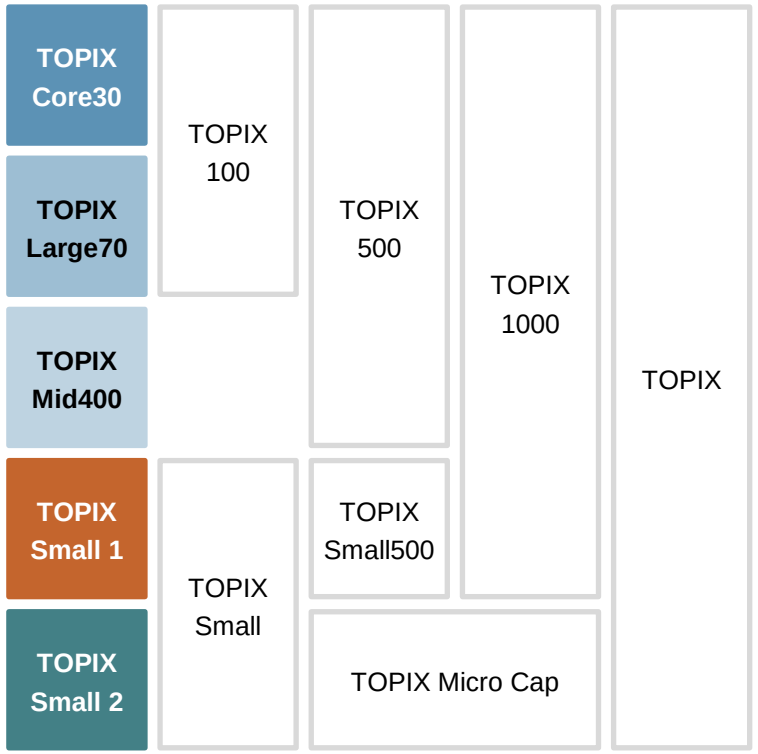
(FY2023: N=122, FY2024: N=180, FY2025: N=244)



Sources: Each company's disclosures.

Term	Definition
TOPIX	TOPIX (Tokyo Stock Price Index) is a free-float adjusted market capitalization-weighted stock price index that is calculated and published every second by JPX Research, a subsidiary of the Japan Exchange Group (JPX), for stocks listed on the Prime Market of the Tokyo Stock Exchange and stocks listed on the Standard Market that were previously listed on the former First Section of the Tokyo Stock Exchange (excluding certain stocks).
TOPIX 500	One of the nine indexes that make up the TOPIX New Index Series. A free-float adjusted market capitalization-weighted stock index consisting of the top 500 stocks in the series by market capitalization and liquidity (trading value). These stocks comprise the constituents of the TOPIX Core30, TOPIX Large70, and TOPIX Mid400.
TOPIX Core30	A free-float adjusted market capitalization-weighted stock index consisting of the top 30 Japanese stocks among the TOPIX constituents with particularly high market capitalization and liquidity (trading value). The “TOPIX Core30” represents its constituent stocks in this report.
TOPIX Large70	A free-float adjusted market capitalization-weighted stock price index consisting of the 70 TOPIX constituents with the highest market capitalization and liquidity (trading value) after TOPIX Core30. The “TOPIX Large70” represents its constituent stocks in this report.
TOPIX Mid400	A free-float adjusted market capitalization-weighted stock price index consisting of 400 middle-market TOPIX constituents with the highest market capitalization and liquidity (trading value) following the TOPIX Core30 and TOPIX Large70. The “TOPIX Mid400” represents its constituent stocks in this report.
TOPIX Small	A free-float adjusted market capitalization-weighted stock index consisting of small-cap TOPIX constituents, excluding the TOPIX 500 stocks, the 500 stocks with the highest market capitalization and liquidity (trading value).
TOPIX Small 1	The constituents of the TOPIX Small500 among the TOPIX Small constituents. The TOPIX Small500 is a free-float adjusted market capitalization-weighted stock price index consisting of the 500 stocks remaining in the TOPIX 1000, which consists of the 1,000 TOPIX stocks with the highest market capitalization and liquidity (trading value), after excluding the TOPIX 500’s top 500 stocks.
TOPIX Small 2	Constituents of the TOPIX Micro Cap among the TOPIX Small constituents. The TOPIX Micro Cap is a free-float adjusted market capitalization-weighted stock price index consisting of the remaining stocks in the TOPIX Small constituents after excluding stocks in the TOPIX Small 1 (or the remaining stocks after excluding TOPIX 1000 stocks from the TOPIX constituents).
Tokyo Stock Exchange 33 (TSE 33) sectors	The Securities Identification Code Committee (SICC) has established the “Guidelines for Sector Classifications,” based on which it determines sector of each listed company. According to the Guidelines, the criteria for industry classification are based on the “Japan Standard Industrial Classification” established by the Ministry of Internal Affairs and Communications. After the SICC determines which Japan Standard Industrial Classification each company falls under based on the details of its business, SICC decides which of the “Sector Classification Items” it falls under based on the results of the determination. There are 33 sub classification items under 10 main Sector Classification Items, and the term “sector” usually refers to a sub classification item. Since the Tokyo Stock Exchange adopts these sub classification items and publishes related stock price sector indices, they are referred to as the Tokyo Stock Exchange 33 (TSE 33) sectors.

Composition of TOPIX indices by size (TOPIX New Index Series)



Sources: Japan Exchange Group website.

3. Significance of avoided emissions in sustainability disclosure and their utilization by financial institutions

Mandatory and voluntary disclosure of sustainability information

2026

■ **While mandatory sustainability disclosure requirements are advancing globally, the importance of traditional voluntary disclosure, as well as the calculation and disclosure of avoided emissions, is once again being recognized.**

Comparison of mandatory and voluntary sustainability disclosure

Item	Mandatory disclosure	Voluntary disclosure
Disclosure basis	Laws and regulations	Company discretion
Disclosure medium	Annual securities report	Integrated reports, sustainability reports, etc.
Disclosure timing	Same as financial information	Timing determined at the company's discretion
Disclosure scope	Same as financial information	Discretionary scope determined by the company
Disclosure content	Based on sustainability disclosure standards prescribed by laws and regulations	Disclosed with reference to sustainability-related standards, guidelines, guidance, etc.
Volume of information disclosed	Tends to be more limited than voluntary disclosure	Tends to be more extensive than mandatory disclosure
Primary climate-related metrics	**GHG emissions (Scope 1, 2, 3)**, transition risks, physical risks, opportunities, capital deployment, internal carbon pricing, remuneration	**Avoided emissions**, reduced emissions of product, green revenue (revenue from environmental solutions) *1
Assurance	Third-party assurance is required (or planned to be required)	Third-party assurance is voluntary
Benefits for financial institutions	Improved data quality and comparability (especially when assurance is mandatory); enhanced timeliness and clarity of disclosures	Enables financial institutions to assess sustainability information not covered in mandatory disclosures and supports richer, narrative-style disclosure

■ **Mandatory and voluntary disclosure are complementary, and both are equally important for financial institutions.**

■ Many financial institutions would prefer companies **not to limit sustainability disclosure to mandatory filings alone, but to continue voluntary disclosure as well.**

*1: These metrics are not explicitly mandated for disclosure under sustainability disclosure standards. However, companies may voluntarily disclose them in mandatory filings for the purpose of explaining climate-related risks, opportunities, and financial impacts.

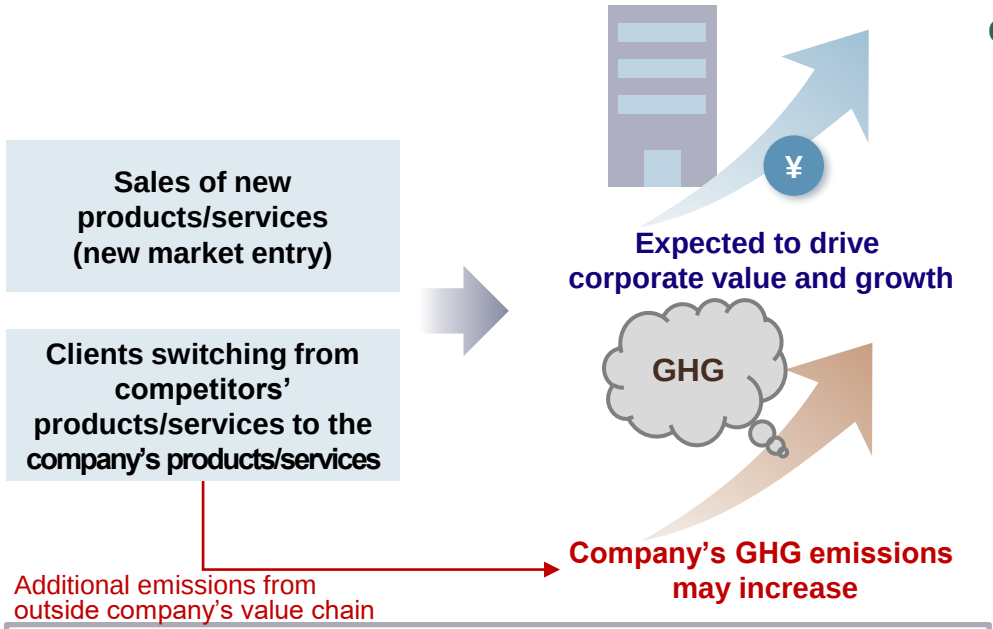
Sources: Mizuho Financial Group.

Avoided emissions as a measure for evaluating climate-related opportunities and positive impacts

2026

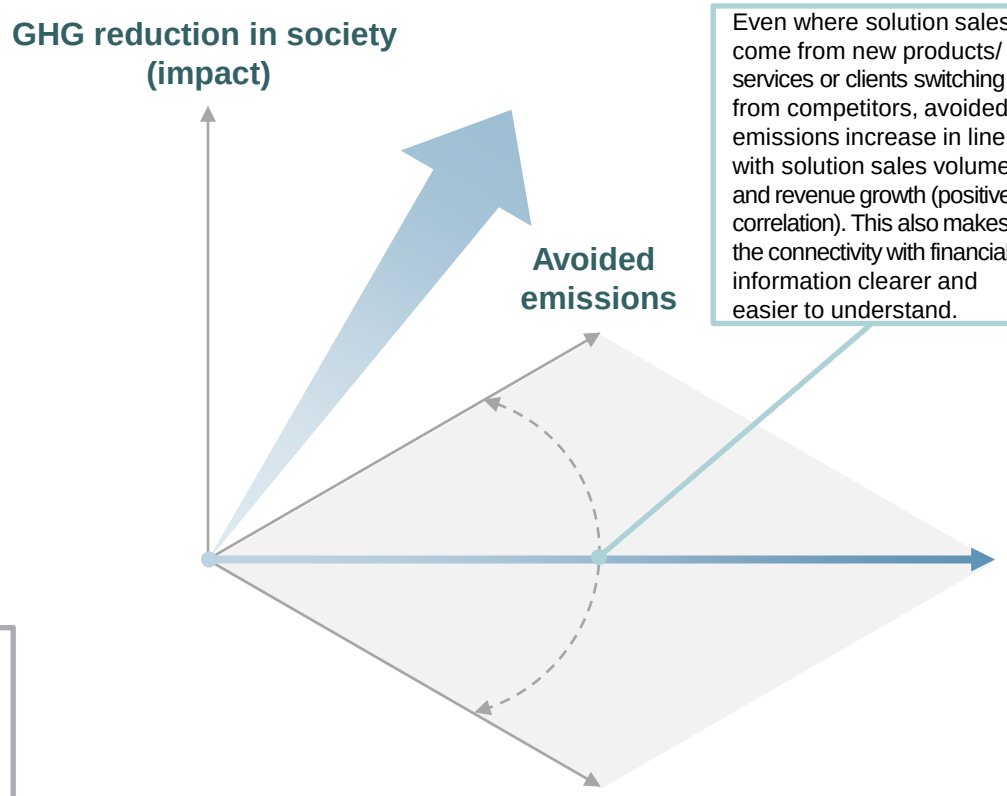
- **Since GHG emissions can increase along with sales volumes and business expansion, they have limitations as a metric for evaluating climate-related opportunities.**
- **Conversely, even if GHG emissions rise as sales volumes increase, avoided emissions make it possible to evaluate a company's climate-related opportunities and its contribution to emission reductions.**

Limitations of GHG emissions metrics (scope 1, 2, 3)



- While increased sales of a company's products/services or market share expansion would ordinarily be expected to enhance its evaluation, assessing climate actions solely through the lens of GHG emissions may not lead financial institutions to an appropriate evaluation.
- GHG emissions are a suitable metric for evaluating climate-related risks associated with the introduction of carbon taxes or emissions trading systems; however, they are less effective for assessing climate-related opportunities that enhance corporate value.

Use of avoided emissions to evaluate opportunities and impacts



Even where solution sales come from new products/ services or clients switching from competitors, avoided emissions increase in line with solution sales volume and revenue growth (positive correlation). This also makes the connectivity with financial information clearer and easier to understand.

- Avoided emissions can be effectively used as **a key metric for evaluating climate-related opportunities and positive impacts.**

Sources: Mizuho Financial Group.

Necessity and application of avoided emissions in evaluating companies

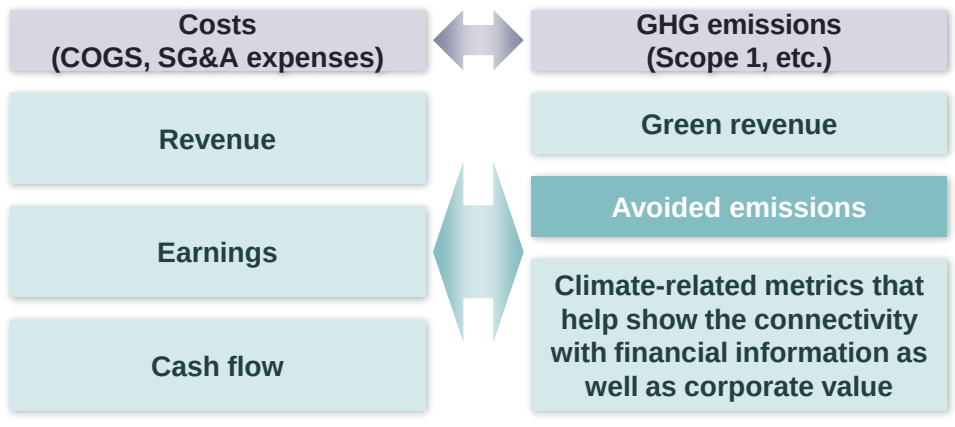
2026

- **Properly understanding the connectivity between sustainability information and financial information is essential to enhancing the sophistication of corporate evaluations. Just as financial information encompasses a diverse range of metrics, sustainability information should ideally utilize metrics such as avoided emissions in addition to GHG emissions.**

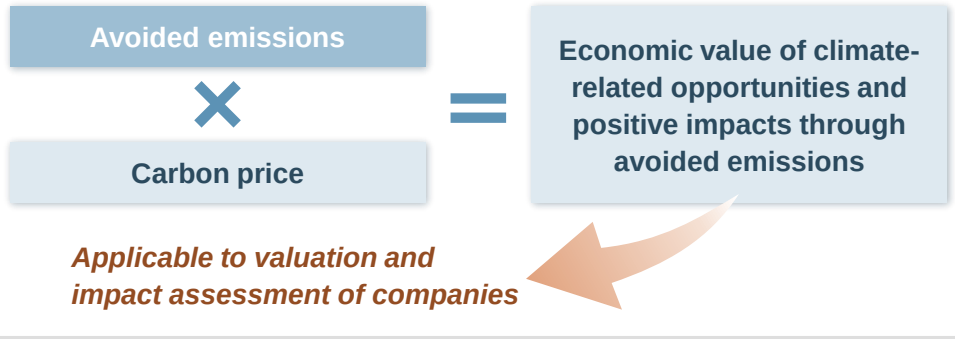
Necessity and application of avoided emissions in evaluating companies

- GHG emissions are likely to materialize as future costs as carbon taxes or emissions trading systems are introduced, sharing similar characteristics with cost of goods sold (COGS) or selling, general and administrative (SG&A) expenses in financial information. Therefore, GHG emissions are a metric well-suited for assessing climate-related risks.
- In contrast, financial information includes not only costs but also revenue, earnings, and cash flow. Since avoided emissions share characteristics with revenue and earnings, they can be effectively utilized to evaluate climate-related opportunities.
- Current sustainability disclosure focuses mainly on GHG emissions. However, given the limitations of GHG emissions, **consideration also of voluntary disclosure items such as avoided emissions, which are highly correlated with revenue, makes it easier to understand the connectivity with financial information as well as corporate value. This is expected to enable financial institutions to conduct more sophisticated evaluations of companies.**
- Furthermore, since sustainability evaluations require multifaceted perspectives covering not only environmental aspects but also economic and social dimensions, **financial institutions should ideally use a combination of multiple metrics related to both opportunities and risks** when leveraging sustainability information in evaluations.
- In addition, **multiplying avoided emissions by a carbon price makes it possible to calculate the economic value of climate-related opportunities and positive impact generated through avoided emissions.** This economic value can also be applied to the valuation and impact assessment of companies.

Correspondence between financial information and sustainability information



Economic value of climate-related opportunities through avoided emissions



Sources: Mizuho Financial Group.

Examining connectivity between avoided emissions and financial information

2026

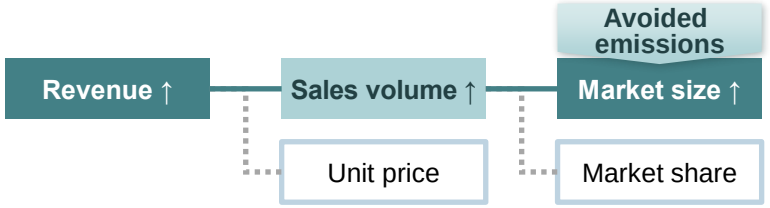
■ **When considering the connectivity between avoided emissions and financial information, revenue is the simplest and most accessible component on the financial information side. Since revenue is calculated as sales volume times unit selling price, the following three main connecting patterns can be identified:**

Examining connectivity between avoided emissions and financial information (revenue)

Connecting pattern *1

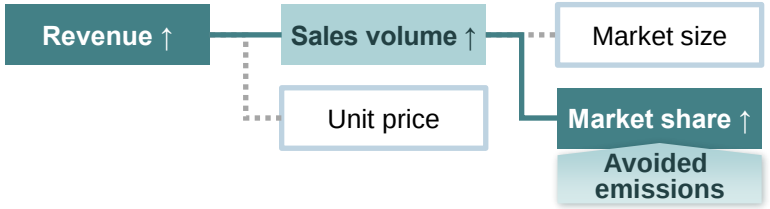
1

Solutions that meet emission-reduction needs driven by regulations and market demand can generate new demand, leading to **the creation of new markets and the expansion of overall market size.**



2

If a solution offers superior performance, such as better energy efficiency, compared with competitors' solutions or a company's own legacy solutions, sales volume can increase by **maintaining or expanding market share.**



3

Growing demand for solutions that meet emission-reduction needs driven by regulations and market demand can create tight supply-demand conditions (i.e., demand exceeding supply), which **pushes up unit selling prices.**



Impact on investment/lending decisions

- If any of the aforementioned connecting patterns between avoided emissions and revenue can be confirmed, financial institutions may consider reflecting them in their evaluation and forecast of market size, market share, and unit selling price when making investment and lending decisions.
- In particular, if the information and data needed to substantiate a connecting pattern are readily available, and if the pattern has strong plausibility and explanatory power, there may be scope to revise the revenue base case upward in financial evaluations.

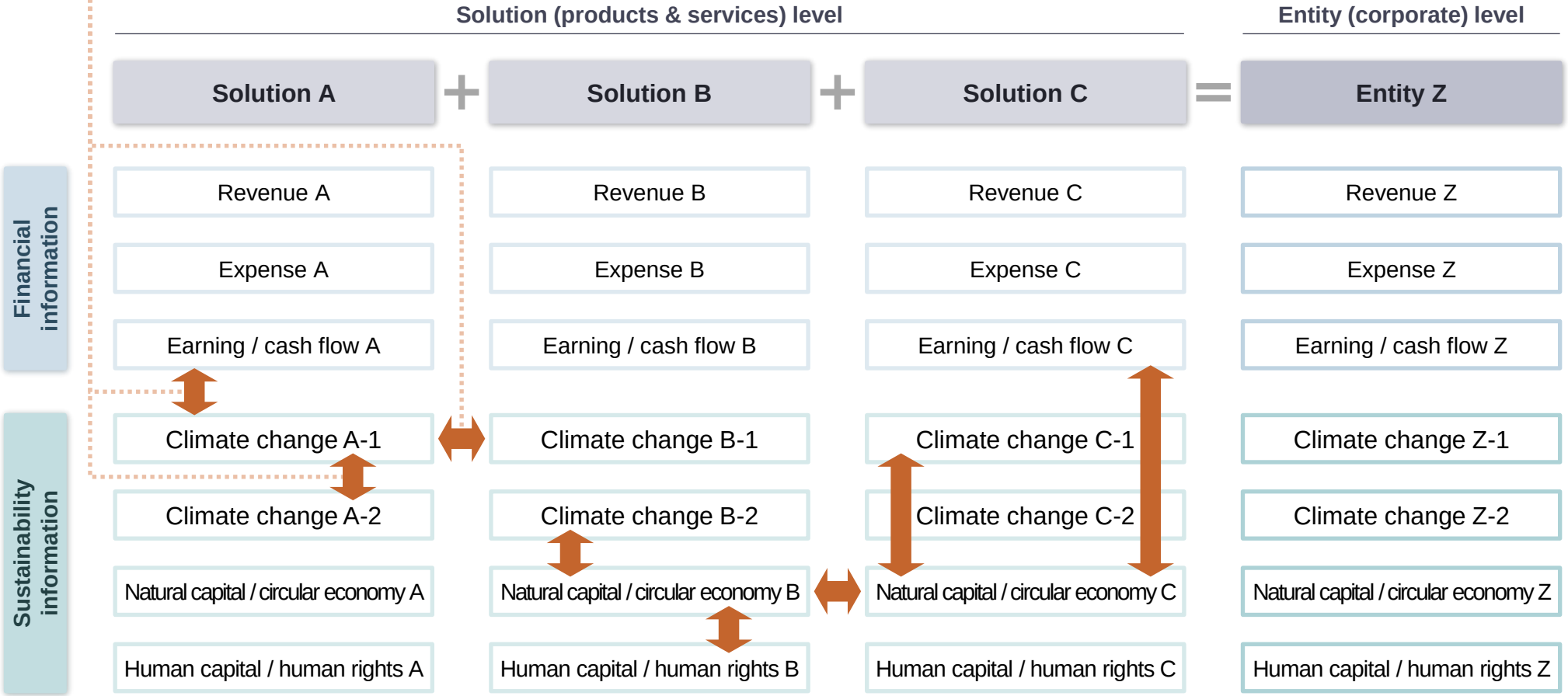
■ Under conventional sustainability disclosure, the logic connecting non-financial information to financial information has often not been sufficiently articulated. Examining and explicitly articulating the relationship between avoided emissions and revenue is **expected to enhance both the effectiveness of disclosure and its usefulness in investment and lending decisions.**

*1: The three connectivity patterns are not mutually exclusive; in practice, multiple patterns may occur simultaneously.
Sources: GX Acceleration Agency (2026). *Materials for the First Roundtable on Applying Avoided Emissions in Financial Practice*.

Classification of sustainability disclosure and importance of solution-level disclosure and evaluation

2026

- Solution-level data can interact in complex ways, including trade-offs between financial and sustainability information or among different sustainability metrics.
- Consequently, entity-level data, which merely aggregates solution-level data, may make it difficult to grasp these interactions in the calculation process and the connectivity between data points, potentially limiting its usefulness for financial institutions when evaluating companies.



- While the move toward mandatory entity-level sustainability disclosures is advancing globally and is valuable in improving data quality and comparability, it can also present challenges.
- Specifically, depending on the composition of the solution-level data underlying entity-level metrics (i.e., the business structure of the company), it may become difficult to identify the connectivity with financial information or to understand the company's specific initiatives and contributions toward sustainability.
- Therefore, to appropriately evaluate companies' sustainability information, **it is desirable to complement entity-level evaluation with solution-level evaluation.**

Sources: Mizuho Financial Group.

Utilization of avoided emissions in sustainable finance

2026

■ **AE are highly compatible with calculation and disclosure at the solution level, making them a suitable metric for utilization in sustainable finance, where capturing the distinct characteristics of individual companies is essential. Furthermore, driving new positive impacts through financing can also be achieved.**

Utilization of avoided emissions in sustainable finance

Avoided Emissions

- The basic practice is to calculate and disclose the avoided emissions at the solution level rather than at the entity level.
- When calculating and disclosing entity-level avoided emissions based on solution-level figures, attention must be paid to aggregation methods and double counting.

Since avoided emissions are well suited to sustainable finance and can lead to actual financing and the creation of positive impacts, **there is significant scope to leverage calculated and disclosed avoided emissions in sustainable finance.**

With regard to sustainability information, the formulation of standards/guidance, calculation and disclosure are often considered from the perspective of investors.

Viewpoint of loans and primary-market investments (perspective of banks and securities companies)

- Flexible disclosure is possible at the solution level depending on a company's diverse business characteristics, and emphasis is placed on evaluating the company's individual characteristics. Therefore, at present, the data quality and comparability required for disclosed sustainability information are not as high as those required for secondary-market investments.
- **Loans and primary market investments lead to financing and can create new positive impacts through avoided emissions.**

Viewpoint of secondary-market investments (perspective of investors)

- Investor evaluations are mainly conducted at the entity level. From the perspective of benchmark comparison and stock and bond selection, disclosed sustainability information needs to have a high level of data quality and comparability.
- **While improving valuation through investment and encouraging investees through engagement and proxy voting can enhance corporate value, they do not directly lead to financing.**

■ In sustainability disclosure standards, primary users of general-purpose financial reports are defined as **current and potential investors, lenders and other creditors.**

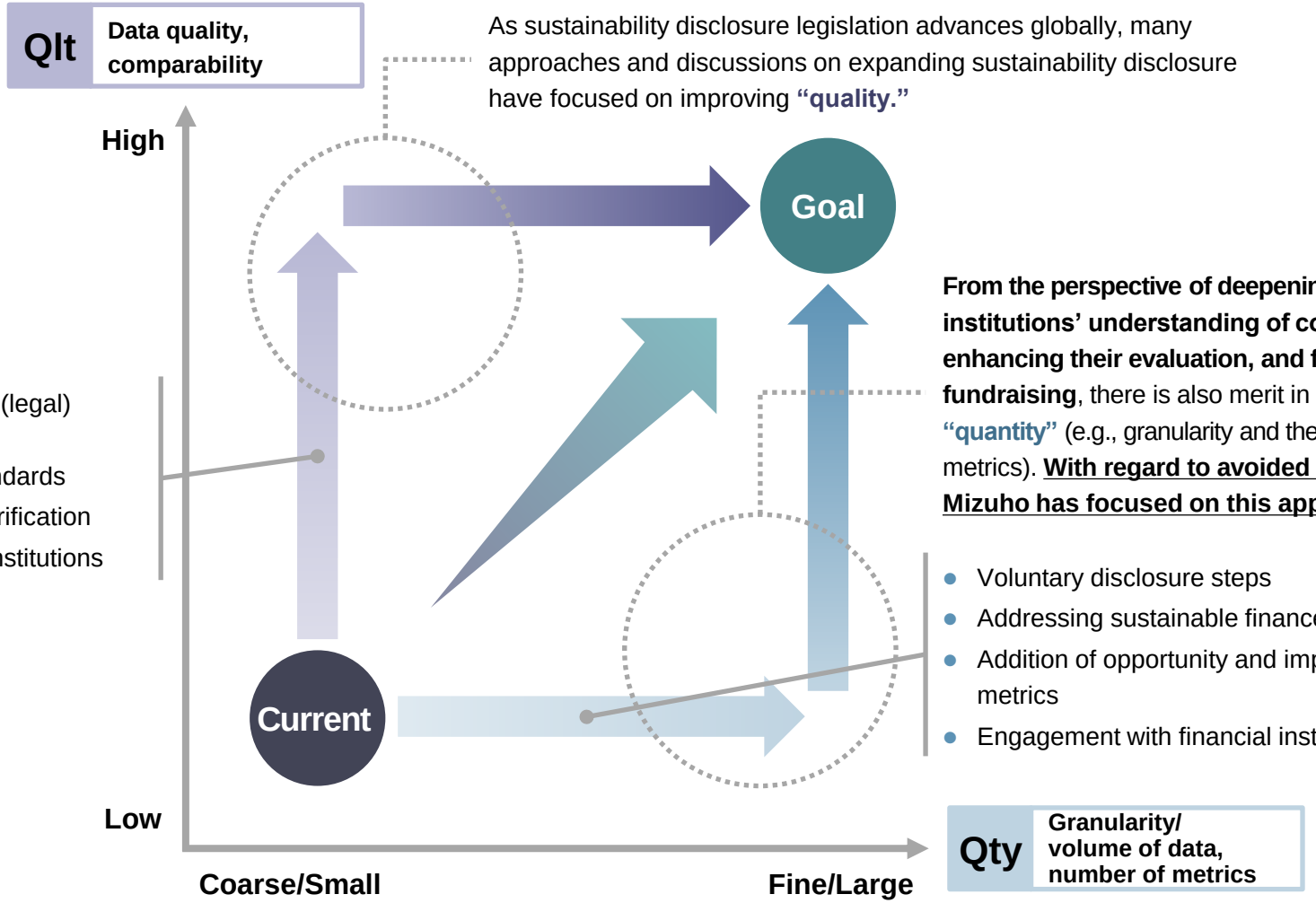
■ **Financial institutions include a wide range of businesses, such as banks, securities companies, insurance companies and asset management companies, and their perspectives vary depending on the form of investment or lending and on the counterparty involved.**

Sources: Mizuho Financial Group.

Approaches to expanding sustainability disclosure

■ **Stakeholders are increasingly requesting companies to expand their sustainability disclosures. While many current approaches to expanding disclosure focus on improving "quality," the increase of "quantity," including information granularity and the number of metrics, is another important dimension.**

Approaches to expanding sustainability disclosure



As sustainability disclosure legislation advances globally, many approaches and discussions on expanding sustainability disclosure have focused on improving **"quality."**

- Compliance with mandatory (legal) disclosure requirements and sustainability disclosure standards
- Obtaining assurance and verification
- Engagement with financial institutions

From the perspective of deepening financial institutions' understanding of companies, enhancing their evaluation, and facilitating fundraising, there is also merit in prioritizing **"quantity"** (e.g., granularity and the number of metrics). **With regard to avoided emissions, Mizuho has focused on this approach.**

- Voluntary disclosure steps
- Addressing sustainable finance issues
- Addition of opportunity and impact metrics
- Engagement with financial institutions

*1: Qlt: Quality, Qty: Quantity.
Sources: Mizuho Financial Group.

Methods for financial institutions to utilize avoided emissions

2026

■ **Financial institutions utilize avoided emissions in diverse ways, including as (1) metrics and targets for finance, (2) evaluation metrics for investees, (3) management metrics for investment and lending portfolios, and (4) themes for engagement. Various cases of their use have already emerged.**

Methods for financial institutions to utilize avoided emissions

	Utilization method	Specific application examples
1	**Metrics and targets for finance**	● **"Impact finance"**: using avoided emissions as an impact KPI/target. ● **"Sustainability-linked finance"**: using avoided emissions as a KPI/SPT [*1]. ● **"Sustainable finance"**: using avoided emissions as a reporting metric.
2	**Evaluation metrics for investees**	● Thematic investing and positive screening using avoided emissions as an evaluation metric. ● Impact assessment and scoring/rating based on avoided emissions. ● Investment products (funds) that utilize the above evaluation methods.
3	**Management metrics for investment and lending portfolios**	● Financed Avoided Emissions. ● Frameworks that use avoided emissions as a monitoring metric to assess companies' transition progress.
4	**Themes for engagement (dialogue)**	● Engagement on the following themes related to avoided emissions: – Development status, sales performance, and forecasts of avoided emissions-related solutions. – Financial and societal impacts generated by avoided emissions, and the methodologies for calculating and disclosing avoided emissions. – Sharing examples of how financial institutions utilize avoided emissions, etc.

*1: Sustainability Performance Targets. Specific sustainability targets set by a company, where financing terms and incentives vary according to the level of achievement.
Sources: Mizuho Financial Group.

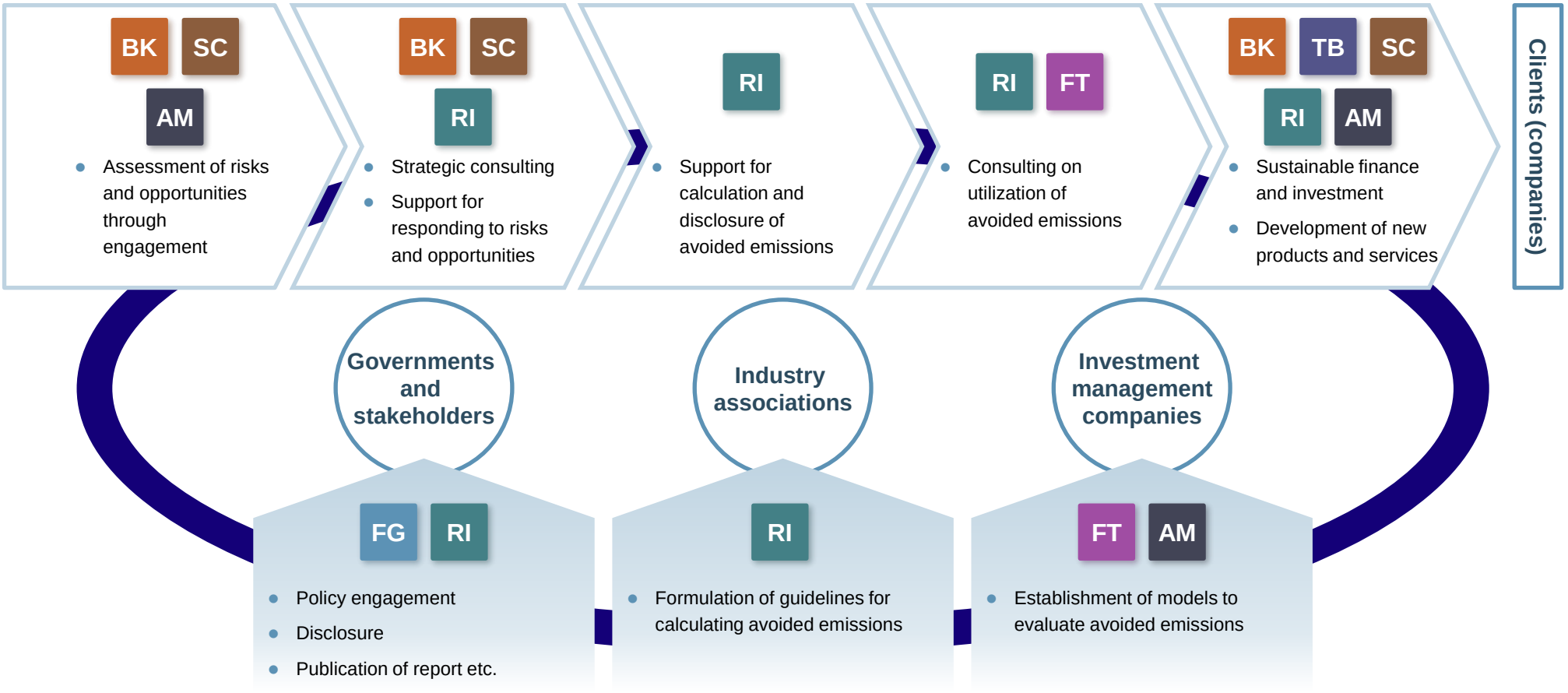
4. Mizuho’s achievements in avoided emissions area

Mizuho Financial Group: Mizuho's value chain for avoided emissions

2026

- **Mizuho has built a value chain for AE and contributes to the establishment of rules and evaluation models.**
- **We also provide comprehensive support to our clients, from pre-assessment to measurement and disclosure support for AE and through to financing.**

Mizuho's value chain for avoided emissions *1



Mizuho's value chain for avoided emissions

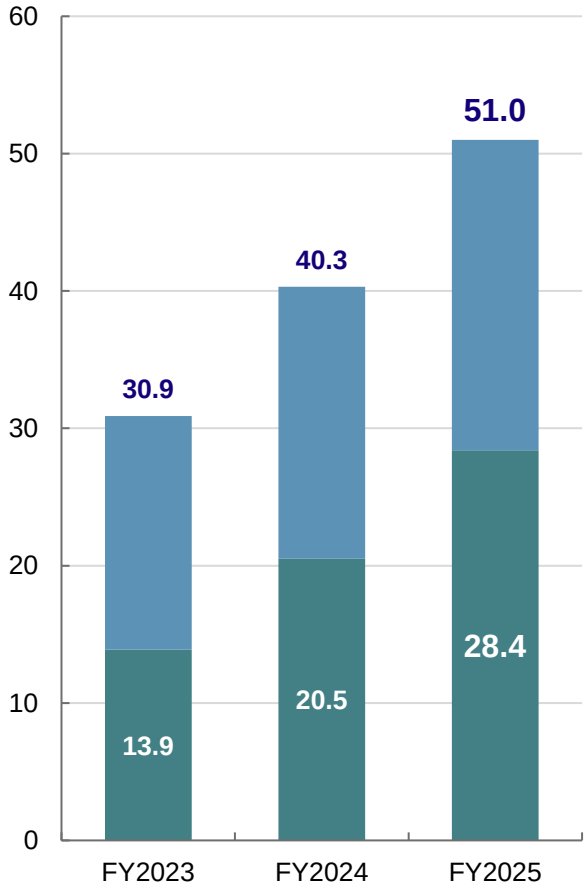
*1: FG: Mizuho Financial Group, BK: Mizuho Bank, RI: Mizuho Research Institute, TB: Mizuho Trust & Banking, SC: Mizuho Securities, FT: Mizuho-DL Financial Technology, AM: Asset Management One.
Mizuho Research Institute is the name of an internal organization of Mizuho Bank, Ltd.
Sources: Mizuho Financial Group.

Mizuho Financial Group: Sustainable finance targets and results to date

- **Mizuho has set a sustainable finance target [*1] of JPY 100 trillion, of which JPY 50 trillion is earmarked for environment- and climate-related finance, recognizing our important role in responding to the enormous financing needs associated with climate change.**

Sustainable finance target and results to date

(Amount of sustainable finance: trillion JPY; cumulative basis from FY2019)



FY2030 Target
(cumulative basis from FY2019)

Sustainable finance

JPY 100 trillion

Environment and climate-related finance

JPY 50 trillion

League table

Global



No. 3

Sustainable finance (loans)

(April 2025 to March 2026)

Japan



No. 1
for six consecutive years

Publicly offered SDG bonds

(April 2020 to March 2026)

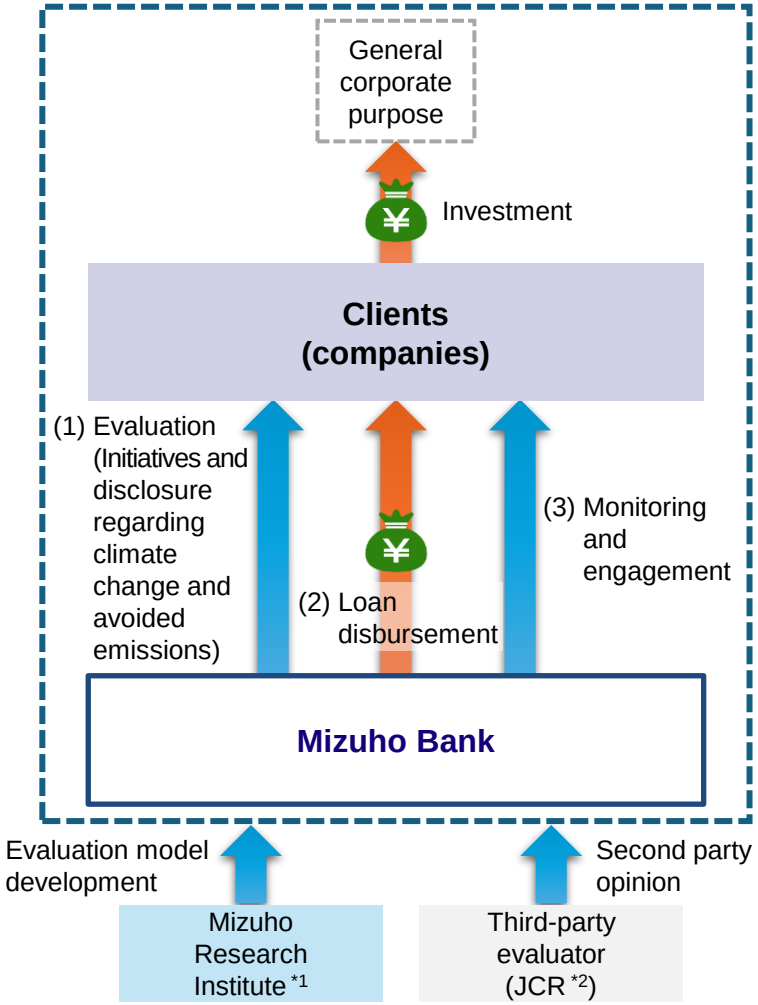
Sources: Mizuho Financial Group (2026). *Sustainability Report 2026*., Sustainable finance (loans) data from LSEG; publicly offered SDG bonds data from Capital Eye.

Mizuho Bank: Mizuho Avoided Emissions Impact Finance (1/2)

2026

- **In October 2025, Mizuho leveraged the group's expertise to develop its own financing product specializing in AE.**
- **Through this product, we aim to meet the financing needs of clients and contribute to promoting and expanding the use of AE.**

Scheme and overview of Mizuho Avoided Emissions Impact Finance



Evaluation	Mizuho Bank **quantitatively evaluates and scores each company's efforts** to disclose information on climate change and avoided emissions **on a five-point scale (AA, A, B, C, D).**
Target	Based on the above scoring, Mizuho Bank offers "Mizuho Avoided Emissions Impact Finance" to **companies that score A or higher.**
Aim	By further enhancing engagement-driven efforts related to avoided emissions, we aim to promote and expand the use of avoided emissions, thereby **contributing to the decarbonization of society as a whole.**

Field		Evaluation items
Commitment of corporate management	1	SBT approval/commitment status
	2	Medium- to long-term environmental vision regarding GHG emissions
	3	Ambition level of medium- to long-term environmental vision regarding GHG emissions
	4	Setting of Scope 3 targets
Disclosure and results of GHG emissions	5	Disclosure and results of GHG emissions (Scope 1, 2)
	6	Disclosure of GHG emissions (Scope 3)
Disclosure and target setting for avoided emissions	7	Disclosure of mitigation and management of significant negative impacts
	8	Disclosure of avoided emissions
	9	Disclosure of solutions for avoided emissions
	10	Disclosure of baseline for avoided emissions
	11	Setting of avoided emissions target

*1: Mizuho Research Institute is the name of an internal organization of Mizuho Bank, Ltd. *2: Japan Credit Rating Agency, Ltd.
Sources: Mizuho Bank.

Mizuho Bank: Mizuho Avoided Emissions Impact Finance (2/2)

2026

- **Since launching Mizuho Avoided Emissions Impact Finance, Mizuho Bank has recorded a cumulative total of four transactions totaling JPY 40 billion (as of the end of March 2026). Mizuho Bank assessed that each company's initiatives met the evaluation criteria of this framework and entered into loan agreements.**

Example of financing utilization by Fuyo General Lease

- In December 2025, it executed a loan agreement under this framework.
- Positively evaluated factors included the company's target-setting for avoided emissions and its disclosure status regarding avoided emissions, while it strived for sustainable growth through the simultaneous achievement of solving social issues and generating economic value.

		実績（2025年3月期）	目標（2027年3月期）
当社グループの脱炭素化	再生可能エネルギー使用率※（RE100目標）	88%	2030年にRE100、カーボンニュートラルの達成
	CO_2排出量（スコープ1, 2）※	2020年度対比 48%削減	
お客さま・社会の脱炭素化	CO_2削減貢献量	45万t-CO_2/年	50万t-CO_2/年
	脱炭素推進に向けた資金投下額	2,558億円	3,000億円
	再エネ発電容量	876MW	1,000MW
	新規成約台数におけるEV/FCV比率	目標項目見直し	5%
	脱炭素推進ファイナンス取扱金額	349億円	150億円

※対象範囲は芙蓉総合リースおよび連結子会社

Avoided emissions

マテリアリティ	2030年のありたい姿	具体的な取り組み		該当ページ	非財務KPI	2024年度実績	2026年度目標値
環境 脱炭素社会実現への貢献	■多様なエネルギー関連事業を国内外で大規模に展開し、脱炭素社会の実現に貢献するグローバル企業 ■エネルギー環境分野の新たな事業領域を切り拓き、気候変動をはじめとする環境問題の解決に貢献するフロントランナー ■車両領域における様々な技術の社会実装を通じ、脱炭素をはじめとする社会課題解決に貢献する企業	・下記ABCほかの取り組みを推進し、より低排出の設備・機材等に入れ替わったことを通じて削減したと推計されるCO₂の量を指標として算出		P.35-36	CO_2の削減貢献量	45万t-CO_2/年	50万t-CO_2/年
		・下記ABCほかの取り組みを推進し、それに関わるリース・ファイナンス等の資金投下額を指標として算出		P.35-36	脱炭素推進に向けた資金投下額※1	2,558億円	5年間累計 3,000億円
		A	・国内外の再エネ・蓄電池事業への出資やプロジェクトファイナンス ・PPAによりお客さまに長期契約で再エネ電力を供給	P.15-16	再エネ発電容量	876MW※2	1,000MW
		B	・EV、FCVのリースの推進 ・EVワンストップサービスの提供 ・EVライフサイクルサービス	P.19-20	新規成約台数におけるEV・FCV比率	目標項目見直し	5%
		C	・芙蓉 再エネ100宣言・サポートプログラム ・芙蓉 ゼロカーボンシティ・サポートプログラム ・芙蓉サーキュラーエコノミーリースを通じて脱炭素に資する設備・機材のリース・ファイナンスを提供	P.35-36	脱炭素推進ファイナンスの取扱金額※3	349億円	5年間累計 150億円

Example of financing utilization by Meidensha

- In March 2026, it became the first electrical equipment manufacturer to execute a loan agreement under this framework.
- Positively evaluated factors included its annual calculation of avoided emissions, as well as disclosure of products/businesses that result in avoided emissions and examples of related projects and initiatives, and the underlying approach to calculating avoided emissions.

GHG削減貢献量（旧環境貢献量）

対象製品／事業	2024年度のGHG削減貢献量（万t-CO_2）	GHG削減貢献量算定の考え方
風力売電事業※1	2.8	系統電力を再生可能エネルギー発電に代替した場合の排出抑制
太陽光発電システム	6.4	
水力用発電設備（明電舎分）	103.1	
水力用発電設備（イームル工業分）	2.8	
電鉄用回生インバーター	2.3	回生電流による省エネルギー
EV駆動ユニット	140.0	同等グレードのガソリン車を代替した場合の排出抑制
電動フォークリフト用制御機器・モーター	170.3	
キュービクル形ドライエア絶縁開閉装置（Eco C-GIS）	0.1	SF_6ガス不使用による排出抑制
エコタンク形真空遮断器※2	13.6	
合計	441.4	



水力発電設備

Sources: Fuyo General Lease (2026). *Fuyo Lease Group Integrated Report 2025.*, Meidensha website.

Mizuho Bank: Sustainable finance using avoided emissions (PIF, SLL)

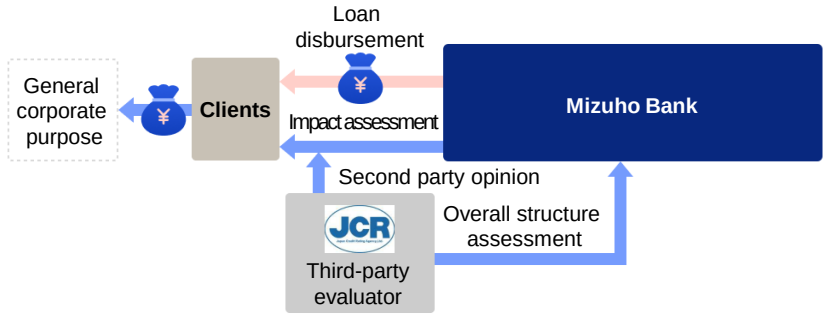
2025

- **AE can be used as a KPI for Positive Impact Finance (PIF) and as a sustainability performance target (SPT) for sustainability-linked loans (SLL). Mizuho Bank has a track record of using AE in both PIF and SLL.**

Positive impact finance with avoided emissions as KPI

- Positive impact finance involves financial institutions conducting a comprehensive analysis and evaluation of the environmental, social and economic impacts of corporate activities (both the positive and negative impacts) based on the Principles for Positive Impact Finance established by the United Nations Environment Programme Finance Initiative (UNEP FI) and procedures consistent with the UNEP FI implementation guidelines, and providing loans with the aim of continued support for those activities.
- Financial institutions prepare a framework for impact analysis and evaluation, and monitor the post-lending impact.
- Mizuho Positive Impact Finance uses an evaluation framework independently developed by Mizuho Research Institute*1, which has extensive expertise in sustainability, to identify the state of a company's sustainability management system and the impact that the company will generate, and to evaluate the KPI and target setting. After implementation, KPI progress will be assessed annually, and recommendations are made to improve impact.
- Mizuho Bank has served as an arranger for Mizuho Positive Impact Finance (syndicated loans) provided to Fuyo General Lease and Tokyo Century Corporation, where avoided emissions were set as a KPI.

Mizuho Positive Impact Finance Scheme



Sustainability-linked loan with avoided emissions as SPTs

- A sustainability-linked loan is a loan designed to motivate a borrower to meet ambitious SPTs based on the borrower's KPI and to link the loan's terms and conditions to the borrower's achievement of these SPTs.
- By arranging SLL with avoided emissions set as the SPT by Mizuho Bank, it is possible to create positive impact and promote the transition toward achieving the SPT.
- Mizuho has served as an arranger for SLL to Fuyo General Lease and Tokyo Century Corporation, where avoided emissions were set as SPTs.

*1: Mizuho Research Institute is the name of an internal organization of Mizuho Bank, Ltd.
Sources: Each company's disclosures.

Mizuho Securities: Sustainable finance with avoided emissions as reporting metric

2026

■ **Mizuho Securities supports issuers' efforts to reduce GHG emissions through their business operations and to communicate the value of those contributions by structuring sustainable finance with AE as a reporting metric.**

Kawasaki Heavy Industries (KHI)

Sales Promotion Framework

- KHI recognizes that reducing Scope 3 emissions, the expansion of green transformation (GX) and transition efforts to middle-market firms and SMEs, and the market expansion of green/transition products are critical social issues in achieving carbon neutrality by 2050.
- In March 2026, the company revised its Sustainable Finance Master Framework and established a new Sales Promotion Framework.
  - Sales Promotion Framework: **A "world-first" framework (FW) that enables business partners/customers that buy KHI's green/transition products to raise funds through sustainable finance without newly formulating their own FW.** It reduces the burden on partners/customers to formulate an FW, enables prompt transition financing, aims to reduce KHI's Scope 3 emissions as well as partners/customers' Scope 1 and Scope 2 emissions, and provides financial support for decarbonization in the supply chain.

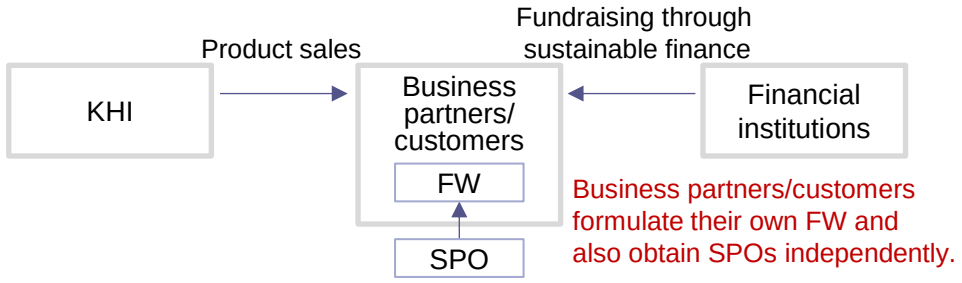
Transition CB (convertible bond)

Issue date	July 2026	Tenor	7 years
Issue amount	JPY 50 billion	External reviewer	JCR

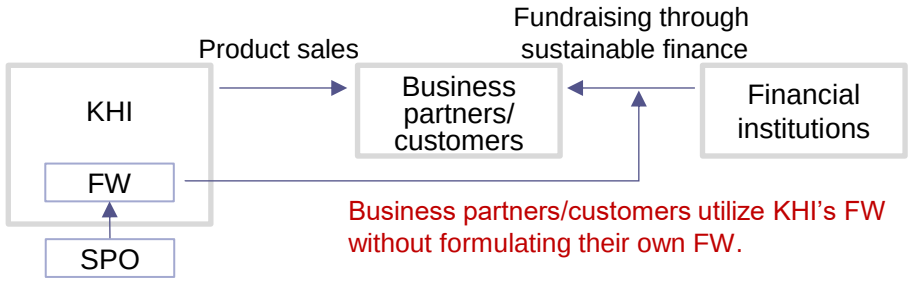
- The **world-first** CB aligned with the Climate Transition Bond Guidelines.
- The Transition CB was issued by selecting **commercialization demonstration projects for building a liquefied hydrogen supply chain** as the use of proceeds, based on eligibility criteria set in light of Group Vision 2030, the Carbon Neutral Strategy, and the Kawasaki Ecological Frontiers System [*1]. **Avoided emissions are adopted as the reporting metric for environmental benefits** under the FW.

Eligibility criteria (extract)	Examples of impact reporting
Clean transport and storage of hydrogen	■ Progress in R&D and demonstration ■ Number of products developed or manufactured and installed ■ Reduction of CO2 emissions by using hydrogen (theoretical value)

(Conventional sustainable finance)



(Sales Promotion Framework)



*1: Kawasaki Ecological Frontiers System: Kawasaki Heavy Industries' proprietary environmentally conscious product certification system aimed at reducing environmental footprint throughout the product and service life cycle.

Sources: Kawasaki Heavy Industries (2026). *Sustainable Finance Master Framework*., Capital Eye.

Mizuho Research Institute: Track record of support related to avoided emissions

2026

■ **Mizuho Research Institute (MRI) has been involved in the development of various guidelines and other frameworks since discussions on avoided emissions first began in Japan. MRI provides a wide range of support services, including support for avoided emissions calculations, review of calculation results, and guideline development.**

MRI's involvement in avoided emissions

- Since the early 2010s, when discussions on avoided emissions first began in Japan, MRI has been involved in initiatives in the chemical and electrical/electronics industries, where discussions had begun earlier.
- In the ILCAJ guideline on avoided emissions, MRI served as the secretariat of the study group and facilitated discussions with experts and document development.
- Based on these achievements, MRI currently provides support services for industry associations and individual companies.

Examples of sectors supported

Metals	Petroleum refining	Energy	Construction
Chemicals	Electrical/ electronics	Electric power	Trading

Examples of support services for industry associations

1	**Trend monitoring**	Provide the latest external updates, including WBCSD guidance.
2	**Development of rules and guidelines**	Develop calculation logic and reporting formats that reflect industry-specific circumstances.
3	**Compilation of case studies**	Collect and organize calculation examples within the industry.
4	**Study sessions for member companies**	Hold study sessions for and dispatch lecturers to affiliated companies.

Examples of support services for private-sector companies

1	**Trend monitoring**	Provide the latest external updates, including WBCSD guidance.
2	**Development of rules and guidelines**	Develop calculation logic and reporting formats that reflect company-specific circumstances.
3	**Calculation support**	Support for calculations, including study sessions for internal stakeholders and setting calculation conditions.
4	**Calculation review**	Review calculation results from the perspectives of consistency with various guidelines and the validity of the LCA assessment.
5	**Disclosure support**	Consider disclosure information and anticipated Q&As based on various guidelines and information disclosure frameworks.
6	**Other**	Serve as chair of the review panel that provides advice on the validity of the calculation method and approach to calculating avoided emissions in Asahi Kasei Group's certification of Environmental Contribution Products.

Sources: Mizuho Research Institute.

Mizuho Research Institute: Support service for calculation of avoided emissions

2026

■ **Based on its wealth of knowledge and experience, MRI supports not only the calculation of avoided emissions but also the LCA calculation that underpins it.**

Support services for calculation of avoided emissions

Support services for calculation of avoided emissions

- Support for calculation of avoided emissions for products, materials, services, and other items.
  * In principle, measurement is performed by the client.
- Support for calculation of avoided emissions and disclosure of the result, referring to the guidelines by the WBCSD, the Institute of Life Cycle Assessment, Japan, the International Council of Chemical Associations, etc.

(1)	Determine products to be assessed.
(2)	Determine products to be compared with (baseline).
(3)	Set functional units and assessment scope.
(4)	Measure GHG emissions for assessed and comparison items based on LCA.
(5)	Evaluate the difference in GHG emissions between assessed and comparison items.
(6)	Multiplying the result in (5) by the product's volume penetration.

Support 1

- Support clients in making appropriate settings in accordance with guidelines.

Support 2

- Support clients' calculation of avoided emissions as well as product LCA calculations.

LCA calculation related services as a basis for measuring AE

Drawing on more than 30 years of experience since the early days of LCA, and on extensive achievements across both the public and private sectors as well as solid expertise, we provide tailored support.

Calculation service

- Support for LCA/CFP calculations.
  * The entity performing the calculation (the client or MRI) can be selected according to the client's preference.

Support service for building internal systems

- Support for building systems to improve the efficiency and robustness of LCA/CFP calculations.
- Support for establishing in-house environmental certification systems, etc.

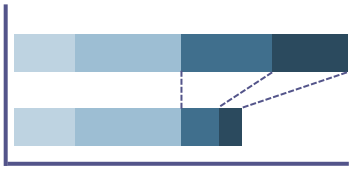
Support service for obtaining third-party verification

- In collaboration with third-party verification bodies in and outside Japan, support for obtaining third-party verification of LCA/CFP calculation results.
- MRI can also review the client's calculation results.

Support service for data linking

- Support for intercompany data linking on GHG emissions.





Sources: Mizuho Research Institute.

Asset Management One: Integrating avoided emissions into net zero assessments

2026

■ **Asset Management One (AM-One) has expanded its net zero assessments, which have been conducted since FY2022, to evaluate the disclosure of AE. By utilizing assessments based on these new criteria in engagement, we aim to integrate AE into our investment process.**

Advancing net zero assessments of investee companies

- To fulfill our corporate message, “Creating a sustainable future through the power of investment,” AM-One is undertaking initiatives toward realizing the net zero transition of investee companies. To evaluate the climate change risks faced by investee companies, since FY2022 we have conducted net zero alignment determinations based on the Net Zero Investment Framework (NZIF) and evaluated the companies’ initiatives toward achieving net zero on a five-phase assessment scale.
  - Companies scoring 1 to 3 on the five-phase scale were assessed as “Net Zero Aligned.”
- From this fiscal year, to capture the risks and opportunities for investee companies more accurately, we have expanded our assessment scale to one with eight phases by positively evaluating those companies assessed as “Net Zero Aligned” that disclose avoided emissions.

Five-phase assessment

	Former phase assessment	Net zero aligned
1	Achieving net zero	○
2	Aligned to a net zero pathway	○
3	Aligning towards a net zero pathway	○
4	Committed to aligning	×
5	Not aligned	×

Eight-phase assessment added “disclosure of AE” as an evaluation item

	New phase assessment	Net zero aligned	Disclosure of AE
1	Achieving net zero +	○	○
2	Achieving net zero	○	×
3	Aligned to a net zero pathway +	○	○
4	Aligned to a net zero pathway	○	×
5	Aligning towards a net zero pathway +	○	○
6	Aligning towards a net zero pathway	○	×
7	Committed to aligning	×	×
8	Not aligned	×	×

- Our assessment currently focuses on whether companies disclose avoided emissions, but as the standardization of calculation standards for avoided emissions (such as under the GHG Protocol) progresses in the future, **we will also consider more quantitative evaluations.**
- Going forward, **we plan to utilize such information on avoided emissions in our engagement with investee companies and consider its integration into our investment process.** Through dialogue with companies, we aim to contribute to promoting the expansion of the calculation and disclosure of avoided emissions.

Sources: Asset Management One.

Mizuho Financial Group / Mizuho Bank: Various evaluation methods utilizing avoided emissions

2026

- **Mizuho Bank has been disclosing FAE for project finance in the power generation sector since FY2019.**
- **In evaluating the status of clients' transition progress (transition stages), Mizuho Financial Group has introduced criteria that incorporate clients' disclosure status regarding AE, in addition to their track record in reducing GHG emissions.**

Calculation and disclosure of financed avoided emissions (FAE)

- Since FY2019, based on the PCAF Standard, Mizuho Bank has disclosed **CO2 avoided emissions (financed avoided emissions)** from loans for renewable energy project finance on Mizuho Financial Group's website and in its Sustainability Report.

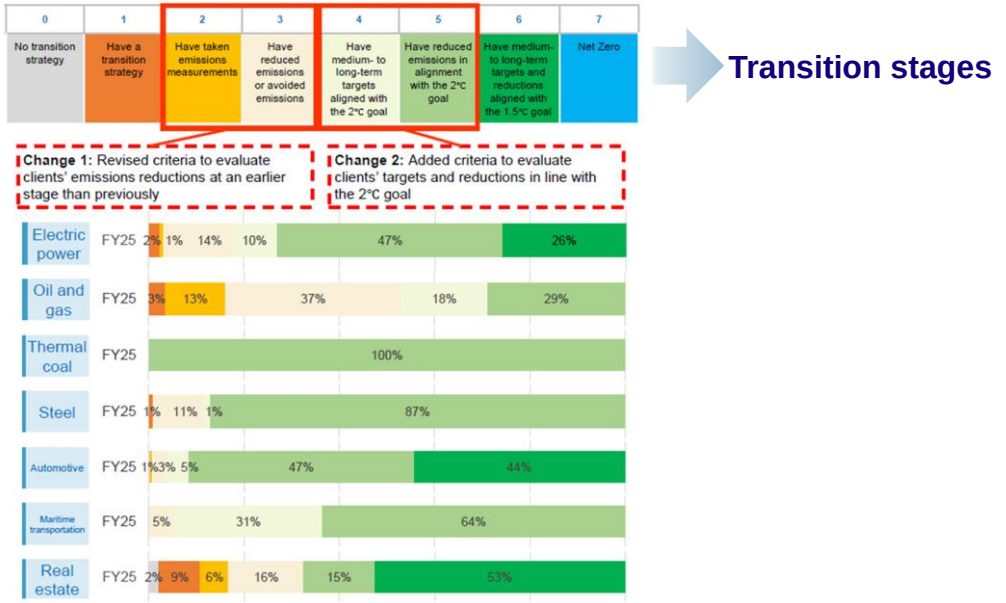


	FY2019	FY2023	FY2024
Financed Emissions ($ktCO_2$)	8,901	10,151	10,587
Avoided CO_2 Emissions ($ktCO_2$)	4,349	7,002	7,057

Reference: Cumulative avoided emissions from FY2019 to FY2024: 34,357 $ktCO_2$

Utilization of avoided emissions in evaluating clients' transition progress (transition stages)

- Mizuho has integrated its previous transition support frameworks to introduce the "Transition Promotion Framework" starting in FY2026.
- Under this new framework, Mizuho takes an integrated approach to evaluating clients' transition progress, managing transition risks, and engaging with clients.
- In evaluating the status of clients' transition progress, Mizuho assesses their progress using "transition stages" and provides support to advance their transitions through engagement and other measures. **In this evaluation, the assessment criteria incorporate not only clients' track record in reducing GHG emissions, but also their disclosure status regarding avoided emissions.**



Sources: Mizuho Financial Group (2026). *Sustainability Report 2026*.

Mizuho Financial Group: Avoided emissions task force in Mizuho Impact Business Working Group

2026

- **In August 2024, Mizuho established a group-wide AE task force for its sustainability strategy. Strategic efforts are being made to further promote and expand the use of AE by sharing the expertise of each group company.**

Avoided emissions task force in Mizuho Impact Business Working Group

- As noted in this report, the revision of standards and guidance on avoided emissions is progressing globally, and interest in avoided emissions is growing among sustainability-related parties. In addition, the disclosure of avoided emissions by Japanese companies is gathering pace.
- Mizuho regards avoided emissions as a metric for utilization in its sustainability strategy, and in August 2024 established a group-wide avoided emissions task force. **Mizuho Financial Group, Mizuho Bank (including Mizuho Research Institute), Mizuho Trust & Banking, Mizuho Securities, Mizuho-DL Financial Technology, and Asset Management One participate in this task force.**
- Within the avoided emissions task force, participating Mizuho group companies share their expertise and actively exchange views. **Strategic efforts are being made to develop and provide financial and non-financial solutions that utilize avoided emissions from both a medium- to long-term and a client perspective**, in order to further promote and expand avoided emissions adoption.

Avoided emissions task force





Sources: Mizuho Financial Group.

Mizuho Financial Group: Awareness-raising activities through events to promote and expand use of AE

2026

- **Through a speaking engagement at a COP30 event and by hosting its own seminars, Mizuho actively shares its expertise regarding the calculation, disclosure, and practical application of AE, thereby contributing, from the standpoint of a financial institution, to the global promotion and expansion of AE.**

The 30th Conference of the Parties to the UN Framework Convention on Climate Change (COP30) in Belém, Brazil

- On November 14, 2025, an event co-hosted by the Ministry of Economy, Trade and Industry (METI) and the WBCSD titled **Turning Avoided Emissions into Corporate Value -Paving the Way for Practical Action-** was held at the Japan Pavilion within the COP30 venue.
- At this event, Mizuho delivered a speech during a session introducing the initiatives of financial institutions for avoided emissions and also participated in a panel discussion. In the speech, Mizuho presented its groupwide efforts regarding avoided emissions, the utilization of avoided emissions as metrics in sustainable finance, an introduction to Mizuho Avoided Emissions Impact Finance, and Mizuho's contributions to PCAF's related activities. In the panel discussion, Mizuho addressed financial institutions' expectations regarding methodologies for the calculation and disclosure of avoided emissions, while also emphasizing the importance of tailored communication for avoided emissions that reflects the unique characteristics of diverse sectors, including banks, securities companies, insurance companies, and asset management companies.



Avoided Emissions Seminar

- On February 3, 2026, Mizuho Bank and the Development Bank of Japan, supported by METI, hosted the **Avoided Emissions Seminar: New Trends in Avoided Emissions for Realizing a Decarbonized Society and Strengthening Industrial Competitiveness** at the Keidanren Kaikan.
- This seminar provided information and fostered discussion from multifaceted perspectives on recent trends surrounding avoided emissions, the significance of their calculation and disclosure, methods for practical application, and the role of finance. Diverse stakeholders, including corporations and financial institutions, gathered for the seminar, providing an opportunity to deepen discussions on concrete measures toward transitioning to a decarbonized society and strengthening Japan's industrial competitiveness.
- Mizuho took the stage during both the presentation and panel discussion sessions of this seminar. During the presentations, Mizuho gave an overview of avoided emissions and pioneering case studies in the electrical and electronics as well as chemical industries, while also touching upon global rule-making developments. Mizuho emphasized the future importance of accurately understanding rules and appropriately disclosing corporate initiatives. Furthermore, in the panel discussion, Mizuho referred to initiatives that incorporate avoided emissions into finance incentive structures, challenges in sustainability disclosure, as well as the role of financial institutions and the utilization of avoided emissions in promoting sustainability.

URL of press release regarding this seminar:
https://www.mizuho-fg.co.jp/sx/news-release/pdf/20260312.pdf (Japanese language only)

Sources: GX League website., Mizuho Bank and Development Bank of Japan (2026). *Mizuho Bank and Development Bank of Japan held "Avoided Emissions Seminar."*

5. Toward further promoting and expanding use of avoided emissions

Toward further promoting and expanding use of avoided emissions

2026

- **Key initiatives to further promote and expand the use of AE are: (1) solution development and expanded disclosure by companies, (2) development and implementation of evaluation methods and financing schemes by financial institutions, and (3) knowledge sharing and development of a common platform that connects companies and financial institutions.**

Initiatives expected for further promoting and expanding use of avoided emissions

Companies

- Development and sales of solutions that result in avoided emissions.
- Expansion of solutions for which avoided emissions are calculated and disclosed.
- Enhancement of calculation and disclosure at the solution level.
- Resolution of challenges for entity-level disclosure, such as aggregation methodologies and double counting.
- Development of sector-specific guidance and common calculation rules through industry associations and other organizations.
- Implementation of financing that utilizes avoided emissions as a KPI and reporting metric.

Financial institutions

- Establishment of dialogue platforms/committees on avoided emissions by companies, financial institutions, industry associations, and others.
- Ensuring consistency between international rules and practical responses regarding avoided emissions.
- Deepening research and verification on the connectivity between avoided emissions and financial information.
- Development and maintenance of avoided emissions databases.
- Accumulation and horizontal rollout of leading cases of corporate disclosure and financial institution utilization of avoided emissions.
- Examination of approaches to third-party verification and assurance for avoided emissions.

- Development and provision of financing utilizing avoided emissions.
- Development of evaluation methodologies and investment products utilizing avoided emissions.
- Promotion of the calculation and disclosure of Financed Avoided Emissions (FAE).
- Expansion of eligible asset classes for FAE.
- Support for portfolio companies in calculating and disclosing avoided emissions.
- Participation in and support for the formulation of guidelines and guidance on avoided emissions.
- Encouraging advanced calculation and disclosure of avoided emissions, as well as supporting the acceleration of transition efforts, through engagement with portfolio companies.

Sources: Mizuho Financial Group.

The first time Mizuho published the Mizuho Avoided Emissions Focus Report was in October 2024. At the time, public awareness of avoided emissions remained limited. Over the past two years, however, we have witnessed steadily growing interest, as reflected in the rising number of inquiries from readers of the report and the continued progress of their corporate disclosures in Japan. In particular, the Avoided Emissions Focus Report 2025, published last October, drew a strong response from a wide range of stakeholders, in part because it was released alongside Mizuho Avoided Emissions Impact Finance. Building on this growing body of insights and dialogue, we are pleased to publish this third edition, the 2026 edition. We would like to take this opportunity to express our sincere gratitude to everyone who contributed to this effort.

In Japan, for companies with fiscal years ending in March, sustainability disclosure aligned with SSBJ Standards will be phased in mandatorily from the annual securities report for the fiscal year ending March 2027, depending on market capitalization. *1 As we approach this important milestone, what is being asked once again is not only why we need to disclose sustainability information, but also how clearly and practically we can explain the pathway by which such information connects to financial information. Merely disclosing sustainability information does not, by itself, enhance corporate value. In an era where connectivity with financial information and disclosure of financial impacts are increasingly required, it is essential to understand this logic in a more precise way.

Furthermore, as outlined in this report, when sustainability information is disclosed and evaluated at the entity level, challenges arise, including the blending of information across different business structures, interdependencies among data, and the difficulty of making connectivity with financial information visible. Against this backdrop, it is important to complement entity-level disclosure and evaluation with solution-level disclosure and evaluation. Only by combining the two can financial institutions more accurately capture a company's individual initiatives and its contributions to society.

One metric that helps address these challenges and that can more readily convey the significance and connectivity of sustainability disclosure is "avoided emissions." Although avoided emissions are currently a voluntary disclosure metric, they are effective in quantitatively demonstrating a company's climate-related opportunities, positive impact, and transition, and they offer valuable insights when considering their connectivity with financial information. In particular, avoided emissions are highly compatible with calculation and disclosure at the solution level, and their relationship with financial metrics such as revenue is also easy to discuss, so they provide practical insights for concretely expressing the significance and connectivity of sustainability disclosure. This report examines these issues in detail, and as sustainability disclosure legislation continues to advance around the world, we expect interest in avoided emissions to grow further.

Anticipating these trends, Mizuho has already established a value chain designed to maximize the value of avoided emissions. By bringing together a broad range of functions, including commercial banking, trust banking, securities (investment banking), asset management, and research and consulting, we have built a framework that enables us to support our clients in an integrated and consistent manner from calculation and disclosure support for avoided emissions to evaluation, financing, and engagement. Following the launch of Mizuho Avoided Emissions Impact Finance last year, Mizuho has further leveraged the combined strengths of the group over the past year to advance a range of new initiatives related to avoided emissions.

Through these efforts, we were reminded once again that avoided emissions are a practical metric that makes visible the value that corporate solutions create for society and the economy, helping to generate positive impact and accelerate the transition. Far from being merely theoretical, they have the power to connect finance with the real economy and to support our clients as they pursue their ambitions. In the course of our research, we found that corporate disclosure in Japan has expanded more than we had expected, while also revealing practical challenges on the ground, such as the need to carefully identify where the disclosures are located, regardless of whether a company is listed or unlisted. Even so, we regard this as evidence that interest in avoided emissions is broadening across an ever wider base.

At present, standards and guidance on avoided emissions are being steadily developed, and we expect initiatives by companies and financial institutions to expand and deepen further. Precisely because of this situation, Mizuho will continue to work closely with all stakeholders to provide practical financial and non-financial solutions, and to devote its full efforts to the promotion and expansion of avoided emissions. We believe in the potential of avoided emissions, and that extending their value across society is a meaningful step toward realizing a sustainable society and economy.

We would be delighted if this report serves as a source of new insights and a useful tool for all readers, and if it inspires you to think that you would like to take on challenges together with Mizuho. We hope you will look forward to Mizuho's future initiatives. Together with all of you, we will continue to move forward strongly toward realizing a sustainable society and economy.

Thank you very much for reading this report to the end.

All members of Mizuho avoided emissions task force

*1: Mizuho Financial Group is the only Japanese company with a March-ending fiscal year to adopt the SSBJ Standards early in its annual securities report for the fiscal year ending March 2026 (its sustainability disclosure is aligned with SSBJ Standards).

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