JEMA-GX Report 2025

Executive Summary

April 2026

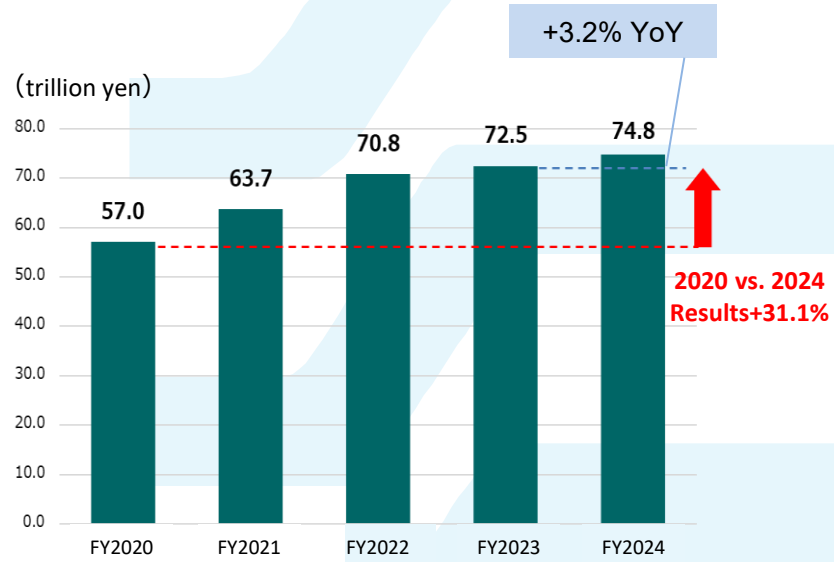
The Japan Electrical Manufacturers' Association

Survey Overview

This survey was conducted to assess the state of the green transformation (GX) across the electrical industry and JEMA's regular member companies, focusing on industry-specific KPIs.

The results, released in the GX Report, are intended to help member companies understand their relative position and to deepen stakeholder understanding of the value that the electrical industry creates by fostering ongoing dialogue.

Trends in Combined sales (Disclosing companies only)



■ Companies Surveyed

(1) JEMA regular member companies (61 companies on a global consolidated group basis; 83 companies on an individual-entity basis)

* Combined sales: ¥74.8 trillion (FY2024, disclosing companies only; +3.2% YoY)

(2) Benchmark companies outside Japan
(5 manufacturers in the electrical industry and related sectors under JEMA's remit)

■ Survey Items

Evaluation and Analysis of Global Consolidated Group Basis

(1) Decarbonization management: target setting, assessment of international initiatives, and quantification of avoided emissions (as of the FY2025 survey)

(2) Greenhouse gas (GHG) emissions: Scope 1, 2, and 3 emission reduction results, reduction rates, etc. (FY 2020–2024 results)

(3) Energy consumption: Fuel and electricity consumption reduction results, reduction rates, and the status of electrification and renewable energy use, etc. (FY 2020–2024 results)

Analysis of Domestic Initiatives (For Reference)

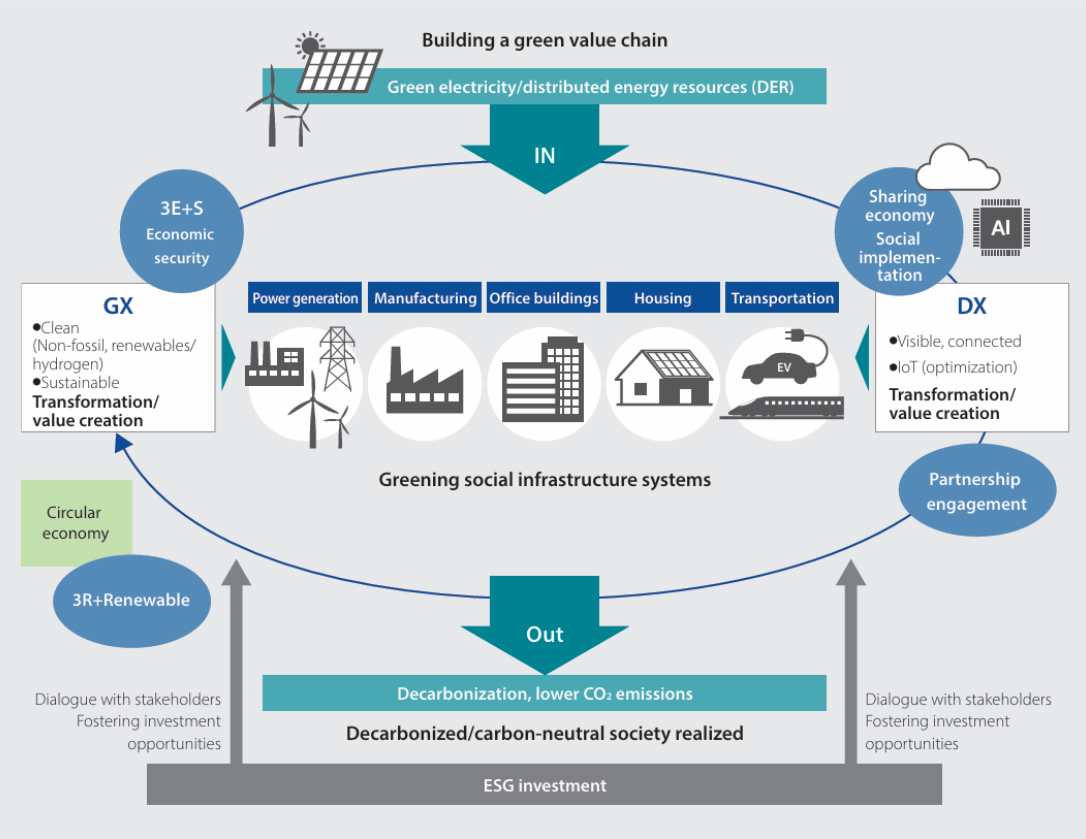
(4) Periodic Reports under Japan's Energy Conservation Act: items subject to the public disclosure system

Designing a Sustainable Future through the Electrical Innovation

— Contributing simultaneously to economic growth and the resolution of social challenges

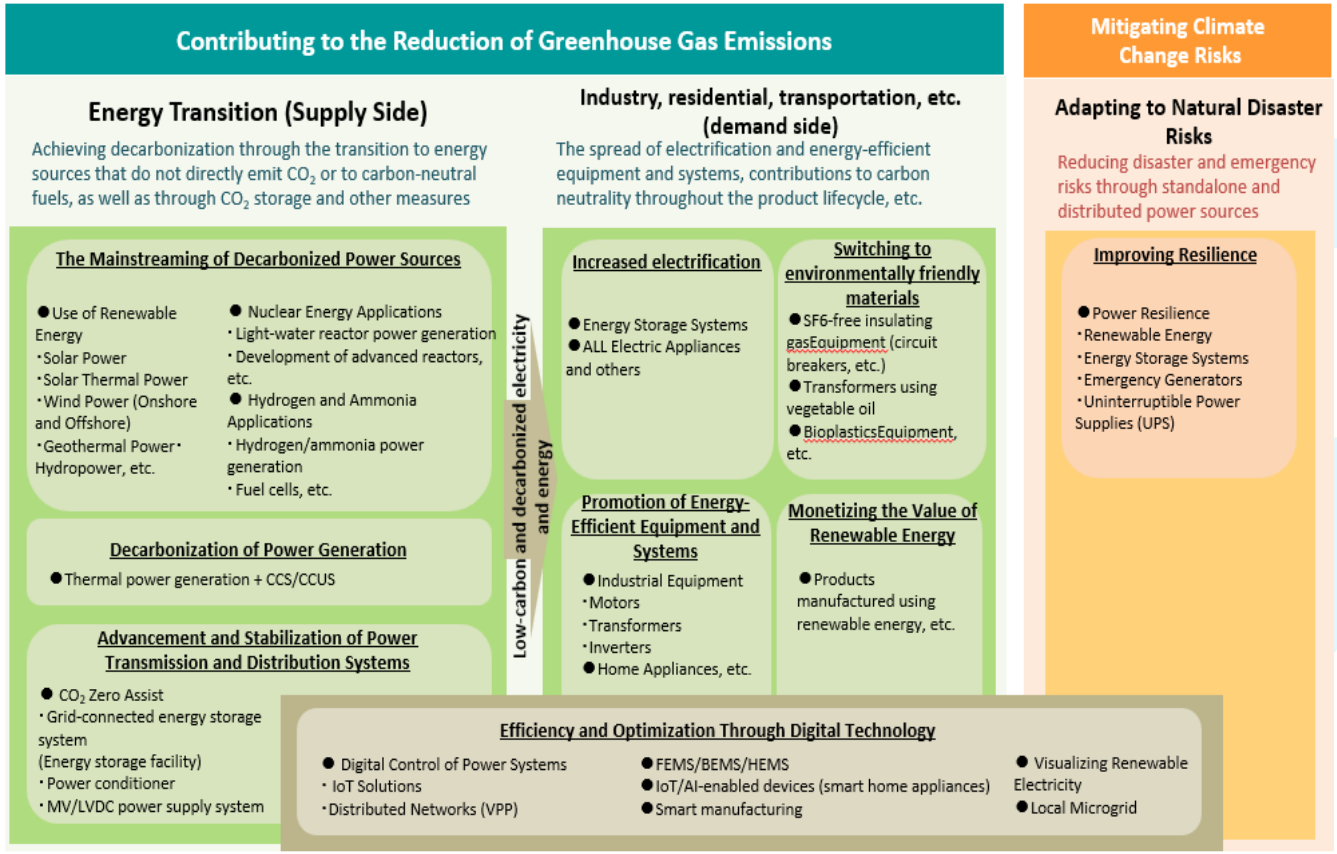
The electrical industry possesses a range of technologies for generating, transmitting, and using electricity, as well as the foundational technologies that underpin AI and digital systems. With innovation, it is supporting both the decarbonization and efficient use of electricity, taking a central role in the green transformation (GX) of the broader society. JEMA designates technologies, products, and solutions that contribute to GX on both the supply and demand sides of energy, and that contribute to reducing climate change risk, as “JEMA Green Technologies and Products.” It articulates their “environmental value” (see the figure at right) and supports the creation of demand for them and their wider adoption.

The electrical industry and innovation (GX and DX) that contribute to a sustainable society and a green value chain



Source: Liaison Group of Japanese Electrical and Electronics Industries for Global Warming Prevention (Secretary, JEMA ” Japanese Electrical and Electronics Industries Long-Term Strategy on Climate Change”

JEMA’s Contribution to Achieving Carbon Neutrality Through Green Technologies and Products



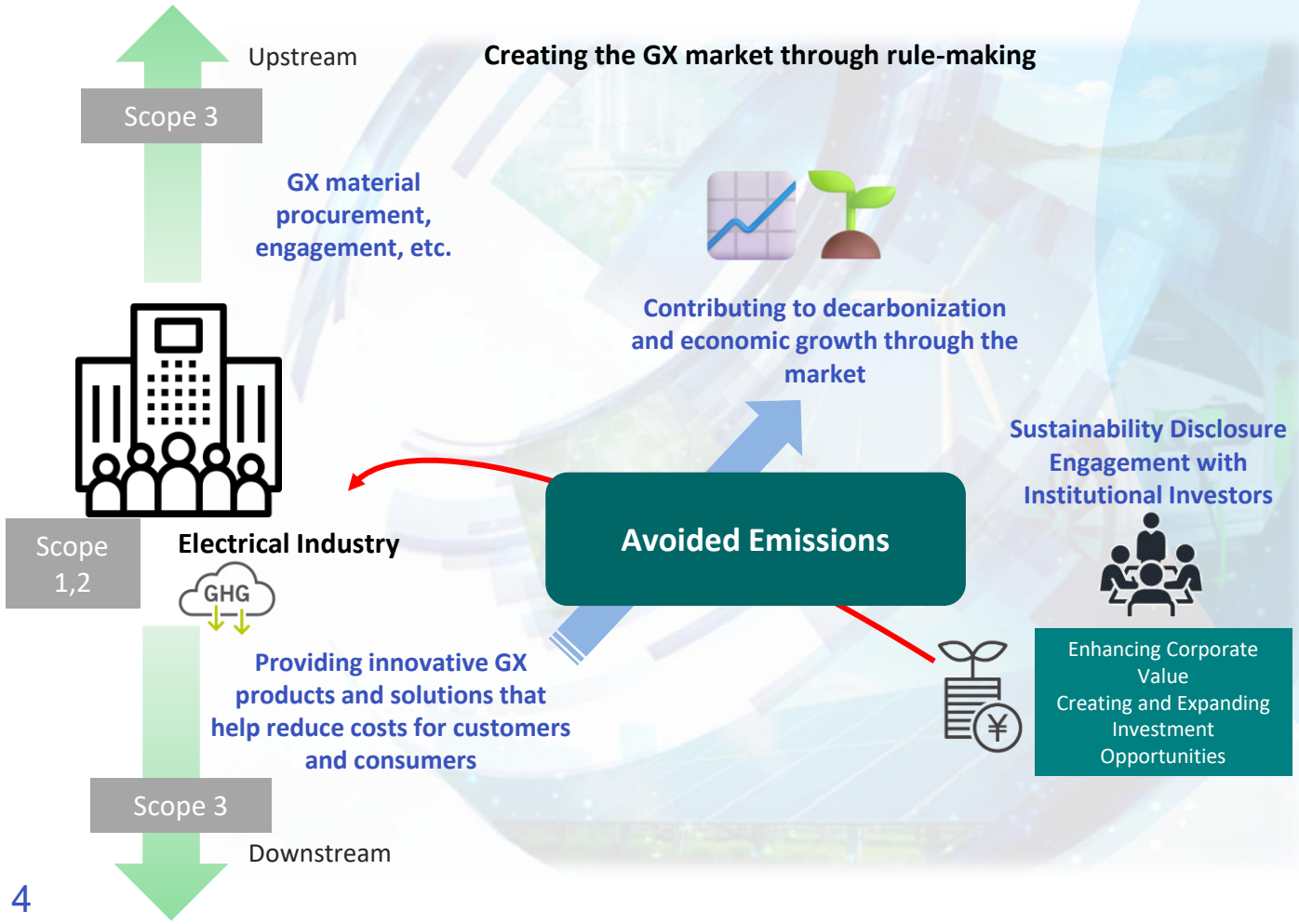
Source: JEMA ”The Electrical and Electronics Industry’s Contribution to Achieving Carbon Neutrality by 2050: JEMA’s –Green Technologies and Products-“ (Japanese Only)

The electrical industry's contribution to reducing emissions across society

— Toward GX market creation through rule-making

By engaging with a wide range of value-chain partners, the electrical industry is contributing to the creation of the GX market and, thereby, spurring both decarbonization and economic growth.

By establishing rules around "***avoided emissions - IEC 63372 standard / as IEC TC111 WG17 convenor and secretary***" and making visible the industry's contribution to society's decarbonization and economic growth through the market, JEMA and its members aim to strengthen credibility through dialogue with stakeholders, raise corporate value, and foster and expand investment opportunities for innovative GX products and solutions.



Japan and international rule-making trends focused on "avoided emissions"

- **IEC 63372**[*1]
  International Standard for Calculating Carbon Reductions from Electrical and Electronic Products, IoT Services, and Other Related Areas（Published Jan. 2026）
- **WBCSD Guidance on Avoided Emissions Ver.2.0**
  （Published Jul.2025）
- **ISO14064-1**[*2]
  Planning to add and revise the definition and concept of emission reduction contributions
- **GHG Protocol Actions and Market Instruments**
  Incorporating reduction contributions into corporate GHG emissions reporting guidance
- **Avoided Emissions Platform (AEP)**
  International Initiative for a Database on Emission Reduction Contributions
- **Mizuho Financial Group**
  Launching Mizuho Avoided Emissions Impact Finance
  （Published Oct. 2025）

*1 International Electrotechnical Commission
*2 International standards for calculating GHG emissions in organizations

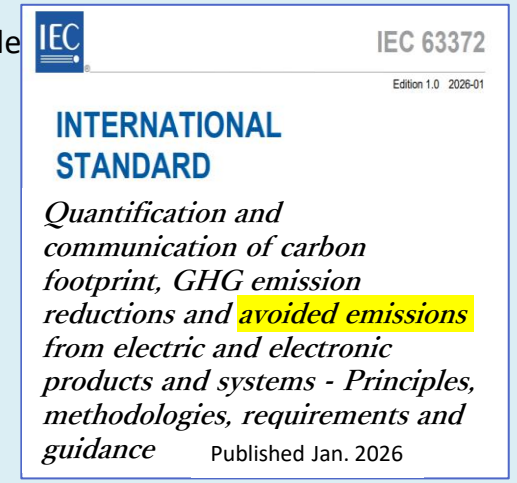
Scaling Positive Impact through “Avoided Emissions”

Beyond reducing its own emissions, the electrical industry plays a critical role in reducing GHG emissions across society as a whole via GX products and technologies.

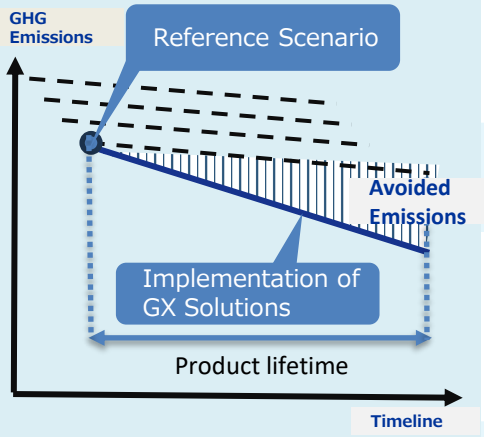
Using avoided emissions as a metric makes visible the transition opportunities and technological advantages that conventional GHG inventories have not adequately captured, enabling companies to disclose and promote the positive social impact they generate through their ability to solve societal challenges.

■ Leading the development of international rules for a new metric “Avoided Emissions”

- The Communiqué of the G7 Sapporo Ministers’ Meeting on Climate, Energy and Environment made clear, under its industrial decarbonization agenda, the need to appropriately evaluate corporate avoided emissions in order to build a society of net-zero greenhouse gas (GHG) emissions. JEMA has taken the lead in developing and publishing the corresponding IEC International Standard (IEC 63372), which covers the quantification and communication of avoided emissions for electrical and electronic products (and services) and systems.



The concept of Avoided Emissions



■ Progress of Companies Calculating Avoided Emissions

- The number of companies quantifying and disclosing avoided emissions has grown from 14 in FY2023 to 21 in FY2025 (reaching about 30% of the companies surveyed).
- Examples from these companies show that the principal solutions offered by the electrical industry — high-efficiency (energy-saving) equipment, electrification technologies, renewable-energy-related technologies, and grid- and storage-related technologies, among others — are helping to meet the growing global demand arising from the trend toward decarbonization.

■ Alignment with the financial capital market

- The avoided emissions metric captures a company’s “positive impact” — its market opportunities under the decarbonization transition, and its technology-driven competitive advantage and growth. With the GX Report, JEMA continues to engage in dialogue with institutional investors and other stakeholders to communicate the importance of this metric.
- Within the corporate evaluation and investment-management criteria used in the financial capital market — particularly from the standpoint of business-portfolio characteristics and alignment with growth strategies — it remains important for companies to keep improving both the quantity and the quality of quantification and disclosure based on international rules, in order to build solid confidence that the electrical industry is “an industry that delivers GHG emissions reductions.”

Reducing Negative Impact through Progress in “Decoupling”

In corporate decarbonization, progress in decoupling — that is, reducing GHG emissions and energy consumption while improving indicators of financial performance such as sales and profit — is essential, reflecting the integration of financial performance and non-financial benefits. Among the companies surveyed, this pattern of “growth with reductions (decoupling)” — emissions falling while sales figures rise — was observed in roughly 70% of companies, indicating that the electrical industry is making steady progress in balancing business growth with emissions reductions.

■ Progress in growth and reduction (decoupling): FY2020–FY2024 results

- GHG Scope 1 and 2 emissions were down 32.3% compared with FY2020. Emissions including Scope 3 were also 10.2% lower YoY.
- Sales grew by 31.1% compared with FY2020, while emissions intensity fell (i.e., improved) by 48.4%.
- A correlation analysis between Scope 1 and 2 emissions-reduction rates and sales-growth rates shows that, for FY2024, roughly 70% of the companies surveyed (42 companies) achieved decoupling — a number that has risen every year since the survey began.
- For Scope 1 and 2 emissions, just under half of the companies surveyed (21 companies) are on track or ahead of the annual reduction pace implied by their own medium-term targets.

■ Progress in the Use of Renewable Energy: FY2020–FY2024 results

- Across the companies surveyed, renewable electricity reached 9,998 GWh (about 8 times the FY2020 figure), accounting for 30.6% of electricity consumption — a substantial advance reflecting member companies’ efforts as well as a clear structural shift that will help reduce long-term transition risk.

■ Progress in Decarbonization Management

- JEMA’s member companies with the Science Based Targets initiative (SBTi) Net zero standards Commitment

Increasing number of companies are setting ambitious goals, such as net-zero targets

	End of Nov. 2023	End of Oct. 2024	End of Oct. 2025
Near-Term	18	21	22
Long-Term	0	3	5
Net-Zero	0 (COMMITTED 3)	3 (COMMITTED 1)	5 (COMMITTED 1)

- JEMA’s member companies with CDP Score – Climate change

Fifteen companies (approximately 25% of the companies surveyed) received a rating of “A” or “A-”

	2021	2022	2023	2024	2025
A or A-	12	14	20	13	15
B or B-	12	13	10	17	16
Others	1	5	5	6	4

*Excluding “No response,” “F,” “Not scored,” and “Score not disclosed”

Overview of survey results: Year-on-year changes in key KPIs

Looking at trends in the electrical industry's key KPIs (combined across member companies): Scope 1 and 2 emissions have fallen substantially — by 32.3% compared with FY2020 (an average of 8% per year). At the same time, sales are on a rising trend driven by business growth, demonstrating strong decoupling performance (GHG emissions intensity: −48.4%).

Specific contributing factors include: (1) energy-efficiency gains (energy consumption: −13.5%); and (2) increased use of renewable electricity (roughly 8-fold increase, with renewable energy reaching 30.6% of electricity in FY2024). The electrification rate also moved upward in FY2024.

KPI	Unit	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Percentage Change (2020 vs. 2024)
Combined Sales	trillion yen	57.0	63.7	70.8	72.5	74.8	31.1%
Scope 1 and 2 emissions	10,000 t-CO_2e	2,177	2,258	1,858	1,627	1,474	**▲32.3% (Average annual reduction rate: approximately 8%)**
Scope 1 emissions	10,000 t-CO_2e	581	601	506	459	434	▲25.3%
Scope 2 emissions	10,000 t-CO_2e	1,596	1,656	1,351	1,168	1,041	▲34.8%
Scope 3 emissions	Million t-CO_2e	2,204	3,352	3,100	2,900	2,604	18.1%
GHG emissions intensity (Scope 1 and 2 emissions / Sales)	Reduction rate (FY 2020 = 100)	-	▲7.2	▲31.2	▲41.1	▲48.4	-
Total energy consumption	GWh	59,813	60,781	56,580	51,638	51,733	**▲13.5%**
Fuel consumption	GWh	23,395	23,683	22,624	19,792	19,023	▲18.7%
Electricity consumption	GWh	36,418	37,098	33,956	31,846	32,710	▲10.2%
The proportion of electricity consumption derived from renewable energy sources	GWh	1,225	2,721	5,272	7,406	**9,998**	716.1% **(Roughly 8-fold increase)**
Renewable-energy share	%	3.4	7.3	15.5	23.3	**30.6**	-
Electrification Rate (Electricity Consumption / Total Energy Consumption)	%	60.9	61.0	60.0	61.7	**63.2**	-

Characteristics of GHG emissions and energy consumption in the electrical industry (FY2024 overview)

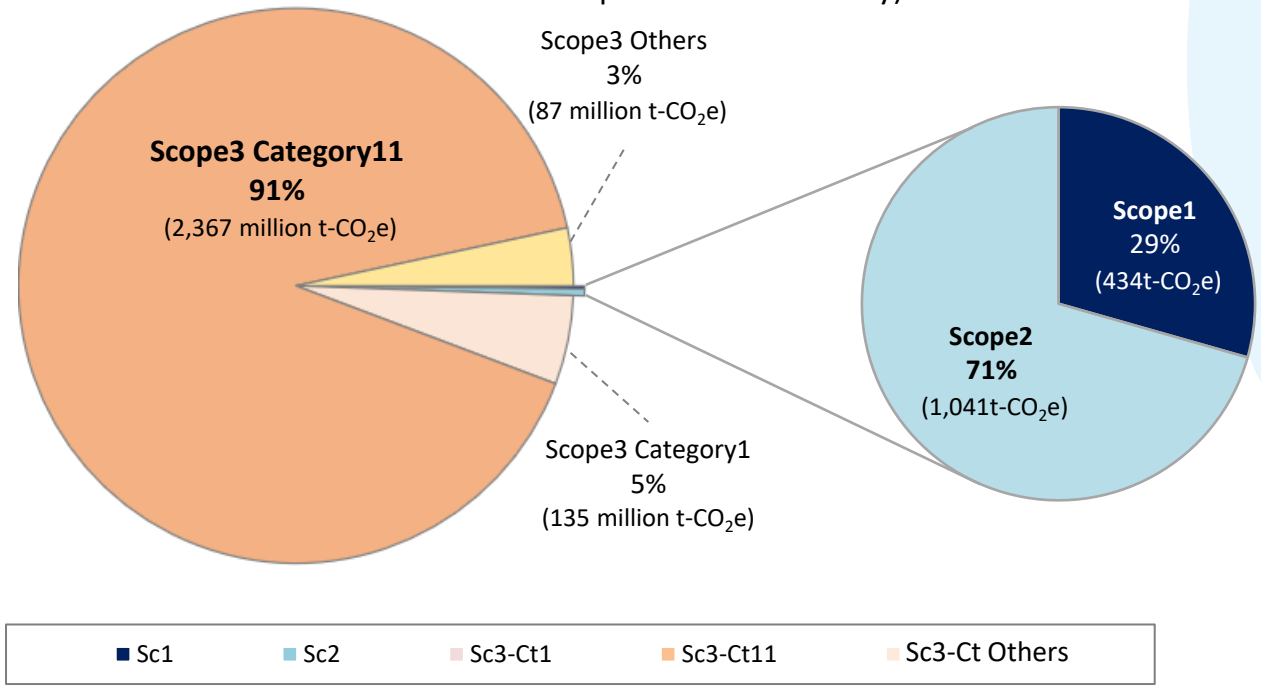
■ Breakdown of GHG Emissions (Scope 1, 2, and 3)

Total Scope 1, 2, and 3 emissions: 2,604 million t-CO_2e

The electrical industry provides equipment for public and social infrastructure, such as electricity systems, as well as household appliances and other related products and services. A defining feature of the industry is that indirect GHG emissions in Scope 3 Category 11 (use of sold products) account for roughly 90% of its total emissions.

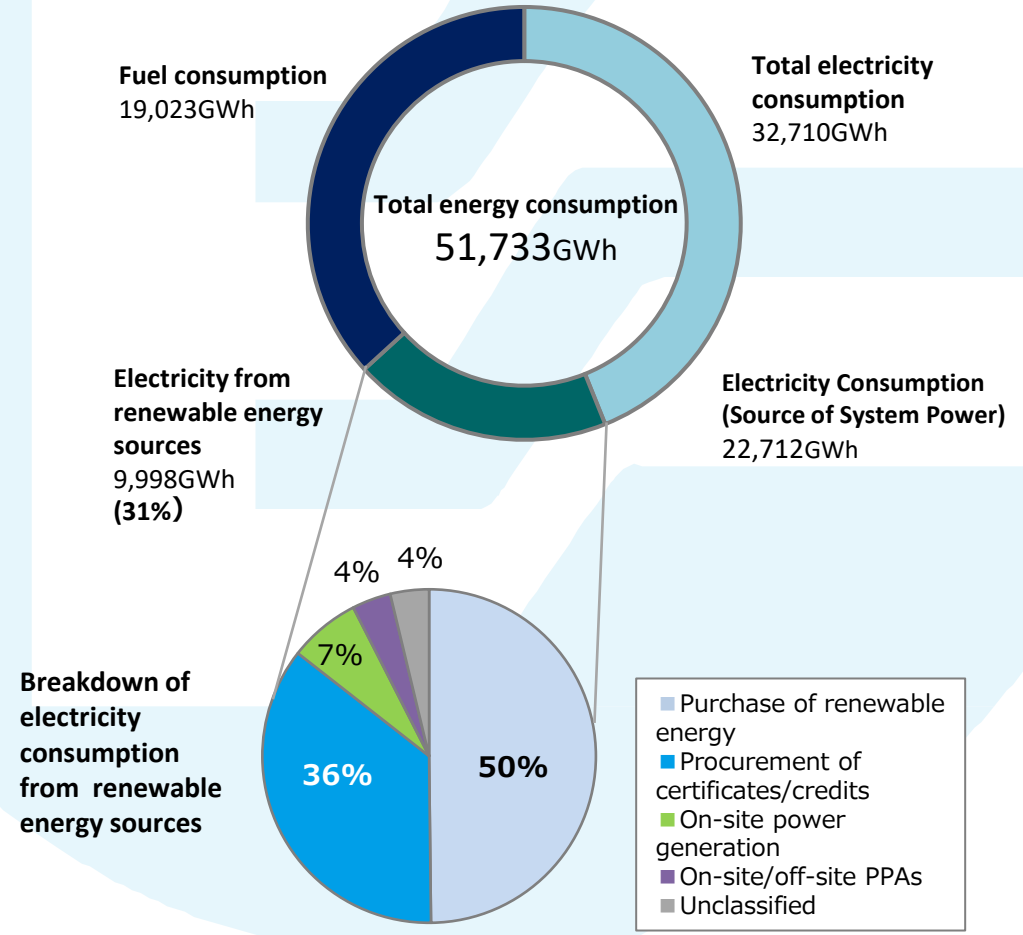
Total Scope 1 and 2 emissions: 1,474 million t-CO_2e

Within Scope 1 and 2, Scope 2 (primarily purchased electricity) accounts for about



■ Breakdown of Energy Consumption

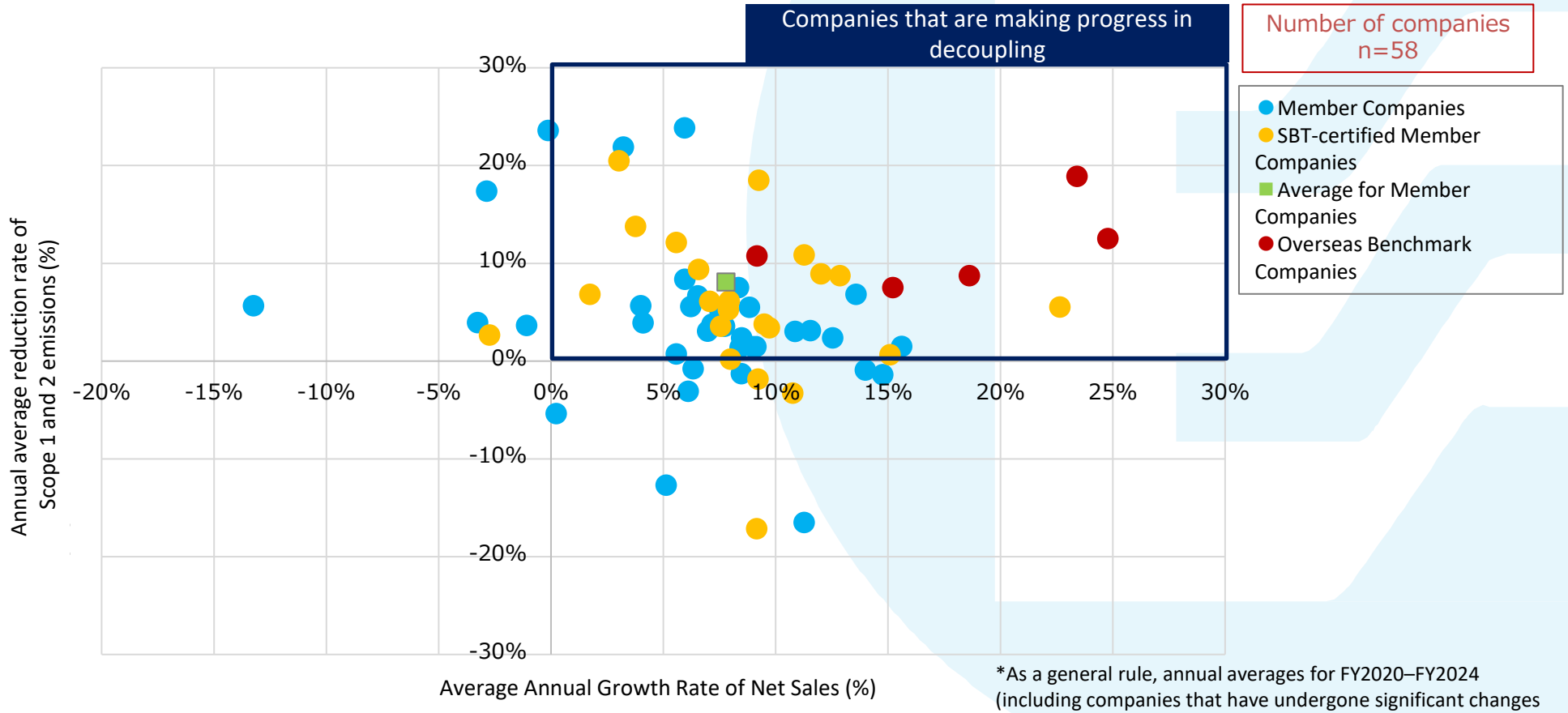
Electricity accounts for just under 60% of total energy consumption, and renewable electricity makes up around 30% of that.
Of the renewable energy used, “purchased renewable electricity” and “certificates and credits” together account for just under 90%.



Summary of Survey Results (Highlights) – Progress in Decoupling (1)

In terms of trends among member companies, approximately 70% of member companies (42 out of 58) are reducing their Scope 1 and 2 emissions while increasing annual average sales, indicating a trend toward “decoupling”.

Correlation between Scope 1 and 2 emissions-reduction rates and sales-growth rates



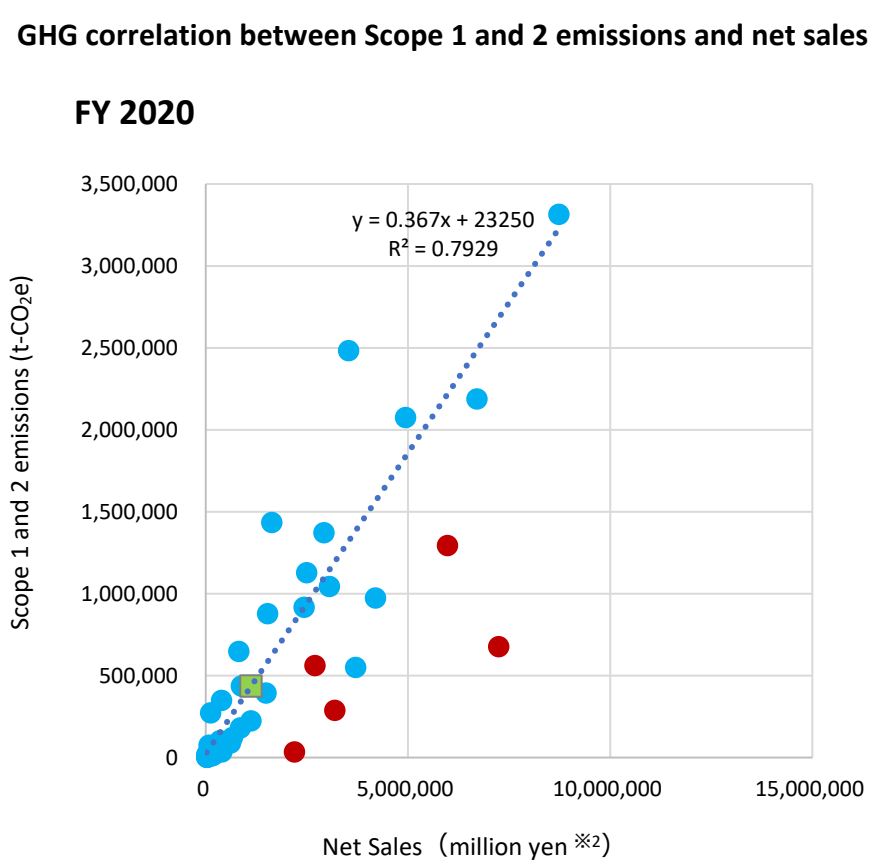
*As a general rule, annual averages for FY2020–FY2024 (including companies that have undergone significant changes in their business portfolio)

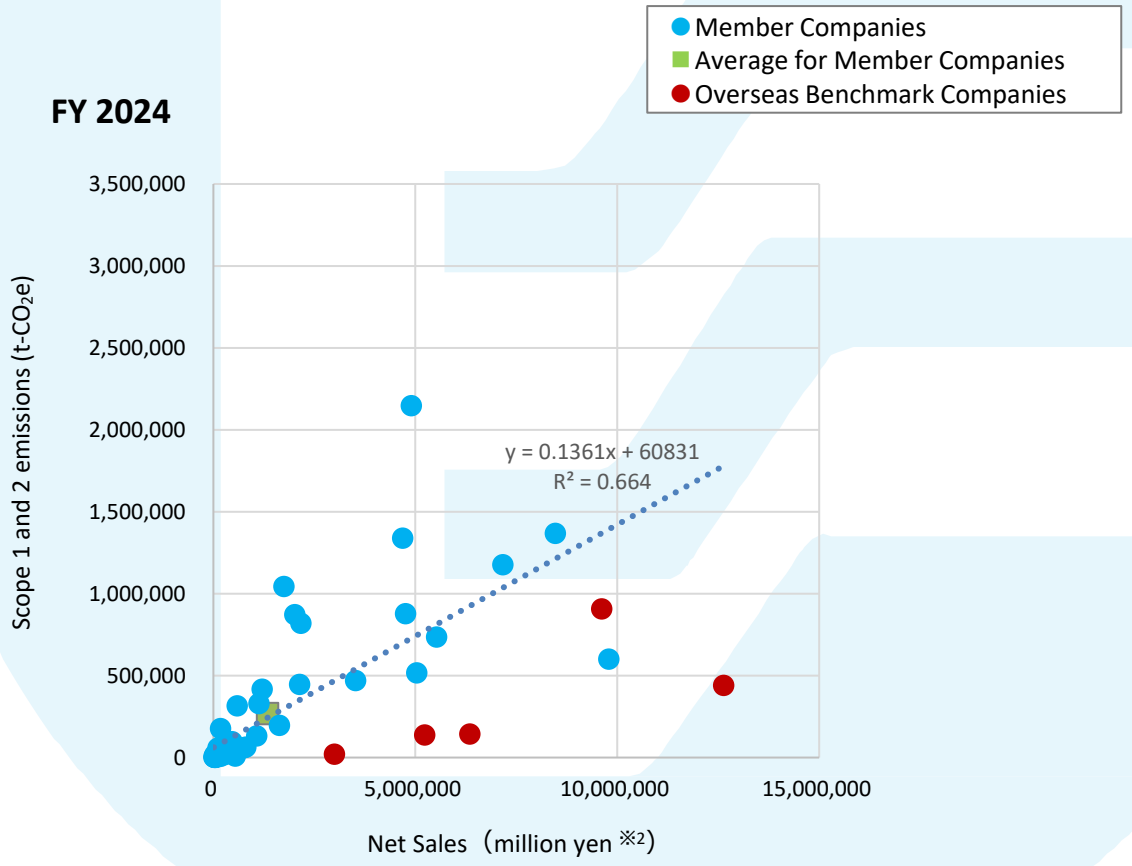
Summary of Survey Results (Highlights) – Progress in Decoupling (2)

In the correlation between Scope 1 and 2 emissions and sales, the slope of the trend line is shallower in FY2024 than in FY2020.

This indicates that companies are increasingly reducing emissions while growing sales — that is, moving toward the lower-right of the scatter plot.

GHG correlation between Scope 1 and 2 emissions and net sales





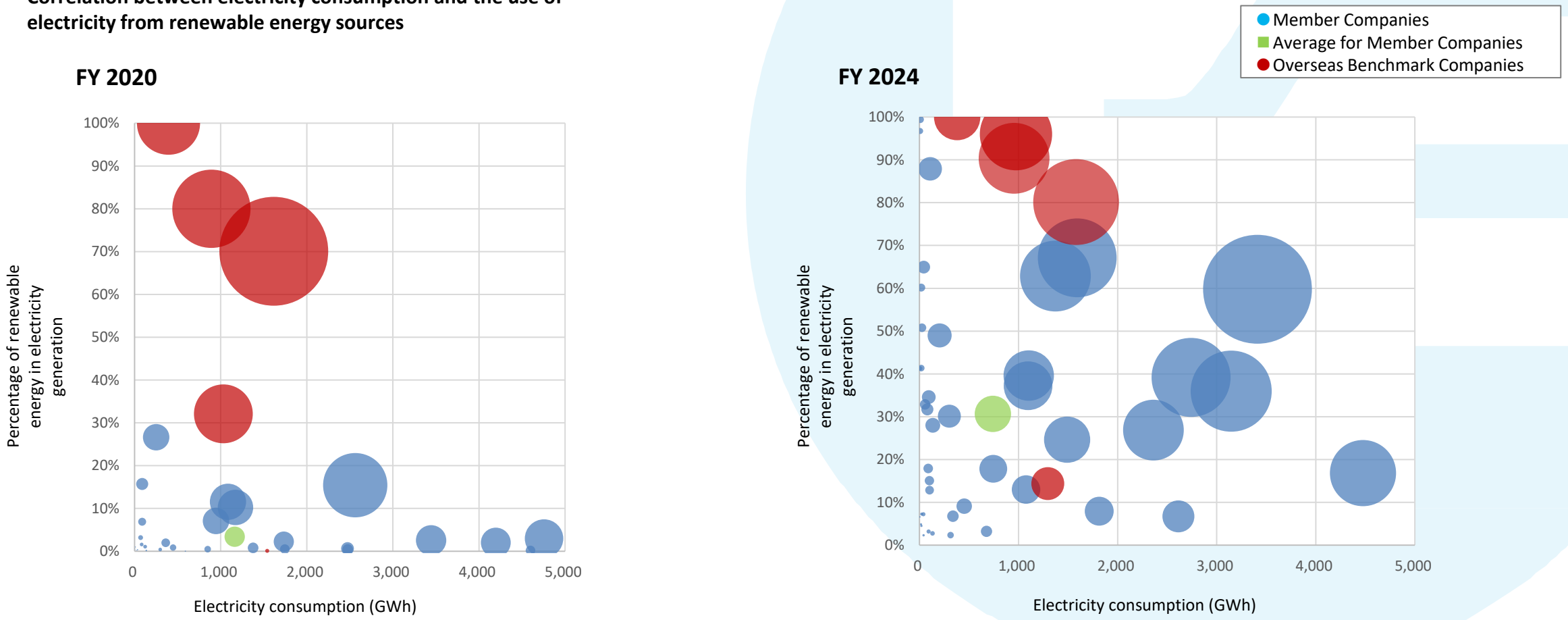
* 1 The trend line is calculated from member companies, excluding the two companies with the highest and lowest Scope 1 and 2 emissions. (The five companies outside Japan are not included.)
* 2 Sales for companies outside Japan have been converted to yen using the exchange rate at the end of the relevant fiscal year.

Summary of Survey Results (Highlights)
– Expansion of renewable energy adoption by various companies

Renewable energy adoption across electrical-industry companies has grown dramatically since FY2020, contributing to reductions in Scope 2 emissions.

Looking at renewable-energy share, some member companies with lower electricity consumption have already reached 100%, while some companies with higher electricity consumption show a low-to-mid share but, in absolute terms, a substantial volume of renewable electricity usage.

Correlation between electricity consumption and the use of electricity from renewable energy sources



*Circle size: Electricity consumption from renewable energy sources (GWh)

Policy Recommendations and Support for Member Companies

■ Policy recommendations (requests)

In light of broader social conditions and the progress shown by the industry and by individual companies in this GX Report, JEMA makes the following policy recommendations.

- Creating and expanding the market for GX products: To accelerate the deployment and adoption of GX products and solutions across society, strengthen measures to create demand and institutional incentives.
- Expand the domestic market in Japan for renewable electricity with demonstrable additionality and strengthen related policy measures.
- Establish formal institutional recognition of “avoided emissions” as a new value metric and integrate it into GX policy and financial frameworks.

■ Support for member companies

JEMA will provide the following support to member companies as they advance their GX efforts.

- Establishing an environment conducive to GX, by making policy recommendations and providing information.
- Deploying measures for companies whose work on Scope 3 quantification and disclosure is still in its early stages.
- Developing and providing guidance for member companies on quantifying “avoided emissions,” in line with the relevant international standard.
- Enhancing guidance and holding seminars to help companies respond to disclosure standards such as those of the ISSB and the SSBJ.
- Lobbying and submitting comments to international initiatives on sustainability disclosure and GHG quantification.

■ About the GX Report

- The GX Report serves both to track the state of GX in the electrical industry and at member companies, and to measure progress against JEMA’s Carbon Neutrality Roadmap. It will continue to be issued through 2030.
- JEMA’s Influence Map score has improved from “C–” to “C” (as of March 2026), in recognition of factors including the accuracy of the GX Report’s positions and policy recommendations on climate change, and the transparency it brings to member-company activities that influence climate policy.
- JEMA will continue to expand the content of the report in response to stakeholder expectations and broader social demands, covering areas such as supplier engagement for Scope 3 reductions and synergies with natural capital and resource circularity.

The Japan Electrical Manufacturers' Association

JEMA-GX Report 2025

Contact Us

The Japan Electrical Manufacturers' Association
Environmental Dept.
17-4, Ichiban-cho, Chiyoda-ku, Tokyo 102-0082
Telephone: +81-3-3556-5881
E-mail: env_public@jema net.or.jp
URL: https://www.jema-net.or.jp/English/index.html