# Climate Change

ENVIRONMENT

## Policy and Concept

### Social background

Countries are carrying out actions against climate change aiming to achieve their greenhouse gas reduction targets under the Paris Agreement, which sets the framework for climate change mitigation. The Japanese government pledged in October 2020 to achieve carbon neutrality by 2050. Moreover, at the climate change summit in April 2021, it announced a greenhouse gas reduction target of 46% below fiscal 2013 levels by fiscal 2030.

<Addressing TCFD Recommendations>
In May 2019, our Company declared our support for the recommendations of the Task Force on Climate-related Financial Disclosures or TCFD*.
Recognizing the size of the impacts that our Group business activities have on the global environment, we declare our support for the TCFD Recommendations to "analyze and disclose business risks and opportunities originating in climate change over the medium and long terms in order to reduce risks of financial market destabilization."
Refer to pages 44–52 of the Integrated Report for details about scenario analysis, etc.

* TCFD was established by the Financial Stability Board, which is an international agency that has central banks, financial regulatory authorities and other organizations from major countries as members. In total, 4,925 organizations around the world, including financial institutions, businesses and governments, declared their support for the TCFD Recommendations as of November 24, 2023.

### Targets and efforts to achieve them

The Kansai Electric Power Group is committed to carbon neutrality by 2050 throughout the entirety of our business activities, including the power generation business, as declared in the Zero Carbon Vision 2050 and the Zero Carbon Roadmap, which provides a pathway to zero carbon.
Specific measures to reduce $CO_2$ emissions include transforming renewable energy into the main power source, leveraging nuclear power to the fullest, achieving zero carbon in thermal power generation, using zero-carbon hydrogen, and optimizing power grids to support the measures for zero-carbon society. At the same time, we will provide various solutions (electrification, storage batteries, etc.) to help customers and society reduce their $CO_2$ emissions.
The Zero Carbon Roadmap, meanwhile, shows the path of our efforts to achieve our goals.
Furthermore, as a member of the Electric Power Council for a Low Carbon Society (ELCS), which was established by a consortium of electric companies including the Company, we are contributing to the ELCS initiatives as well by working on these Group endeavors.

## Goals

**Advancement of efforts to reduce GHG emissions**
- GHG emissions from our business activities (Scope 1, 2) FY 2025: -55%*1 FY 2030: -70%*1
- GHG emissions through the entire supply chain (Scope 1, 2, 3) FY 2030: -50%*1

**Continuation of safe and stable operation of nuclear power plants*2**
- Operation of nuclear power plants with top priority placed on safety

**Further development and utilization of renewable energy sources**
- Achieve 5 GW scale of new development and 9 GW scale of cumulative capacity in Japan by 2040

**Maintain and improve thermal efficiency of thermal power plants*2**
- Achieve benchmark indicators*3 (A: 1.00, B: 44.3%)

**Introduction of equipment for GHG emission reduction**
- Transformer with vegetable oil
- $SF_6$ alternative gas appliance

**Efforts to introduce renewable energy and DER utilization in the grid network**
- Efforts to introduce renewable energy and DER utilization in the grid network

**Controlling $SF_6$ emissions (calendar year basis) (gas recovery rate upon inspection/removal of equipment)**
- 97% (upon inspection)
- 99% (upon removal)

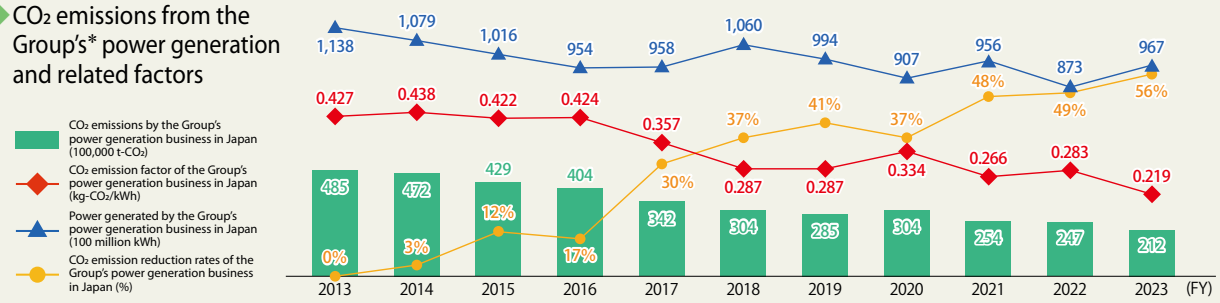
*1 Compared to FY 2013 *2 Targets and results apply only to the Company
*3 Indicators based on the benchmark system of the Act on Rationalizing Energy Use and Shifting to Non-fossil Energy

# Efforts

## Our Group's $CO_2$ emissions associated with power generation in Japan

The Group's $CO_2$ emissions from its domestic power generation business amounted to 21.2 million tonnes in fiscal 2023. Emissions are down 56% from base-year (fiscal 2013) levels, with the 50% reduction target for fiscal 2025 achieved two years ahead of schedule. As a leading company in zero-carbon energy, we will continue to ensure safe, stable operation of our nuclear power plants, developing and introducing renewable energy.

### $CO_2$ emissions from the Group's* power generation and related factors

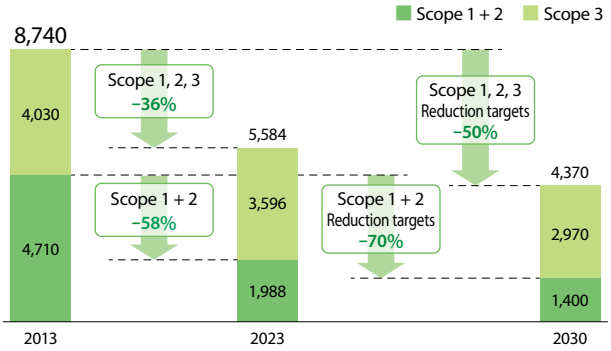



*The figures representing the Group's power generation in Japan are calculated according to the ratio of capital contribution (Figures from fiscal 2022 onward exclude power generation by companies in which we have a stake of less than 50%)

We are making steady progress in reducing GHG emissions: Scope 1 and 2 emissions in fiscal 2023 were down 58% from fiscal 2013 levels to 19.88 million t-$CO_2$, and Scope 1, 2, and 3 emissions were also down 36% from fiscal 2013 levels to 55.84 million t-$CO_2$.

| | | Targets | Results |
|---|---|---|---|
| GHG emissions* | Scope 1, 2 (compared to FY 2013) | 55% reduction by FY 2025 | 58% reduction in FY 2023 |
| | | 70% reduction by FY 2030 | |
| | Scope 1, 2, 3 (compared to FY 2013) | 50% reduction by FY 2030 | 36% reduction in FY 2023 |

*The Company, Kansai Transmission and Distribution, Inc., Kanden Energy Solution Co., Inc., Kanden Realty & Development Co., Ltd. and OPTAGE Inc. are included in the calculation.




## Continuing safe and stable operation of nuclear power plants

As a power source that emits no $CO_2$, nuclear power generation is key to tackling global warming. With the understanding of residents from relevant local communities, we ensure safe and stable operation of restarted plants. Dealing appropriately with investigations conducted by the Nuclear Regulation Authority, we will continuously promote voluntary safety measures that go beyond regulatory requirements.

## Higher efficiency for thermal power generation, and achieving zero carbon

A facility renovation plan is underway at the Nanko Power Station, our oldest LNG thermal power plant, with over 30 years of operation. A combined cycle unit will be installed to stabilize electricity supplies and switch to decarbonized energy.
This renovation is expected to increase power generation efficiency by about 40% and reduce the $CO_2$ emission factor by about 30%. Furthermore, aiming to introduce CCS technology and hydrogen co-firing power generation in the late 2030s, we contribute to creating a zero-carbon society.

Nanko Power Station

### Nanko Power Station Decarbonization roadmap

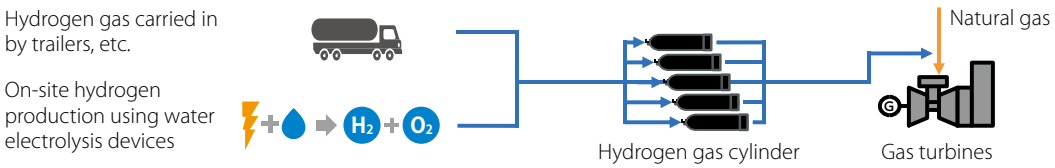
| Power source | Decarbonization roadmap* | | | |
|---|---|---|---|---|
| | 2020s | 2030s | 2040s | 2050s |
| Nanko Power Station Unit 1 | 2026–2029 Renovation | 2029– LNG exclusive firing | Late 2030s: 20–50% hydrogen co-firing<br>Late 2030s: Full recovery by CCS | Mid 2040s: Hydrogen exclusive firing |
| Nanko Power Station Unit 2 | 2026–2030 Renovation | 2030– LNG exclusive firing<br>2030– LNG exclusive firing | Late 2030s: 20–50% hydrogen co-firing<br>Mid 2040s: Full recovery by CCS | Mid 2040s: Hydrogen exclusive firing |
| Nanko Power Station Unit 3 | 2026–2030 Renovation | 2030– LNG exclusive firing<br>2030– LNG exclusive firing | Late 2030s: 20–50% hydrogen co-firing<br>Mid 2040s: Full recovery by CCS | Mid 2040s: Hydrogen exclusive firing |

* As for each power source's decarbonization roadmap, the upper line refers to the hydrogen scenario and the lower refers to the CCS scenario.

## ● Himeji No. 2 Power Station acquiring knowledge on the introduction of hydrogen power generation

We have been working on feasibility studies since the adoption of the Green Innovation Fund Project*1—Large-scale Hydrogen Supply Chain Development, which was offered by NEDO*2 in August 2021. While designing and manufacturing of relevant facilities have been underway since fiscal 2023, we plan to conduct demonstrations of hydrogen co-firing power generation in fiscal 2025, using gas turbines installed at the Himeji No. 2 Power Station. Our objective is to establish operational techniques that can contribute to commercializing hydrogen power generation.

### Demonstration system process flow




*1 The 2 trillion yen Green Innovation Fund, set up by the government for NEDO, aims to encourage innovation among companies to achieve carbon neutrality by 2050, subsidizing companies for up to 10 years.
*2 New Energy and Industrial Technology Development Organization

## ● Maizuru Power Station and Himeji No. 2 Power Station: $CO_2$ capture technology research, and constructing and demonstrating $CO_2$ capture pilot facilities

We are supporting NEDO's project at our Maizuru Power Station, R&D of $CO_2$ separation/capture technologies*3. Following the commissioning run performed until the first half of fiscal 2023, the demonstration started at testing facilities in January 2024. The solid sorbent system is potentially a great deal more energy efficient than its conventional counterparts in capturing $CO_2$ and is therefore considered promising next-generation capture technology.
Pilot-scale facilities for the demonstration of a liquid amine-type $CO_2$ capture system were jointly constructed with Mitsubishi Heavy Industries, Ltd. at the Himeji No. 2 Power Station to study $CO_2$ capture technology for the separation and recovery of $CO_2$ from the exhaust gas. The demonstration will start in fiscal 2025 to develop higher-performance, energy-efficient $CO_2$ capture processes and absorbents compatible that can be adapted to the currently mainstream combined cycle system in thermal power generation facilities.

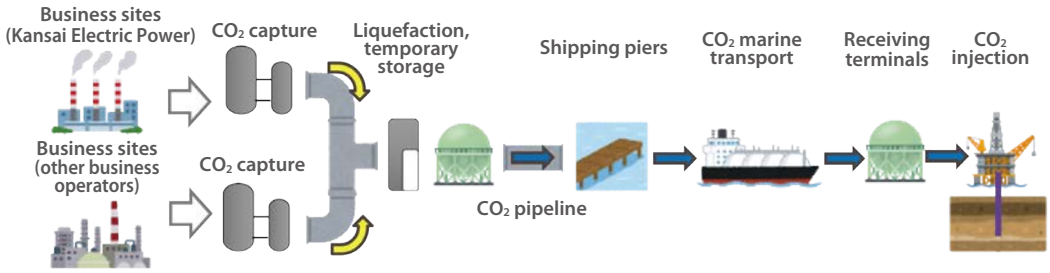
*3 Development of carbon recycling/next-generation thermal power generation technology / Research and development of $CO_2$ capture technology / Research on application of advanced $CO_2$ solid sorbents to treatment of coal-fired emissions

## ● Establishment of a CCS value chain in the Sakai-Semboku area: Conducting joint studies with other business operators in the Sakai-Semboku area

We are conducting studies toward the establishment of a CCS value chain that encompasses separation, capture, transportation, and storage of $CO_2$. In the Sakai-Semboku area, engineering design and economic viability are being studied with Cosmo Energy Holdings Co., Ltd. and a project in which we participate was nominated as a candidate for the JOGMEC*4 2024 Business Feasibility Study on Japanese Advanced CCS Project.
We will also conduct studies with a view to future cooperation with other business operators that have $CO_2$ emission sources in the Sakai-Semboku area.

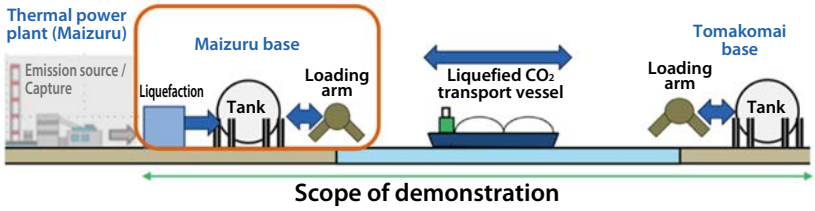
*4 JOGMEC: Japan Organization for Metals and Energy Security

### ◆ Conceptual diagram of $CO_2$ capture, storage, and transportation

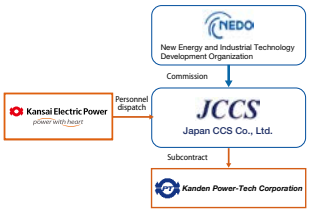



## ● Technological development and demonstration of $CO_2$ marine transport at the Maizuru Power Station

We participate and cooperate in the NEDO project, R&D and Demonstration of $CO_2$ Ship Transportation Project*5 at the Maizuru Power Station where facilities designed for the project (for liquefaction, storage, and shipping of $CO_2$) and a demonstration vessel are used to ① develop technology for integrated marine transport of liquefied $CO_2$, ② demonstrate liquefied $CO_2$ marine transport, and ③ study the feasibility of $CO_2$ marine transport for CCUS. The demonstration is scheduled to start from fiscal 2024.




Project scope




Project system in which the Group is involved

*5 CCUS R&D and demonstration project / Large-scale CCUS demonstration in Tomakomai / Demonstration of $CO_2$ transport / Technological development and demonstration of $CO_2$ marine transport

## Encouraging efficient energy use

With the goals of realizing energy conservation, cost cutting and $CO_2$ reduction for our customers and society, we are offering high-efficiency systems that utilize renewable energy sources and heat pump technologies, as well as proposing effective operation procedures. We are also providing total support for energy management to customers and other members of society and undertaking activities that serve these purposes, including the services for visualizing energy use.
The solution offered to residential customers is "total electric conversion," which, through efficient use of energy, can make our lives more comfortable and convenient. Specific products and services include an energy-efficient hot water supply system (EcoCute), safe, comfortable and convenient electric appliances (IH cooking heaters, etc.), and power consumption visualization (Hapi e-Miruden).
The internet-based service Hapi e-Miruden monitors the amount and rate of electricity and gas consumed. By entering data on utility costs the system can automatically indicate the total household $CO_2$ emissions while providing useful information, such as tips on energy conservation according to registered equipment or power consumption patterns.
For corporate customers, we provide optimized energy systems and operational methods that meet diversified needs for efficient energy use, etc. These include various solution services such as SenaSon (Smart energy aggregate Solution) and Omaka-Save-Air, designed to provide comprehensive support for energy management. We also work with other group companies to provide a range of services such as energy conservation diagnoses and energy management support appropriate to the customer's facility usage patterns. We remain committed to helping our customers minimize their energy consumption, achieve cost savings, and reduce their $CO_2$ emissions.

## Greenhouse gas emission reduction initiatives

Kansai Transmission and Distribution, Inc. is committed to reducing greenhouse gas emissions by installing transformers with vegetable oil and $SF_6$ alternative gas appliances as part of its efforts toward zero-carbon emissions. As vegetable oil for transformer insulation absorbs $CO_2$ during cultivation of raw materials, it reduces $CO_2$ emissions in its life cycle. We are also utilizing eco-friendly dry air as an alternative to $SF_6$, the global warming potential (GWP) of which is about 23,500 times greater than that of $CO_2$.

## Group companies' renewable energy programs

Kanden Energy Solution Co., Inc. leverages its solar and wind power plants to decarbonize energy systems. Moreover, as a comprehensive energy business operator, we are promoting distributed renewable energy sources, storage batteries, and energy conservation, particularly by upgrading and standardizing energy management systems, thereby helping customers and society achieve zero-carbon emissions.

### Major achievements

#### Solar power generation

Arida Solar Power Station (Arida City, Wakayama Prefecture)

This station is the Group's largest solar power station with about 150,000 solar panels installed across a large area.

| | |
|---|---|
| Power output | 29,700 kW |
| Generated energy | Approx. 31 GWh/annum (Equivalent to the annual consumption by 10,000 standard households) |
| $CO_2$ emission reduction | Approx. 16,000 tonnes/annum* |
| Total site area | Approx. 45 ha |
| Commencement | October 2015 |

#### Wind power generation

Awaji Wind Power Station (Awaji City, Hyogo Prefecture)

While harmonizing with the community, this station operates by utilizing the wind blowing through the hills in northern Awaji City.

| | |
|---|---|
| Power output | 12,000 kW (6 turbines @2,000 kW) |
| Generated energy | Approx. 20 GWh/annum (Equivalent to the annual consumption by 6,500 standard households) |
| $CO_2$ emission reduction | Approx. 7,000 tonnes/annum* |
| Commencement | December 2012 |

* The reduction in $CO_2$ emissions was a figure calculated upon commencement of operations.

## Performance data

### Greenhouse gas (GHG) emissions

| | | Unit | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|---|---|
| Direct greenhouse gas emissions (Scope 1)*1*2 | | 10,000 t-$CO_2$eq | 2,377.1 | 2,304.3 | 1,987.5 |
| | Energy-derived $CO_2$ | | 2,850.3 | 2,370.4 | 1,977.7 |
| | Vehicle-emitted $CO_2$ | | 0.6 | 0.6 | 0.5 |
| | $N_2O$ | | 2.3 | 2.3 | 5.3 |
| | $SF_6$ | | 4.0 | 3.8 | 3.9 |
| Indirect greenhouse gas emissions (Scope 2)*1*3 | | | 0.5 | 0.5 | 0.2 |
| Other indirect greenhouse gas emissions (Scope 3)*1*4 | | | 1,924.2 | 3,126.1 | 3,236.6 |
| | Category 1*5 | | 248.5<br>(143.4) | 255.0 | 147.6 |
| | Category 2*6 | | 104.9<br>(99.9) | 101.7 | 90.0 |
| | Category 3*7 | | 1,147.6<br>(1,151.2) | 2,353.5 | 2,544.4 |
| | Category 4*8 | | 0.0 | 0.0 | 0.0 |
| | Category 5*9 | | 1.1 | 1.0 | 0.9 |
| | Category 6*10 | | 0.2 | 0.2 | 0.2 |
| | Category 7*11 | | 0.6 | 0.6 | 0.6 |
| | Category 8*12 | | — | — | — |
| | Category 9*12 | | — | — | — |
| | Category 10*12 | | — | — | — |
| | Category 11*13 | | 421.4<br>(347.5) | 414.1 | 452.8 |
| | Category 12*12 | | — | — | — |
| | Category 13*12 | | — | — | — |
| | Category 14*12 | | — | — | — |
| | Category 15*12 | | — | — | — |

*1 The amount of greenhouse gases emitted in our entire supply chain is calculated in accordance with the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (ver. 2.6) issued by the Ministry of the Environment and the Ministry of Economy, Trade and Industry. Emission intensity is calculated based on the Emission Intensity Database for Calculation of Greenhouse Gas Emissions Throughout the Supply Chain (ver. 3.4).
*2 Direct GHG emissions (energy-derived $CO_2$, $SF_6$* and $N_2O$) reported by electric companies in line with the Act on Promotion of Global Warming Countermeasures along with $CO_2$ emissions from transportation fuel use, which are excluded from the reporting obligations. *Based on calendar year
*3 Of emissions that should be reported by electric operators in line with the Act on Promotion of Global Warming Countermeasures, indirect $CO_2$ emissions include emissions from electricity and heat purchased from other companies. Emission factors adjusted for each electric operator are used for electricity. The emission intensity of each supplier is used for heat from FY 2023.
*4 Indirect emissions not covered by Scope 1 or Scope 2 (emissions from other corporations related to the business activities of the company concerned)
*5 Σ {(amount data for products or services purchased)* × (emission intensity)}
*The amount of gas purchased for the gas business is included in Category 1 for FY 2021 and 2022 and readjusted with fuel and energy activities for FY 2023 for inclusion in Category 3. Nuclear power-related items (contributions to spent fuel reprocessing, etc.), however, are excluded from calculation as rational calculation is not possible without appropriate emission intensity available at present.
*6 Σ {(capital expenditure)* × (emission intensity)} *Including intangible fixed assets (software)
*7 Σ {(fuel and heat consumption) × (emission intensity)}*1 + Σ {(electricity purchased from other companies) × (emission intensity)}*2 + Σ {(electricity sold to other companies) × (individual electric operator emission factor)}*3
*1: Gas purchased for the gas business is reclassified into Category 3 from FY 2023 as fuel and an energy activity. The emission intensity is based on IDEA (ver. 3.4).
*2: $CO_2$ emissions from mining and transportation of electricity purchased from other companies
*3: $CO_2$ emissions from production of electricity sold to other companies
*8 Σ {(fuel consumption by trucks, materials, and equipment) × (emission intensity)}
*9 $CO_2$ emissions from ① industrial waste disposal (landfill and recycling) and ② industrial waste transportation*
*According to the Act on Rationalizing Energy Use and Shifting to Non-fossil Energy, $CO_2$ emissions from transportation as a consignor / outsourced transportation. Those from self-transportation are categorized as Scope 1 emissions.
Σ {① (waste disposal amount, excluding valuable resources) × (emission intensity by waste type and disposal method)} + ② Σ {(fuel consumption) × (emission intensity)}
*10 Σ {(number of employees) × (emission intensity)}
*11 Σ {(number of employees) × (number of operating days) × (emission intensity)}
Calculated by work pattern and city classification
*12 None applicable due to the nature of the business
*13 Σ {(total gas sales) × (emission intensity)}

## • GHG emissions, including values from group companies*1

| | Unit | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|---|
| Direct greenhouse gas emissions (Scope 1)*2 | 10,000 t-$CO_2$eq | — | 2,304.8 | 1,987.8 |
| Indirect greenhouse gas emissions (Scope 2)*3 | | — | 1.5 | 0.4 |
| Other indirect greenhouse gas emissions (Scope 3)*4 | | — | 3,522.6 | 3,596.2 |
| Category 1*5 | | — | 296.8 | 192.8 |
| Category 2*6 | | — | 129.1 | 127.2 |
| Category 3*7 | | — | 2,646.0 | 2,766.5 |
| Category 4*8 | | — | 0.0 | 2.2 |
| Category 5*9 | | — | 1.0 | 0.9 |
| Category 6*10 | | — | 0.3 | 0.3 |
| Category 7*11 | | — | 0.7 | 0.7 |
| Category 8*15 | | — | — | — |
| Category 9*15 | | — | — | — |
| Category 10*15 | | — | — | — |
| Category 11*12 | | — | 448.4 | 490.9 |
| Category 12*13 | | — | 0.1 | 0.1 |
| Category 13*14 | | — | 0.3 | 14.5 |
| Category 14*15 | | — | — | — |
| Category 15*15 | | — | — | — |

*1 The amount of greenhouse gases emitted in our entire supply chain is calculated in accordance with the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (ver. 2.6) issued by the Ministry of the Environment and the Ministry of Economy, Trade and Industry. Emission intensity is calculated based on the Emission Intensity Database for Calculation of Greenhouse Gas Emissions Throughout the Supply Chain (ver. 3.4). Those applicable include the Company and Kansai Transmission and Distribution, Inc. for FY 2021, with Kanden Energy Solution Co., Inc., Kanden Realty & Development Co., Ltd. and OPTAGE Inc. included for FY 2022 onward.
*2 Direct GHG emissions (energy-derived $CO_2$, $SF_6$* and $N_2O$) reported by electric companies in line with the Act on Promotion of Global Warming Countermeasures along with $CO_2$ emissions from transportation fuel use, which are excluded from the reporting obligations. *Based on calendar year
*3 Of emissions that should be reported by electric operators in line with the Act on Promotion of Global Warming Countermeasures, indirect $CO_2$ emissions include emissions from electricity and heat purchased from other companies.
*4 Indirect emissions not covered by Scope 1 or Scope 2 (emissions from other corporations related to the business activities of the company concerned)
*5 Σ {(amount data for products or services purchased)* × (emission intensity)}
*The amount of gas purchased for the gas business is included in Category 1 for FY 2021 and 2022 and readjusted with fuel and energy activities for FY 2023 for inclusion in Category 3. Nuclear power-related items (contributions to spent fuel reprocessing, etc.), however, are excluded from calculation as rational calculation is not possible without appropriate emission intensity available at present.
*6 Σ {(capital expenditure)* × (emission intensity)} *Including intangible fixed assets (software)
*7 Σ {(fuel and heat consumption) × (emission intensity)}*1 + Σ {(electricity purchased from other companies) × (emission intensity)}*2 + Σ {(electricity sold to other companies) × (individual electric operator emission factor)}*3
*1: Gas purchased for the gas business is reclassified into Category 3 from FY 2023 as fuel and an energy activity. The emission intensity is based on IDEA (ver. 3.4).
*2: $CO_2$ emissions from mining and transportation of electricity purchased from other companies
*3: $CO_2$ emissions from production of electricity sold to other companies
*8 Σ {(fuel consumption by trucks, materials, and equipment) × (emission intensity)} $CO_2$ emissions from sales of LNG transported by Kanden Energy Solution trucking is included from FY 2023, calculated according to: Σ {(haul distance) ÷ (gas mileage) × (unit calorific value) × (emission factor) × 44/12}
*9 $CO_2$ emissions from ① industrial waste disposal (landfill and recycling) and ② industrial waste transportation*
*According to the Act on Rationalizing Energy Use and Shifting to Non-fossil Energy, $CO_2$ emissions from transportation as a consignor / outsourced transportation. Those from self-transportation are categorized as Scope 1 emissions.
Σ {① (waste disposal amount, excluding valuable resources) × (emission intensity by waste type and disposal method)} + ② Σ {(fuel consumption) × (emission intensity)}
*10 Σ{(number of employees) × (emission intensity)}
*11 Σ {(number of employees) × (number of operating days) × (emission intensity)}
Calculated by work pattern and city classification
*12 $CO_2$ emissions from ① gas sales, ② real estate sales and ③ communication services sales
① Σ {(total gas sales) × (emission intensity)} + ② Σ {(amount of real estate sold (number of residences or total floor area)) × (emission intensity) × (remaining useful legal life)} + ③ Σ {(number of openings in the year concerned) × (service life emission period) × (electricity consumption per day of product use) × (emission intensity)}
*13 $CO_2$ emissions from ① real estate sales and ② communication services sales
① Σ {(amount of real estate sales ($m^2$)) × (emission intensity)} + ② Σ {(product sales weight)* × (emission intensity)} *Products other than sold out products are not included in calculation
*14 Σ {(energy consumption) × (emission intensity)}
Newly added companies for calculation included for FY 2022 are Kanden Realty & Development Co., Ltd. and OPTAGE Inc., with Kanden Energy Solution Co., Inc. also included for FY 2023. $CO_2$ emissions from leased real estate, information communication equipment, and energy-related facilities used by customers are included.
*15 None applicable due to the nature of the business

## • Group's $CO_2$ emissions and their factors associated with power generation in Japan

| | Unit | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|---|
| $CO_2$ emissions*1 | 10,000 t-$CO_2$ | 2,540 | 2,470 | 2,120 |
| $CO_2$ emission factor (at the generation end) (per power generation output)*2 | kg-$CO_2$/kWh | 0.266 | 0.283 | 0.219 |

*1 $CO_2$ emissions refer to those produced by fuel combustion at the Group's thermal power plants in Japan.
*2 $CO_2$ emission factor (at the generation end) corresponds $CO_2$ emissions per kWh of the Group's domestic power generation business.
• $CO_2$ emission factor (at the generation end) = $CO_2$ emissions of the Group's domestic power generation business ÷ amount of power generated

## • $CO_2$ emissions and retail emission factors of the Company

| | Unit | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|---|
| $CO_2$ emissions (before adjustment)*1 | 10,000 t-$CO_2$ | 3,006 | 4,012 | 3,733 |
| $CO_2$ emissions (after adjustment)*2 | | 3,099 | 4,689 | 4,704 |
| $CO_2$ emission factor (energy used) (before adjustment) (per amount of electric power sold)*3 | kg-$CO_2$/kWh | 0.299 | 0.360 | 0.318 |
| $CO_2$ emission factor (energy used) (after adjustment) (per amount of electric power sold)*3 | | 0.308 | 0.420 | 0.401 |

∗1 $CO_2$ emissions refer to those produced by fuel combustion at the thermal power plants and include those for power purchased from other corporations.
∗2 Adjusted $CO_2$ emissions refer to values adjusted according to FIT, non-FIT non-fossil fuel power source procurement, and certified emission reduction in Japan and abroad.
∗3 $CO_2$ emission factor (energy used) corresponds $CO_2$ emissions per kWh of the Kansai Electric Power Co., Inc. electricity used.
• $CO_2$ emission factor (energy used) (before adjustment) = $CO_2$ emissions (before adjustment) ÷ amount of electric power sold
• $CO_2$ emission factor (energy used) (after adjustment) = $CO_2$ emissions (after adjustment) ÷ amount of electric power sold
∗1,2,3 The results for FY 2023 are provisional; the actual $CO_2$ emission factor will be officially announced by the government in accordance with the Law Concerning the Promotion of the Measures to Cope with Global Warming, etc.
Note: Figures representing the Company only

## • Greenhouse gases other than $CO_2$

| | Unit | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|---|
| $N_2O$ (dinitrogen oxide)*1 | 10,000 t-$CO_2$eq | 2.3 | 2.1 | 5.3 |
| $SF_6$ (sulfur hexafluoride)*1*2 | | 3.9 | 4.0 | 3.9 |

∗1 The results were first made public in fiscal 2010. $CO_2$ equivalent
∗2 $SF_6$ emissions are based on the calendar year.

## • Utilization rate of nuclear power facilities and net thermal efficiency of thermal power facilities

| | Unit | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|---|
| Utilization rate of nuclear power facilities*1 | % | 61.0 | 48.5 | 76.6 |
| Net thermal efficiency of thermal power facilities*2 | | 48.2 | 48.1 | 49.4 |

∗1 Utilization rate of nuclear power facilities = amount of power generated ÷ (permitted output × calendar hours) × 100
∗2 Net thermal efficiency of thermal power facilities = (amount of power transmitted × quantity of heat per kWh) ÷ total amount of input heat (lowest heat value standard) × 100
Note: Figures representing the Company only

## • Energy consumption

| | | Unit | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|---|---|
| Total energy consumption*1 | | 1,000 GJ | 380,842 | 370,022 | 337,005 |
| Thermal fuel consumption*2 | Coal | 1,000 t | 3,597 | 3,294 | 3,453 |
| | Heavy oil | 1,000 kL | 683 | 822 | 115 |
| | Crude oil | | 176 | 183 | 46 |
| | LNG | 1,000 t | 4,319 | 4,150 | 3,801 |
| | Wood pellets | 1,000 kL (heavy oil equivalent) | 3 | 2 | 0 |
| | Other | | 181 | 197 | 4 |
| Fuels for nuclear power generation (weight of pre-irradiation uranium)*2 | | tU | 30 | 114 | 137 |

∗1 These figures are reported to the government in accordance with the Act on Rationalizing Energy Use and Shifting to Non-fossil Energy. (Fossil fuel consumption, purchased electricity, and purchased heat)
∗2 Figures representing the Company only