

# Environment

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# Environment

- ◆ Environmental Management
- ◆ Environmentally Friendly Business
- ◆ Climate Change
- ◆ Resource Circulation
- ◆ Pollution Prevention
- ◆ Efforts Toward Conserving Biodiversity
- ◆ Water Resources

# Environmental Management



ENVIRONMENT



## Policy and Concept

### ● Environmental policy

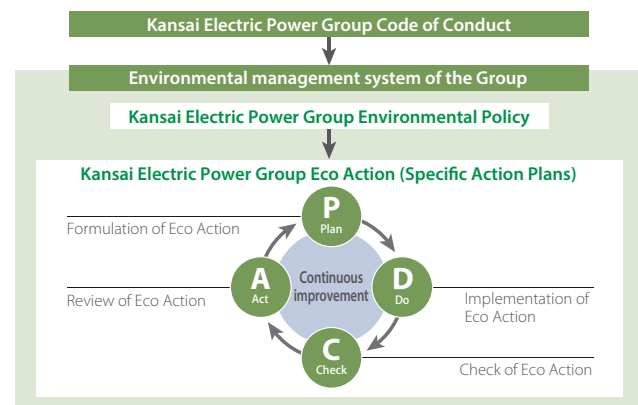
As a responsible energy business deeply involved with the environment, we recognize the importance of addressing various environmental issues, such as climate change, resource recycling promotion and local environmental conservation. We are also committed to reducing the environmental burden and risks related to our business activities in line with the Kansai Electric Power Group Code of Conduct, which aims to proactively contribute to building a better environment and a sustainable society by providing environmentally friendly products and services. Moreover, in line with our conduct standards for individuals, we fully recognize the significance of environmental conservation, pay due consideration to the environmental impact of our business operations and support environmentally friendly practices with an emphasis on resource and energy conservation.

The Kansai Electric Power Group Environmental Policy sets the direction of our medium- to long-term environmental management plans, featuring seven approaches to address climate change, each of which is being promoted. The Environmental Policy is subject to review and examination by the Sustainability Promotion Board as necessary, and the results of which are communicated to our employees as well as to employees of group companies.

### ● Environmental management system

Our Group has an environmental management system in place, incorporating the ISO 14001 guidelines, in order to promote measures for building a better environment and manage environmental risks. Our environmental management system, supervised by top management, is being upgraded through a continuous PDCA cycle—i.e., development of environmental policies; development, implementation, check and review of our Group's Eco Action (an action plan for environmental management); and management review by the Sustainability Promotion Board. Eco Action covers both our business activities and office activities while the latter concerns group-wide efforts to conserve resources and save energy.

### ◆ Environmental management system of the Kansai Electric Power Group (PDCA cycle)



### ● Kansai Electric Power Group Environmental Policy

#### 1. Adhering to environmental laws, regulations and related rules

At the Kansai Electric Power Group, we adhere to laws, regulations and other rules related to the environment.

#### 2. Responding to climate change

At the Kansai Electric Power Group, recognizing climate change as a key business challenge, we actively work to reduce greenhouse gas emissions. We pursue the goal of carbon neutrality throughout the entirety of our business activities and support our customers and society in achieving decarbonization by 2050.

In addition, we also work to adapt in preparation for the harmful impacts of climate change.

#### 3. Promoting resource circulation

At the Kansai Electric Power Group, recognizing that natural resources are limited, we advance efforts toward resource circulation in society as a whole. Our efforts include reducing natural resource consumption in our business activities, proactively promoting 3R (reduce, reuse, recycle) practices, and providing products and services that contribute to resource circulation.

#### 4. Protecting local community environments

At the Kansai Electric Power Group, we seek to prevent environmental pollution while working to strictly manage and reduce toxic chemicals in our business activities in order to promote the environmental protection of local communities.

#### 5. Conserving biodiversity

At the Kansai Electric Power Group, we recognize the importance of biodiversity. We properly assess, analyze and evaluate the impacts of our business activities and work to preserve biodiversity.

#### 6. Promoting environmental communication

At the Kansai Electric Power Group, we work proactively to raise environmental awareness and disclose information related to the environment.

#### 7. Continuously improving our environmental management systems

At the Kansai Electric Power Group, we seek to continuously improve our environmental management systems in order to increase our environmental performance.



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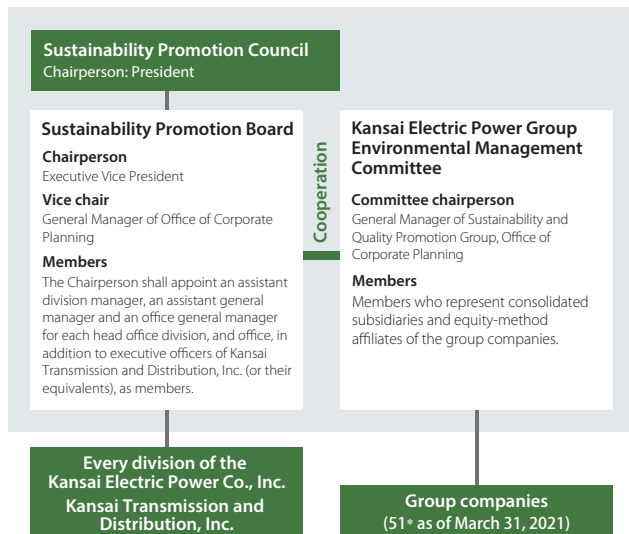


## System

Environmental management efforts are ongoing, with the President (as Chief Environmental Management Officer) leading the environmental officers of each division and organization. Meanwhile, the Office of Corporate Planning and the Office of Energy and Environmental Planning are promoting corporate environmental management, utilizing their expertise in environmental issues while providing assistance and guidance to each division (support for independent environmental management).

The Sustainability Promotion Board, which is in principle held twice a year, reviews our environmental management system, the results of which are reflected in the system itself. At the same time, the Kansai Electric Power Group Environmental Management Committee, comprised of representatives from consolidated subsidiaries and equity-method affiliates, usually holds an annual meeting to exchange information on issues concerning our Group's environmental management activities while cooperating as needed with the Sustainability Promotion Board.

### ◆ Environmental management promotion system of the Kansai Electric Power Group



\* 51 companies, which are selected from 86 consolidated subsidiaries and 4 equity-method affiliates, excluding those that have low environmental impacts and Kansai Transmission and Distribution, Inc.

## Goals

### ● Environmental Management System (list of Eco Action)

Kansai Electric Power Group Eco Action (results in fiscal 2020 and targets for fiscal 2021)

#### ◆ Responding to climate change

| Item   | FY 2020  |  | FY 2021  |
|--|--|--|--|
|  | Targets  | Results  | Targets  |
| Advancing efforts to control CO <sub>2</sub> emissions   | <ul style="list-style-type: none"> <li>Keep the top spot for the amount of CO<sub>2</sub>-free power generation in Japan</li> <li>Halve CO<sub>2</sub> emissions associated with power generation in Japan in FY 2030 (compared to FY 2013)</li> </ul> | <ul style="list-style-type: none"> <li>We kept the top spot for the amount of CO<sub>2</sub>-free power generation in Japan (based on surveys and comparisons made in the electric power statistics)</li> <li>Reduction of about 40% from fiscal 2013 levels of CO<sub>2</sub> emissions associated with power generation in Japan (Emissions: About 30.4 million t-CO<sub>2</sub>)</li> </ul> | <ul style="list-style-type: none"> <li>Keep the top spot for the amount of zero-carbon power generation in Japan</li> <li>Halve CO<sub>2</sub> emissions associated with power generation in Japan in FY 2025 (compared to FY 2013)</li> </ul> |
| Continuing safe and stable operation of nuclear power plants*1   | <ul style="list-style-type: none"> <li>Safety-first nuclear power plant operations</li> </ul>  | <ul style="list-style-type: none"> <li>We continued the safe and stable operations at running plants</li> </ul>  | Continue safe and stable operation of nuclear power plants (zero unplanned shutdowns)  |
| Further development and utilization of renewable energy  | <ul style="list-style-type: none"> <li>Achieve 6 million kW of installed capacity by 2030s (2 million kW or more new development in Japan and abroad)</li> </ul>   | <ul style="list-style-type: none"> <li>Accumulated installed capacity with a total of 4.75 million kW (Capacity of facilities that have begun operation (completed construction): about 4.14 million kW; Project underway: about 0.61 million kW)</li> </ul>   | Continued  |
| Maintaining and improving the thermal efficiency of thermal power plants*1   | <ul style="list-style-type: none"> <li>Achieve benchmark indicators*3 (A: 1.00, B: 44.3%)</li> </ul>   | <ul style="list-style-type: none"> <li>We achieved benchmark indicators</li> </ul>   | Continued  |
| Reducing transmission and distribution loss*2  | <ul style="list-style-type: none"> <li>Maintain or reduce transmission and distribution loss</li> </ul>  | <ul style="list-style-type: none"> <li>5.1%</li> </ul>   | Continued  |
| Promoting use of innovative forms of energy among customers and communities  | <ul style="list-style-type: none"> <li>Contribute to making energy use by customers and communities more sophisticated</li> </ul>  | <ul style="list-style-type: none"> <li>We worked to expand use of devices and services that contribute to more sophisticated utilization of energy by customers and communities</li> <li>Smart meters deployed: 0.72 million/year (Cumulative total: 12.25 million), progress rate: about 93%</li> </ul>   | Continued  |
| Controlling SF <sub>6</sub> emissions (calendar year basis) (gas recovery rate upon inspection/removal of equipment) | <ul style="list-style-type: none"> <li>97% (upon inspection)</li> <li>99% (upon removal)</li> </ul>  | <ul style="list-style-type: none"> <li>99.6% (upon inspection)</li> <li>99.3% (upon removal)</li> </ul>  | Continued  |

\*1 Targets and results apply only to our Company. \*2 Targets apply only to Kansai Transmission and Distribution, Inc.

\*3 Indicators based on the benchmark system of the Law Concerning the Rational Use of Energy

◆ Promoting resource circulation

| Item  | FY 2020 |         | FY 2021   |
|---|---------|---------|-----------|
|   | Targets | Results | Targets   |
| Maintaining industrial waste recycling rate | • 99.5% | • 99.8% | Continued |

◆ Protecting local community environments

| Item   | FY 2020  |  | FY 2021   |
|--|--|--|-----------|
|  | Targets  | Results  | Targets   |
| Maintaining sulfur oxide (SOx) and nitrogen oxide (NOx) emission factors | SOx  | Emission factors: maintain the lowest levels in the world<br>Emissions: strictly adhere to agreed values at each power plant | Continued |
|  | NOx  |  |           |
| Proper processing of PCB wastes  | • Proceed with certainty to achieve processing before the legal deadline | • Amount of high-level PCB processed (Cumulative total): 5,415*<br>Zero PCB waste (processing completed)                     | Continued |

\* Number of high-voltage transformers, condensers and other electrical equipment that were subcontracted to the Japan Environmental Storage & Safety Corporation (JESCO).

◆ Conserving biodiversity

| Item                         | FY 2020   |  | FY 2021   |
|------------------------------|---|--|-----------|
|                              | Targets   | Results  | Targets   |
| Conservation of biodiversity | • Consideration of biodiversity through business activities | • We worked on activities to conserve biodiversity (field surveys, monitoring of the effect of extermination programs, etc.), seeking guidance and advice from experts | Continued |

◆ Office energy and resource conservation activities (group-wide items)

| Item              | Reducing office electricity consumption                          | Reducing office water consumption                                       | Improving fuel efficiency of company vehicles                            | Reducing copy paper consumption  |
|-------------------|--|---|--|--|
|                   | Reduce by 1% or more from previous year                          | Reduce as much as possible  | Improve as much as possible  | Reduce as much as possible   |
| Record of results | <p>(GWh)<br/>80<br/>60<br/>40<br/>20<br/>2018 2019 2020 (FY)</p> | <p>(1,000 m³)<br/>600<br/>400<br/>200<br/>0<br/>2018 2019 2020 (FY)</p> | <p>(km/L)<br/>12.0<br/>11.0<br/>10.0<br/>9.0<br/>2018 2019 2020 (FY)</p> | <p>(t)<br/>800<br/>700<br/>600<br/>500<br/>400<br/>2018 2019 2020 (FY)</p> |
|                   | <p>(GWh)<br/>80<br/>60<br/>40<br/>20<br/>2018 2019 2020 (FY)</p> | <p>(1,000 m³)<br/>600<br/>400<br/>200<br/>0<br/>2018 2019 2020 (FY)</p> | <p>(km/L)<br/>12.0<br/>11.0<br/>10.0<br/>9.0<br/>2018 2019 2020 (FY)</p> | <p>(t)<br/>800<br/>700<br/>600<br/>500<br/>400<br/>2018 2019 2020 (FY)</p> |

\* Calculated for 38 consolidated subsidiaries (excluding Kansai Transmission and Distribution, Inc.) for which three-year data (FY 2018–2020) is available.

## Efforts

### ● Environmental education (practical knowledge and awareness raising)

We conduct education for our employees in order to develop human resources that understand the Kansai Electric Power Group Environmental Policy and are able to implement it.

Specifically, we are conducting specialized education to provide practical knowledge, etc.

### ● Environmental compliance

Recognizing “strict enforcement of compliance” as part of materiality (important issues), our Group is committed to eliminating any major violations of environmental compliance.

Major violations of environmental compliance reported in fiscal 2018 to 2020 are summarized below.

#### ◆ Major environmental compliance violations

| Item                                      | Targets | Results |         |         |
|---|---------|---------|---------|---------|
|   |         | FY 2018 | FY 2019 | FY 2020 |
| Major environmental compliance violations | 0       | 1       | 4       | 1       |

• Major violations of environmental compliance occurred or reported in each fiscal year are included.

• “Major violations of environmental compliance” are defined as “violations that have impacted (or could impact) the surrounding environment and/or human health.”

Major violations of environmental compliance occurred or reported in fiscal 2020 are summarized below.

#### ◆ Summary of major violations of environmental compliance

- Inappropriate processing of PCB contaminated transformer insulating oil when analyzing its performance

We are implementing efforts to identify root causes, review in-house rules (observance of relevant laws and regulations), and educate employees to prevent any recurrence of these violations.

In addition, details of these incidents are communicated company-wide and preventive measures are shared between all those concerned to prevent similar violations from taking place at other offices.

## ● Performance data

| Eco Action-related                          |                   | Unit      | FY 2018                 | FY 2019                 | FY 2020                 |
|---|-------------------|-----------|-------------------------|-------------------------|-------------------------|
| SF <sub>6</sub> gas emissions               |                   | t         | 0.2                     | 0.1                     | 0.1                     |
|   | • Upon inspection |           | 0.2                     | 0.1                     | 0.0                     |
|   | • Upon removal    |           | 0.1                     | 0.0                     | 0.1                     |
| SF <sub>6</sub> gas recovery rate           |                   |           |                         |                         |                         |
|   | • Upon inspection | %         | 98.5                    | 99.0                    | 99.6                    |
|   | • Upon removal    |           | 99.3                    | 99.4                    | 99.3                    |
| Transmission and distribution loss rate*1*2 |                   |           | 5.1                     | 4.8                     | 5.1                     |
| Number and rate of smart meters installed*2 |                   | million % | About 10.58<br>About 81 | About 11.53<br>About 88 | About 12.25<br>About 93 |

\*1 Transmission and distribution loss rates = (area transmission-end power – area consumption power (end use) – substation power) / area transmission-end power × 100 [%]

\*Area\* in this case refers to the entire supply area of Kansai Transmission and Distribution, Inc.

\*2 Data of Kansai Transmission and Distribution, Inc. only

| Office-related  |                                       | Unit                     | FY 2018 | FY 2019 | FY 2020 |
|---|---------------------------------------|--------------------------|---------|---------|---------|
| Energy and resource conservation<br>(Office division)           | Office electricity consumption*1      | GWh                      | 74      | 75      | 74      |
|   | Office water consumption*1            | 1,000 m <sup>3</sup>     | 425     | 413     | 388     |
|   | Fuel efficiency of company vehicles   | km/L                     | 11.4    | 10.95   | 10.9    |
|   | Vehicle fuel consumption (gasoline)   | 1,000 kL                 | 2.0     | 1.7     | 1.5     |
|   | Vehicle fuel consumption (diesel oil) |                          | 0.3     | 0.4     | 0.4     |
|   | Copy paper consumption                | t                        | 772     | 747     | 662     |
| CO <sub>2</sub> emissions resulting from office<br>activities*2 | Office electricity                    | 10,000 t-CO <sub>2</sub> | 2.4     | 2.4     | 2.6     |
|   | Office water                          |                          | 0.01    | 0.01    | 0.01    |
|   | Vehicle fuels                         |                          | 0.5     | 0.5     | 0.4     |

\*1 The scope of this calculation was reviewed for the actual consumption amounts of office electricity and water.

\*2 CO<sub>2</sub> emissions from office activities = amount of electricity consumption × adjusted emission factor

CO<sub>2</sub> emissions from office water consumption = amount of office water consumption × emission factor

CO<sub>2</sub> emissions from vehicle use = amount of vehicle fuel consumption × emission factor by type of fuel

| Material-related, revegetation rate         |                                      | Unit    | FY 2018 | FY 2019 | FY 2020 |
|---|--------------------------------------|---------|---------|---------|---------|
| Amount of limestone used*1                  |                                      | 1,000 t | 57      | 61      | 56      |
| Amount of ammonia used*1                    |                                      |         | 8       | 8       | 8       |
| Revegetation rate*2<br>(end of fiscal year) | Thermal power plants                 | %       | 38      | 39      | 39      |
|   | Nuclear power plants                 |         | 68      | 67      | 67      |
|   | Electric power offices (substations) |         | 28      | 28      | 28      |

\*1 Data of the Kansai Electric Power Co., Inc. only

\*2 Revegetation rate = (business site revegetation area ÷ business site total area) × 100

| Rates of conversion to underground transmission and distribution lines*   |  | Unit | FY 2018 | FY 2019 | FY 2020 |
|---|--|------|---------|---------|---------|
| Rate of conversion to underground transmission lines (end of fiscal year) |  | %    | 17.4    | 17.5    | 17.6    |
| Rate of conversion to underground distribution lines (end of fiscal year) |  |      | 10.3    | 10.3    | 10.4    |

\* Data of Kansai Transmission and Distribution, Inc. only

## ● Environmental conservation cost

We practice and announce the results of environmental accounting for the Company, Kansai Transmission and Distribution, Inc. and other group companies, where the costs and effects of environmental conservation in our business activities are determined.

### ◆ Evaluation of the performance in FY 2020

We invested a total of about 7.92 billion yen in environmental conservation, a year-on-year increase of about 3.86 billion yen, while the total cost amounted to about 16.46 billion yen, a year-on-year decrease of about 0.21 billion yen, due to a lower PCB processing cost, etc.

### ◆ Environmental conservation costs (100 million yen)

| Category  | Investment |         | Expenses |         | Major items   |
|---|------------|---------|----------|---------|---|
|   | FY 2019    | FY 2020 | FY 2019  | FY 2020 |   |
| 1. Global environmental conservation costs (CO <sub>2</sub> reductions, etc.) | 0.1        | 0.0     | 2.0      | 2.0     |   |
| 2. Local environmental conservation costs                                     | 38         | 76      | 37.7     | 38.5    |   |
| (1) Measuring/monitoring environmental impact                                 | 2.4        | 5.3     | 14.3     | 14.7    | Radiation control and measurement, air quality concentration measurement, and marine area surveys |
| (2) Pollution control (air pollution, water contamination, oil leakage, etc.) | 35.2       | 70.2    | 15.6     | 17.1    | Air pollution control measures, water contamination prevention measures                           |
| (3) Nature conservation   | 0          | 0       | 7.8      | 6.8     |   |
| 3. Costs to build a circular economy  | 2.9        | 3.5     | 123.1    | 119.6   |   |
| (1) Industrial waste processing, recycling                                    | 2.8        | 3.4     | 57.8     | 48.4    |   |
| (2) General waste processing, recycling                                       | 0          | 0       | 0.0      | 0.1     |   |
| (3) Radioactive waste processing  | 0          | 0       | 65.3     | 71.2    |   |
| (4) Green purchasing  | 0.1        | 0.0     | 0.0      | 0.0     |   |
| 4. Environmental management costs   | 0          | 0       | 0.7      | 0.7     |   |
| 5. R&D costs  | 0.1        | 0.2     | 3.0      | 3.5     | Load leveling, environmental conservation, energy savings and recycling, natural energy           |
| 6. Other costs  | 0          | 0       | 0.2      | 0.2     |   |
| Total   | 40.6       | 79.2    | 166.7    | 164.6   |   |
| Total capital investment during the period                                    | 4,472      | 5,415   |          |         |   |
| Operating expenses during the period  |            |         | 25,332   | 32,069  |   |

Note: Based on the Environmental Reporting Guidelines (FY 2005 version) issued by the Ministry of the Environment. Depreciation is not calculated into expenses. Composite costs are tallied proportionally by one of three methods: (1) calculation of differences; (2) proportional division based on rational criteria; and (3) proportional division based on criteria of expediency. Costs involved in generating nuclear power are calculated with the sum of individual measures to protect the environment taken as environmental conservation costs (radiation control and measurement, low-level radioactive waste processing, etc.). Figures may not add up due to rounding off.

## ◆ Effects of environmental conservation

| Category                             | Item (unit)   |                             | FY 2019 | FY 2020 | Year-on-year change |
|--------------------------------------|---|-----------------------------|---------|---------|---------------------|
| 1. Global environmental conservation | CO <sub>2</sub> emissions (basic)                     | (10,000 t-CO <sub>2</sub> ) | 3,844   | 3,702   | -142                |
|                                      | CO <sub>2</sub> emission intensity (basic)            | (kg-CO <sub>2</sub> /kWh)   | 0.340   | 0.340   | 0.00                |
|                                      | CO <sub>2</sub> emissions (after adjustment)          | (10,000 t-CO <sub>2</sub> ) | 3,594   | 3,583   | -13                 |
|                                      | CO <sub>2</sub> emission intensity (after adjustment) | (kg-CO <sub>2</sub> /kWh)   | 0.318   | 0.350   | 0.03                |
| 2. Local environmental conservation  | Air pollution control                                 |                             |         |         |                     |
|                                      | SOx emissions   | (t)                         | 2,138   | 2,098   | - 40                |
|                                      | SOx emission intensity                                | (g/kWh)                     | 0.036   | 0.033   | - 0.003             |
|                                      | NOx emissions   | (t)                         | 4,414   | 4,551   | 137                 |
|                                      | NOx emission intensity                                | (g/kWh)                     | 0.074   | 0.072   | -0.002              |
|                                      | Landscape integration                                 |                             |         |         |                     |
|                                      | Revegetation area                                     | (1,000 m <sup>2</sup> )     | 3,109   | 3,102   | - 7                 |
| 3. Building a circular economy       | Industrial and other waste generated                  | (1,000 t)                   | 621     | 567     | -54                 |
|                                      | Recycling rate for industrial waste, etc.             | (%)                         | 99.8    | 99.8    | 0.0                 |
|                                      | Low-level radioactive waste                           | (Rods)                      | 507     | 2,034   | 1,527               |

Note: CO<sub>2</sub> emissions: including from power supplied by other companies; CO<sub>2</sub> emissions and CO<sub>2</sub> emission intensity: the results for FY 2019 are provisional and the actual CO<sub>2</sub> 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.; CO<sub>2</sub> emission factor: by the amount of power sold (adjusted CO<sub>2</sub> emissions include environmental value adjustments under the surplus solar power purchasing system and the renewable energy feed-in tariff system in addition to deduction reflecting carbon credits); SOx and NOx emissions: only the Company's self-generated power; SOx and NOx emission factor: by the amount of power generated by thermal power plants of the Company.

## ● Economic benefits from environmental conservation measures

### ◆ FY 2020 assessment

Economic benefits increased approximately 0.8 billion yen from the previous year due to an increase of gain on sale of disused articles, etc.

### ◆ Economic benefits from environmental conservation measures (100 million yen)

| Category     |   | FY 2019 | FY 2020 | Major items                                      |
|--------------|---|---------|---------|--|
| Revenue      | Operating revenues from recycling, etc.     | 35.4    | 43.7    | Gain on sale of disused articles (recycling)     |
| Cost savings | Cost savings from reuse and recycling, etc. | 0.1     | 0.1     | Cost savings from the purchase of recycled items |
| Total        |   | 35.5    | 43.8    |  |



## ● Environmental accounting (group companies)

### ◆ Environmental accounting of group companies

The environmental accounting applies to 12 group companies that participate in the Kansai Electric Power Group Environmental Management Committee (as of FY 2020).

### ◆ Environmental conservation costs (million yen)

| Category                               | Major items  | Investment |        | Expenses |         |
|--|--|------------|--------|----------|---------|
|  |  | 2019       | 2020   | 2019     | 2020    |
| Costs for pollution control            | Air, water and soil pollution prevention   | 0          | 0      | 31,480   | 35,604  |
| Costs for resource recycling           | General and industrial waste processing and recycling  | 2,930      | 2,739  | 87,889   | 73,604  |
| Costs for management activities        | Environmental protection efforts, environmental education and related activities at business places and in their neighborhoods     | 3,700      | 7,536  | 24,130   | 24,376  |
| Costs for community activities         | Contributions to and support of environmental protection activities and environmental protection organizations outside the company | 0          | 0      | 0        | 0       |
| Costs for research and development     | Research and development of products, for example, that contribute to environmental protection                                     | 0          | 0      | 7,706    | 1,800   |
| Costs related to environmental damages | Natural restoration, damage compensation, etc.   | 0          | 0      | 276      | 264     |
| Other costs                            |  | —          | —      | 0        | 0       |
| Total                                  |  | 6,630      | 10,275 | 151,481  | 135,649 |

### ◆ Environmental conservation effects (physical effects)

| Category                                    | Item (unit)   | 2019 | 2020 |
|---|---|------|------|
| Global and local environmental conservation | CO <sub>2</sub> emissions (10,000 t-CO <sub>2</sub> ) | 11.9 | 14.7 |
|   | SO <sub>x</sub> emissions (t)                         | 0.3  | 0.6  |
|   | NO <sub>x</sub> emissions (t)                         | 59.7 | 55.5 |
| Environmental management                    | ISO or other external certifications (locations)*     | 5    | 4    |
| Building a circular economy                 | Industrial waste generated (1,000 t)                  | 62.4 | 63.3 |

\* Cumulative to end of fiscal year

### ◆ Economic benefits from environmental conservation measures

| Category     | Major items                                 | 2019   | 2020   |
|--------------|---|--------|--------|
| Revenue      | Operating revenues from recycling, etc.     | 18,071 | 25,928 |
| Cost savings | Cost savings from reuse and recycling, etc. | 53.3   | 375    |
| Total        |   | 18,124 | 26,303 |

## ◆ Management of chemical substances (PRTR)

| Name of targeted chemical substance | Releases (t/year)     |                      |                      |
|-------------------------------------|-----------------------|----------------------|----------------------|
|                                     | FY 2018               | FY 2019              | FY 2020              |
| 2-aminoethanol                      | —                     | —                    | —                    |
|                                     | (—)                   | (—)                  | (—)                  |
| Asbestos (specified)                | 0.0                   | 0.0                  | 0.0                  |
|                                     | (0.0)                 | (0.0)                | (0.0)                |
| Ethylbenzene                        | 4.7                   | 8.6                  | 5.9                  |
|                                     | (4.7)                 | (8.6)                | (5.9)                |
| Ferric chloride                     | 0.0                   | 0.0                  | 0.0                  |
|                                     | (0.0)                 | (0.0)                | (0.0)                |
| Xylene                              | 6.5                   | 12                   | 9.1                  |
|                                     | (6.5)                 | (12)                 | (9.1)                |
| Dioxins (specified)                 | 0.065 (mg-TEQ/year)   | 0.24 (mg-TEQ/year)   | 0.11 (mg-TEQ/year)   |
|                                     | (0.065 (mg-TEQ/year)) | (0.24 (mg-TEQ/year)) | (0.11 (mg-TEQ/year)) |
| 1,2,4-trimethylbenzene              | <0.1                  | —                    | <0.1                 |
|                                     | (<0.1)                | —                    | (<0.1)               |
| Toluene                             | 4.9                   | 8.7                  | 5.0                  |
|                                     | (4.9)                 | (8.7)                | (5.0)                |
| Hydrazine                           | <0.1                  | <0.1                 | 0.0                  |
|                                     | (<0.1)                | (<0.1)               | (0.0)                |
| Benzenes (specified)                | 0.1                   | <0.1                 | <0.1                 |
|                                     | (0.1)                 | (<0.1)               | (<0.1)               |
| Boron compound                      | —                     | 0.0                  | 0.0                  |
|                                     | (—)                   | (0.0)                | (0.0)                |
| PCB                                 | 0.0                   | 0.0                  | —                    |
|                                     | (0.0)                 | (0.0)                | (—)                  |
| Methylnaphthalene                   | 1.4                   | 1.2                  | 2.3                  |
|                                     | (1.4)                 | (1.2)                | (2.3)                |
| Bromotrifluoromethane               | 0.0                   | —                    | —                    |
|                                     | (0.0)                 | (—)                  | (—)                  |
| Nonylphenoxypolyoxyethanol          | 0.0                   | —                    | —                    |
|                                     | (0.0)                 | (—)                  | (—)                  |
| Ethylenediaminetetraacetic acid     | —                     | 0.0                  | 0.0                  |
|                                     | (—)                   | (0.0)                | (0.0)                |
| 2,6-di-tert-butyl-p-cresol          | (0.0)                 | (0.0)                | (0.0)                |
| n-Hexane                            | (0.0)                 | (0.0)                | (0.0)                |

| Name of targeted chemical substance | Transfers (t/year)    |                        |                       |
|-------------------------------------|-----------------------|------------------------|-----------------------|
|                                     | FY 2018               | FY 2019                | FY 2020               |
| 2-aminoethanol                      | —                     | —                      | —                     |
|                                     | (—)                   | (—)                    | (—)                   |
| Asbestos (specified)                | 6.8                   | 1.6                    | 14                    |
|                                     | (6.8)                 | (1.6)                  | (14)                  |
| Ethylbenzene                        | 0.0                   | <0.1                   | 0.0                   |
|                                     | (0.0)                 | (<0.1)                 | (0.0)                 |
| Ferric chloride                     | 1.0                   | 0.9                    | 0.0                   |
|                                     | (1.0)                 | (0.9)                  | (0.0)                 |
| Xylene                              | 0.0                   | 0.4                    | 0.0                   |
|                                     | (0.0)                 | (0.4)                  | (0.0)                 |
| Dioxins (specified)                 | 0.030 (mg-TEQ/year)   | 0.0043 (mg-TEQ/year)   | 0.079 (mg-TEQ/year)   |
|                                     | (0.030 (mg-TEQ/year)) | (0.0043 (mg-TEQ/year)) | (0.079 (mg-TEQ/year)) |
| 1,2,4-trimethylbenzene              | 0.0                   | —                      | 0.0                   |
|                                     | (0.0)                 | (—)                    | (0.0)                 |
| Toluene                             | 0.0                   | 0.8                    | 0.0                   |
|                                     | (0.0)                 | (0.8)                  | (0.0)                 |
| Hydrazine                           | 0.0                   | 0.0                    | 0.0                   |
|                                     | (0.0)                 | (0.0)                  | (0.0)                 |
| Benzenes (specified)                | 0.0                   | 0.0                    | 0.0                   |
|                                     | (0.0)                 | (0.0)                  | (0.0)                 |
| Boron compound                      | —                     | 0.0                    | 6.9                   |
|                                     | (—)                   | (0.0)                  | (6.9)                 |
| PCB                                 | 4.7                   | 2.3                    | —                     |
|                                     | (4.7)                 | (2.3)                  | —                     |
| Methylnaphthalene                   | <0.1                  | 0.0                    | 0.0                   |
|                                     | (<0.1)                | (0.0)                  | (0.0)                 |
| Bromotrifluoromethane               | 0.0                   | —                      | —                     |
|                                     | (0.0)                 | —                      | —                     |
| Nonylphenoxypolyoxyethanol          | 0.0                   | —                      | —                     |
|                                     | (0.0)                 | —                      | —                     |
| Ethylenediaminetetraacetic acid     | —                     | 0.0                    | 0.0                   |
|                                     | —                     | (0.0)                  | (0.0)                 |
| 2,6-di-tert-butyl-p-cresol          | (<0.1)                | (<0.1)                 | (<0.1)                |
| n-Hexane                            | (1.7)                 | (2.0)                  | (2.1)                 |

## Notes:

- The chart shows total values reported in compliance with the PRTR Law.
- "0" indicates no releases or transfers at targeted business sites.
- "<0.1" indicates less than 0.1 t/year releases, etc.
- "—" indicates no business sites targeted for totaling.
- Significant figures are displayed in two digits.
- The figures in parentheses includes the results of group companies (excluding those of some group companies)

## ◆ Radioactive substances, radioactive waste (non-consolidated)

| Fiscal year   |  | 2018                           | 2019          | 2020          | Unit                |                            |
|---|--|--------------------------------|---------------|---------------|---------------------|----------------------------|
| Gaseous waste   | Evaluated dose values for the public in the vicinity of power plants (inert gases) | Mihama Nuclear Power Station   | N.D.          | N.D.          | N.D.                | millisievert* <sup>1</sup> |
|   |  | Takahama Nuclear Power Station | N.D.          | N.D.          | N.D.                |                            |
|   |  | Ohi Nuclear Power Station      | N.D.          | N.D.          | N.D.                |                            |
|   | Evaluated dose values for the public in the vicinity of power plants (iodine)      | Mihama Nuclear Power Station   | N.D.          | N.D.          | N.D.                | millisievert* <sup>1</sup> |
|   |  | Takahama Nuclear Power Station | N.D.          | N.D.          | N.D.                |                            |
|   |  | Ohi Nuclear Power Station      | N.D.          | N.D.          | N.D.                |                            |
| Liquid waste  | Evaluated dose values for the public in the vicinity of power plants               | Mihama Nuclear Power Station   | <0.001        | <0.001        | <0.001              | millisievert* <sup>1</sup> |
|   |  | Takahama Nuclear Power Station | <0.001        | <0.001        | <0.001              |                            |
|   |  | Ohi Nuclear Power Station      | <0.001        | <0.001        | <0.001              |                            |
| Radioactive gaseous waste discharged (inert gas)  |  | Mihama Nuclear Power Station   | N.D.          | N.D.          | N.D.                | becquerel* <sup>2</sup>    |
|   |  | Takahama Nuclear Power Station | N.D.          | N.D.          | N.D.                |                            |
|   |  | Ohi Nuclear Power Station      | N.D.          | N.D.          | N.D.                |                            |
| Radioactive gaseous waste discharged (iodine)   |  | Mihama Nuclear Power Station   | N.D.          | N.D.          | N.D.                | becquerel* <sup>2</sup>    |
|   |  | Takahama Nuclear Power Station | N.D.          | N.D.          | N.D.                |                            |
|   |  | Ohi Nuclear Power Station      | N.D.          | N.D.          | N.D.                |                            |
| Radioactive liquid waste discharged (excluding tritium)   |  | Mihama Nuclear Power Station   | N.D.          | N.D.          | N.D.                | becquerel* <sup>2</sup>    |
|   |  | Takahama Nuclear Power Station | N.D.          | N.D.          | N.D.                |                            |
|   |  | Ohi Nuclear Power Station      | N.D.          | N.D.          | N.D.                |                            |
| Radioactive liquid waste (tritium) discharged   |  | Mihama Nuclear Power Station   | 1600000000000 | 860000000000  | 1100000000000       | becquerel* <sup>2</sup>    |
|   |  | Takahama Nuclear Power Station | 1900000000000 | 1300000000000 | 2300000000000       |                            |
|   |  | Ohi Nuclear Power Station      | 2200000000000 | 5600000000000 | 6600000000000       |                            |
| Radioactive solid waste generated (200-L drum equivalent)* <sup>4</sup>   |  | 11,800                         | 12,312        | 13,223        | Equivalent in drums |                            |
|   | • Mihama Nuclear Power Station   | 4,828                          | 3,918         | 3,202         |                     |                            |
|   | • Takahama Nuclear Power Station   | 4,396                          | 4,624         | 6,516         |                     |                            |
|   | • Ohi Nuclear Power Station  | 2,576                          | 3,770         | 3,505         |                     |                            |
| Radioactive solid waste reduced (200-L drum equivalent)* <sup>5</sup>   |  | 9,099                          | 11,805        | 11,189        | Equivalent in drums |                            |
|   | • Mihama Nuclear Power Station   | 3,907                          | 2,946         | 2,409         |                     |                            |
|   | • Takahama Nuclear Power Station   | 3,460                          | 3,959         | 5,715         |                     |                            |
|   | • Ohi Nuclear Power Station  | 1,732                          | 4,900         | 3,065         |                     |                            |
| Amount of solid radioactive waste generated – Amount of solid radioactive waste reduced (200-L drum equivalent)* <sup>6</sup> |  | 2,701                          | 507           | 2,034         | Equivalent in drums |                            |
|   | • Mihama Nuclear Power Station   | 921                            | 972           | 793           |                     |                            |
|   | • Takahama Nuclear Power Station   | 936                            | 665           | 801           |                     |                            |
|   | • Ohi Nuclear Power Station  | 844                            | -1,130        | 440           |                     |                            |
| Cumulative amount of solid radioactive waste stored (200-L drum equivalent)* <sup>7*8</sup>                                   |  | 100,311                        | 100,818       | 102,853       | Equivalent in drums |                            |
|   | • Mihama Nuclear Power Station   | 26,172                         | 27,144        | 27,938        |                     |                            |
|   | • Takahama Nuclear Power Station   | 44,223                         | 44,888        | 45,689        |                     |                            |
|   | • Ohi Nuclear Power Station  | 29,916                         | 28,786        | 29,226        |                     |                            |

ND: Not Detectable

\*1 Millisievert (effective dose): unit indicating the degree of radiation's effect on the human body

\*2 Becquerel: unit of radioactivity (one becquerel is defined as one nucleus decaying per second, representing the rate at which radioactive material emits radiation.)

\*3 Notes 4-7 are for the storage status at power plants.

\*4 The amount of solid low-level radioactive waste produced in the fiscal year.

\*5 The total of amount of solid waste with low-level radioactivity reduced through incineration, etc. and transported out of facilities in the fiscal year.

\*6 The net increase of solid waste with low-level radioactivity calculated by deducting the amount reduced from the amount generated in the fiscal year.

\*7 Cumulative amount of low-level solid radioactive waste

\*8 Totals might not match due to rounding after conversion to drum equivalent.

## ◆ Environmental protection records at thermal power plants

| Item   |                       |   | Sakaiko Power Station                               | Nanko Power Station                        | Miyazu Energy Research Center | Kansai International Airport Energy Center | Maizuru Power Station       | Gobo Power Station           | Himeji No.1 Power Station 5, 6 U & GT 1, 2 U | Himeji No. 2 Power Station | Aioi Power Station          | Ako Power Station          |          |   |
|--|-----------------------|---|---|--|-------------------------------|--|-----------------------------|------------------------------|--|----------------------------|-----------------------------|----------------------------|----------|---|
| Main fuel  |                       |   | L   | L  | Heavy/crude                   | Kerosene                                   | Coal                        | Heavy/crude                  | L  | L                          | L                           | Heavy/crude                |          |   |
| Air quality related                                    | Sulfur oxides         | Amount emitted hourly (m <sup>3</sup> N/h)  | Air Pollution Control Law (total amount regulation) | 84   | 98                            | 306*1                                      | 13                          | 515*1                        | 6,510*3                                      | 129                        | 582                         | 2,757*3                    | 2,158*3  |   |
|  |                       |   | Agreed value  | —  | —                             | 112  | —                           | 255                          | 184  | —                          | —                           | 165                        | 180      |   |
|  |                       |   | Actual value  | —  | —                             | Stopped                                    | —                           | 187                          | 88   | —                          | —                           | 3                          | 79       |   |
|  |                       | Amount emitted daily (t/d)                  | Agreed value  | 10.1                                       | —                             | —  | —                           | —                            | —  | —                          | —                           | —                          | —        | — |
|  |                       |   | Actual value  | —  | —                             | —  | —                           | —                            | —  | —                          | —                           | —                          | —        | — |
|  |                       | Amount emitted annually (t/y)               | Agreed value  | 940  | —                             | 492 × 10                                   | —                           | 1,523 × 10                   | 970 × 10                                     | —                          | —                           | 885 × 10                   | 650 × 10 |   |
|  | Actual value          |   | —   | —  | Stopped                       | —  | 688 × 103m <sup>3</sup> N   | 23,551 × 103m <sup>3</sup> N | —  | —                          | 0.256 × 103m <sup>3</sup> N | 22.7 × 103m <sup>3</sup> N |          |   |
|  | Nitrogen oxides       | Amount emitted hourly (m <sup>3</sup> N/h)  | Air Pollution Control Law (total amount regulation) | 625  | 255                           | —  | —                           | —                            | —  | —                          | —                           | —                          | —        |   |
|  |                       |   | Agreed value  | —  | —                             | 58   | —                           | 244                          | 110  | 123.5                      | 463                         | 85                         | 94       |   |
|  |                       |   | Actual value  | 50.2                                       | 34                            | Stopped                                    | —                           | 215                          | 51   | 64                         | 93                          | 45                         | 73       |   |
|  |                       | Amount emitted daily (t/d)                  | Agreed value  | 7.7  | 1.8                           | —  | —                           | —                            | —  | —                          | —                           | —                          | —        |   |
|  |                       |   | Actual value  | 2.1  | 1.5                           | —  | —                           | —                            | —  | —                          | —                           | —                          | —        |   |
|  |                       | Amount emitted annually (t/y)               | Agreed value  | 1,420                                      | 400                           | 244 × 10                                   | —                           | 1,457 × 10                   | 560 × 10                                     | 701 × 10                   | 2,263 × 10                  | 390 × 10                   | 340 × 10 |   |
|  | Actual value          |   | 558   | 169  | Stopped                       | —  | 1,137 × 103m <sup>3</sup> N | 20,459 × 103m <sup>3</sup> N | 207.837 × 103m <sup>3</sup> N                | 393 × 10                   | 51.4 × 103m <sup>3</sup> N  | 53.5 × 103m <sup>3</sup> N |          |   |
|  | Soot particles        | Emission concentration (g/m <sup>3</sup> N) | Air Pollution Control Law                           | 0.04                                       | 0.03                          | 0.05                                       | 0.05                        | 0.1                          | 0.07   | 0.05                       | 0.05                        | 0.07                       | 0.05     |   |
|  |                       |   | Agreed value  | 0.02                                       | Not emitted                   | 0.014                                      | —                           | 0.009                        | 0.01   | —                          | —                           | 0.015                      | 0.015    |   |
|  |                       |   | Actual value  | <0.002                                     | —                             | Stopped                                    | <0.002                      | 0.008                        | 0.014  | —                          | <0.002                      | 0                          | 0.001    |   |
|  | Water quality related | Hydrogen ion concentration index            |   | Water Pollution Control Law and ordinances | 5.8–8.6                       | 5.0–9.0*2                                  | 5.0–9.0                     | —                            | 5.0–9.0                                      | —                          | 5.0–9.0                     | 5.0–9.0                    | 5.0–9.0  |   |
| Agreed value   |                       |   |   | —  | —                             | 5.8–8.6                                    | —                           | 5.8–8.6                      | 5.8–8.6                                      | 5.8–8.6                    | 5.8–8.6                     | 5.8–8.6                    |          |   |
| Actual value   |                       |   |   | 7.9  | 7.3                           | 6.0–7.6                                    | —                           | 6.3–7.7                      | 6.4–8.0                                      | 6.7–8.0                    | 7.2–7.8                     | 6.7–7.4                    | 6.5–7.7  |   |
| Chemical oxygen demand                                 |                       | Highest concentration (mg/L)                | Water Pollution Control Law and ordinances          | 12   | —                             | 160  | —                           | 160                          | —  | 70                         | 70                          | 70                         | 70       |   |
|  |                       |   | Agreed value  | —  | —                             | 15   | —                           | 15                           | 10   | 15                         | 15                          | 15                         | 15       |   |
|  |                       |   | Actual value  | 1.8  | —                             | 7.7  | —                           | 7.4                          | 5.6  | 6.0                        | 4.6                         | 3                          | 2.6      |   |
|  |                       | Pollution load amount (kg/d)                | Water Pollution Control Law and ordinances          | 209.2                                      | —                             | —  | —                           | —                            | —  | 38.8                       | 49.71                       | 67.8                       | 85.5     |   |
|  |                       |   | Agreed value  | —  | —                             | 20.8                                       | —                           | 22                           | 36.8   | 15.2                       | 35                          | 18                         | 22.4     |   |
|  |                       |   | Actual value  | 5.99                                       | —                             | 0.2  | —                           | 5.54                         | 10   | 6.0                        | 12.2                        | 2.25                       | 3.9      |   |
| Amount of suspended solids                             |                       | Highest concentration (mg/L)                | Water Pollution Control Law and ordinances          | 50   | 600*2                         | 200  | —                           | 200                          | —  | 90                         | 90                          | 90                         | 90       |   |
|  |                       |   | Agreed value  | —  | —                             | 20   | —                           | 15                           | 20   | 20                         | 20                          | 20                         | 20       |   |
|  |                       |   | Actual value  | <5   | 5                             | 4  | —                           | 2                            | 1.7  | 7                          | <5                          | 1                          | <1       |   |
| Amount of inclusion of n-hexane extractable substances |                       | Highest concentration (mg/L)                | Water Pollution Control Law and ordinances          | 2  | 4*2                           | 5  | —                           | 5                            | —  | 5                          | 5                           | 5                          | 5        |   |
|  |                       |   | Agreed value  | —  | —                             | 1  | —                           | 1                            | 1  | 1                          | 1                           | 1                          | 1        |   |
|  |                       |   | Actual value  | <1   | <1.0                          | <0.6                                       | —                           | <1.0                         | 0.3  | 0.2                        | <1                          | 0.1                        | <0.5     |   |

\*1 Regulated value of Kyoto Prefecture ordinance execution rules to protect and nurture the environment

\*2 Regulated value of Osaka City sewer ordinance execution rules

\*3 Regulated K value

## ■ Reporting Coverage

### ● Reporting coverage of the Kansai Electric Power Co., Inc. and its 86 consolidated subsidiaries (as of the end of March 2021)

Specific data of environmental impact including electricity consumption in an office is grasped and reported in this report ⇒ **97.5%**

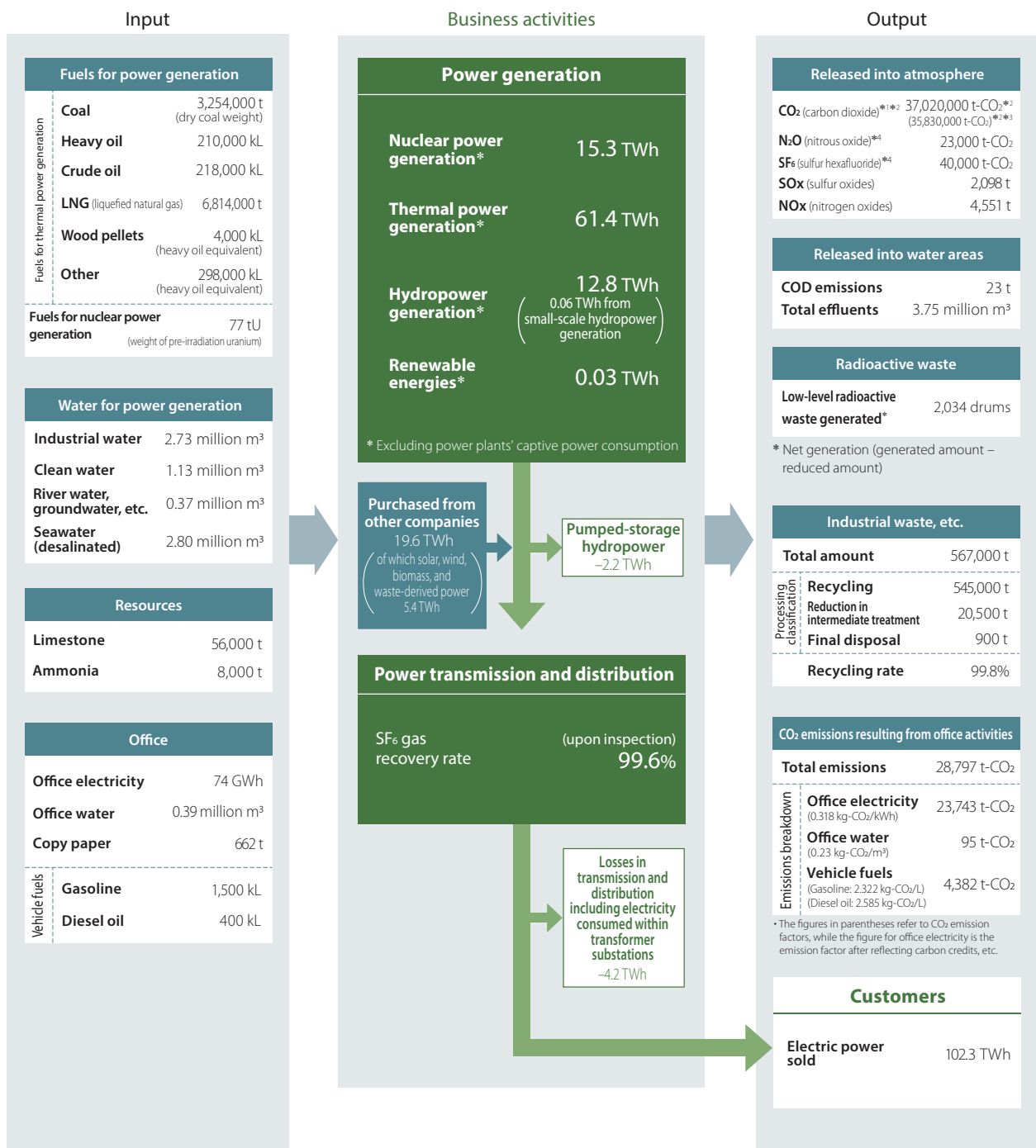
<Explanation>

It represents the ratio of companies that are performing Eco Action among the Kansai Electric Power Co., Inc. and its 86 consolidated subsidiaries (ratio of sales).

#### ◆ Calculation method

$$\frac{\text{(Sales of the Kansai Electric Power Co., Inc. in FY 2020) + \text{(Sales of 38 consolidated subsidiaries in FY 2020 that are performing Eco Action as of the end of March 2021)}}{\text{(Sales of the Kansai Electric Power Co., Inc. in FY 2020) + \text{(Sales of 86 consolidated subsidiaries in FY 2020)}}$$

◆ Status overview of our business activities and environmental load (FY 2020 results)



Note 1: Totals may not sum due to rounding.  
 Note 2: Thermal power generation figures do not include biomass power generation.

\*1 Includes CO<sub>2</sub> originating from electricity purchased from other companies  
 \*2 The results for FY 2020 are provisional; the actual CO<sub>2</sub> 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.  
 \*3 Emissions reflecting carbon credits, etc.  
 \*4 CO<sub>2</sub> conversion