J-POWER Group Integrated Report 2024

Supplementary Material (Environmental)

Index

Environmental

Input-Output (domestic operations)

INPUT

Use of renewable energy

Hydropower River water [10,000 m3]	5,262,000

Wind power

Geothermal energy

Use of fuel

Coal [10 kt] (dried; 28 GJ/t equivalent)	1,276
Natural gas [million Nm3]	0
Heavy oil [10 ML]	2.4
Light oil [10 ML]	2.9
Other fuels [kL] (gasoline equivalent)	1.0
Biomass fuel [10 kt]	12.9

Use of water

Sea water [10,000 m3]	863,000
Industrial water [10,000 m3]	840
Tap water [10,000 m3]	27
Others [10,000 m3] (e.g. underground water)	26

Use of electricity

Purchased electricity [0.1 TWh]	1.32

Use of chemicals

Limestone ($CaCO_3$) [10 kt]	14.3
Ammonia (NH_3) [10 kt]	1.1

Use of paper

Copier papers [10,000 sheets] (A4-size equivalent)	3,335

Discharge to waters, etc.

Highly treated wastewater [10,000 m3]	348
COD in wastewater [t]	20

Chemical releases and transfer

Toluene [t]	14.5
Xylene [t]	4.8
Asbestos [t] *disposed as industrial waste	0.4
Styrene [t]	4.2
Ethyl benzene [t]	4.1

emission/waste

Emission to the atmosphere, etc.

CO_2: fuel burning [10 kt-CO_2]	3,368
CO_2: electricity usage [10 kt-CO_2]	13
N_2O [10 kt-CO_2] Dinitrogen monoxide	8.1
SF_6 [10 kt-CO_2] Sulfur hexafluoride	2.2
NOx [kt] Nitrogen oxide	18.8
SOx [kt] Sulfur oxide	7.5
Dust [kt]	0.5

Discharge of waste, etc.

Industrial waste [10 kt]	7.9
including coal ash [10 kt]	6.8
including plastics[kt]	0.8
Specially-controlled industrial waste [t]	486
General waste (old paper) [t]	31
General waste (driftwood from dam) [1,000 m3]	2.7

OUTPUT

We will meet people's needs for energy without fail.

Electricity supply by power industry

Generated electricity [0.1 TWh]	526 (122)
Sold electricity [0.1 TWh]	479 (102)

( ) indicates the amount of electricity generated from renewable energy (hydropower, wind power, geothermal energy) and the amount of electricity sold (included in the total).




Effective use

Coal ash [10 kt]	121	94.7%
Gypsum [10 kt]	22	100%
Sludge [10 kt] (excluding gypsum)	0.7	74.7%
Other industrial waste [10 kt]	1.3	67.3%
Paper waste [t]	141	81.8%
Driftwood from dam [1,000 m3]	14	83.9%

Percentages indicate each effective utilization rate.

* The scope of aggregation includes J-POWER and its domestic consolidated subsidiaries in the electric power business and electric power-related and other related businesses. The consolidated subsidiaries' portion is the one equivalent to J-POWER's investment ratio.

Environmental Consideration at Power Plants

Noise and vibration measures

Equipment that generates noise and vibration, such as boilers, turbines, and blast fans, are stored inside the building to prevent their generation. For outdoor facilities, soundproof covers and soundproof walls are also installed as needed. The strength of the noise and vibration is regularly measured at the site boundary to confirm that it is below the standard value.

Dust suppression measures

To prevent dust from scattering when handling coal and coal ash, we install enclosed conveyors and storage silos, and take measures such as wind shielding and water sprinkling, depending on the topography and weather conditions. In addition, coal ash landfills are properly treated by covering the surface.

Odor prevention

Since ammonia is used in flue gas denitration facility, etc., we take care to prevent leaks from ammonia-using equipment and receiving and storage facilities through daily patrols and inspections. The strength of the odor is regularly measured at the site boundary to confirm that it is below the standard value.

Air pollution prevention

In order to remove nitrogen oxides (NOx), sulfur oxides (SOx), and dust and soot generated from the combustion of coal and other fuels, emissions are controlled at high efficiency by improving combustion methods and by appropriately operating and managing flue gas purification facilities, such as desulfurization, denitration, and electrostatic precipitators. These units are equipped with a measuring device that can continuously monitor the status of smoke emissions and are operated under automatic control.

Oil leak prevention

To prevent the diffusion of fuel oil and lubricating oil leaks within the power plant premises, various measures have been implemented, including the constant use of adsorbent materials within the premises.

Effective use of coal ash, etc.

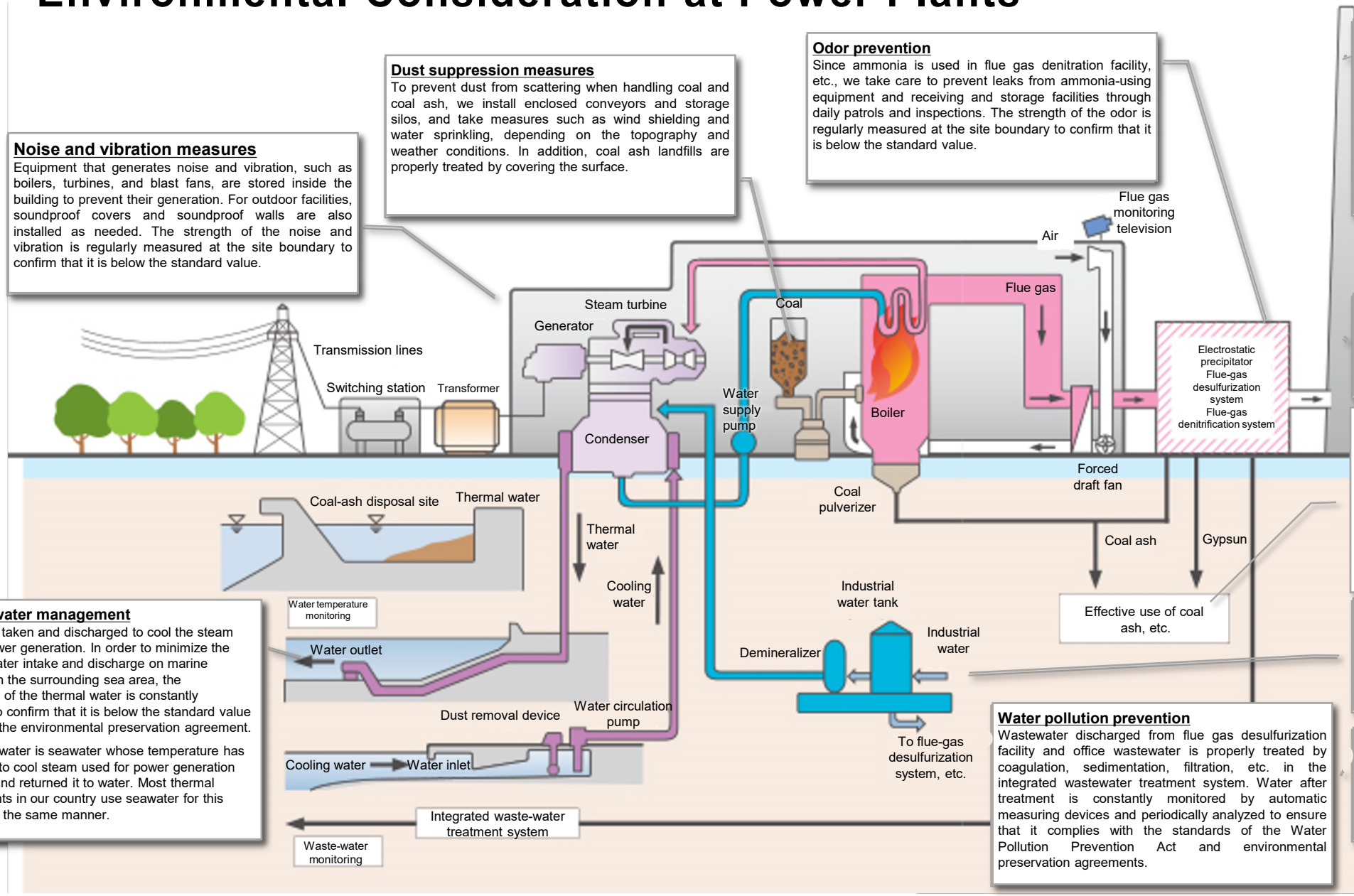
Coal ash includes clinker ash, which adheres to the boiler and falls off, and fly ash, which is collected by electrostatic precipitators. Those ashes are effectively used as raw materials for cement, admixture, fertilizer, etc.
In flue gas desulfurization facility, calcium carbonate reacts with sulfur oxides in the flue gas to produce gypsum. The gypsum is sold almost entirely as a building material.

Industrial water saving

Industrial water is used for boilers, cooling water, wet desulfurization facility, etc., and wastewater is collected and reused to the extent possible to reduce the amount of industrial water used.

Soil pollution prevention

All J-POWER Group's domestic facilities were surveyed for soil contamination and confirmed to be free of soil and groundwater contamination. We are committed to preventing soil contamination from occurring in the future.



Thermal water management

Seawater is taken and discharged to cool the steam used for power generation. In order to minimize the impact of water intake and discharge on marine organisms in the surrounding sea area, the temperature of the thermal water is constantly monitored to confirm that it is below the standard value specified in the environmental preservation agreement.

* Thermal water is seawater whose temperature has increased to cool steam used for power generation indirectly and returned it to water. Most thermal power plants in our country use seawater for this purpose in the same manner.

Water pollution prevention

Wastewater discharged from flue gas desulfurization facility and office wastewater is properly treated by coagulation, sedimentation, filtration, etc. in the integrated wastewater treatment system. Water after treatment is constantly monitored by automatic measuring devices and periodically analyzed to ensure that it complies with the standards of the Water Pollution Prevention Act and environmental preservation agreements.

J-POWER Group Environmental Action Guidelines (1/2)

*Integrated report reference page: p.69

Addressing climate change issues

Accelerating development of CO_2-free power sources

- Maintain stable operation of existing hydroelectric, geothermal, wind, biomass, and solar power generation.
- Improve efficiency by upgrading facilities at existing hydroelectric power plants and promote NEXUS Sakuma Project.
- Promote new development of hydroelectric, geothermal, wind, and solar power generation.
- Respond appropriately to the Nuclear Regulation Authority's new regulatory standards conformity assessment.
- Promote voluntary and continuous efforts to improve safety and build a nuclear power plant which is trusted by the community.

Reducing greenhouse gas (GHG) emissions

- Promote the Osaki CoolGen Project to develop high-efficiency IGCC power generation technology.
- Promote efforts to develop and commercialize CO2 capture, utilization, and storage (CCUS) technologies.
- Maintain high-efficiency operation at existing thermal power plants.
- Expand introduction of biomass in existing thermal power plants, etc., and study practical application of ammonia co-firing.
- Improve existing thermal power plant facilities and promote the GENESIS project.
- Promote initiatives aimed at utilizing carbon credits and emissions trading.
- Calculate and report greenhouse gas emissions accurately by source.
- Reduce greenhouse gas emissions other than CO_2 such as SF_6, HFCs, and N_2O.

Promoting energy saving

- Reduce loss factor of plant-home use at power facilities.
- Promote energy saving at offices.
- Improve efficiency of transportation of raw materials, etc.
- Promote use of public transportation and eco-driving.

Addressing local environmental issues

Creation of a recycling-oriented society

- Promote the 3Rs of waste and appropriate disposal.
- Thoroughly separate plastic waste and monitor its amount discharged and recycled, etc. and promote 3Rs.
- Maintain appropriately the final disposal site and implement decommissioning procedures.
- Expand use of reused and recycled products, etc.

Biodiversity conservation

- Conserve and sustainably use the natural environment at planning, design, construction, and operation stage.
- Conserve rare animals, plants and their habitats.
- Raise awareness of biodiversity.

Forest conservation

- Conserve company-owned forests.
- Promote use of unutilized wood residues in forests.

Water environment conservation

- Appropriately use water resources and conserve water quality.
- Promote measures to reduce sedimentation sand and mitigate long-term turbid water in rivers.
- Appropriately manage waste water based on environmental agreements, etc.
- Control water pollutants through appropriate management of wastewater treatment facilities.
- Strengthen measures to prevent oil leakage from equipment, etc.

J-POWER Group Environmental Action Guidelines (2/2)

*Integrated report reference page: p.69

Addressing local environmental issues (continued)

Reducing air pollutant emissions

- Appropriately manage combustion and environmental facilities to control emissions of NOx, SOx, and Dust etc.

Suppressing noise, vibration, and odors

- Appropriately manage equipment that generates noise, vibration, and odors.

Managing chemical

- Ensure that emissions and transfers of chemicals are monitored, managed, and disclosed.
- Manage appropriately and dispose of PCB waste and PCB-used products in accordance with J-POWER policies.
- Manage appropriately and systematically remove asbestos.

Environmental consideration in business planning

- Conduct environmental impact assessments of business activities.
- Design and introduce high-efficiency, environmentally friendly facilities at the time of new installation or remodeling.

Transparency and reliability initiatives

Improving environmental management level

- Implement continuous improvement and optimization of EMS
- Raise employee awareness of environmental issues.
- Request cooperation from suppliers in environmental considerations.
- Prevent environmental problems and when it occurs, communicate thoroughly and respond appropriately.

Ensuring compliance with environmental laws, regulations, agreements, etc.

- Ensure identification, dissemination, and application of laws, regulations, agreements, etc.
- Implement and actively participate in education on environmental laws and regulations, etc.
- Utilize waste disposal guidelines, etc. and expand the use of e-manifests.

Promoting environmental communication activities

- Conduct environmental reporting in consideration of external guidelines and social demands.
- Undertake third-party audits of environmental significant data.
- Actively respond to ESG ratings and surveys.
- Conduct communication activities with various stakeholders and respond appropriately.
- Make social contributions through public relations or local environmental preservation activities, etc.

Creation of a recycling-oriented society

*Integrated report reference page: p.72

We are striving to make effective use of waste with the environmental target of effective utilization rate of industrial waste of approximately 97%.

Coal ash and gypsum from thermal power plants account for 98% of the industrial waste, of which more than 95% is effectively utilized. We also strive to make effective use of industrial waste other than coal ash. In FY2023, 94.8% of the total 1.53 million tons of industrial waste was effectively utilized.

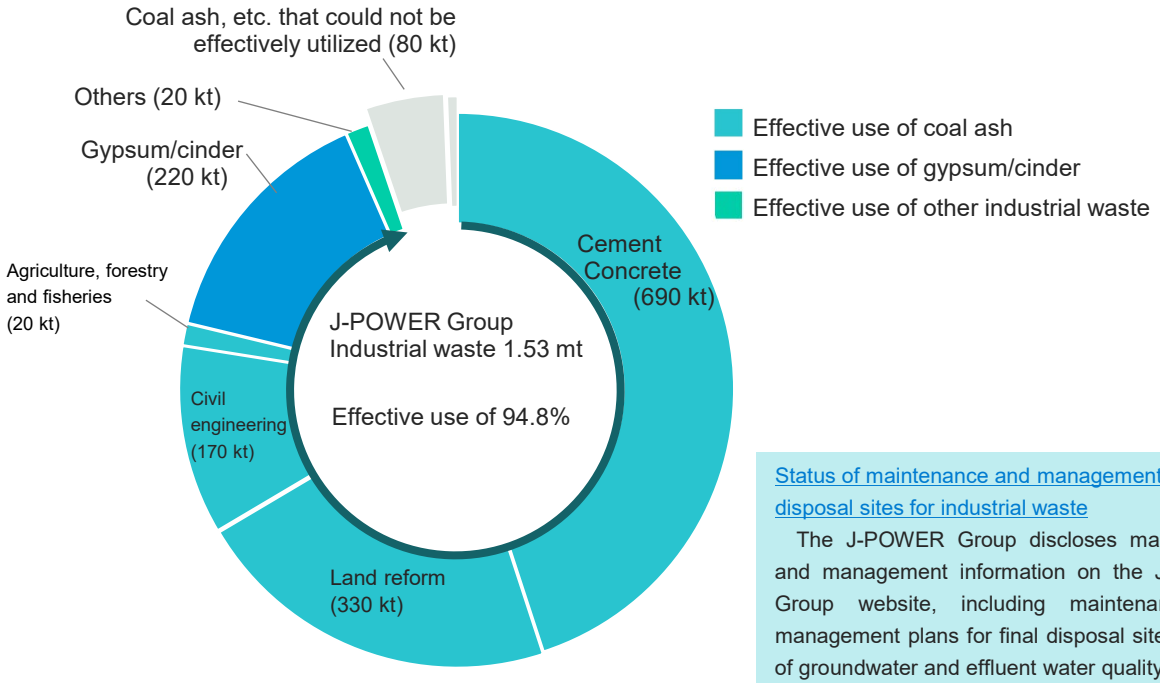


Fig: Discharge and effective use of industrial waste

Status of maintenance and management of final disposal sites for industrial waste

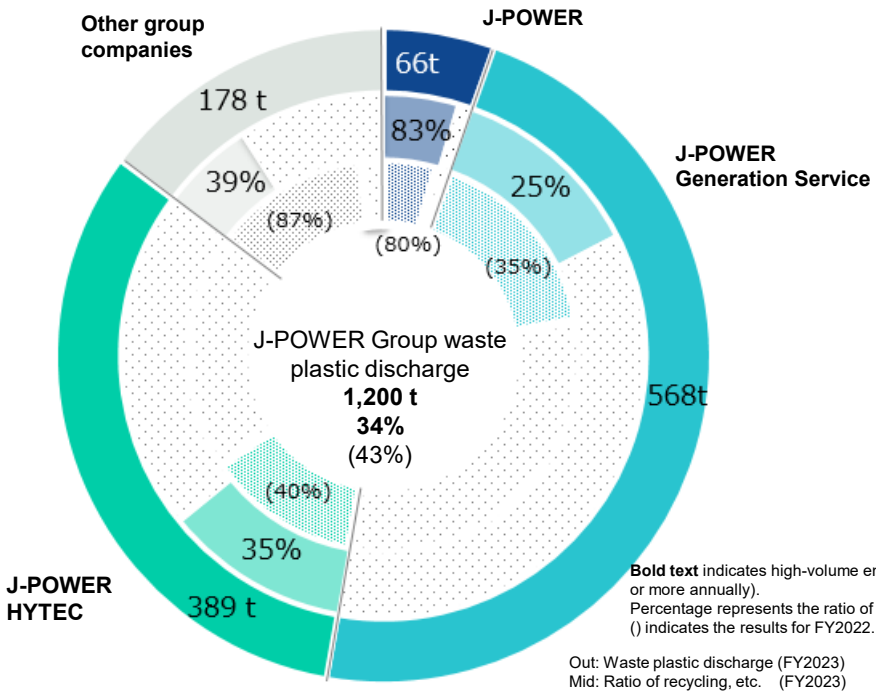
The J-POWER Group discloses maintenance and management information on the J-POWER Group website, including maintenance and management plans for final disposal sites, results of groundwater and effluent water quality analysis, inspection results, and landfill volumes.

https://www.jpower.co.jp/bs/karyoku/maintenance.html

Discharge and recycling of industrial waste from plastic products.

Since waste plastics is generated as a result of equipment renewal and repair work, we promote thorough separation of waste and the 3Rs.

In FY2023, J-POWER Generation Service Co., Ltd. and J-POWERHYTEC Co., Ltd. were classified as waste generators who generate large amounts of plastics (250 tons/year or more) under the Plastic Resource Circulation Act Japan. J-POWER, the installer of the power plants, and the entire group have set an environmental goal of waste plastics reducing emissions and promoting recycling and will continue to work on thorough understanding of waste plastic sorting, emission volume, recycling, etc., and promotion of the 3Rs (Environmental Action Guidelines).



Bold text indicates high-volume emitters (those discharging 250 tons or more annually).
Percentage represents the ratio of recycling, etc. for each company.
() indicates the results for FY2022.

Out: Waste plastic discharge (FY2023)
Mid: Ratio of recycling, etc. (FY2023)
In: Ratio of recycling, etc. (FY2022)

Managing chemical

We comply with all applicable laws and regulations regarding the use, storage, management, and disposal of chemical substances and PCB waste (including equipment containing low concentrations of PCBs) contained in products or equipment used as well as products containing asbestos.

Management of releases and transfers of specified chemical substances

Some products used for painting on equipment and buildings and for treating water supply in thermal power plants contain chemical substances specified in law. Therefore, we are working to reduce the amount of waste handled by monitoring the amount of releases and transfers while complying with established procedures and handling it safely.

Table: Releases and transfers of chemical under the law (FY2023) Unit: t

Material name	Major usage	Volume handled	Emission to environment	Amount moved in waste
Asbestos	Heat insulating material	0.6	0	0
Xylene	Fuel for power generation	11.1	1.5	0
Styrene	Paint for equipment	4.1	4.1	0
Trimethylbenzene	Fuel for power generation	18.6	0.1	0
Toluene	Fuel for power generation	12.0	12.0	0
Hydrazine	Water supply treatment	1.1	0	0
Boron compound	Fertilizer additives	11.6	0	0

Note: The data was compiled for business establishments that handle 1 ton or more of Class I Specified Chemical Substances or 0.5 tons or more of certain Class I Specified Chemical Substances per year.

Asbestos

We continue to investigate and take measures against asbestos. Current usage is shown in the table below. We will continue to take appropriate measures such as systematically removing asbestos and replacing it with non-asbestos products in compliance with relevant laws and regulations.

Table: Major asbestos use in buildings and facilities (as of March 31, 2024)

Target		Place of use	Current (use status)
Spraying containing asbestos		Soundproofing, heat insulation, and fireproofing materials for equipment rooms, etc.	Measures have been taken for sprayed materials confirmed to contain asbestos.
Products containing asbestos	Building materials	Fireproof boards for buildings Used for floor material, etc.	Asbestos is believed to be contained in building materials used before August 2006. No asbestos-containing products have been used since then.
	Soundproofing material	Soundproofing material for transformer (Substation facilities)	Measures have been taken for soundproofing materials confirmed to contain asbestos
	Asbestos cement pipes	Pipeline materials for underground lines (Power transmission facilities)	Length: approx. 0.6 km
	Heat insulating material	Power generation facilities (Thermal power facilities)	Remaining asbestos-containing products: approx. 20,000 m3 (approx. 20% of total)
	Sealing materials and joints		Remaining asbestos-containing products: approx. 31,000 pcs (approx. half of total)
	Thickener	Electric lines for overhead transmission lines (Power transmission facilities)	Wire corrosion inhibitor, Length: approx. 76 km
		Power generation facilities (Hydro facilities)	Asphalt surface water-barrier wall: 3 facilities (Otsumata Dam: Fukushima Prefecture, Numappara Dam: Tochigi Prefecture, Honbetsu Power Station's water pipeline culvert section: Hokkaido)
	Cushioning material	Suspension insulators for power transmission equipment, etc.	Number: About 490,000 pcs (Asbestos-containing products are used as cushioning materials inside insulators but not used for the porcelain portion of the insulator surface.)

Biodiversity conservation

In habitats of rare bird species, we strive to preserve the living and breeding environments of flora and fauna, as well as ecosystems, by implementing measures such as conducting construction work outside of breeding seasons.

For the Ohma Nuclear Power Station construction site (Aomori), efforts are being made to relocate larvae and pupae of Zygaena niphona hakodatensis, which is classified as an endangered species II, to outside the construction zone, to clear vegetation in wetlands for preserving the living and breeding environments of flora and fauna, to create ponds and marshes suitable for amphibian growth, and to exterminate non-native species.

Larvae of Zygaena niphona hakodatensis (Endangered species II)

Mowed wetlands

In addition, we contribute to forest conservation and CO_2 emissions reduction by preserving company-owned forests around hydroelectric power plants and processing forest residues into biomass fuel (to be burned at thermal power plants).

Water environment conservation

*Integrated report reference page: p.72-73

At our hydroelectric power plants, we take measures to mitigate prolonged turbidity and sedimentation, and at thermal power plants, we manage discharged water in accordance with relevant laws and regulations and environmental preservation agreements with local governments.

Water risk assessment

Using WRI Aqueduct (3.0), J-POWER and its consolidated subsidiaries' power plants were evaluated for water stress and no sites in Japan were found to have high water stress. ("Medium-high" was the highest.)

Overseas, the judgment in Thailand went from Medium-high to Extremely high. Since water stress is relatively high at some sites, we are working to reduce water intake/consumption and operational risk by reusing treated wastewater and installing water reservoirs to suit the environment at each site.

Environmental impact assessments of business activities

*Integrated report reference page: p.72

Prior to the construction of new or additional power plants, we conduct environmental assessments in accordance with relevant laws and regulations, and give appropriate consideration to environmental impact at the planning stage, taking into account the opinions of local residents and other stakeholders. (17 projects as of August 2024)

Business activities	Progress	Area
New Aso Nishihara Wind Farm Project	Draft EIS procedure completed	Nishihara-mura, Aso-gun; Ozu-machi, Kikuchi-gun; Kumamoto, Japan
Hisatsu Wind Farm Project	Draft EIS procedure completed	Minamata City, Kumamoto; Izumi City, Isa City, Kagoshima; Japan
Youra Peninsula Wind Power Project	Draft EIS under examination	Tsukumi City, Saiki City, Oita, Japan
North Kagoshima (West and East Districts) Wind Power Project	Draft EIS procedure completed	Akune City; Izumi City; Satsumasendai City; Satsuma-cho, Satsuma-gun; Kagoshima, Japan
New Setana Waterfront Wind Power Project	Scoping Documents procedure completed	Setana-cho, Kudo-gun, Hokkaido, Japan
Setana Futoro Wind Farm Project	Scoping Documents procedure completed	Setana-cho, Kudo-gun, Hokkaido, Japan
New Koriyama Nunobiki Kogen Wind Power Generation Project	Scoping Documents procedure completed	Koriyama City, Fukushima, Japan
Naka-Noto Wind Farm Project	Scoping Documents procedure completed	Nanao City; Shikamachi, Hakui-gun; Nakanoto-machi, Kashima-gun; Ishikawa, Japan
Fukui Ohno, Ikeda Farm Project	Scoping Documents procedure completed	Ohno City; Ikeda-cho, Imadate-gun; Fukui, Japan

Business activities	Progress	Area
New Tahara Waterfront Wind Power Project	Scoping Documents procedure completed	Tahara City, Aichi, Japan
Watarai, Minami-Ise Wind Power Project	Scoping Documents procedure completed	Watarai-cho, Watarai-gun; Minami-Ise-cho; Mie, Japan
Hiroshima West Wind Farm Project	Scoping Documents procedure completed	Hiroshima City; Hatsukaichi City; Aki-Ohta-cho, Yamagata-gun; Hiroshima, Japan
Seiyo Yusuhara Wind Power Project	Scoping Documents procedure completed	Seiyo City; Kihoku-cho, Kitauwa-gun; Ehime, Japan Yusuhara-cho, Takaoka-gun, Kochi, Japan
New Aso Oguni Wind Farm Project	Scoping Documents procedure completed	Oguni-machi, Aso-gun; Minami-oguni-machi, Aso-gun; Kumamoto, Japan; Kokonoe-machi, Kusu-gun, Oita, Japan
GENESIS Matsushima Project	Scoping Documents procedure completed	Oseto-cho, Saikai City, Nagasaki, Japan
Kichu Wind Farm Project	Document on primary EIC procedure completed	Aridagawa-cho, Arida-gun; Hidakagawa-cho, Hidaka-gun; Hirogawa-cho, Arida-gun; Wakayama, Japan
West Chugoku Wind Farm Project	Document on primary EIC procedure completed	Shunan City, Iwakuni City, Yamaguchi; Yoshika-cho, Shimane; Japan

Improving environmental management level

We have introduced an environmental management system (EMS) at each business site of the J-POWER Group, and are working to continuously improve the environmental management level by formulating environmental action plans, periodically monitoring and evaluating the status of our efforts, and reviewing our measures.

In addition, as a party to businesses with various environmental burdens, we provide environmental education programs tailored to each individual's position and role, ensuring that every employee understands environmental management as a member of the J-POWER Group and works with a sense of responsibility.

*Integrated report reference page: p.73

Environmental laws and regulations

Training to improve waste management skills
Beginner Level Number of participants: 150
Improving competency for practical application by grasping the general flow of waste management operations
- ✓ Acquiring and reinforcing basic knowledge of waste management operations through lectures and exercises

Training to improve waste management skills
Standard Level Number of participants: 110
Acquisition of necessary knowledge for practical operations
- ✓ Explaining key points of waste management laws (including explanations of legal revisions)
- ✓ Learning how to complete consignment contracts and manifest forms

Waste disposal risk assessment Number of sites: 4
Elevating risk management for waste management operations across the entire group
- ✓ Verifying operational status of waste management at each business site
- ✓ Identifying issues and areas for improvement through discussions with relevant personnel

Training on environmental laws and regulations
Number of participants: 133
Acquiring basic knowledge of environmental laws related to various business activities and understanding the latest trends
- ✓ Updating educational materials on environmental laws in line with legal revisions and posting them on the company intranet
- ✓ Providing training support for departments with high demand

EMS training

EMS internal auditor training Number of participants: 67
Training of internal environmental auditors in EMS
- ・Acquisition of necessary knowledge for conducting internal environmental audits
- ・Enhancement of employees' competencies and capabilities through fundamental understanding of EMS

Training for EMS managers and secretariat staff
Number of participants: 10
Appropriate maintenance and improvement of EMS
- ✓ Approach focused on explaining standards and conducting exercises
- ✓ Providing extensive learning opportunities for EMS management personnel, secretariat staff, and other practitioners

Environment e-learning Number of participants: 5,617
Acquisition of the latest environmental knowledge and enhancement of environmental awareness
- ✓ Attended by J-POWER Group company executives and employees
- ✓ In FY2023, the theme was biodiversity

Environmental information exchange Number of sites: 107
Improving environmental awareness and environmental management levels
- ✓ Information exchange between the environmental department at the head office and the environmental managers and staff at each business site.
- ✓ Communicating updates on social trends and legal revisions, as well as exchanging opinions on continuous improvement of environmental management, etc.

Environmental lecture Number of participants: 106
Holding lectures by experts on environmental issues and social trends
- ✓ Attended by J-POWER Group board members and environment management directors
- ✓ In FY2023, the theme was climate change

Ensuring compliance with environmental laws, regulations, agreements, etc.

In order to reduce the impact of our business activities on the surrounding environment, we strive to improve our facilities and operations, as well as to properly inform and apply laws, regulations, agreements, etc. applicable to our business activities.

Responding to environmental problems

Based on the environmental management system, each business site is prepared to prevent environmental problems before they occur and to prevent the spread of damage in the event that environmental problems do occur. We also have a communication system in place in the event of environmental problems, and are prepared to promptly report and communicate with local relevant organizations and departments, including the Crisis Management Response Team at J-POWER's head office. The Crisis Management Response Team will promptly share information with top management and, if necessary, disclose the situation to the media. We are also taking measures across the department to prevent recurrence not only at the subject location but also at similar locations. There were no environmental incidents publicly reported through the mass media in FY2023. The number of publicly reported environmental incidents in recent years is as follows.

FY2021: 2 incidents
FY2022: 1 incident
FY2023: 0 incidents

Promoting environmental communication activities

*Integrated report reference page: p.73

In addition to reporting and disclosing environmental information to society, we participate in cleanup activities and social events in each region, placing importance on face-to-face interactions.

We also hold environmental information exchange meetings within the group companies to share information on environmental management.

Table: Environmental communication with internal and external parties (excerpts)

Target	Contents
Information disclosure to society	• News releases *As needed on the J-POWER website • Issuing integrated reports *Every August • Responses to questionnaires (CDP, domestic press, etc.)
Report to the government, etc.	• Periodic reporting on Act on Rationalizing Energy Use and Act on Promotion of Global Warming Countermeasures *Consent to voluntary disclosure • Notification based on PRTR system • Notification based on the Act on Waste Management and Public Cleansing, etc.
Interaction with local community	• Cleaning around offices • Participation in community exchange events (nature observation, learning events, etc.) • Holding open-house events of offices • Planting, seeding, and flowerbed maintenance on the office premises, etc.
Information sharing within the group companies	• Timely sharing of environmental information (e.g., information on legal revisions, trouble cases, etc.) • Environmental information exchange • Cleaning and beautification activities at business sites, etc.

List of Environmental Data (1/2)

Power generation and energy use

		FY2021	FY2022	FY2023
Generated electricity [0.1 TWh]	Total	690	710	737
	Domestic	623	596	526
	Overseas	67	114	211
Coal [10 kt] (dried; 28 GJ/t equivalent)	Total	1,565	1,514	1,276
	Domestic	1,565	1,514	1,276
	Overseas	0	0	0
Natural gas [million Nm3]	Total	1,274	1,857	3,571
	Domestic	44	0	0
	Overseas	1,230	1,857	3,571
Heavy oil [10 ML]	Total	3.7	2.5	2.4
	Domestic	3.7	2.5	2.4
	Overseas	0	0	0
Light oil [10 ML]	Total	2.8	33.2	19.7
	Domestic	2.8	2.4	2.9
	Overseas	5.9	30.8	16.8
Other fuel [10 ML] (gasoline equivalent)	Domestic	1.05	0.65	1.00
	Overseas	-	-	-
Biomass fuel [10 kt]	Total	3.2	12.2	12.9
	Domestic	3.2	12.2	12.9
	Overseas	0	0	0
Purchased electricity [0.1 TWh]	Total	2.45	3.00	10.57
	Domestic	1.18	0.98	1.32
	Overseas	1.27	2.02	9.24
Total energy used [10 ML]*	Domestic			
J-POWER Group		1,207	1,159	1,005
J-POWER alone		1,185	1,154	1,005

*"Total energy consumption" is calculated in crude oil equivalent based on the Energy Conservation Act.

Emission to the atmosphere

		FY2021	FY2022	FY2023
Nitrogen oxide (NOx) [kt]	Total	24.1	23.9	21.2
	Domestic	23.0	23.0	18.8
	Overseas	1.1	0.9	2.4
NOx emission intensity [g/kWh]	Domestic	0.46	0.48	0.47
	Overseas	0.16	0.08	0.12
Sulfur oxide (SOx) [kt]	Total	10.5	9.3	7.6
	Domestic	10.5	9.3	7.5
	Overseas	0.0	0.0	0.1
SOx emission intensity [g/kWh]	Domestic	0.21	0.19	0.19
	Overseas	0.00	0.00	0.00
Dust emission [kt]	Total	0.6	0.8	0.7
	Domestic	0.5	0.7	0.5
	Overseas	0.1	0.1	0.2
Dust emission intensity [g/kWh]	Domestic	0.01	0.01	0.01
	Overseas	0.01	0.01	0.01

Sulfur hexafluoride management

		FY2021	FY2022	FY2023
Collection rate at time of inspection [%]	Domestic	99.6	99.2	94.6
Collection rate at time of removal [%]	Domestic	99.2	99.3	99.1

List of Environmental Data (2/2)

Use of water resources

		FY2021	FY2022	FY2023
River water [10,000 m3]	Domestic	5,166,000	5,127,000	5,262,000
Sea water [10,000 m3]	Domestic	868,000	944,000	863,000
Industrial water [10,000 m3]	Domestic	850	929	840
Tap water [10,000 m3]	Domestic	30	27	27
Other water resources [10,000 m3] (e.g. underground water)	Domestic	305	26	169
Total water intake [10,000 m3]	Domestic Overseas	6,035,400 1,300	6,072,300 683	6,126,000 1,538
Highly treated wastewater [10,000 m3]	Domestic	491	443	348
COD in waste water [t]	Domestic	27	24	20
Water consumed [10,000 m3]	Domestic Overseas	665 650	607 490	658 1,284

Number of sheets of copier paper procured (A4-size equivalent)

		FY2021	FY2022	FY2023
Number of sheets of copier paper procured [10,000 sheets]	Domestic	3,957	3,615	3,332
Green procurement rate [%]		98%	96%	97%

Generation and effective utilization of industrial waste

	FY2021	FY2022	FY2023
Industrial waste generated [10 kt]	198	195	153
Effective use rate [%]	97.7%	96.2%	94.8%
including coal ash generated [10 kt]	165	164	127
Effective use rate [%]	98.3%	95.8%	94.7%
including gypsum generated [10 kt]	26	28	22
Effective use rate [%]	97.3%	99.9%	100%
Industrial waste discharged [10 kt]	4.6	7.5	7.9

Discharge and recycling of plastic waste (domestic)

		FY2021	FY2022	FY2023
J-POWER	Amount of discharge [t]	58	51	66
	% of recycling, etc. including heat recovery [%]	86%	80%	83%
J-POWER Generation Service*		760	536	568
		14%	35%	25%
J-POWER HYTEC*		481	523	389
		34%	40%	35%
Other group companies		352	215	178
		66%	60%	39%
Total for J-POWER Group		1,651	1,324	1,200
		33%	43%	34%

*Falls under the category of high-volume emitters under the Law for Recycling Plastic Materials.


POWER Group