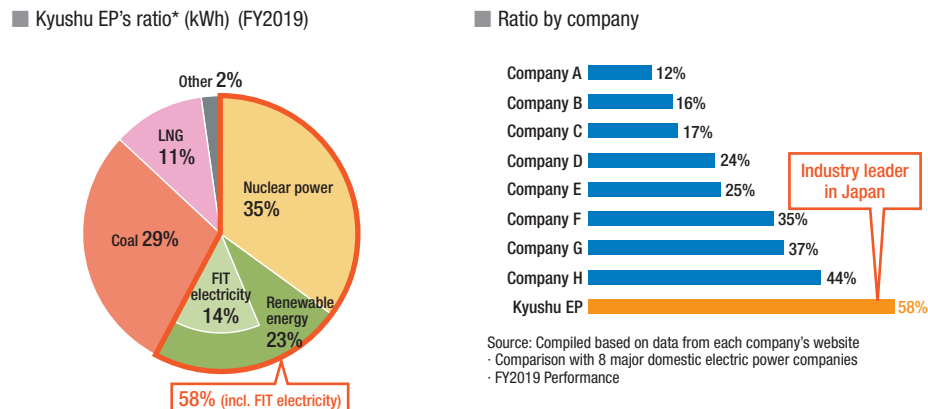


Materiality: Leading the Way Toward a Decarbonized Society

Lowering the Carbon Intensity of and Decarbonizing Energy Sources

Kyushu Electric Power (Kyushu EP) has achieved a roughly 60% ratio of zero-emission or FIT energy sources, making it one of Japan's leaders thanks to our expanded adoption of renewable energy as well as our safe and stable nuclear power operations. We aim to continue maintaining and expanding our non-fossil power sources to achieve carbon neutrality while also leveraging the non-fossil value our high ratio of such power sources generates to increase revenue, providing renewable energy rate plans to household and corporate customers (see **P58**) and selling Non-Fossil Certificates through a new market.

● Top-Class Ratio of Zero-Emission or FIT Energy Sources in Japan

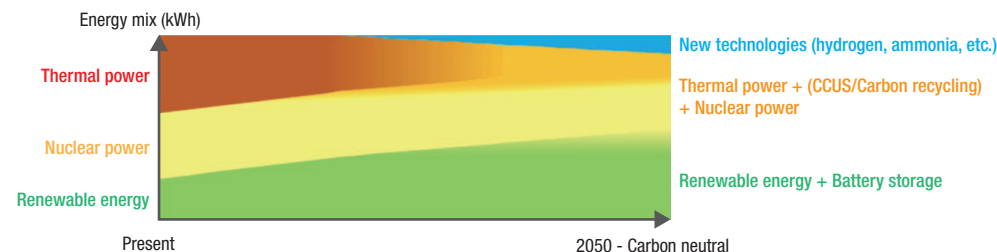


*FIT electricity possesses no value as a renewable energy or zero-CO₂-emission energy source if Non-Fossil Certificates are not used, instead considered to bear the same CO₂ emissions as the national average for electricity, including thermal power sources. Approximately 8% of the non-fossil value derived from FIT power sources (based on the achievement plans submitted and reported under the Act on Sophisticated Methods of Energy Supply Structures) is attributable to Kyushu EP. This figure has been calculated based on the amount of power generated by Kyushu EP and the amount procured from other companies, but does not include that from remote islands.

As an industry leader in low-carbon and carbon-free efforts, we will push to make renewable energy a primary power source by promoting its development Group-wide. Meanwhile, we will continue to maximize the use of nuclear power with the understanding of local communities and safety as our top priority, make thermal power generation even more efficient, and adopt new technologies (utilizing hydrogen, ammonia, etc.) as we simultaneously pursue low-carbon and decarbonized power sources and economic efficiency.

Total investments for FY2021-FY2025: Approx. ¥500 billion
 (Reference) FY2016-FY2020: Approx. ¥800 billion

■ Projected low-carbon/decarbonized scenario



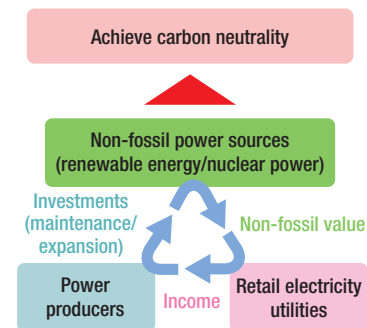
● Leveraging Non-Fossil Value to Expand Earnings

Trading non-fossil value on a new market

The trading of Non-Fossil Certificates derived from nuclear power and non-FIT renewable energy sources began in 2020. Kyushu EP, which has a high ratio of non-fossil fuel power sources, has seen favorable results from selling these on the market and through bilateral trades (to the tune of several billion to ten billion yen annually) while also backing other retail electricity utilities in achieving their goals set forth under the Act on Sophisticated Methods of Energy Supply Structures.

Income from the sale of these certificates is used to maintain and expand our non-fossil power sources by investing in surveying, developing, and replacing renewable energy (non-FIT power sources), facility refurbishments, and installing safety measures at nuclear power stations. Moving forward, we will continue promoting this cycle of providing non-fossil value and investing in non-fossil power sources in an aim to achieve carbon neutrality.

■ Trading scheme



■ Major investments made from selling Non-Fossil Certificates



Resource surveys for new geothermal power development sites (Left: drilling to confirm resources; Right: testing to confirm steam capacity)



Replacement work at the Tsukabaru Hydroelectric Power Station

TOPICS Maximizing profits through the effective utilization of new markets

In recent years, new markets such as the capacity market, the baseload (BL) market, and the supply-demand adjustment market have been developed. These markets are diversifying the ways we can recover our investments into power sources, and we intend to make effective use of them to maximize profits.

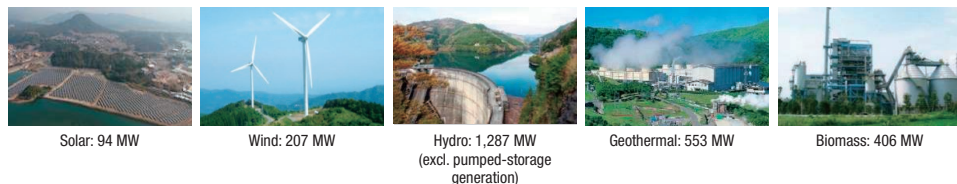
Capacity market	<ul style="list-style-type: none"> The capacity market was introduced to secure future supply capacity for the entire nation ahead of time by increasing the predictability of investment recovery for power producers. Retail electricity utilities compensate power producers based on the value of the capacity (kW) they provide. Transactions began for FY2024 capacity.
Baseload (BL) market	<ul style="list-style-type: none"> This market was introduced to facilitate new electric power companies' access to BL power sources (nuclear, geothermal, large hydro, and coal-fired). In the BL market, former general electric utilities and other operators sell electricity from BL sources at a fixed annual price, which helps stabilize their income. Transactions began in FY2020.
Supply-demand adjustment market	<ul style="list-style-type: none"> This market was introduced so that general transmission and distribution companies are able to secure low-cost and stable adjustable power as the need for it rises with the expanded adoption of renewable energy. The market makes it possible for power producers to secure a fixed level of income for their adjustable capacity. Transactions began in FY2021 for adjustable capacity.

● Positioning Renewable Energy as a Main Power Source

(Target for renewable energy developed in Japan and overseas: 4,000 MW by 2025, 5,000 MW by 2030)

The Kyuden Group has developed approximately 2,550 MW of renewable energy to date. We will continue to develop geothermal and hydroelectric power projects where our strengths lie, as well as expand offshore wind power, biomass and other projects which have great potential for adoption to make renewable energy a primary source of power.

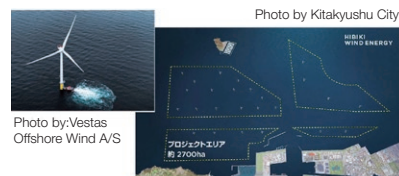
■ Renewable energy developed (as of March 31, 2022; including overseas)



Offshore Wind Power

Kyuden Mirai Energy has formed a consortium with Electric Power Development Co., Ltd. (J-POWER), Saibu Gas Co., Ltd., and others with which it is developing an offshore wind power project in the Hibikinada area of Kitakyushu City, Fukuoka Prefecture. In April 2017, Hibiki Wind Energy Co., Ltd. was established as a special-purpose company to serve as the project's operating entity. It plans to construct an offshore wind farm with a maximum capacity of 220 MW over an area of approximately 2,700 ha, aiming to begin commercial operations in FY2025.

■ Hibikinada offshore wind project (development concept)



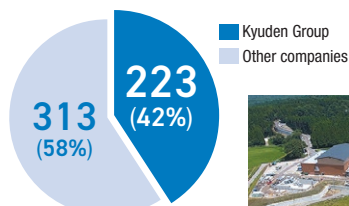
Geothermal and Hydroelectric Power

In the field of geothermal power, the Kyuden Group has approximately 220 MW of installed capacity in Japan, which accounts for about 42% of the country's total installed capacity. This includes the Otake Power Station (Oita Prefecture), Japan's first commercial power plant that started operations in 1967. We are currently promoting the development of new projects, conducting geothermal resource surveys both in and outside of the Kyushu region.

Overseas, we are participating in the Sarulla Geothermal IPP* project (approx. 330 MW) in Indonesia, one of the largest geothermal projects in the world.

We also have a long track record of developing hydroelectric power projects, including the Koyamada Power Station (Kagoshima Prefecture), the oldest power plant in Kyushu, which was built in 1898. Currently, we are working to increase our output and the volume of our power generation by developing new projects that make effective use of untapped energy and replacing (updating) existing facilities.

■ Geothermal power stations in Japan (MW output as of March 31, 2021)



Otake Power Station

Source: Compiled based on "The Current State and Trends of Geothermal Power Generation" published by the Thermal and Nuclear Power Engineering Society

*Independent Power Producer. Independent operators that solely generate electricity for wholesale to electric utilities

Biomass

Led by Kyuden Mirai Energy, we are actively developing biomass power generation, which uses unused wood and other materials as fuel.

In February 2022, the Shimonoseki Biomass Power Station (approx. 75 MW; Yamaguchi Prefecture) began operations, constructed in a joint effort between three Group companies (Kyuden Mirai Energy, Nishinippon Plant Engineering and Construction, and Kyuden Sangyo). In addition, three more plants (approx. 180 MW) are scheduled to be in operation by FY2025.



Shimonoseki Biomass Power Station (exterior view)

Tidal

In March 2022, Kyuden Mirai Energy's proposal for Japan's first 1 MW-class tidal power generation pilot project off the coast of Goto City in Nagasaki Prefecture was selected as a "FY2022 Regional Decarbonization Model Project by Tidal Power Generation" by the Ministry of the Environment.

The project utilizes the results of the 500 kW-class pilot Kyuden Mirai Energy conducted in the same area in FY2021, aiming to establish a business model that will lead to the technology's practical and commercial application by enhancing the efficiency of tidal stream turbines. It is scheduled to be implemented from FY2022 to FY2025.



Tidal turbine (illustrative image)

In the project, a 500 kW tidal turbine manufactured by SIMEC Atlantis Energy (SAE), a UK-based tidal stream power generation company, will be converted into a 1 MW-class turbine and connected to the actual power grid and run for verification purposes. In doing so, we aim to firmly establish tidal power technology that conforms to Japan's environmental and technological standards with the goal of commercializing it as soon as possible.

TOPICS

Kyuden Group receives the Minister of Economy, Trade and Industry Award at the Global Environment Awards

The Kyuden Group received the Minister of Economy, Trade and Industry Award at the 30th Global Environment Awards hosted by Fujisankei Communications Group. This is the second time for the Kyuden Group to receive this award, following the 27th awards ceremony in 2018.

The METI Minister's Award was established with cooperation from the World Wildlife Fund (WWF) Japan and is a prize meant to recognize companies and organizations engaged in environmental activities.

The award was given in recognition of the Kyuden Group's wide-ranging track record of activity, including our proactive development and introduction of renewable energy, our utilization and promotion of EVs, as well as our efforts to preserve biodiversity, such as our controlled burning activities at the Bogatsuru Marshlands.



Chairperson Uriu receiving a certificate of commendation from Parliamentary Vice-Minister of Economy, Trade and Industry Kazuchika Iwata (Their Imperial Highnesses Crown Prince and Crown Princess Akishino also in attendance) Photo by Sankei Shimbun

● Maximizing Use of Nuclear Power Generation

As a comprehensively advantageous power source in terms of curbing CO₂ emissions and energy security, we continue to make maximum use of nuclear power based on the fundamental prerequisite that safety is ensured.

■ Nuclear power stations (as of March 31, 2022)

Station name	Output	Start of operation	Type
Genkai	Units 3 & 4 1,180 MW each	Unit 3: Mar. 1994 Unit 4: Jul. 1997	Pressurized water reactor (PWR)
Sendai	Units 1 & 2 890 MW each	Unit 1: Jul. 1984 Unit 2: Nov. 1985	

Note: Operations at Genkai Units 1 & 2 ended in April 2015 and April 2019



Genkai Nuclear Power Station (Saga Prefecture)

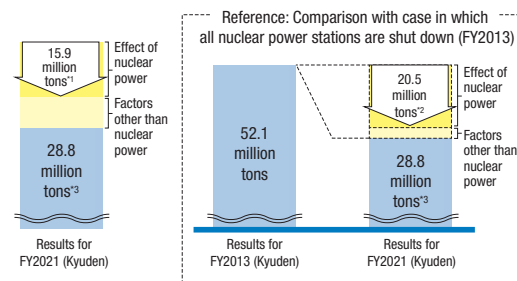


Sendai Nuclear Power Station (Kagoshima Prefecture)

Maintaining safe, stable, and high-utilization nuclear power operations

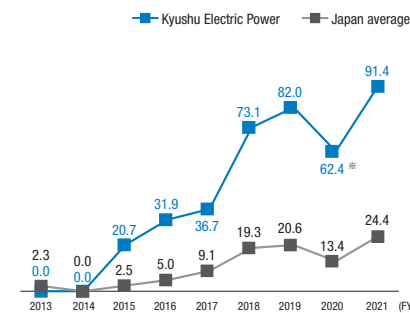
We aim to maximize the utilization of our nuclear power stations currently in operation by maintaining safe and stable operations through continued efforts to improve their safety and reliability. We will also continue to consider ways to improve the utilization rates and operability of our nuclear power stations that are assuredly safe.

■ Effect of nuclear power generation on reducing CO₂ emissions



*1: FY2020 CO₂ emissions coefficient (adjusted) used: 0.479kg-CO₂/kWh
 *2: FY2013 CO₂ emissions coefficient (adjusted) used: 0.617kg-CO₂/kWh
 *3: FY2021 results are provisional. The final figures will be announced by the government in December 2022

■ Nuclear power station utilization rate (%)



* Drop in utilization rate due to equipment shut downs for regular inspections following works to install special equipment to deal with severe accidents at Sendai Nuclear Power Station Units 1 & 2

Nuclear power's contribution to earnings

Nuclear power is a power source that can generate electricity at any time of day, regardless of weather. This not only helps secure stable revenue, but can also generate income from the non-fossil value trading market because as with renewable energy, it does not emit CO₂ during operation.

Even with safety measures and other costs taken into account, nuclear power is competitive from a medium- to long-term perspective, and our investment decisions are made comprehensively based on such considerations.

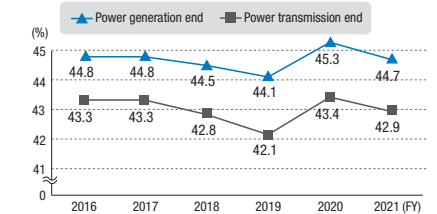
Please see "Stable Supply of Energy" for more information on our efforts to improve the safety and reliability of nuclear power generation. **P56**

● Lowering the Carbon Intensity of Thermal Power

The increased adoption of renewable energy comes with fluctuations in output, and thermal power plays a role in compensating for this. We are continuously working to maintain and improve the overall efficiency of our thermal power generation as a means of curbing our fuel consumption and CO₂ emissions.

Going forward, we will continue to take steps to reduce our environmental impact, decommissioning or scheduling shutdowns of our aging thermal power plants, aiming to fade out inefficient coal-fired thermal power plants by 2030, and studying the use of hydrogen and ammonia as fuels for power generation given they do not produce CO₂ during combustion.

■ Thermal efficiency trends (Kyushu Electric Power)



* Thermal efficiency is calculated on a lower heating value basis.

Co-combustion of biomass at thermal power stations

At Kyushu Electric Power's coal-fired power stations, we are working to lower our carbon emissions by utilizing unused, domestically produced, carbon neutral biomass energy.

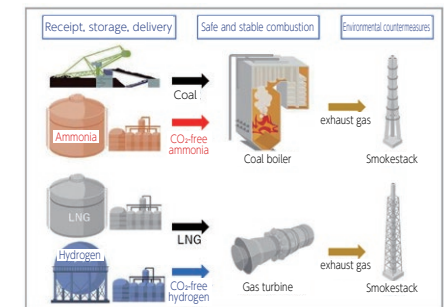
In FY2014, we completed a pilot project at the Reihoku Power Station (Kumamoto Prefecture) that began in FY2010 co-combusting woody biomass using unused domestic woodland resources (timber scraps, etc.), and operations have continued since FY2015.

We are also participating in the Sewage Sludge Solid Fuel Conversion Project publicly tendered by Kumamoto City together with J-POWER and others, which began production in FY2013. The fuel produced is being co-combusted alongside coal at our Matsuura Power Station and J-POWER's Matsuura Thermal Power Plant (Nagasaki Prefecture).

Studying and establishing hydrogen/ammonia co-combustion technologies

We are making the following efforts to establish co-combustion technologies that use 1% hydrogen and 20% ammonia by FY2030.

- Investigating the receiving, storage, and delivery facilities needed for the fuels based on their properties
- Conducting tests for safe and stable combustion
- Reviewing environmental measures to accompany fuel changes



Hydrogen and ammonia co-combustion processes

Developing hydrogen and ammonia fuel supply chains

In preparation for the full-scale adoption of hydrogen and ammonia as CO₂-free fuels, we are building collaborative relationships and conducting joint studies together with companies across an array of fields both in Japan and overseas in an aim to develop a stable and economical supply chain, upstream to downstream, as soon as possible.

● Upgrading the Transmission and Distribution Network

In order to fully tap Kyushu's renewable energy potential, we are working to expand interconnections for renewable energy sources and improve our network utilization rate.

Maximizing the introduction of renewable energy

Renewable energy power generation facilities, solar power in particular, are being introduced on mainland Kyushu at a rapid pace. Against this backdrop, Kyushu Transmission and Distribution (Kyushu T&D) is working to maintain stable supply and maximize the amount of renewable energy it receives on its network through flexible thermal power operations, the use of pumped-storage hydroelectric power plants and large-capacity battery storage, and more effective use of the existing grid (by adopting the Japanese version of the Connect and Manage transmission access scheme).

Adopting the Connect and Manage scheme

Kyushu T&D has adopted the Connect and Manage scheme to maximize the existing capacity of its transmission and electrical substation facilities. This approach allows more renewable energy to be connected to the grid faster, without augmenting said facilities.

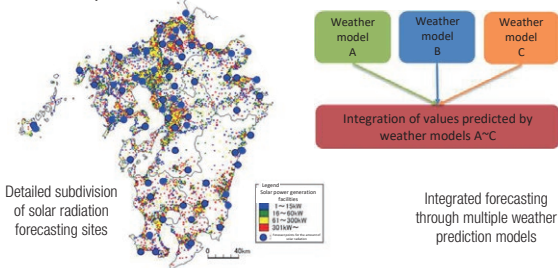
Specifically, it employs an "N-1 power system" that instantly curbs power generation in the event of single equipment failure (N-1 failure) upon having secured enough capacity to ensure stable transmission even in such an event. By doing so, power sources can be connected to the network in excess of its operational capacity.

On top of this, we have begun introducing "non-firm connections" on the bulk power system that generate electricity during the hours when transmission and substation facilities are available and are curtailed when they are not (from January 2021).

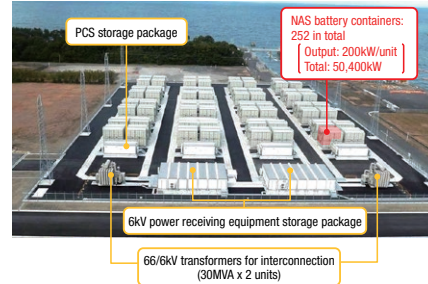
Improving the accuracy of renewable energy output forecasts

Kyushu T&D is working to enhance the accuracy of its renewable energy output forecasts in order to maximize the use of renewables.

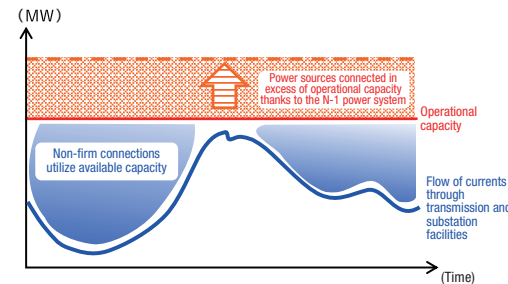
Solar radiation estimates are needed for such forecasts, and we are working to improve our precision by subdividing our forecasting sites across Kyushu for more detailed estimates and by using integrated forecasts that incorporate multiple weather prediction models.



■ Panoramic view of the Buzen Battery Storage and Transformer Station, equipped with one of Japan's largest capacity energy storage systems



■ Utilizing available capacity through the Connect and Manage scheme (illustrative image)



● Promoting Green and Transition Finance

Issuing the "Kyushu Electric Power Transition Bond"

In May 2022, Kyushu Electric Power became the first former general electric utility to issue a "Kyushu Electric Power Transition Bond" in an aim to diversify our capital procurement sources and better familiarize a wide range of stakeholders with the Kyuden Group's efforts to lower carbon intensity, decarbonize energy sources, and promote electrification to achieve carbon neutrality by 2050.

Moving forward, we will also take steps to achieve carbon neutrality from financial angles as well.

■ Overview of the Kyushu Electric Power Transition Bond

Bond name	1st Kyushu Electric Power Transition Bond	2nd Kyushu Electric Power Transition Bond
Issue amount	¥30 billion	¥25 billion
Term	5 years	10 years
Interest rate	0.350%	0.644%
Issue date	May 24, 2022	
Use of funds	New investments and refinancing of existing investments in the development of the Hibiki Power Station (a state-of-the-art, high-efficiency LNG-fired power plant in Fukuoka Prefecture) and the shutdown and decommissioning of existing thermal power plants	

Fund allocation and improvements to the environment (as of March 31, 2022)

■ Fund allocation

Bond name	1st Kyushu Electric Power Green Bond
Issue amount	¥15 billion
Amount allocated	¥15 billion
Amount for refinancing	¥13.1 billion
Unallocated funds	¥0 (fully allocated)
Use of funds	New investments and refinancing of existing investments in the Shin-Takeda Hydro Power Station (Oita Prefecture), the Jikumaru Hydro Power Station (Oita Prefecture), and the Otake Geothermal Power Station (Oita Prefecture)

■ Environmental improvements

Type of renewable energy	Renewable energy developed (Kyuden Group)	CO ₂ emissions reduced in FY2021*
Solar	Approx. 94 MW	Approx. 30,000 tons
Wind	Approx. 207 MW	Approx. 70,000 tons
Hydro	Approx. 1,287 MW	Approx. 1.45 million tons
Geothermal	Approx. 553 MW	Approx. 580,000 tons
Biomass	Approx. 406 MW	Approx. 230,000 tons
Total	Approx. 2,550 MW	Approx. 2.36 million tons

* Calculated using the FY2020 CO₂ emissions coefficient (adjusted) of 0.479kg-CO₂/kWh

Active Development of Overseas Business - Helping Build Sustainable Societies -

We are working on renewable energy, thermal power generation, and transmission and distribution projects that will help lower the carbon intensity of electricity in countries and regions around the world according to their needs by utilizing the technologies and know-how in the electric power industry the Kyuden Group has accumulated in Japan and overseas. (Overseas equity output target: 5,000 MW by 2030)

IPPs and other investment projects

We are expanding into the Americas and the Middle East while focusing on Asia, a market with high growth potential, and are working to identify business opportunities in Europe and Africa.

Overseas consulting business

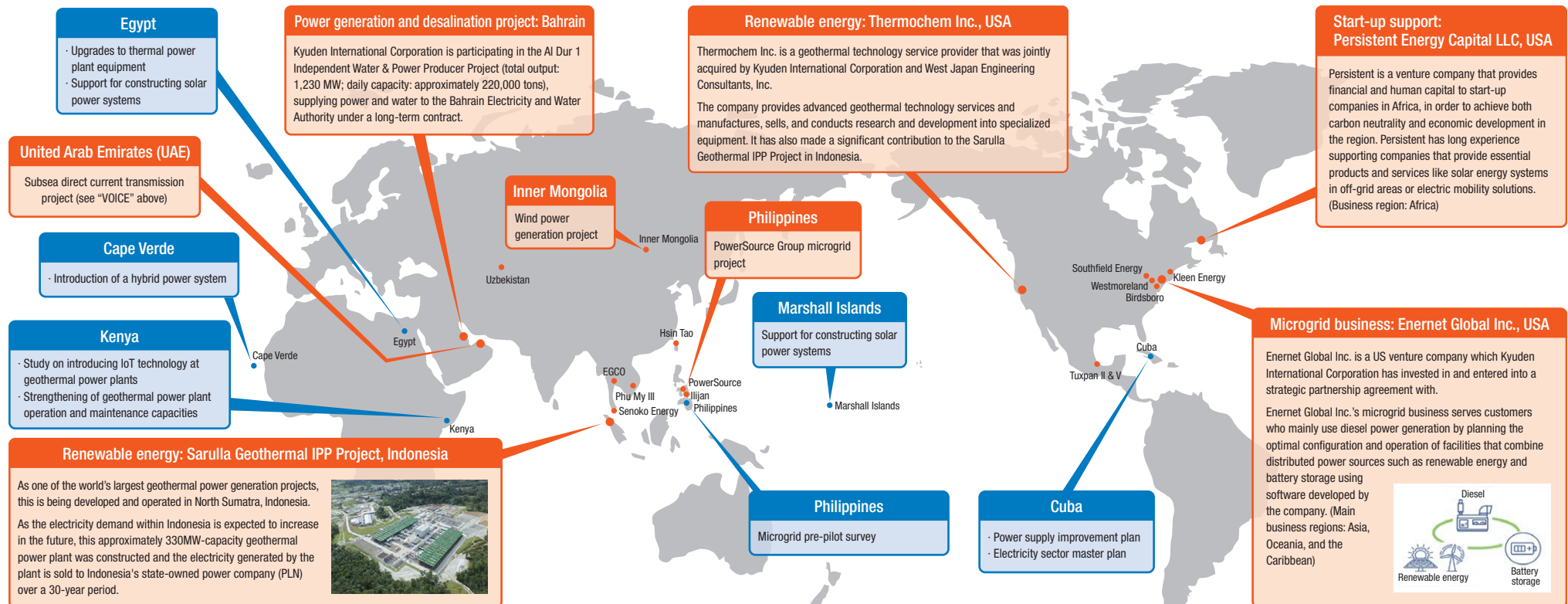
In cooperation with our own Group companies and other highly specialized partners, we conduct surveys on the introduction of renewables and support the formulation of electricity master plans.

Entering new business domains

We have been expanding our business domains in recent years, taking on microgrid projects in an island nation and a transmission and distribution project in the Middle East.

Highlight Main Initiatives

● IPPs and other investment projects (as of the end of July 2022) ● Consulting projects (last 1-2 years)



VOICE

Contributing to lower carbon intensity and decarbonized energy sources through the Kyuden Group's first subsea direct current transmission project



Yu Iwashita
Business Development Group,
Planning Division,
Kyushu Electric Power
Transmission and Distribution

The project involves constructing ultra-high-voltage direct current transmission facilities that will power offshore oil and gas production facilities in the Persian Gulf from the United Arab Emirates (UAE) mainland for 35 years. By transmitting clean energy being developed on the mainland, the project will contribute to a significant reduction in CO₂ emissions from these oil and gas operations. I'm in charge of designing and managing the construction of the subsea cables, and even though I struggle discussing and coordinating things in English everyday as I'm not used to it, I find it rewarding that I can use the experience I gained from transmission and distribution projects in Japan to help build sustainable societies across borders.

Promotion of Electrification

Combining environmentally friendly energy with the resources of the Kyuden Group, we will take on the challenge of maximizing electrification, especially in the Kyushu area where the potential for electrification is great, helping reduce greenhouse gas (GHG) emissions throughout society.

Household and Commercial Sectors

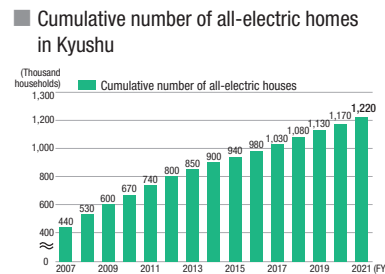
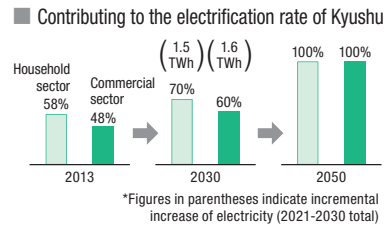
In the household sector, we are promoting the transition to all-electric homes through more events and mass marketing that convey the advantages of going fully electric, and engaging in sales activities that seize upon various opportunities.

In terms of climate-control and hot water supply systems for the commercial sector, we offer high-efficiency heat pump systems optimized for use in our customers' facilities. We also promote the adoption of electric kitchen systems by extensively publicizing their advantages in terms of ease of use, hygiene, and economy.

By promoting these initiatives, we will contribute to the realization of 100% electrification rate in Kyushu by 2050, reaching 70% in the household sector and 60% in the commercial sector by 2030.

In achieving this goal, we are aiming for total incremental increases in power consumption of 1.5 TWh in the household sector and 1.6 TWh in the commercial sector between 2021 and 2030.

Contribution to Kyushu's electrification rate	Incremental increase (FY2021 performance)
	Household: 0.13 TWh Commercial: 0.11 TWh



Industrial and Transportation Sectors

In the industrial sector, we are conducting technological research on heat pumps and other heat conversion devices and taking on the challenge of electrifying heat demand across a wide range of temperature bands in production processes (hot water, steam, application of heat, etc.). We also conduct on-site assessments and reviews with our customers and provide energy conservation proposals to improve energy use efficiency.

In the transportation sector, we aim to replace 100% of our company vehicles with EVs by 2030. We also operate an array of businesses and services to promote the spread of EVs, including EV car sharing, charging infrastructure expansions, and energy management through EVs. (No. of company EVs deployed (FY2021): 61 (12%))

TOPICS Efforts to spread the use of EV taxis

In a joint collaboration with Daiichi Koutsu Sangyo Co., Ltd. and the Sumitomo Corporation Group, Kyushu Electric Power has been testing the deployment of EV taxis and chargers at Daichi Kotsu's Island City sales office since January 2022. We are analyzing the economic efficiency, durability, and environmental impact of taxis that run for long hours across long distances to verify how to charge and run EV taxis in an optimal way to promote their spread.



EV taxi

Promoting Carbon Neutrality in the Region

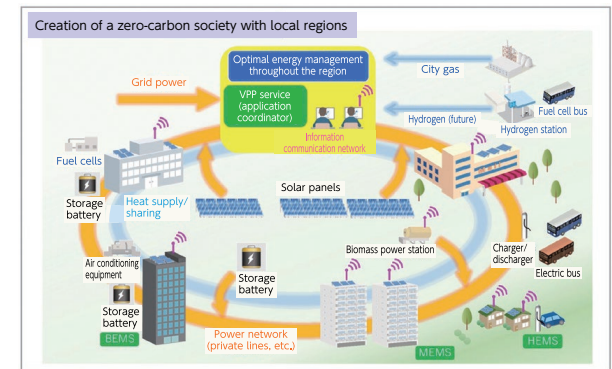
The Kyuden Group will contribute to solving local and social issues and co-create a zero-carbon society by providing solutions in response to the collaborative needs of local governments in promoting carbon neutrality in the region and strengthening its resilience.

Creating a regional energy system

Regional energy systems have the potential to greatly change the business models in our electricity business. As these energy systems are an area where the Kyuden Group can leverage its strengths. We see this as a new business opportunity and are coordinating with local governments and other bodies to gather information and select a proof-of-concept field site.

Specifically, we are considering field sites and planning to conduct proof-of-concept testing to acquire the technical expertise needed to create a regional energy system and build a business model.

Illustrative image of a regional energy system

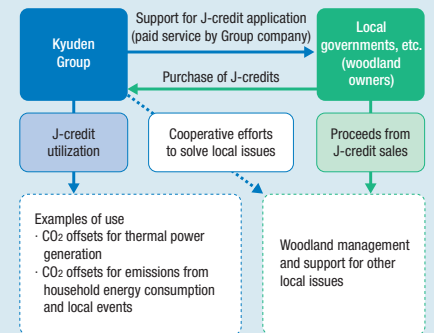


TOPICS Project to create and utilize J-credits through the utilization of forest resources

The Kyuden Group is working on a project to support the creation of J-credits* from woodlands owned by local governments, etc., and purchase the credits created.

Based on the results of a pilot project in Hisayama Town, Fukuoka Prefecture, we are preparing to start operations in Kusu Town, Oita Prefecture as part of our full-scale roll-out of the project across the entire Kyushu region.

*A scheme in which the national government awards credits (with tradable environmental value) by certifying (1) the amount of CO₂ emissions reduced through the introduction of energy-saving equipment and the use of renewable energy, and (2) increases in CO₂ absorption achieved through proper forest management



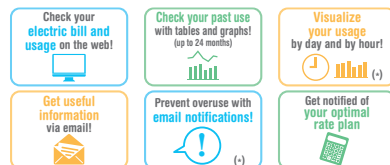
Promotion of Energy Conservation

The Kyuden Group offers a wide variety of services to support the prosperous and comfortable lives of its customers, and we are working to help reduce not only our own greenhouse gas (GHG) emissions, but those of society as a whole.

● Kirei Life Plus, a Members' Site Offering Useful Information

Kyushu Electric Power (Kyushu EP) offers a number of useful services through its "Kirei Life Plus" members' site, including energy conservation rankings that compare members' energy use with other households, optimal rate plan notifications that inform members of recommended rate plans and their benefits, and overage emails that notify members when their usage has gone over a pre-set amount.

■ Member services offered on Kirei Life Plus



* For customers with smart meters

● Collaborating on a Demand Response (DR)* Service for Households

Since February 2021, Kyushu EP has been offering a demand response service via its Kyuden eco/Kirei Life Plus smartphone application in collaboration with SB Power Corp. The aim of the app is to create a system that helps customers conserve energy and reduce their electricity bill, cuts Kyushu EP's supply costs, and enables renewable energy to be used more effectively by optimizing the supply-demand balance through demand response.

*A mechanism for balancing the supply and demand of electricity by having customers (the demand side) who are signed up for one of Kyushu EP's household plans (and have a smart meter installed) either save electricity or create demand based on guidance from the Company



● Zero Carbon Challenge Declarations by Kyuden Group Employees

In an aim to achieve carbon neutrality in the Kyushu area, employees of Federation of Electric Power Related Industry Worker's Unions of Kyushu and the Kyuden Group have made "Zero Carbon Challenge Declarations," pledging to take efforts to conserve energy and go electric at home and elsewhere. Since June 2022, both labor and management have been working together to implement specific initiatives based on these.

By spreading and sharing these declarations broadly with local communities and society on our website and social media, we will help foster momentum toward achieving carbon neutrality.



Energy Policy Recommendations and Involvement

● Endorsement of the GX League Basic Concept

In March 2022, Kyushu EP endorsed the "GX League Basic Concept" announced by the Ministry of Economy, Trade and Industry. The Kyuden Group will take carbon neutrality and other changes in the business environment as an opportunity for transformation, have this lead to further corporate growth, and continue to aim to be a corporate group that leads the decarbonization of Japan from Kyushu.



Reduction of Environmental Impact

The Kyuden Group recognizes that as a corporate group whose operations impact the environment, we have a responsibility to be diligent in our efforts to conserve the environment.

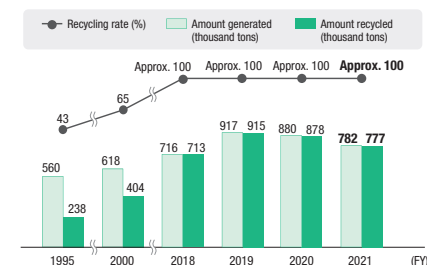
That is why we promote environmental management that balances both our business activities and the environment across all of our operations, striving to reduce the environmental impacts and risks associated with them. At the same time, we roll out our environmental programs with full consideration of biodiversity, helping realize a sustainable society.

● Efforts to Establish a Circular Society

Zero-emission waste activities

Industrial waste generated by the Kyuden Group includes byproducts from its thermal power operations (coal ash, gypsum) and materials removed from construction sites. In addition to properly managing and disposing of this industrial waste, we also practice the 3Rs: Reduce, Reuse, and Recycle.

■ Industrial waste generated and recycling rate



Promoting green procurement

The Kyuden Group introduced its Green Procurement System in FY2002, which stipulates that "the Company is to procure environmentally friendly products" when making purchases, and we are working together with our suppliers as we strive to do so.

TOPICS

Making the Circular Park Kyushu resource recycling center a reality

—An effort to socially implement resource recycling at the former site of the Sendai Power Station—

One global challenge in building a sustainable society today is the transition to a circular economy that recycles the finite resources we possess. Against this backdrop, Kyushu EP has designated the site of the former Sendai Power Station (Kagoshima Prefecture) as "Circular Park Kyushu" as a resource recycling site in an aim to build a sustainable society by promoting a circular economy and decarbonization. Specific considerations for the site are currently underway.*

Moving forward, we will work to socially implement solutions to issues related to resource recycling by recovering resources from waste, utilizing the relevant technologies and expertise companies and universities possess, and by conducting a pilot project in cooperation with Satsumasendai City.

*Kyushu EP has concluded a collaborative agreement with Satsumasendai City, Waseda University Educational Corporation, The Kagoshima Bank, Ltd., and Nakadai Holdings Co., Ltd. to make Circular Park Kyushu a reality, through which the partners will move forward with joint studies in industrial, governmental, and academic fields to reach decisions regarding the park's commercialization.



A shot from the signing of the collaborative agreement

Water Resources

Water resources are fundamental to the Kyuden Group's business activities. We use large amounts of water at not only our hydroelectric power plants but also at our thermal and nuclear power plants as a coolant and for other uses. As such, limitations being placed on the supply of water caused by droughts or other issues would have huge impacts on the Group's businesses.

As a business that uses water resources, we will continue to comply with the permitted amounts of water intake based on relevant laws and regulations, and are working to reduce the amount of water we consume by, for example, recirculating water at our power plants.

Further, all our business sites and Group companies are making efforts to conserve water in the office and reduce the amount of water we consume.

Water risk assessments

To identify water risks, WRI Aqueduct 3.0 tools are being used to determine the current and future level of water stress in areas where facilities are located.

According to the Baseline Water Stress tool, maximum water stress is low-medium in the Kyushu region where Kyushu Electric Power (Kyushu EP) has installed power plants that use fresh water or seawater, and water-related risks such as droughts are assumed to occur less frequently there. Although water-related risks are low, Kyushu EP and Kyushu Transmission and Distribution manage the following risks regarding the use of water resources, which are essential for the power generation business.

Hydroelectric power generation business

We discharge the necessary amount of water to maintain the river environment downstream from the dams and weirs of our hydroelectric power plants. In addition, when drawing water from rivers for our power generation, we ensure strict compliance with permitted amounts of water intake based on relevant laws and ordinances.

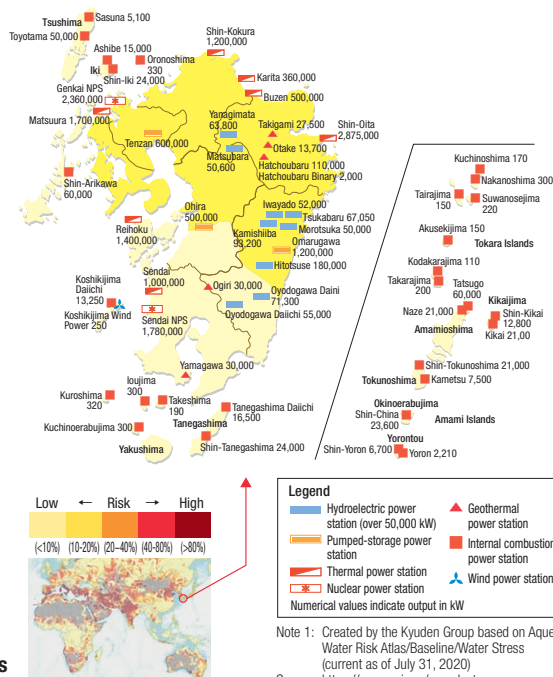
Where river levels are predicted to rise due to heavy rainfall, we release water from our dams in advance based on water governance agreements with the national government or other authorities. We also cooperate to the fullest extent possible in local disaster prevention.

Thermal power generation business

Thermal power plants require a certain amount of external water intake to maintain the water quality needed for power generation. On top of properly managing this intake on a daily basis, we also strive to reduce the level of our intake by recovering and reusing the water used in power generation. In the event that restrictions are placed on the amount of water we can receive due to drought or other circumstances, we will work to maintain our thermal power operations by utilizing the water stored inside our plants effectively and considering other water-saving measures or ways to receive water.

Thermal and nuclear power generation businesses

We use seawater as indirect cooling water for power generation facilities, and monitor the temperature difference between intake water and discharged water.



Note 1: Created by the Kyuden Group based on Aqueduct Water Risk Atlas/Baseline/Water Stress (current as of July 31, 2020)
Source: <https://www.wri.org/aqueduct>
Note 2: Kyuden Group facilities shown on the map are current as of March 2022

Preserving Biodiversity

The Kyuden Group will help achieve a sustainable society by rolling out environmental programs with full consideration given to biodiversity and preventing deforestation in line with our Environmental Action Policies¹.

We will also continue our efforts to preserve biodiversity based on the Electric Utility Industry's Action Guidelines for Biodiversity formulated by the Federation of Electric Power Companies of Japan.

*1: A basic policy for the medium- to long-term based on the Kyuden Group Environmental Charter, a guideline for steadily promoting environmental business management that balances business operations and the environment. The policy is comprised of five pillars: initiatives to address environmental issues, initiatives to establish a circular society, preserving the local environment, collaboration with society, and promoting effective management of the environment.

Engaging in environmental activities with local communities

The Kyuden Mirai Foundation, established by Kyushu EP, aims to continue defending the abundance of nature and providing a bright future for children.

It engaged in environmental conservation activities to help protect ecosystems and landscapes, including controlled burning at the Bogatsuru Marshlands in Taketa City, Oita Prefecture, registered as an important wetland site under the Ramsar Convention. It also offers hands-on environmental education programs to raise awareness of environmental conservation among children at Kyushu EP's company-owned Kuju Kyuden Forest in Yufu City, Oita Prefecture.

In FY2021, it also launched the "Kyuden Future Forest Project" which aims to build a forest that will serve as base for environmental education and exchange among residents. The first phase of the project involves planting trees in Isahaya City, Nagasaki Prefecture together with local residents in an effort to become carbon neutral.



Controlled burning at the Bogatsuru Marshlands

Environmental education (tree planting) underway at the Isahaya Kyuden Future Forest

TOPICS Joining the 30by30 Alliance for Biodiversity

Kyushu EP has applied to join the Ministry of the Environment's 30by30 Alliance to lend our hand in achieving the 30by30 target, a global biodiversity target².

Moving forward, we will hold discussions with the Ministry in an aim to have our company-owned forests certified as Other Effective area-based Conservation Measures (OECMs) that contribute to preserving biodiversity.

*2: A target in which countries around the world aim to conserve at least 30% of their land and marine areas respectively by 2030. It is being considered as a major goal of the Post-2020 Global Biodiversity Framework, a global biodiversity target to be agreed upon at the 15th Conference of the Parties (COP15) to the Convention of Biological Diversity (CBD) this year.



A company-owned forest (by Lake Yamashita in Yufu City, Oita Prefecture)

Company-owned forests

Kyushu EP maintains 4,447 hectares of company-owned forests (in a cycle of planting, cutting, and planting) primarily in Oita Prefecture in cooperation with the Group company Kyushu Rinsan.

Our efforts have been highly praised, becoming the first electric power company to obtain FSC® certification (FSC-C018956) (Forest Stewardship Council®; headquartered in Germany) in 2005, which certifies that forests are being managed in an environmentally friendly manner. We estimate the amount of carbon fixed throughout our company-owned forests as a whole to be approximately 1,308,000 tons of CO₂ equivalent (as of March 31, 2022).

Initiatives Based on the TCFD Recommendations



Kyushu Electric Power expressed its support for TCFD* recommendations in July 2019.
 *: Task Force on Climate-related Financial Disclosures (TCFD) is a task force established by the Financial Stability Board (FSB) in response to the request from the G20 Finance Ministers and Central Bank Governors Meeting. In June 2017, the task force announced recommendations encouraging the disclosure of information on the financial impact of the risks and opportunities of climate change.

The Kyuden Group has designated addressing climate change as a key management issues (materiality). By utilizing the TCFD recommendations to formulate our strategies and enriching our information disclosure based on this framework, we will achieve our goal of “leading the way toward a decarbonized society” and fulfill our responsibility to our stakeholders.

● Governance and Risk Management

Response system for climate change (risk and opportunity assessment and management process)

In July 2021, we established the Sustainability Promotion Committee chaired by the President and under the supervision of the Board of Directors to actively promote carbon neutrality and other ESG initiatives.

In addition to formulating strategies and basic policies related to ESG issues in general (identifying key management issues as materiality), deliberating specific measures, and managing the progress of their implementation, the Committee is also tasked with deliberating and supervising strategies and risks related to climate change. The Carbon Neutrality and Environment Sub-Committee chaired by the Chief ESG officer has also been established under the Sustainability Promotion Committee. It discusses environmental issues, including carbon neutrality, from a more specialized standpoint.

The Committee meets at least twice yearly, and the results of their discussions are reported without delay to the Board of Directors, which supervises all ESG-related activities.

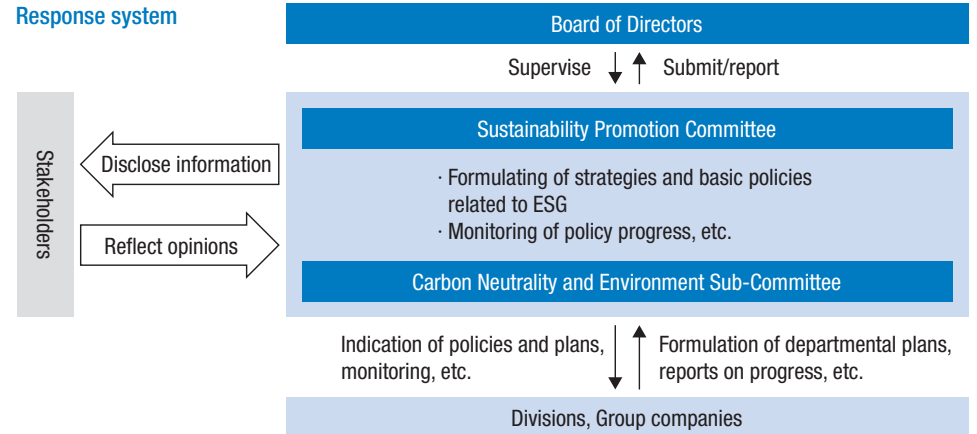
Our Action Plan to Achieve Carbon Neutrality announced in November 2021, which includes our goals for 2050 and the upward revision to our management (environmental) targets for 2030, was approved by the Board of Directors following deliberation by the Carbon Neutrality and Environment Sub-Committee and the Sustainability Promotion Committee.

We will continue to further enhance and strengthen the process of assessing and managing climate change risks and opportunities to enhance corporate value for the Kyuden Group. (See **P72** for details on our risk management system)

Climate change-related agenda items discussed by the Sustainability Promotion Committee

Oct. 2021	<ul style="list-style-type: none"> Our 2050 vision for carbon neutrality and review of the 2030 CO₂ reduction targets (management targets), and the basic direction of specific initiatives Basic concept of our Sustainability Policy and the status of considerations for materiality
Nov. 2021	<ul style="list-style-type: none"> Materiality proposals Review of our 2030 CO₂ reduction targets and specific initiatives for carbon neutrality Direction for formulating the Medium-term ESG Promotion Plan
Apr. 2022	<ul style="list-style-type: none"> Identification of materiality Medium-term ESG Promotion Plan

Response system



■ Sustainability Promotion Committee

Structure Chairperson: Member of the Board of Directors, President & Chief Executive Officer
 Vice-chairperson: Chief ESG officer (Member of the Board of Directors, Vice-Presidential Executive Officer)
 Committee members: External directors, executive directors of relevant divisions, etc.
 Frequency Twice yearly in principle, and additionally as necessary

■ Carbon Neutrality and Environment Sub-Committee

Structure Chairperson: Chief ESG officer (Member of the Board of Directors, Vice-Presidential Executive Officer)
 Vice-chairperson: Executive Director of the Corporate Strategy Division and Director of the District Symbiosis Division
 Committee members: Directors of relevant divisions, etc.
 Frequency Twice yearly in principle, and additionally as necessary

Linking climate change response to executive compensation

Kyushu Electric Power offers its Directors (excluding Directors who are Audit & Supervisory Committee members and external directors) performance-based compensation, and has adopted GHG reductions aimed at carbon neutrality as one of its performance indicators (See **P68** for details on executive compensation)



● Strategies (Risks, Opportunities, and Measures) - Climate Change Countermeasures based on Scenario Analysis -

We have analyzed a number of scenarios based on the Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report, an IEA report, and Japan's 6th Strategic Energy Plan among others to assess the impact of climate change on the Kyuden Group.

The results of this analysis have been properly reflected in our Action Plan to Achieve Carbon Neutrality, the Kyuden Group's low carbon transition plan, and we have formulated our Medium-term ESG Promotion Plan to steadily implement it. The Sustainability Promotion Committee and the Carbon Neutrality and Environment Sub-Committee are to review and discuss our progress on the Action Plan, and revise it as appropriate based on the social trends and movements in terms of technical innovation.

In addition to the risks, opportunities, and financial impacts related to our electricity businesses (domestic, overseas, and renewable energy businesses), we have recently conducted a scenario analysis for ICT service business and urban development business, two of our growth businesses.

Scenario Analysis (1.5°C Case)

Scenario	Scenario Drivers			Risk or Opportunity	Timeframe	Likelihood	Financial Impact (P&L basis)	Response Strategy		
	Major Theme	Topic	Driver							
1.5°C Case	Electricity businesses (including renewable energy and overseas)	Policy and Regulation	Costs and investments accompanying tighter GHG emission regulations	Carbon pricing (taxes, emission rights, etc.)	Transition risk (policy and regulation)	Medium- to long-term	Mid	Costs would increase by ¥10 billion to ¥15 billion if GHG emissions were not reduced (assuming a carbon price of ¥2,000-¥3,000/t-CO ₂)	<ul style="list-style-type: none"> Reduce GHG emissions Make recommendations on and get involved in energy policy 	
				Phase-out of inefficient coal-fired power and improvements of thermal efficiency		Short-, medium-, long-term	High	Tens of billions of yen (the amount of increase in our fuel costs if we were to mix in 20% ammonia at our coal-fired power plants and 1% hydrogen at our LNG-fired power plants)	<ul style="list-style-type: none"> Establish co-firing technologies at our existing thermal power plants Develop hydrogen and ammonia supply chains Produce carbon-free fuel using renewable energy and nuclear power Switch from coal-fired to LNG combined cycle thermal power 	
		Technology	Making renewable energy a primary source of power	Expanded earnings by promoting the development of renewable energy (including overseas)	Opportunity (source of energy)	Short-, medium-, long-term	High	¥13 billion in ordinary income from the renewable energy business (FY2025)	<ul style="list-style-type: none"> Develop geothermal and hydroelectric power projects where our strengths lie Develop offshore wind power and biomass projects which have great potential for adoption Utilize battery and pumped storage 	
				Decreased grid stability	Transition risk (technology)	Medium- to long-term	Low	Minor to medium	Upgrade supply and demand operation and grid stabilization technologies through the use of digital technology	
			Maximizing the use of nuclear power	Improvements of nuclear power station utilization rate	Opportunity (source of energy)	Medium- to long-term	Mid	A 1% increase in the utilization rate would reduce fuel costs by about ¥3 billion	Shorten inspection periods, operate on long-term cycles, improve electricity output	
				Unplanned outages of nuclear power	Transition risk (policy and regulation, technology)	Short-, medium-, long-term	Low	Approx. ¥5 billion per reactor for a one-month outage	Allocate appropriate budgets for repairs and improvement costs in line with the state of the facilities	
		Market	Electric power demand	Increased electricity sales as a result of progress in electrification	Opportunity (products and services)	Short-, medium-, long-term	High	Sales will increase by approx. ¥50 billion if electrification target is reached (increase in sales if 2030 target KPI is achieved)	Contribute to the electrification of Kyushu - Household: Strengthen cooperation with housing-related businesses, etc.	
				Decreased electricity sales due to the spread of distributed energy systems, increased competition, etc.	Transition risk (market)	Medium- to long-term	High	A 1% decrease in retail electricity sales would reduce sales by approx. ¥12 billion	Establish distributed energy resource (DER) control technologies and develop an aggregation business using battery storage	
			Fuel prices	Higher fuel prices	Transition risk (market)	Short-, medium-, long-term	High	Certain financial impact, but mitigated by stable nuclear power supply	<ul style="list-style-type: none"> Diversify supply sources Curb price hikes through contractual fixed price options, etc. (coal) Consider diversifying pricing methods by using new indices with higher price stability (LNG) 	
		Reputation	Credibility	Higher financing costs due to investors deeming our efforts toward carbon neutrality as insufficient	Transition risk (reputation)	Medium- to long-term	Mid	Approx. ¥0.7 billion (the impact of a 0.1% change in the interest rate on approx. ¥700 billion in actual funding from FY2021)	<ul style="list-style-type: none"> Steadily implement the Action Plan Promote proper information disclosure, including on the progress toward our KPIs 	
		Products and Services	Changing customer needs	Sales of non-fossil value	Opportunity (products and services)	Short-, medium-, long-term	High	¥20 billion to ¥40 billion (potential sales if all non-fossil value was sold)	<ul style="list-style-type: none"> Maximize the use of zero-emission power sources Expand renewable energy and CO₂-free rate plans 	
				Increased carbon neutrality needs in the region		Medium- to long-term	High	Approx. several hundred million yen (increased sales from distributed energy systems, EV services, etc.)	<ul style="list-style-type: none"> Establish distributed energy resource (DER) control technologies and develop an aggregation business using battery storage Consider new business models using EVs 	
		ICT Service / Urban Development Businesses	Policy and Regulation	Costs and investments accompanying tighter GHG emission regulations	Carbon pricing (taxes, emission rights, etc.)	Transition risk (policy and regulation)	Medium- to long-term	Mid	Minor	<ul style="list-style-type: none"> Maintain and improve profitability by differentiating ourselves and adding higher value by improving energy-saving performance, creating self-sufficient zero energy buildings (ZEBs) and houses (ZEHs), introducing renewable energy-based electricity, and promoting the use of digital transformation. Also, reduce the impact of carbon pricing Provide an accurate response to disaster response needs of local governments and enter into agreements with them Collaborate with other companies on related products and services to differentiate us from competitors, including drone services and uninterruptible power supplies Minimize impacts by constructing disaster-resistant facilities, selecting development sites and implementing disaster prevention measures based on hazard maps, and hedging risk with insurance coverage Build a decentralized and disaster-resilient telecommunication network Prepare disaster response manuals, etc.
					Increased costs following a tightening of the Energy Conservation Act		Medium- to long-term	High	Minor	
Products and Services	Changing customer needs		Increased need to promote electrification and for energy management in response to growing demand for decarbonization and energy conservation	Opportunity (products and services)	Short-, medium-, long-term	High	Medium			
			Increased demand for products/services tied to ensuring resiliency		Medium- to long-term	Mid	Minor			
Physical	Facility damage		Losses incurred due to typhoons, floods, torrential rain and other natural disasters (increased costs to restore damaged facilities and reduced earnings due to suspended operations)	Physical risk (acute)	Short-, medium-, long-term	Low	Minor			
		Operational costs	Increased electricity costs for air conditioning due to higher average temperatures	Physical risk (chronic)	Medium- to long-term	High	Minor			

Timeframe Short-term: Now through FY2025; Mid-term: FY2026-FY2030; Long-term: FY2031-FY2050

Financial Impact Minor: Less than ¥1 billion; Medium: ¥1 to 10 billion; Large: ¥10 billion or more *FY2021 figures used to determine financial impact unless otherwise stated

Presumptions 1.5°C Case: Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report (SSP1-1.9 scenario), IEA WEO 2021 (Net Zero Emissions by 2050 (NZE) scenario), Japan's 6th Strategic Energy Plan, etc.

4°C Case: Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report (SSP5-8.5 scenario), etc.

Scenario Analysis (4°C Case)

Scenario	Scenario Drivers			Risk or Opportunity	Timeframe	Likelihood	Financial Impact (P&L basis)	Response Strategy	
	Major Theme	Topic	Driver						
<p>4°C Case</p> <p>There is a wide gap between the efforts different countries and regions have taken to address climate change, and GHG emission reductions have not progressed when viewed on a global basis.</p> <p>Temperatures have risen across the world, causing abnormal weather including changes in the flow rate of water to increase also in Kyushu, the Kyuden Group's main area of business. The impacts of this have grown apparent, with some resource development sites overseas have becoming inoperable.</p> <p>In Japan, the adoption of zero-emission power sources has progressed, maximizing the use of renewable energy and nuclear power. Moreover, the growing need for decarbonized power sources is advancing the debate on new types of nuclear reactors.</p> <p>Customers are highly environmentally conscious, and with ambitious energy conservation measures being promoted, electrification has made headway in all sectors, including the widespread use of EVs.</p> <p>As total global GHG emission reductions have been insufficient, stricter carbon pricing schemes and other regulations are about to be imposed on power producers in developed countries.</p>	Electricity businesses (including renewable energy and overseas)	Policy and Regulation	Costs and investments accompanying tighter GHG emission regulations	Carbon pricing (taxes, emission rights, etc.)	Transition risk (policy and regulation)	Medium- to long-term	Mid	Costs would increase by ¥20 billion to ¥30 billion if GHG emissions were not reduced (assuming a carbon price of ¥4,000-¥6,000/t-CO ₂)	<ul style="list-style-type: none"> Reduce GHG emissions Make recommendations on and get involved in energy policy
			Phase-out of inefficient coal-fired power and improvements of thermal efficiency	Short-, medium-, long-term		High	Greater than the 1.5°C case	<ul style="list-style-type: none"> Establish co-firing technologies at our existing thermal power plants Develop hydrogen and ammonia supply chains Produce carbon-free fuel using renewable energy and nuclear power Switch from coal-fired to LNG combined cycle thermal power 	
		Technology	Maximizing the use of nuclear power	Unplanned outages of nuclear power	Transition risk (policy and regulation, technology)	Short-, medium-, long-term	Low	Approx. ¥5 billion per reactor for a one-month outage	Allocate appropriate budgets for repairs and improvement costs in line with the state of the facilities
		Market	Electric power demand	Increased electricity sales as a result of progress in electrification	Opportunity (products and services)	Short-, medium-, long-term	High	Not as prominent as the 1.5°C case	Contribute to the electrification of Kyushu – Household: Strengthen cooperation with housing-related businesses, etc.
				Decreased electricity sales due to the spread of distributed energy systems, increased competition, etc.	Transition risk (market)	Medium- to long-term	High	A 1% decrease in retail electricity sales would reduce sales by approx. ¥12 billion	Establish distributed energy resource (DER) control technologies and develop an aggregation business using battery storage
		Reputation	Credibility	Higher financing costs due to investors deeming our efforts toward carbon neutrality as insufficient	Transition risk (reputation)	Medium- to long-term	Low	Approx. ¥0.7 billion (the impact of a 0.1% change in the interest rate on approx. ¥700 billion in actual funding from FY2021)	<ul style="list-style-type: none"> Upgrade the strategies in the Action Plan Promote proper information disclosure, including on the progress toward our KPIs
		Products and Services	Changing customer needs	Increased carbon neutrality needs	Opportunity (products and services)	Medium- to long-term	Low	Not as prominent as the 1.5°C case	Maximize the use of zero-emission power sources
		Physical	Fuel	Reduced hydroelectric power generation	Physical risk (chronic)	Medium- to long-term	Low	Approx. several hundred million yen/% (sensitivity of income and expenditures to a 1% change in the flow rate)	Update our existing power stations and promote new development using FIT and FIP systems
	Inability to operate resource development sites			Physical risk (acute)	Medium- to long-term	Low	Fuel costs would increase by about ¥15 billion due to higher fuel prices (sensitivity to price increases of \$10/t for coal and \$1/MMBtu for LNG)	<ul style="list-style-type: none"> Diversify supply sources Curb price hikes through contractual fixed price options, etc. (coal) Consider diversifying pricing methods by using new indices with higher price stability (LNG) 	
	Facilities		Facility damage		Medium- to long-term	High	¥6 billion to recover from disasters (actual cost for FY2020)	<ul style="list-style-type: none"> Promote the shift away from utility poles Improve disaster response capabilities (through training, etc.) 	
	ICT Service / Urban Development Businesses	Policy and Regulation	Costs and investments accompanying tighter GHG emission regulations	Carbon pricing (taxes, emission rights, etc.)	Transition risk (policy and regulation)	Medium- to long-term	Mid	Minor	Maintain and improve profitability by differentiating ourselves and adding higher value by improving energy-saving performance, creating self-sufficient zero energy buildings (ZEBs) and houses (ZEHs), introducing renewable energy-based electricity, and promoting the use of digital transformation. Also, reduce the impact of carbon pricing
				Increased costs following a tightening of the Energy Conservation Act		Medium- to long-term	High	Not as prominent as the 1.5°C case	
		Products and Services	Changing customer needs	Increased need to promote electrification and for energy management in response to growing demand for decarbonization and energy conservation	Opportunity (products and services)	Short-, medium-, long-term	High	Not as prominent as the 1.5°C case	<ul style="list-style-type: none"> Provide an accurate response to disaster response needs of local governments and enter into agreements with them Collaborate with other companies on related products and services to differentiate us from competitors, including drone services and uninterruptible power supplies
				Increased demand for products/services tied to ensuring resiliency		Medium- to long-term	Mid	Greater than the 1.5°C case	
Physical	Facility damage	Losses incurred due to typhoons, floods, torrential rain and other natural disasters (increased costs to restore damaged facilities and reduced earnings due to suspended operations)	Physical risk (acute)	Short-, medium-, long-term	Mid	Greater than the 1.5°C case	<ul style="list-style-type: none"> Minimize impacts by constructing disaster-resistant facilities, selecting development sites and implementing disaster prevention measures based on hazard maps, and hedging risk with insurance coverage Build a decentralized and disaster-resilient telecommunication network Prepare disaster response manuals, etc. 		
		Operational costs		Increased electricity costs for air conditioning due to higher average temperatures	Physical risk (chronic)	Medium- to long-term	High	Greater than the 1.5°C case	Improve the energy efficiency of the air conditioning at our data centers, etc.

Timeframe Short-term: Now through FY2025; Mid-term: FY2026-FY2030; Long-term: FY2031-FY2050

Financial Impact Minor: Less than ¥1 billion; Medium: ¥1 to 10 billion; Large: ¥10 billion or more *FY2021 figures used to determine financial impact unless otherwise stated

Presumptions 1.5°C Case: Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report (SSP1-1.9 scenario), IEA WEO 2021 (Net Zero Emissions by 2050 (NZE) scenario), Japan's 6th Strategic Energy Plan, etc.

4°C Case: Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report (SSP5-8.5 scenario), etc.

● Indicators and Targets - Setting Climate-related Targets -

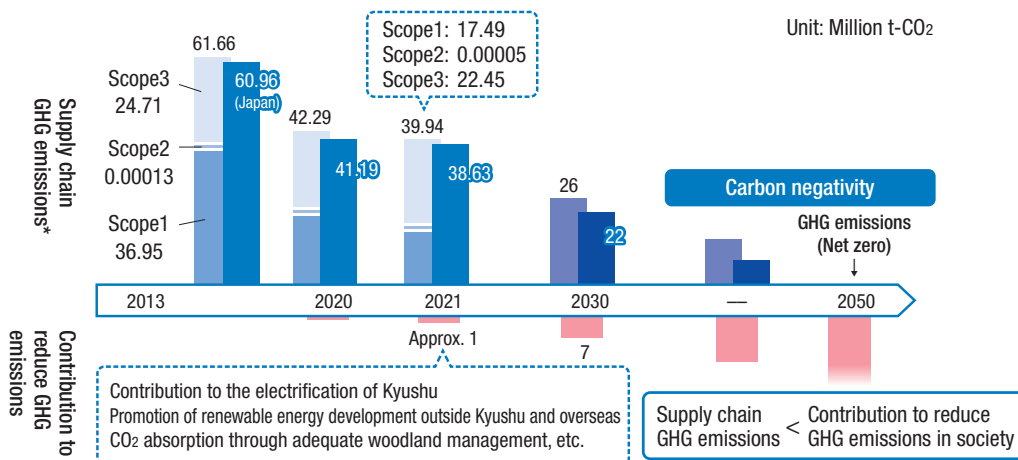
As an industry leader in low-carbon and carbon-free efforts, we will take on the challenge of achieving net zero greenhouse gas (GHG) emissions in our supply chains by 2050 and make significant contributions to reducing emissions across society by helping improve Kyushu's rate of electrification. In doing so, we aim to achieve carbon negativity for all of the Kyuden Group's business activities as early as possible before 2050.

We have also set interim management targets (environmental targets) for 2030 on our way toward carbon neutrality by 2050. These have been set at a level that goes far beyond those announced by the Japanese government, and we have formulated a concrete action plan to achieve them.

	Long-term Vision and KGLs (2050)	Indicator	Interim Targets and KPIs (2030)	FY2021 Performance
Supply	Net zero supply chain GHG emissions	Supply chain GHG emissions	60% reduction of supply chain GHG emissions (compared to FY2013) (65% for domestic business (compared to FY2013))	35% reduction (37% for domestic business)
		Positioning renewable energy as a Main Power Source	Renewable energy developed: 5,000 MW (Japan and overseas)	2,790 MW (Japan and overseas, approved projects ¹⁾)
		Lowering the carbon intensity of thermal power	Achieve the benchmark index for the Energy Conservation Act (Index A: 1.0 or more; Index B: 44.3% or more; Coal-only Index: 43.0% or more) Establish technology toward co-firing of 1% hydrogen / 20% ammonia	Benchmark index for the Energy Conservation Act (Index A: 0.968; Index B: 42.41%) Investigate and examine hydrogen/ammonia co-firing technologies
Demand	Contribute to reducing GHG emissions in society - Help achieve a 100% electrification rate for the household and commercial sectors	Promotion of electrification	Contribute to the electrification of Kyushu (Household: 70%; Commercial: 60%) Societal GHG emissions reductions: 7 million t-CO ₂	Kyushu's electrification rate (Household: 60%; Commercial: 49%) ² Societal GHG emissions reductions: approx. 1 million t-CO ₂
		Household sector	Incremental electricity: 1,500GWh (2021-2030 total)	Incremental electricity: 130GWh
		Commercial sector	Incremental electricity: 1,500GWh (2021-2030 total)	Incremental electricity: 110GWh
		Transportation sector	Conversion of company cars to 100% EVs (excluding special-purpose vehicles)	Percentage of fleet replaced: 12% (61 EVs deployed)

*1: The total of projects expected to be developed by 2030 at the present stage *2: FY2018 actuals

Supply chain GHG emissions (management targets)



* GHG emissions data have received an Independent Practitioner's Assurance from Deloitte Tohmatsu Sustainability Co., Ltd in our ESG Data Book 2022.

Internal carbon pricing

The Kyuden Group has set an internal carbon price based on trading conditions in the non-fossil value market and other factors to use in making investment decisions to promote our renewable energy business in an aim to achieve carbon neutrality by 2050.

Our internal carbon price has been set at around ¥1,300 to ¥2,800/t-CO₂ based on the trading price of non-fossil value on the market (¥0.6 to ¥1.3/kWh).

We will also consider further utilizing internal carbon price to accelerate our efforts toward decarbonization (expanding the scope of its application, reviewing the price level, etc.), taking into account social trends and other factors.

Total investments in lower carbon and decarbonized energy sources

Total investments for FY2016-FY2020:
Approx. ¥800 billion
(of which renewable energy-related:
approx. ¥150 billion)

Total investments for FY2021-FY2025:
Approx. ¥500 billion
(of which renewable energy-related:
approx. ¥250 billion)

(See P47 for details on our promotion of green and transition finance)