



# Presentation materials for IR meeting

November 11, 2021

President & Chief Executive Officer  
Kazuhiro Ikebe



Section1      Performance Highlights

Section2      Progress on financial targets

Section3      Business Topics

(Attachment)      Financial Results for The 2nd Quarter of FY2021



# Section 1 Performance Highlights

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- Sales increased and profits fell from the previous fiscal year.
- Without the negative effect of the time lag inherent in the fuel cost adjustment system, Profits would have increased compared to the same quarter of the previous year, as there was an increase in the total amount of electricity sold and a reduction in fuel costs as nuclear power stations' availability increased.

## Performance Highlights (Consolidated)

(Billion of Yen, %)

	FY2021 2Q	FY2020 2Q	Difference	Rate of Change
Ordinary Revenues	777.7	737.0	40.6	+5.5
Sales [Figures are included above]	771.5	729.6	41.8	+5.7
Ordinary Expenses	711.9	654.6	57.3	+8.8
Ordinary Income	65.7	82.4	-16.7	-20.3
Net Income attributable to owners of the parent	45.3	63.0	-17.6	-28.0
(Reference) ordinary income excluding effect of time lag	89.7	66.4	23.3	+35.1

- The volume of total electricity sold increased by 12.8% from the previous fiscal year.
- While lower temperatures in August did have a negative impact on the volume of electricity sold, Group-wide sales efforts and a rebound in electricity demand, as the impact of COVID-19 decreased, led to an overall increase in the volume of retail electricity sold. The amount of wholesale electricity sold also increased due to an expansion of sales in bilateral transactions.

※ The impact of the COVID-19 is around -0.5 billion kWh (+1 billion kWh year-on-year)

## Consolidated electricity sales volume

(Billion kWh,%)

	FY2021 2Q	FY2020 2Q	Difference	Rate of Change
Retail (Kyuden Mirai Energy Co., Inc. [Figures are included above])	39.0 (3.6)	37.5 (2.9)	1.5 (0.7)	+4.1 (+23.2)
Wholesale	8.6	4.8	3.8	+81.0
Total	47.6	42.2	5.4	+12.8

Note1: Some rounding errors may be observed.

Note2: The figures represent our company and consolidated subsidiaries (Kyushu Electric Power Transmission and Distribution Co., Inc. and Kyuden Mirai Energy Co., Inc.) (internal transactions have been eliminated).

## Forecasts of Financial Results for FY2021 (Consolidated)

3

- Net sales are expected to increase from the previous forecast as a result of an increase in the total mount of electricity sold and an increase in the unit price of electricity due to the impact of fuel cost adjustments
- Profit remains unchanged from the previous forecast as a result of higher fuel costs and purchased power charges

(Billion of Yen, %)

	FY2021	Previous Forecasts (April)	Difference	Rate of Change
Sales	1,640.0	1,510.0	130.0	+8.6
Operating Income	100.0	100.0	-	-
Ordinary Income	70.0	70.0	-	-
Net Income attributable to owners of the parent	45.0	45.0	-	-
(Reference) ordinary income excluding effect of time lag	108.0	77.0	31.0	+40.3

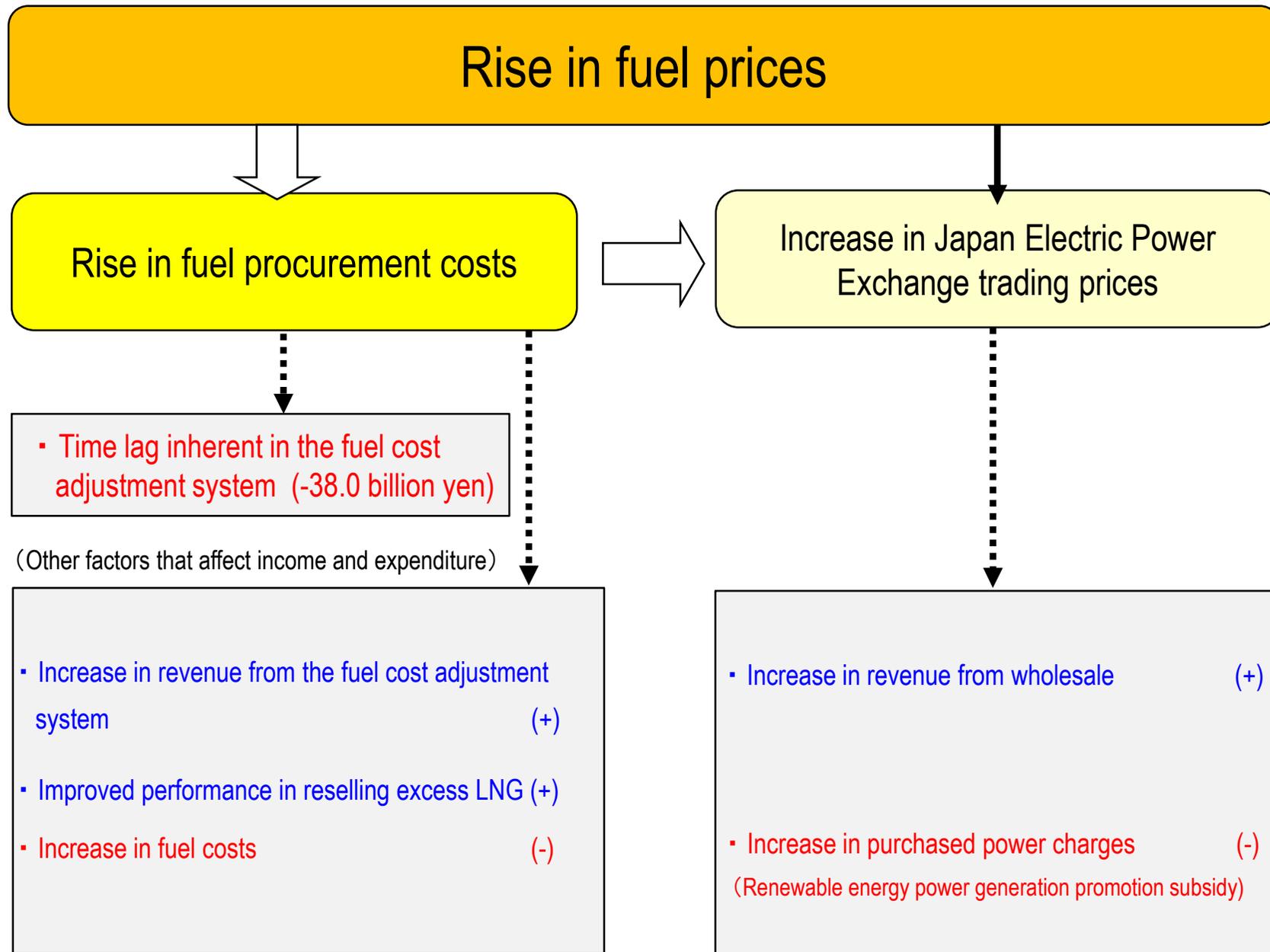
### Forecast of electricity sales volume

(Billion kWh, %)

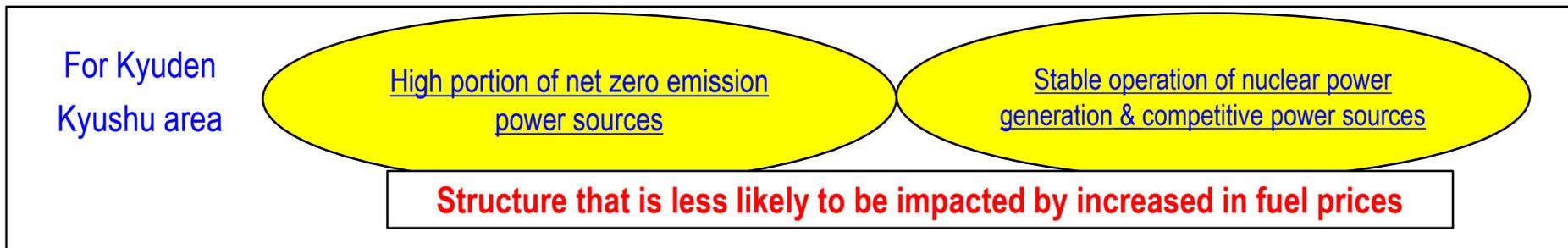
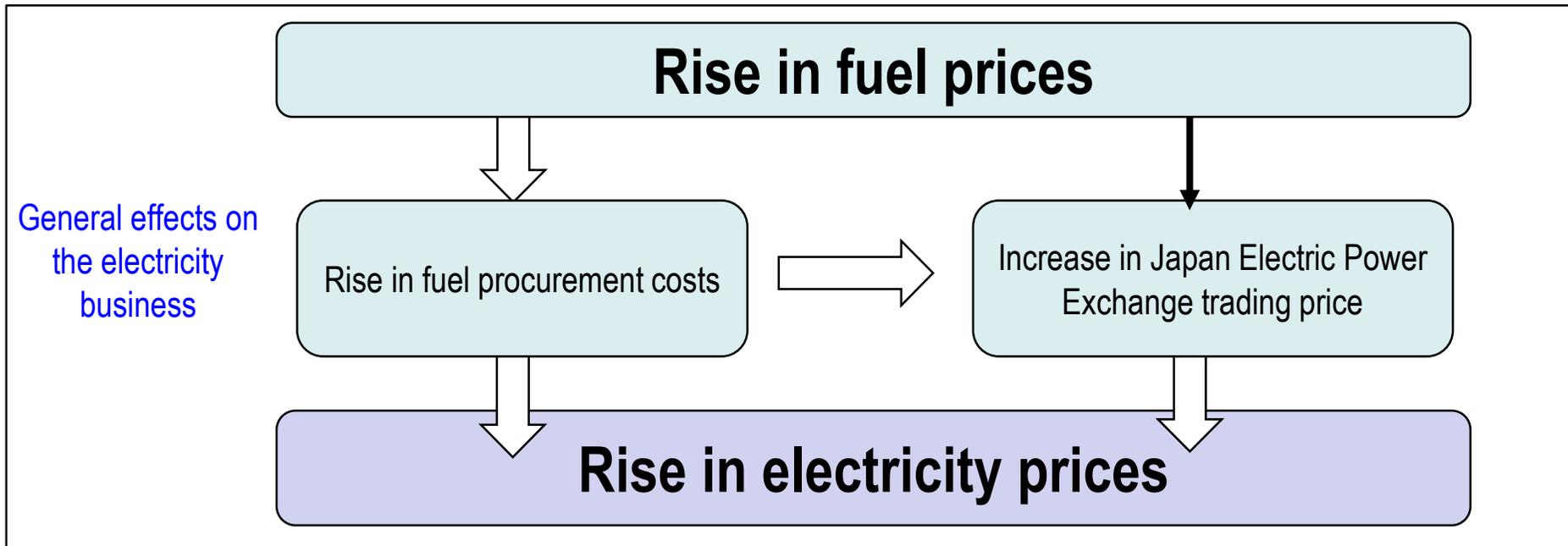
	FY2021	Previous Forecasts (April)	Difference	Rate of Change
Retail	78.8	76.6	2.2	+2.9
Wholesale	16.1	12.4	3.7	+29.8
Total	94.9	89.0	5.9	+6.6

Note1: The impact of the COVID-19 is around -1.0 billion kWh (no change)

Note2: Electricity sales volume contains our company and consolidated subsidiaries (Kyushu Electric Power Transmission and Distribution Co., Inc. and Kyuden Mirai Energy Co., Inc.) (internal transactions have been eliminated).



※ (+) indicates an upturn in revenue and expenditures, (-) indicates a downturn



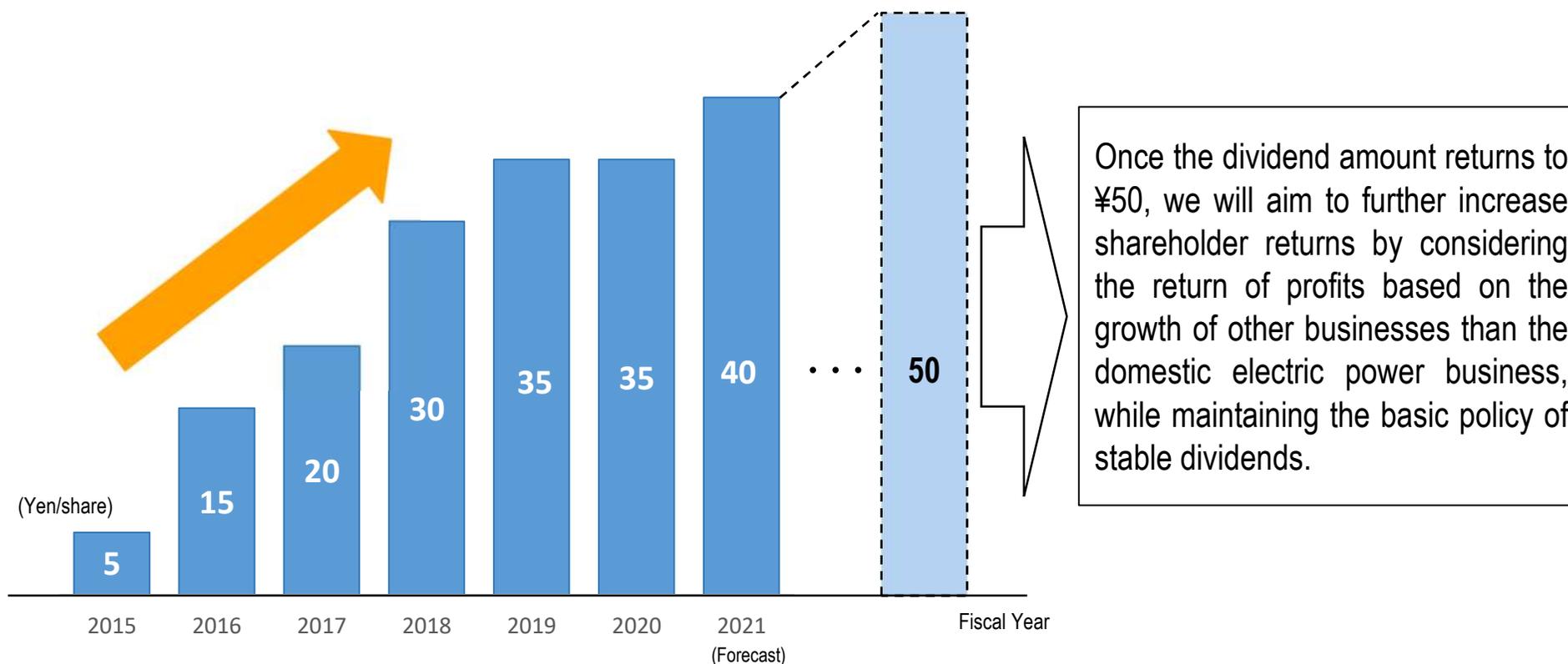
(Reference)

Unit price for fuel cost adjustment (low voltage) (yen/kWh)				Spot price in Japan Electric Power Exchange (yen/kWh)			
	2021/4	2021/12	Degree of price increase		2021/4	2021/10	Degree of price increase
National average	- 2.58	0.15	+ 2.73	System price	6.69	12.06	+ 5.37
Kyuden	- 1.61	- 0.01	+ 1.60	Prices in the Kyushu area	5.88	8.31	+ 2.43

(Note) taken from the websites of the utilities

- The Dividend level for FY2021 is expected to be ¥40/share (¥20 mid term and ¥20 end of term)
- Dividends increased for five consecutive years from FY2015 to FY2019
- Kyuden is planning to restore dividends to ¥50/share as quickly as possible during the financial target period (by FY2025)

## Dividend trends





## Section 2 Progress on financial targets

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- Steady progress in ordinary income for the second quarter of FY2021, recording ¥54.0 billion in domestic power business and ¥12.0 billion in growth businesses.

## Ordinary Income

(Billion of Yen)

	FY2025 Target	FY2020	FY2021		Comment	
			Full-year plan	2Q		
Domestic power business	75.0	30.0	50.0	54.0		
Total growth businesses	50.0	27.0	20.0	12.0		
(reproduced)	Renewable energy business	13.0	3.0	—	2.0	commencing operation of new biomass power plants, etc.
	Overseas business	7.0	4.0	—	1.0	participating in a new project in the Middle East, etc.
	ICT Services business	10.0	7.0	—	3.0	optical broadband business (BBIQ) and data center business are performing well.
	Urban development business	5.0	3.0	—	2.0	participation in the logistics facilities business and the development of rental housing complexes in the U.S. , etc.
Total	125.0	57.0	70.0	66.0		

(Note) The amounts listed for each segment are before elimination of internal transactions.

Because the classification of business segments differs between the financial targets and the financial results, the values for each business segment differ from the figures published in the financial results.

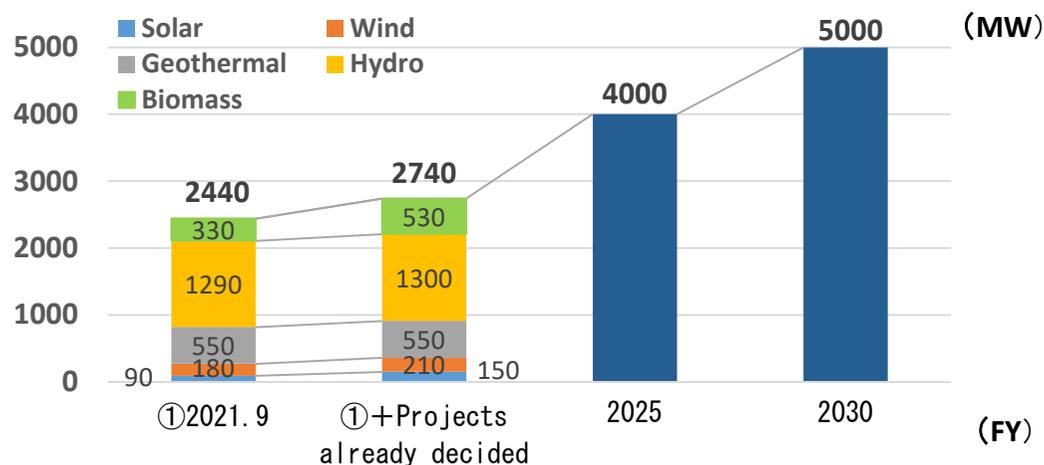
- Steadily promoting development to achieve renewable energy development targets, including commencing operation of new biomass power plants

## Ordinary Income (Billion of Yen)

	FY2025 Target	FY2020	FY2021 2Q	Status of progress (2021.2Q)
Renewable energy business	13.0	3.0	2.0	<ul style="list-style-type: none"> <li>Recent development results                             <ul style="list-style-type: none"> <li>①Kanda biomass in Fukuoka (commenced operation in June 2021)</li> <li>②Nakagusuku biomass in Okinawa (commenced operation in July 2021)</li> <li>③Oita biomass in Oita (commenced operation in July 2021)</li> <li>④Karatsu/Chinzei wind farm in Saga (commenced operation in Nov 2021)</li> </ul> </li> <li>Development total output: 2440 MW Development total output: 2740 MW will be developed (including projects that have obtained approval) (70% of the FY2025 target)</li> <li>Development of new technologies Launched Japan's first demonstration project for a large-scale tidal power generation (500kW) at Naruseto off the coast of Goto city in Nagasaki prefecture</li> </ul>
Mid-term plan				
<ul style="list-style-type: none"> <li>In addition to geothermal and hydropower, which are our strengths, we are promoting the development of biomass, and offshore wind power which has high potential.</li> <li>Development of new technologies</li> </ul>				

## Renewable energy development

(by power source)



- Steadily promoting development of overseas projects to achieve the target equity output for FY2025, including participation in a new project in the Middle East

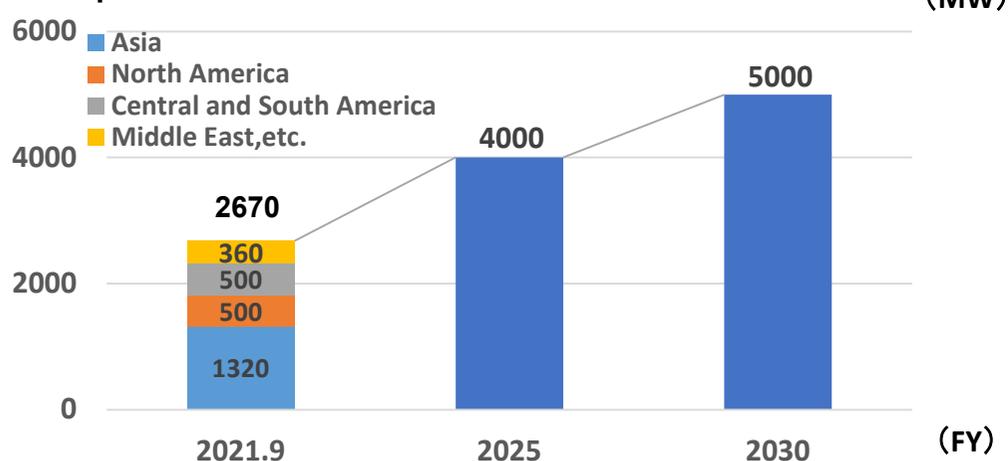
## Ordinary Income

(Billion of Yen)

	FY2025 Target	FY2020	FY2021 2Q	Status of progress (2021.2Q)
Overseas business	7.0	4.0	1.0	<ul style="list-style-type: none"> <li>Output equity ownership: 2670 MW (70% of the FY2025 target)</li> <li>Recent developments                             <ul style="list-style-type: none"> <li>① AI Dur Bahrain power generation/desalination plant (started participation in the project in August 2021)</li> <li>② Southfield Energy gas thermal power plant in the U.S. (started commercial operation in October 2021)</li> </ul> </li> </ul>
<b>Mid-term plan</b> <ul style="list-style-type: none"> <li>Participate in geothermal, offshore wind power, hydrogen and other areas where we can leverage our knowledge and expertise</li> <li>Promote business development in Asia, the U.S., Middle East, Europe as well as Africa, where future is expected</li> <li>Expand business in consulting, micro-grid and transmission and distribution</li> </ul>				

## Output equity ownership

(by area)



(Note) Totals may not add up due to rounding

- Optical broadband business (BBIQ) and data center business are performing well. New businesses and services, other than existing businesses, are also being developed.

## Ordinary Income

(Billion of Yen)

	FY2025 Target	FY2020	FY2021 2Q	Status of progress (2021.2Q)
ICT services business	10.0	7.0	3.0	<ul style="list-style-type: none"> <li>• The optical broadband business (BBIQ) and data center business are performing well</li> <li>• Started offering bundled plans with electricity and Netflix plans for BBIQ (BBIQ has been No.1 in customer satisfaction in Kyushu area for five consecutive years)</li> <li>• New projects                             <ul style="list-style-type: none"> <li>① Developed an information platform business for digital gift certificates and local currencies in cooperation with financial institutions</li> <li>② Opened an eSports facility (one of the largest in western Japan)</li> </ul> </li> </ul>
Mid-term plan				
<ul style="list-style-type: none"> <li>• Providing optimal solutions with a view to areas outside of Kyushu</li> <li>• Expanding ICT services in new business domains to increase sales and profit</li> </ul>				

## Main businesses

Name	Main businesses
Kyushu Electric Power	Drones business, information platform businesses, etc.
QTnet	Optical broadband business "BBIQ", mobile services business "QT mobile", data sensor business
Nishimu Electronics Industries	Manufacturing and sales of electrical equipment, construction and maintenance
Kyuden Business Solutions	Information system development, operation and maintenance businesses

## Objective / business strategy

### Improve the sales profitability of existing business

Increase by 50% as of FY2025 compared to FY2020

### Development and deployment of new services

- Ads (creating, pitching digital advertising)
- Financial/medical (Fintech, pathology AI analysis)
- Primary industry (IT sensors for agriculture) , etc.

- Promote initiatives to increase earnings and diversify sources of earnings, including participation in the logistics facilities business and the development of rental housing complexes in the U.S.

## Ordinary Income

(Billion of Yen)

	FY2025 Target	FY2020	FY2021 2Q	Status of progress (2021.2Q)
Urban development business	5.0	3.0	2.0	<ul style="list-style-type: none"> <li>• Major projects that will become operation FY2021 and onwards                             <ol style="list-style-type: none"> <li>① Development of Atlanta rental housing complex in U.S.</li> <li>② Operation of Hiroshima airport</li> <li>③ Logistics center in Fukuyama city</li> <li>④ Development of the Fukuoka Maizuru Square (slated to start in FY2022)</li> <li>⑤ Development of a commercial facility on the former fruit and vegetable market site in Fukuoka city (slated to start in FY2022)</li> <li>⑥ Development of a Portland rental housing complex in the U.S. (slated to start in FY2023)</li> <li>⑦ Development of an area in Niagemachi, Oita city (slated to start in FY2024)</li> </ol> </li> </ul>
Mid-term plan				
<ul style="list-style-type: none"> <li>• In addition to expanding offices, houses and airports, strengthen initiatives in new profit-making businesses such as urban development, mixed use development, development of industrial real estate including logistics facilities</li> <li>• Promote area expansion beyond Kyushu and overseas</li> </ul>				

## Main businesses

Name	Main businesses
Kyushu Electric Power	New business areas such as urban development, property development, social infrastructure development, industrial properties
Denki Building	Office buildings, etc.
Kyuden properties	Housing development and rental businesses, etc.
Kyushu maintenance	Building maintenance, etc.

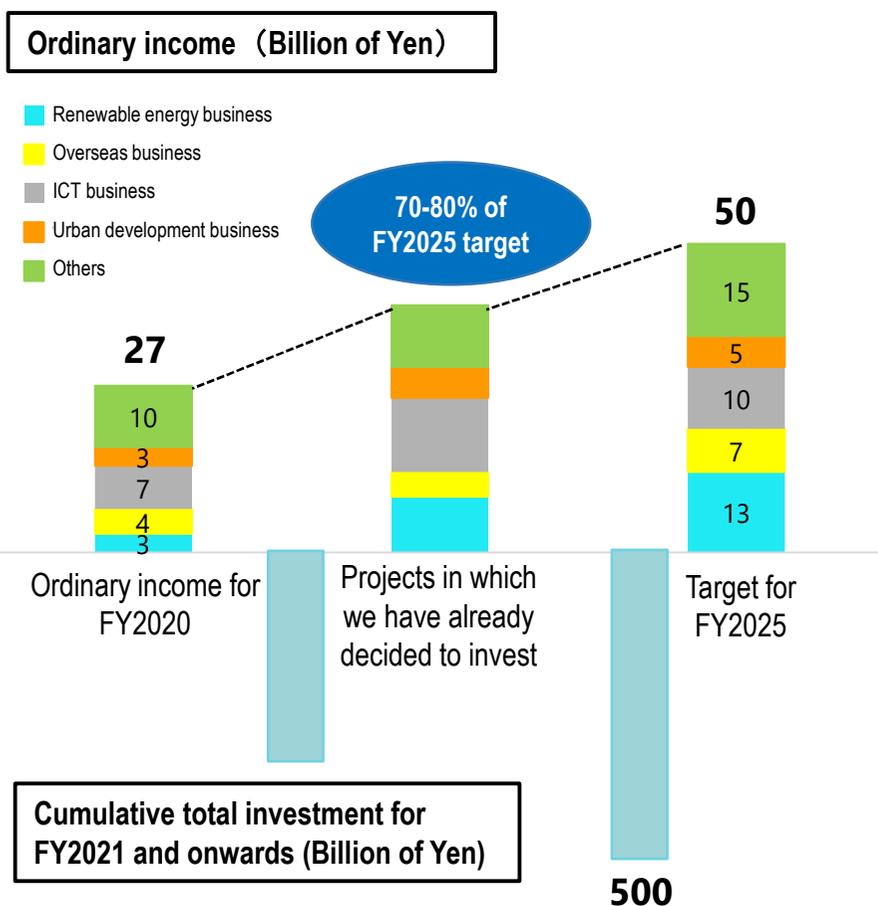
## Objective / business strategy

### Expand business areas and sectors

- Urban development, mixed use development
- Industrial real estate (logistics centers, data centers)
- Fee-based business
- Overseas real estate development projects , etc.

- Of the ¥50 billion set as ordinary income target for growth-oriented businesses by FY2025, 70% to 80% is projected to be obtained from projects in which we have either already invested or have signed agreements to invest.

## Ordinary income / investment for growth



## Major projects in which we have invested or have decided to invest

Segment	Major projects
Renewable energy <sup>※</sup>	<ul style="list-style-type: none"> <li><b>Biomass</b> : 350 MW Shimonoseki, Ishikari, Hirohata</li> <li><b>Wind power</b> : 30 MW Karatsu/Chinsei windfarm</li> <li><b>Solar power/hydropower</b> : 60 MW Redevelopment of the Taketa Hydropower Plant</li> </ul>
Overseas	<ul style="list-style-type: none"> <li>Al Dur Bahrain power generation/desalination plant project (started participation in August 2021)</li> </ul>
Urban development	<ul style="list-style-type: none"> <li>Development of a commercial facility on the former fruit and vegetable market site in Fukuoka city (slated to start in April 2022)</li> <li>Development of a Portland rental housing complex in the U.S. (slated to start in FY2023)</li> </ul>

※Output figures are the total output of plants scheduled to come online in FY2021 and onwards

- The following measures were implemented to increase accuracy in business projection and ensure financial targets can be met
  - ✓ Strengthening of budget and balance management
    - thoroughly manage budget and income/expenses by strengthening information sharing initiatives within the company and among group companies, and early identification of factors that may affect earnings
  - ✓ Strengthen monitoring by management using KPIs
    - Started implementing more detailed KPI management and periodical reporting of KPI progress at Board meetings (management confirms the status of progress and future actions)



## Section 3 Business Topics

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Promotion of DX (digital transformation)	23

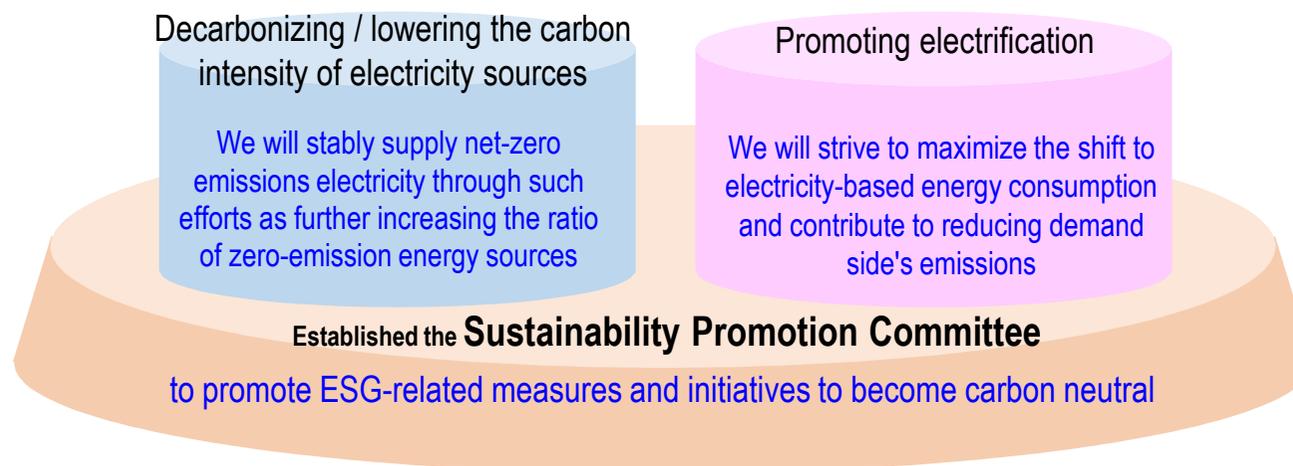
## Kyuden Group Carbon Neutral Vision 2050 (Released in April 2021)

### Kyuden Group Will Endeavor to Achieve Carbon Neutrality by 2050

Starting from Kyushu, the Kyuden Group will lead the way to Japan's decarbonization

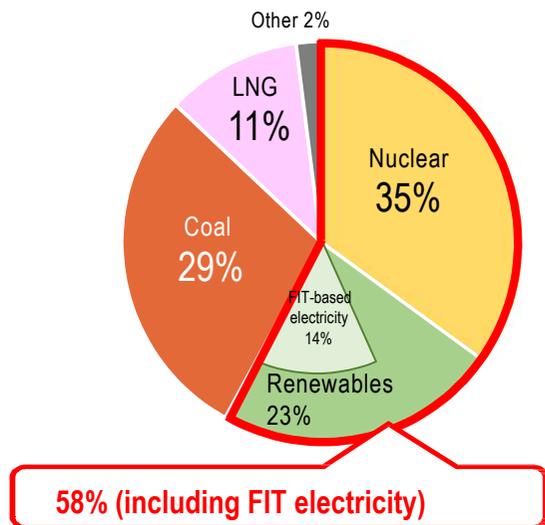
- Seeing responses to global warming as an opportunity for corporate growth, Kyuden Group will—as a **frontrunner in carbon-reduction/decarbonization efforts**—aspire to serve as an **enterprise group that spearheads Japan's decarbonization initiatives from Kyushu**.
- We will continuously work on “**decarbonizing / lowering the carbon intensity of energy sources**” and “**promoting electrification**”. We consider these as fundamental strategies for clean energy supply and demand.
- A new **Sustainability Promotion Committee**, which is chaired by the president, will promote ESG-related measures and initiatives for becoming carbon neutral.

### Achieve Carbon Neutrality by 2050

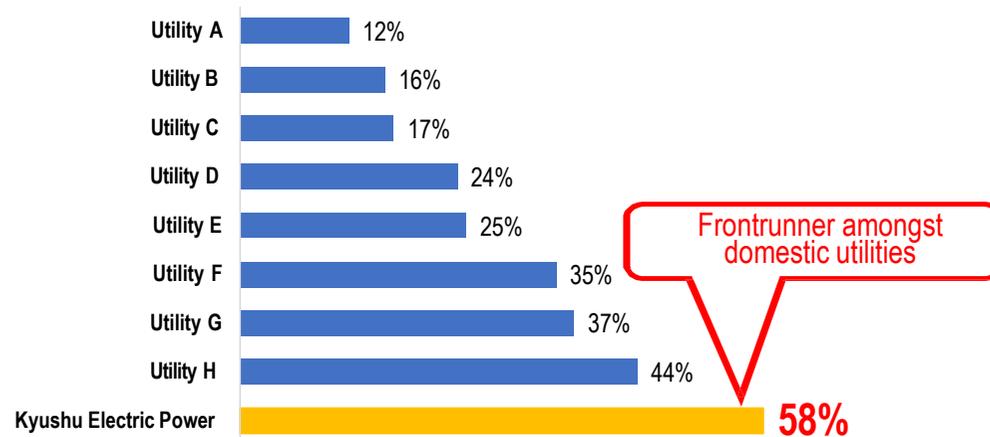


- We are leading domestic firms with a roughly 60% zero-emission/FIT energy source ratio, by expanding the introduction of renewables and safe, stable nuclear power generation.

Our zero-emission/FIT power source ratio\* (FY2019)



Zero-emission/FIT power source ratio\* compared to other companies



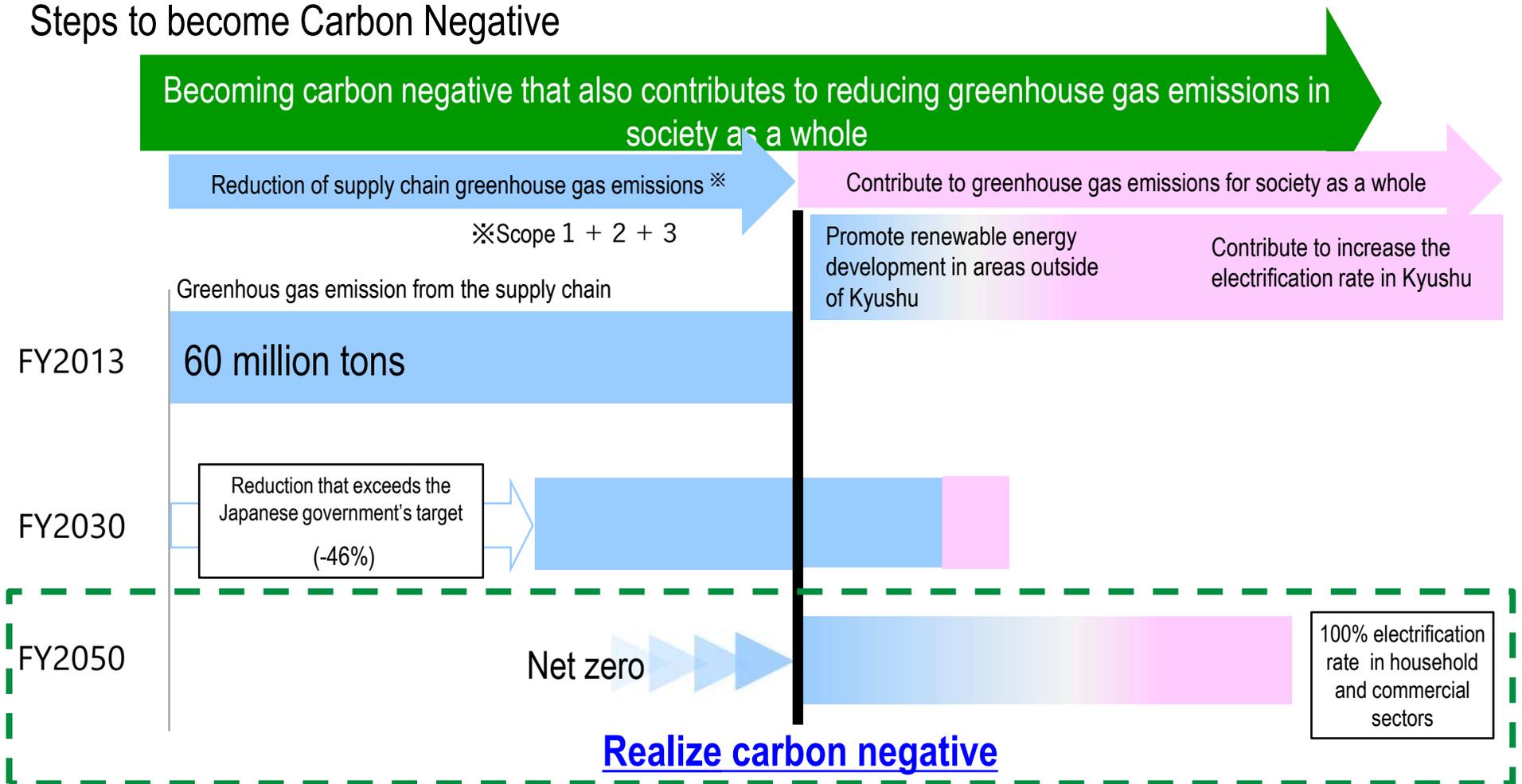
(Source) Data derived from each company's website  
 • Comparison with eight major utilities in Japan  
 • FY2019 results

\* If a non-fossil fuel certificate is unavailable, FIT power is considered neither as renewable energy nor as a source of zero carbon-emission energy but is treated as a form of electricity that emits Japan's national average level of carbon emissions, consisting of thermal and other energy sources. Some 8% of the non-fossil value based on FIT energy sources (numbers in the achievement plan for the Act on Sophisticated Methods of Energy Supply Structures) are attributed to us. The calculation is based on the quantity of electricity we generated and procured from other companies (outlying islands are excluded).

**Becoming “Carbon Negative” as the Kyuden Group**

- Supply side: reduce greenhouse gas emissions to net zero as a supply chain
- Demand side: contribute to society as a whole to reduce greenhouse gas emissions by promoting electrification wherever possible

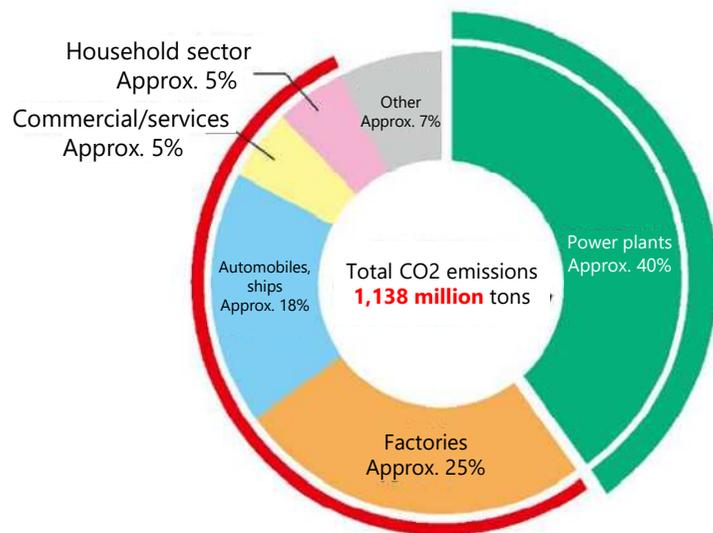
Steps to become Carbon Negative



- Carbon neutrality is a challenging goal
- Leveraging our strengths as a top runner in low carbon/decarbonization effort, we would like to use the following initiatives to realize carbon neutrality, and see it as a growth opportunity to expand earnings:
  - ✓ Promoting electrification
  - ✓ Turning renewables into a main power source
  - ✓ Maximal utilization of nuclear power generation
  - ✓ Creating a profit from zero emission power sources
  - ✓ Business reform and business model innovation through digital transformation

- About 60% of CO2 emissions is from sectors other than electricity generation. Electrification on the demand side is crucial in achieving carbon neutrality
- Electrification is a promising area for the Kyuden Group to expand earnings

Composition of Japan's CO2 emissions (FY2018)



**60% of CO2 emissions is emitted on the demand side due to the use of fossil fuels**

Necessary measures

Demand side  
Promote electrification

**40% of CO2 emissions is emitted from power plants**

Necessary measures

Supply side  
Low carbonization/decarbonization of power sources

## Major electrification promotion initiatives

- **Household sector**  
Expansion of all-electric homes by strengthening collaboration with housing-related businesses
- **Commercial sector**  
Strengthen the ability to recommend customized solutions that leverage economic efficiency and environmental benefits of electrification
- **Industrial sector**  
Strengthen ability to recommend customized solutions focusing on low-temperature zones where heat pump technology can be applied
- **Transportation sector**  
Convert company vehicles to EVs and consider new business models using EVs

- In addition to developing geothermal and hydropower, which are the strengths of Kyuden Group, we will develop biomass, and offshore wind power which has high potential for introduction
- Business opportunities for geothermal and offshore wind in particular are expanding due to deregulation and policy support from the national government

## Geothermal generation

- ✓ “Geothermal Development Acceleration Plan”, Ministry of Environment (published April 27, 2021)

- Reviewing the operation of the Natural Park Law and the Hot Spring Law
- Designation of promotion areas
- Shortened the lead time for geothermal development by about 2 years
- Plans to double the number of geothermal power generation facilities by 2030

- ✓ We own 40% of Japan’s geothermal generation capacity. We have developed and are operating one of the world’s largest geothermal power generation projects in Indonesia.
- ✓ Currently, 6 areas in and outside of the Kyushu area are being investigated for future development
  - In Kyushu: Yamashitaike, Waitasan (Oita), Minamiaso (Kumamoto), Kirishima, Ibusuki (Kagoshima)
  - Outside of Kyushu: Sarukuradake (Fukushima)

## Off shore wind power generation

- ✓ The Japanese government has established a basic policy to promote offshore wind power based on the Act of Promoting the Utilization of Sea Areas in Development of Power Generation Facilities Using Maritime Renewable Energy Resources. Each fiscal year, the government designates promotion zones, and then selects projects for these zones through public solicitation.

### **Designation and organization of wind power promotion zones and promising zones** (Announced September 13, 2021)

- ① Promotion zones: 5 zones
- ② Promising zones: 7 zones
- ③ Zones that have reached a certain level of readiness: 10 zones

- ✓ We are working on the following projects
  - Hibikinada area in Kitakyushu city (First project under the revised Harbor Act) We are conducting an environmental impact assessment, designing wind turbines, and implementing activities to gain the understanding of the local community.
  - Together with RWE Renewables Japan, we are working on a project off Yurihonjos city, Akita Prefecture
  - In addition, feasibility studies are being conducted in several other locations.

- In order to achieve carbon neutrality, the policy is to make maximum use of nuclear power on the premise of safety, while making renewable energy the main power source.
- For Sendai Nuclear Power Station, the decision to extend the operation period will be made based on the results of special inspections (Unit 1 is currently underway, Unit 2 is scheduled to be implemented from February 2022).

Application for approval of extension of operation period

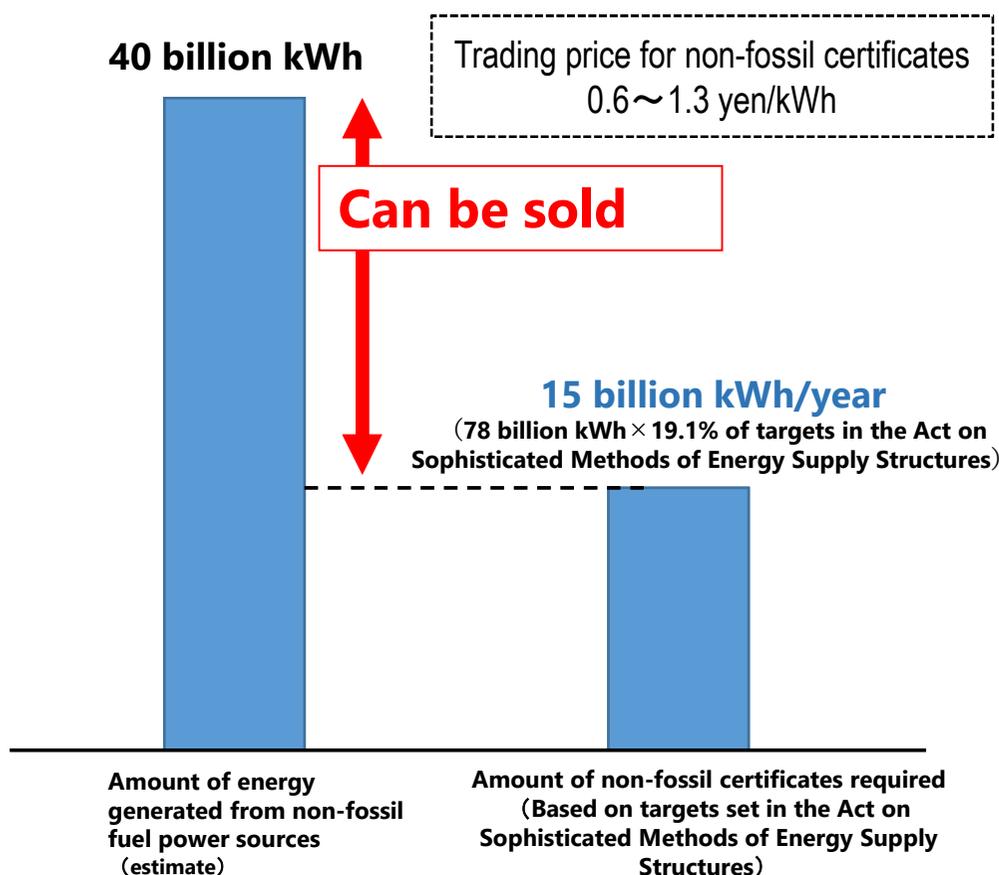
- to extend the operational life of a nuclear power station, an application must be submitted to the NRA at least one year prior to the expiration date of the first 40 years of operation, with the results of a special inspection attached.

### Deadline for application for Sendai Units 1 and 2

	Start of operation date	End of the current operational life (40 years)	Application deadline
Unit 1	July 4, 1984	July 3, 2024	July 4, 2023
Unit 2	November 28, 1985	November 27, 2025	November 28, 2024

- We are promoting initiatives to turn zero-emission power sources such as renewable energy and nuclear power into profit generators.
- In addition to using the non-fossil value trading market, renewable energy plans will be offered to our customers and the J-credit creation and utilization business will be advanced.

## Potential of non-fossil certificate trading (FY2021)



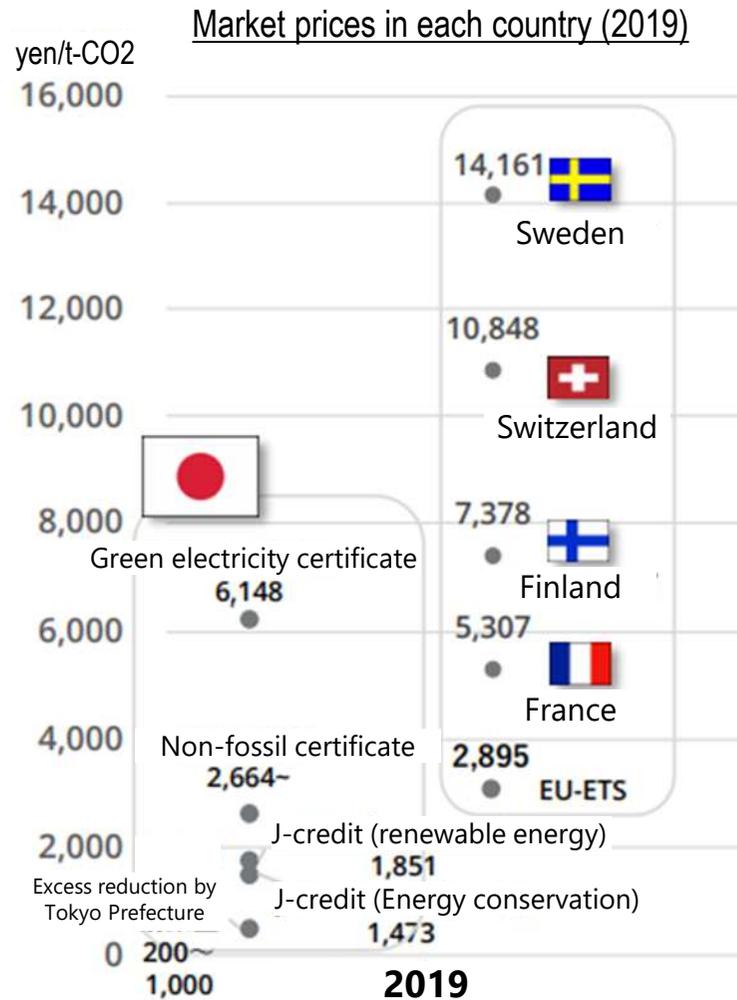
※ The above illustration is purely conceptual based assumptions used to forecast performance for the full year. Actual transaction volume may differ.

## Renewable energy plans for customers

- ✓ Marugoto Renewable Energy plan (for households), Renewal Energy ECO Plan (for corporations) [offered by Kyuden]
- ✓ “+eco” a flat-rate environment friendly plan for households [Offered by Kyuden Mirai Energy]

## J-credit creation and utilization business

- ✓ Support municipalities in submitting applications to the national government for the J-credit scheme that uses forest resources
- ✓ Purchase the J-credits and use them to offset CO2 emissions from thermal power generation and contribute to the solution of regional issues
- ✓ Started a demonstration of this business in June 2021 in Hisayama Fukuoka



- The IEA projections suggest that the price of coal may increase in 2030 to 2040.
- Other organizations estimate that coal prices will have to be in the following range to achieve the temperature targets in the Paris Agreement.  
→ \$50 ~ \$100 /ton  
(¥6,000 ~ ¥10,000 /ton)
- Some companies in Japan have already set prices of ¥10,000 /ton or more in internal carbon pricing.

Source: Created by Kyuden based on "Report of the High-Level Commission on Carbon Price"(CPLC,2017), "On internal carbon pricing"(Ministry of Environment)

※Tentatively set at 3 (yen/kWh) for the green electricity certificates. Values for non-fossil certificates are taken from FY2019 Non-Fossil Certificate Transaction (2nd). J-credit values are an average of J-credit winning bid prices (2020.1.6-2020.1.10)

※The CO<sub>2</sub> emission factor for electricity is from the "alternative emission factor by electric utility (FY 2018 results): 0.488 (kg-CO<sub>2</sub>/kWh)" published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry.

- Building a DX promotion system within the company to promote business reform and business model innovation
- ICT solution services are being provided to promote social innovation and regional economic revitalization through DX.

## Direction of internal DX

- ✓ “Defensive DX” through cost reduction and streamlining of internal operations and structural reform of ICT infrastructure
  - Reform existing work processes using AI, increase efficiency and enhance facility maintenance using drones and IoT
  - Develop data utilization infrastructure to realize data-driven management, and utilize self-service business intelligence
- ✓ “Offensive DX” to achieve business model reform
  - Define "offensive DX" as efforts to enhance the value of products and services, build new points of contact with customers and reform business models, and promote “offensive DX”

## ICT solution services to promote DX

- ✓ Working on social reform using DX
  - Started providing DX promotion services to local industries in Kyushu (Kyuden Business Solutions)
  - Collaborating with startups using open innovation frameworks (QTnet, etc.)
- ✓ Promote regional revitalization
  - Signed a “Comprehensive Collaboration Agreement Related to the Promotion of Municipality DX” with Miyaki town (QTnet)

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## Kanda Biomass Power Station

- Commenced operation in June 2021. It is one of the largest woody biomass power plants

Operating entity	Kanda Biomass Energy (jointly funded by Kyuden Mirai Energy, and others)
Location	Kanda town in Kyoto-gun, Fukuoka
Output and type of fuel	Approx. 75,000 kW Palm kernel shells (PKS), wood pellets, unused wood sourced domestically

## Nakagusuku Biomass Power Station

- Commenced commercial operation in July 2021. It is the largest woody biomass power plant in Okinawa.

Operating entity	Okinawa Uruma New Energy (jointly funded by Kyuden Mirai Energy, Kyudenko Corporation and others)
Location	Uruma city in Okinawa
Output and type of fuel	49,000 kW Palm kernel shells (PKS), wood pellets

## Oita Biomass Power Station

- Commenced commercial operation in July 2021; in addition to raw wood, unused wood left in the mountains (leftover wood from forest areas) are turned into domestically sourced wood chips, which are then used as fuel.

Operating entity	Oita Biomass Energy (jointly funded by Kyuden Mirai Energy and others)
Location	Oita city in Oita
Output and type of fuel	22,000 kW Palm kernel shells (PKS), domestically sourced wood chips (unused wood, general timber)

## Karatsu/Chinsei Wind farm

- Commenced commercial operations in November 2021. It has the largest generation capacity per unit in the Kyuden Group.

Operating entity	Kyuden Mirai Energy
Location	Karatsu city in Saga
Output	27,200 kW (3,400kW × 8 units)

## Tidal power generation

- Tidal current power generation is the generation of electricity through capturing the flow of seawater generated by the ebb and flow of the tide.
- In May 2019, Kyuden Mirai Energy and a consortium of other companies were selected as Japan's first large-scale demonstration project for tidal current power generation by the Ministry of the Environment in a public call for proposals for the "Project to Promote the Practical Application of Tidal Current Power Generation Technology".
- The project passed the government review board in May 2021. Studies for practical application will be continued going forward.

### Demonstration project overview

Operating entity	A consortium consisting of Kyuden Mirai Energy and Nagasaki Marine Industries Cluster Creation Promotion Council LLC
Location	At Naruseto off the coast of Goto city in Nagasaki
Output	500kW
Details	<ul style="list-style-type: none"> <li>• Confirmation of safe and reliable generation installation and removal</li> <li>• Confirmation of power generation status, etc.</li> </ul>

### Development plan of renewable energy (As of November 11, 2021)

※ Kyuden Mirai Energy Co., Inc.

	Name	Prefecture	Output (kW)	Notes
Solar	(Outside Kyushu) Miya river watarai※	Mie	59,900	Starting operation in FY2023 (scheduled)
	<b>Subtotal</b>		<b>59,900</b>	—
Hydro	Shin-takeda	Oita	8,300	Starting operation in June 2022 (scheduled) Redevelopment (7,000 kW→8,300 kW)
	<b>Subtotal</b>		<b>8,300</b>	—
Biomass	(Outside Kyushu) Shimonoseki-biomass※	Yamaguchi	74,980	Starting operation in FY2021 (scheduled)
	(Outside Kyushu) Ishikari biomass※	Hokkaido	51,500	Starting operation in FY2022 (scheduled)
	(Outside Kyushu) Hirohata biomass※	Hyogo	74,900	Starting operation in FY2023 (scheduled)
	<b>Subtotal</b>		<b>201,380</b>	—
<b>Total</b>			<b>269,580</b>	—

### Al Dur Power Generation and Desalination Project

- In August 2021, Kyuden acquired a 19.8% stake in the operating company that operates the Al-Dur 1 power generation and desalination project in the Kingdom of Bahrain
- This is the second power generation and desalination project for the Kyuden Group in the Middle East, following the Taweelah B desalination project in the UAE.

Operating entity	Al Dur Power and Water Company
Location	Al Dur, Kingdom of Bahrain
Capacity	Total output : 1,230,000 kW (240,000 tons of output based on equity) Total desalination capacity: 220,000 tons per day (40,000 tons of output based on equity)
Electricity and water will be sold to	Electricity and Water Authority of Bahrain
Fuel	Natural gas
Start of commercial operation	2012

### Southfield Energy and Gas Thermal Power Plant (U.S.)

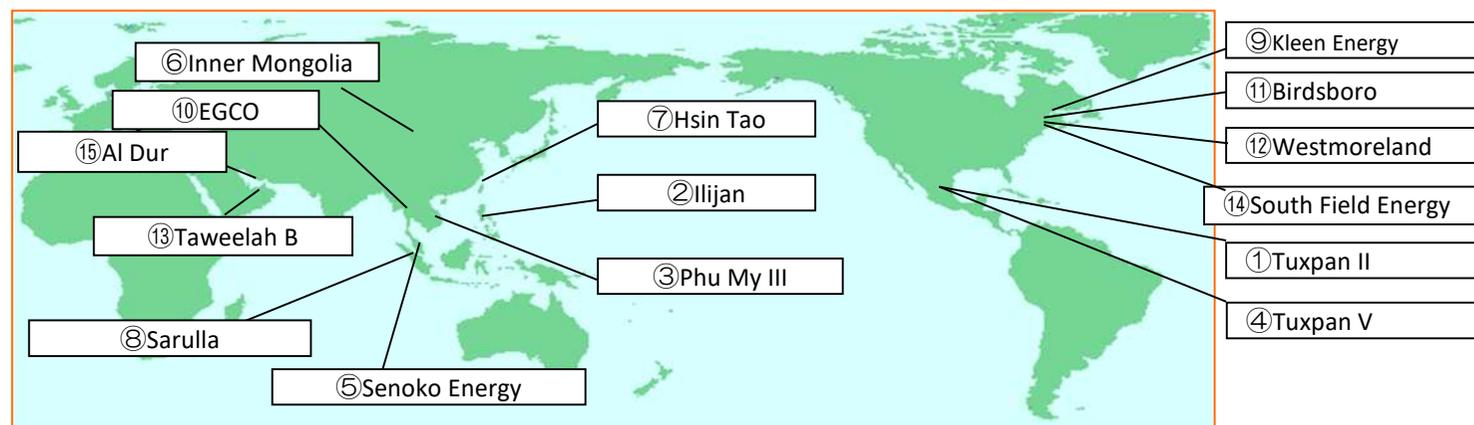
- In August 2018, Kyuden acquired an 18.1% stake in the Southfield Energy gas-fired power generation project in Ohio, U.S. owned by Advanced Power.
- Commercial operation commenced in October 2021

Location	Colombiana, Ohio U.S.
Output	1,182,000 kW
Generation method	Gas turbine combined cycle
Fuel	Natural gas

# Overseas business (main new projects) (continued)

## Business Development Overseas (As of November 11, 2021)

	Project name	Fuel	Start of Operation /Investment	Output	Ownership	Net Capacity
①	Mexico: Tuxpan II	Gas	2001/12	495 MW	50.0%	248 MW
②	Philippines: Ilijan	Gas	2002/6	1,200 MW	8.0%	96 MW
③	Vietnam: Phu My III	Gas	2004/3	744 MW	26.7%	199 MW
④	Mexico: Tuxpan V	Gas	2006/9	495 MW	50.0%	248 MW
⑤	Singapore: Senoko Energy	Gas	[Investment] 2008/9	2,380 MW	15.0%	357 MW
⑥	China: Inner Mongolia	Wind	2009/9	50 MW	29.0%	15 MW
⑦	Taiwan: Hsin Tao	Gas	[Investment] 2010/10	600 MW	33.2%	199 MW
⑧	Indonesia: Sarulla I~III	Geothermal	2018/5	330 MW	25.0%	83 MW
⑨	USA : Kleen Energy	Gas	[Investment] 2018/5	620 MW	20.3%	126 MW
⑩	Thailand : EGCO-related power generation assets	Gas/Coal Renewable	[Investment] 2019/5	6,016 MW	6.1%	370 MW
⑪	USA : Birdsboro	Gas	[Investment] 2018/1	488 MW	8.3%	41 MW
⑫	USA : Westmoreland	Gas	[Investment] 2019/11	940 MW	12.5%	118 MW
⑬	UAE : Taweelah B	Gas	[Investment] 2020/3	2,000 MW	6.0%	120 MW
⑭	USA: South Field Energy	Gas	2021/10	1,182 MW	18.1%	214 MW
⑮	Bahrain : Al Dur I	Gas	[Investment] 2021/8	1,234 MW	19.8%	244 MW

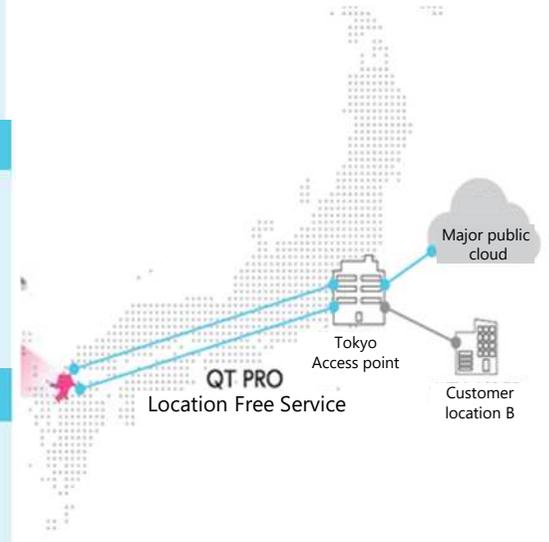


**Total 2,670 MW**  
 (Note) Totals may not add up due to rounding

## Data center services (QTnet)

- Currently operating three urban data centers in Fukuoka, a city with low disaster risk and an optimal environment for business.
- Providing highly reliable facilities that are resistant to disasters, have high security, and 24-hour/365-day operation and maintenance support.
- Providing a one-stop solution for customers looking for data center capabilities and communication lines

<b>Fukuoka Daiichi Data Center (QD1)</b>	
Number of racks: Approx. 1000	
Electricity supply: Effective 4kVA/rack (max. 6kVA)	
Since 2003~	
<b>Fukuoka Daiichi Data Center (QD2)</b>	
Number of racks: Approx. 600	
Electricity supply: Effective 6kVA/rack (max. 20kVA)	
Since 2015~	
<b>Fukuoka Daiichi Data Center (QD3)</b>	
Number of racks: Approx. 1,400	
Electricity supply: Effective 8kVA/rack (max. 30kVA)	
Since 2019~	



## eSports facility (QTnet)

- The "esports Challenger's Park" commenced operation in August 2021
- As one of the largest e-sports facilities in Western Japan, QTnet's ultra-high speed and high-capacity internet connection provides a stress-free gaming environment, contributing to the spread and growth of e-sports.



## Fukuyama city logistics facility

- In April 2021, Kyuden Real Estate acquired a logistics facility (cold storage warehouse) in Fukuyama city, Hiroshima.
- This is the second acquisition of a logistics facility by the Kyuden Group following the acquisition of a logistics facility in Higashi Ogishima, Kawasaki city, Kanagawa. For Kyuden Real Estate it is its first acquisition of a logistics facility on their own.



## Development of a Portland rental housing complex in the U.S.

- The project, which started in July 2021, is a joint venture of Kyuden Group's U.S. based subsidiary, Kyuden Urban Development America LLC, and Mitsubishi's U.S. subsidiary, Diamond Realty Investments, Inc.
- This is our second overseas real estate development project, following a joint development project in Atlanta, U.S.



## Signed a Memorandum on Clean Ammonia

- Intension to collaborate with Yara International, a leading global ammonia player, in the following areas
- ① jointly develop clean ammonia end-to-end supply chain to coal thermal power generation plants in the Kyushu region
- ② jointly develop a receiving and distribution system of clean ammonia for usage in a wide range of fields around the Kyushu region

### Overview of Yara International

Name	Yara International ASA
Headquarters	Oslo, Norway
Overview	<ul style="list-style-type: none"> <li>• The world's largest manufacturer of mineral fertilizer (One of the world's largest ammonia handling companies)</li> </ul> <p>Volume of ammonia handled (2020)</p> <ul style="list-style-type: none"> <li>• Production volume: 8.5 million tons</li> <li>• Trade volume by sea: 4.5 million tons</li> </ul> <p>Ammonia trading structure (as of 2020)</p> <ul style="list-style-type: none"> <li>• Dedicated ammonia fleet of 11 vessels</li> <li>• 18 ammonia terminals with a total tank capacity of 580,000 tons</li> </ul>

- Currently, the installation of the Specific Safety facilities at Genkai Nuclear Power Station is being carried out with the highest priority on safety, following the installation of these facilities at Sendai Nuclear Power Station.

Specific Safety Facilities: facilities that project against damage in a act of terrorism, such as an intentional aircraft crash, which could cause damage to the core cooling facilities or significant damage to the reactor containment vessel

## Current status regarding the installation of the Specific Safety Facilities

### Sendai Nuclear Power Station

- Started operating in November and December 2020, one month earlier than originally planned (Unit 1 was the first unit in Japan to have completed these requirements)
- Since then the facility has been operating in accordance with new regulatory requirements

	Start of Operation
Unit 1	November 11, 2020
Unit 2	December 16, 2020

### Genkai Nuclear Power Station

- As of the end of September 2021, civil engineering and construction work will be about 80% complete, and mechanical and electrical equipment installation work will be about 30% complete.
- Utilizing the knowledge gained from Sendai Nuclear Power Station we aim to complete the works within the installation deadline.

	SSF deadline
Unit 3	Aug 24, 2022
Unit 4	Sep 13, 2022

# Overview of various electricity markets

## Non-fossil value trading market

- Our ratio of non-fossil power sources is at a high level compared with other companies due to the progress made in restarting nuclear power plants and the active introduction of renewable energy sources. Therefore a certain level of profit can be expected from the sale of non-FIT non-fossil certificates (trading of non-FIT started in FY2020)

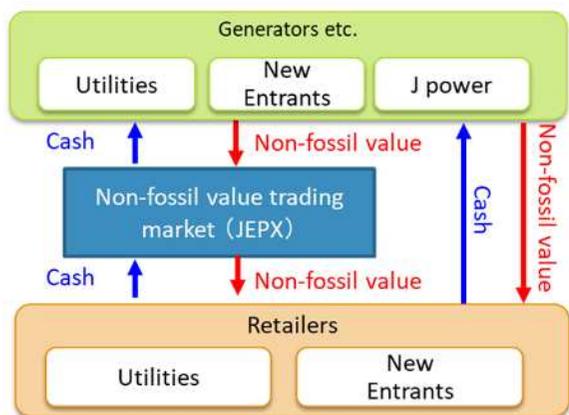
## Capacity market

- The creation of a capacity market has led to the valuation of kW values, which will contribute to a certain extent to the recovery of our fixed power supply costs (Started in FY2020; transactions for FY2024)

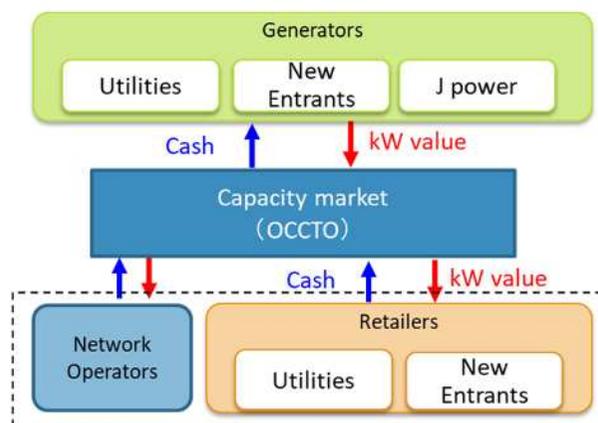
## Supply and demand adjustment market

- Now that our power generation division can receive compensation for the inherent value of the load balancing capability of power sources ( $\Delta kW$ ), it will contribute to the recovery of our fixed power supply costs (started transactions in FY2021)

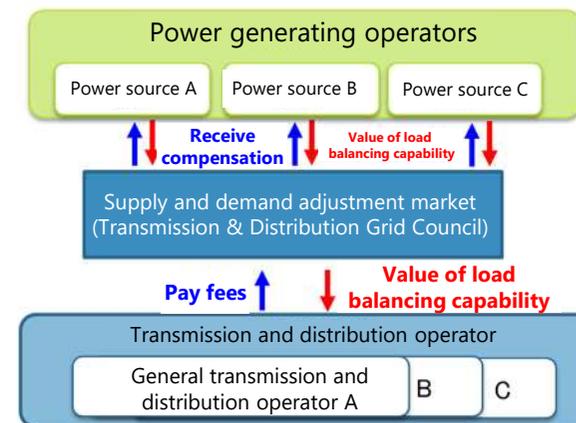
**Non-fossil value trading market**



**Capacity market**



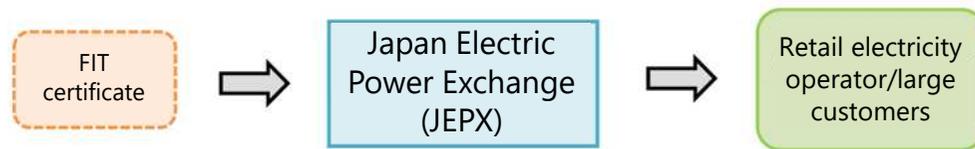
**Supply and demand adjustment market**



- Establishment of a new "Renewable Energy Value Trading Market" where consumers can directly participate in transactions
- Reviewing the price of non-fossil certificates
- Further vitalization of the market is expected in the future due to the increase in the target under the Act on Sophisticated Methods of Energy Supply Structures and the growing need for carbon neutrality.

### o Renewable energy value trading market

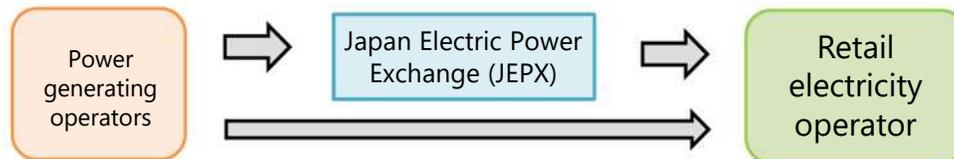
- The value traded is "zero emission value" (emission factor reduction effect) and "environmental label value".
- FIT certificates can be traded. In addition to retail electricity providers, consumers who meet certain requirements will also be able to participate in transactions.
- Trading started in November 2021
- Price levels (minimum price) and price determination methods are currently being discussed.



	After	Before
Minimum price	0.3 yen/kWh	1.3 yen/kWh

### o Market to achieve obligations outlined in the Act on Sophisticated Methods of Energy Supply Structures

- This market will operate under the current mechanism of the non-fossil value trading market. Non-FIT non-fossil certificates will be traded.
- The equivalent amount in FIT certificates will be deducted from the interim target for the percentage of non-fossil power sources.
- The new minimum price is set at 0.6 yen/kWh.



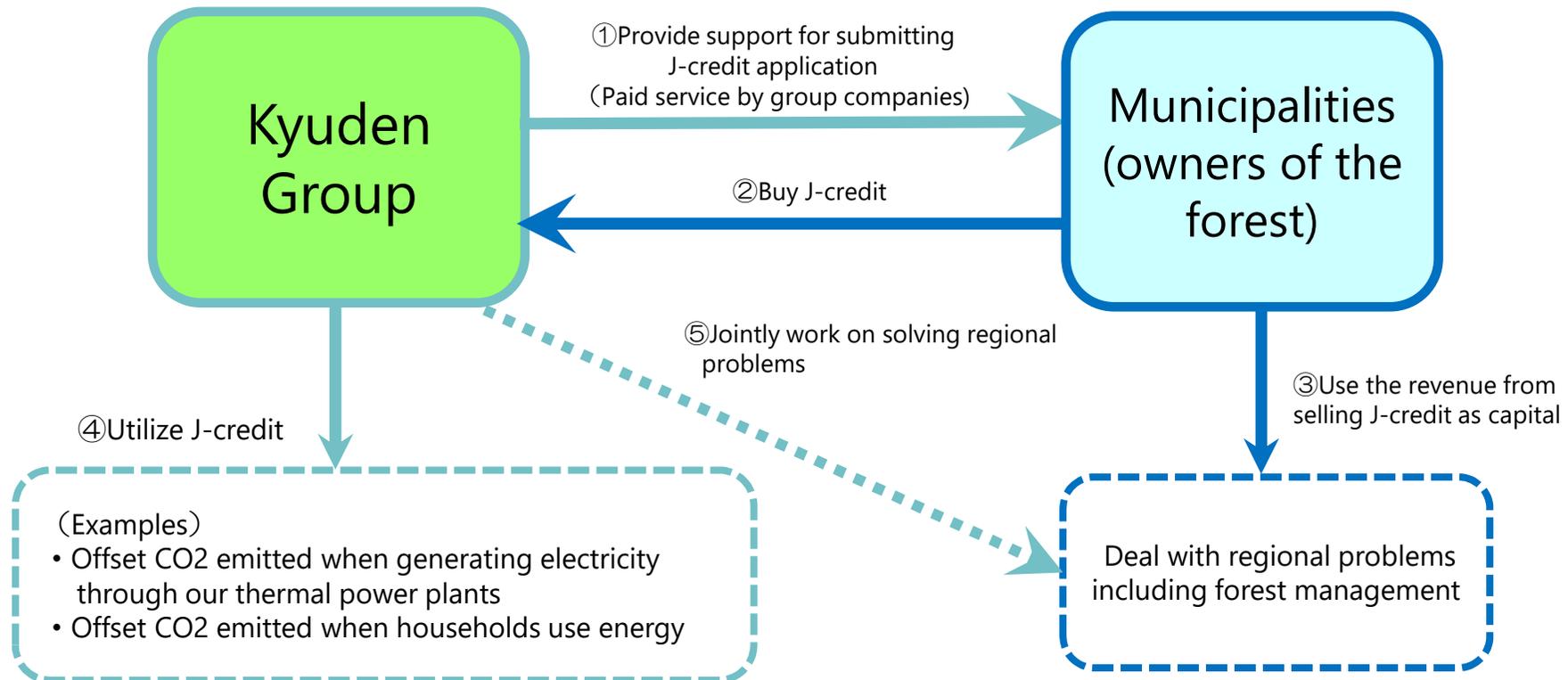
	After	Before
Minimum price	0.6 yen/kWh	None
Maximum price	1.3 yen/kWh	4.0 yen/kWh

(Excerpt from the materials from the 48th Working Group for System Review held March 26, 2021)

## J-credit creation/utilization business using forest resources

- In June 2021, a demonstration of the J-credit creation and utilization business was started in a town-owned forest in Hisayama town in Fukuoka, to confirm the feasibility and effectiveness of the project
- Based on the results of the demonstration in Hisayama town, which will then be rolled out to other regions. (Currently, we are submitting proposals to other local governments, mainly in Oita)
- Creation of J-credits derived from energy conservation\* and renewable energy sources (other than forests) is also being considered and proposed to relevant authorities

\*turning the amount of CO2 that have been reduced by introducing energy conservation equipment to electricity retail customers and Group companies into credits



For more information, please contact:

Investor Relations Group

Corporate Strategy Division

KYUSHU ELECTRIC POWER CO.,INC.

TEL : +81 92 726 1575

Email: [ir@kyuden.co.jp](mailto:ir@kyuden.co.jp)

URL : [https://www.kyuden.co.jp/english\\_ir\\_index.html](https://www.kyuden.co.jp/english_ir_index.html)

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