



# Section2 Business Update

Noted mainly about movement after the last IR meeting FY2019.2Q (November 13, 2019)

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## Sendai nuclear power plant

- All approvals have been acquired from the NRA.
- Installation of the SSF constructions are scheduled to be completed during the regular inspection period as mentioned below:
  - Sendai Unit 1: 16 Mar 2020 - 26 Dec 2020
  - Sendai Unit 2: 20 May 2020 - 26 Jan 2021
- Construction progress of the engineering works is at approx. 90%, and of the equipment works is at approx. 60% (as of the end of March 2020).
- Construction costs are approx. 242 billion yen

## Genkai nuclear power plant

- Approvals for a change in reactor installation have been acquired in April, 2019.
- Construction planning permission: 1st part and 2nd part have been approved, and currently 3rd part is under review.
- Construction costs are approx. 240 billion yen

[Status of applications for permissions] (as of the end of March 2020)

		Date of application/approval			
		Sendai No. 1	Sendai No. 2	Genkai No. 3	Genkai No. 4
Change in Reactor Installation Permission		[approved] April 5, 2017		[approved] April 3, 2019	
Construction Plan Permission	First part	[approved] May 15, 2018	[approved] Aug 10, 2018	[approved] Nov 28, 2019	[approved] Nov 28, 2019
	Second part	[approved] July 26, 2018	[approved] Aug 31, 2018	[approved] Mar 4, 2020	[approved] Mar 4, 2020
	Third part	(submitted) Mar 9, 2018 [approved] Feb 18, 2019	(submitted) Mar 9, 2018 [approved] Apr 12, 2019	(submitted) Jan 17, 2020 <b>Under review</b>	(submitted) Jan 17, 2020 <b>Under review</b>
Approval for Changes in Safety Regulations		(submitted) Aug 2, 2019 [approved] Mar 25, 2020		—	
SSF deadline (Date of approval for the main facilities)		Mar 17, 2020 (Mar 18, 2015)	May 21, 2020 (May 22, 2015)	Aug 24, 2022 (Aug 25, 2017)	Sep 13, 2022 (Sep 14, 2017)

## Key initiatives to expand sales of electricity in Kyushu

- In April 2019, we have strengthened our price competitiveness by reducing our prices. This is the result of our efforts to restart operation of four nuclear power units and having improved management efficiency.

\* Price reduction rate: Retail average ▲ 1.3%

- We offer a selection of new electricity plans <sup>\*1</sup> to low-voltage customers (such as household customers), that are suited to our customers' needs and diverse lifestyles. Next to that, we actively propose electricity and gas as a set <sup>\*2</sup> and electricity plans for all-electric homes <sup>\*3</sup>.

\*1 Plan for families with children under the age of 3, Plan for people who have relocated to Kyushu, Smart family plan (for residential customers), Smart business plan (for commercial businesses), Residential lightning time of use (offers affordable night-time and weekend rates), etc.

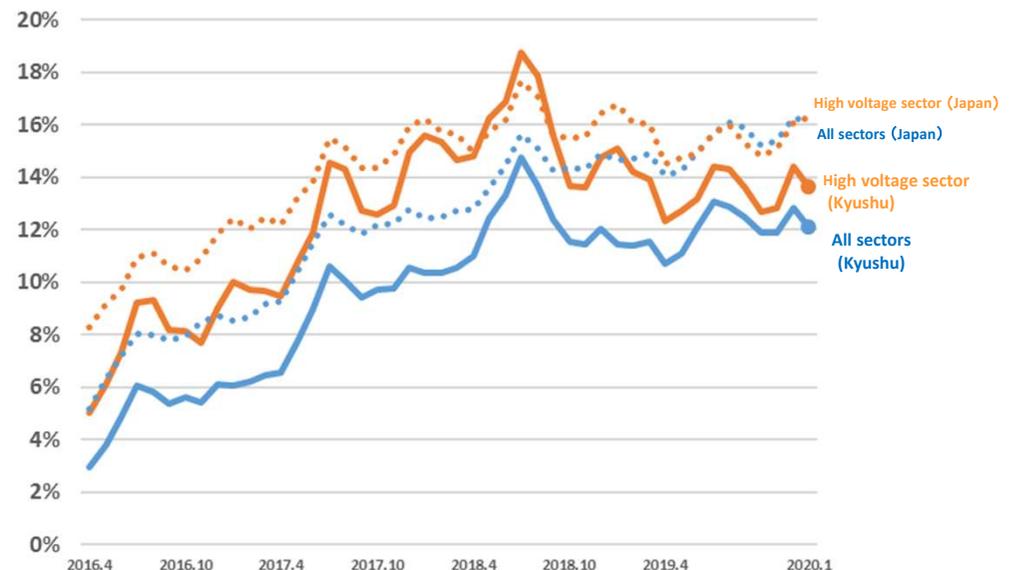
\*2 Number of applications Kyuden Gas service: 120,000 (cumulative total as of March 31, 2020)

\*3 Number of all-electric homes: 1.14 million (cumulative total as of March 31, 2020)

- For high-voltage customers such as corporations, we provide service depending on the customers' needs, such as "proposing optimal price menu according to the customer's usage situation" and "proposing technical services including energy-saving diagnosis".

[Market share of new entrants in Kyushu]

\* based on kWh. Dotted lines shows national average (excluding Okinawa)



(Based on data from Electricity and Gas Market Surveillance Commission)

## Retail sales of Kyuden Mirai Energy

- The wholly-owned subsidiary Kyuden Mirai Energy has engaged in the retail electricity business in the Kanto area since April 2016.
- Mirai offers rate plans that allows the customer to accumulate JAL miles, WAON points, as well as a rate plan for all-electric homes. From March 2020, we offer a so-called “d point” plan that allows the customer to earn d points.
- The number of contracts surpassed 20,000 in January 2020
- In a ranking of new electricity retailers and their electricity sales volume, Kyuden Mirai Energy climbed 103 positions from No. 112 (as of the end of April 2018) to No. 9 (as of the end of December 2019).
- In August 2019, Kyuden Mirai Energy opened an office in Tokyo. By strengthening sales capabilities and customer service, Mirai aims to further expand sales in the Kanto area.

### [Kyuden Mirai Energy electricity sales development]

\* Ranking is among new entrants



(Based on data from the Agency for Natural Resources and Energy)

### [“d point” plan overview ]

- Household customers can apply from March 1, 2020
- 2 points will be added for every 100 yen of electricity fee\*<sup>1</sup> (during the application process the d point\*<sup>2</sup> card number has to be registered in order to accumulate points)

\*1 Excluding consumption taxes, renewable energy surcharges, mailing service fees, past due interests, etc.

\*2 d point is a well-known point plan provided by NTT DoCoMo, Inc., and easily accessible (no telephone contract is required to participate).



## Partnership with Itochu Enex for retail electricity business

- From April 1, 2020, Kyuden Group and Itochu Enex have started a partnership to sell electricity to high-voltage and extra-high voltage customers.
- By leveraging the customer base and sales capabilities that Itochu Enex has built by selling oil and gas, we aim to expand our electricity sales by gaining access to new sales areas.

[Outline of partnership]

<b>Business content</b>	Sales operation cooperation for electricity retail business ( Kyuden group : supplying electricity to customers Itochu Enex : Billing of retail electricity charges to customers, etc. )
<b>Starting date</b>	April 1, 2020
<b>Target area</b>	Itochu Enex sales area (excluding Hokkaido, Hokuriku, Okinawa)
<b>Target customers</b>	Customers using high voltage or extra high voltage
<b>Sales body</b>	Kyushu area: ITOCHU ENEX × Kyushu Electric Power Outside Kyushu : ITOCHU ENEX × Kyuden Mirai Energy

## Shares acquisition of Westmoreland gas-fired power project in U.S.

our 4th power generation project in the USA

- On November 2019, Kyuden Group has participated in Westmoreland Gas-Fired Power Project in Pennsylvania (“WML”).
- WML is utilizing a gas combined-cycle generating system equipped with state-of-the-art gas turbines (total output: 940 MW). WML supplies electricity to the north-eastern part of the United States through PJM.
- Stable profits are expected due to the adoption of the latest gas turbines, the availability of low-priced gas because it is located in a shale gas production area, and the sale of electricity to PJM, which has a capacity market.

### [Overview of Westmoreland project]

Project Site	Westmoreland, Pennsylvania (USA)
Commercial Operation	December 2018
Generation Capacity	940 MW [equity output 118MW]
Generation Type	Natural gas combined cycle
Market selling electricity	PJM
Shareholders	Kyushu Electric Power Co., Inc. - 12.5% Mitsubishi Corporation - 37.5% Electric Power Development Co.,Ltd. - 25% Tenaska - 25%

## Shares acquisition of Taweelah B independent water & power producer project in UAE

Our 1st IWPP project in the UAE

- On December 2020, Kyuden Group has signed a share purchase agreement with JGC Holdings Corporation to acquire a 6% interest in Taweelah Asia Power Company P.J.S.C. and separately a 15% interest in Asia Gulf Service Holding Company Limited for Taweelah B Independent Water & Power Producer Project ("Taweelah B") in the United Arab Emirates ("UAE").
- Taweelah B supplies both electricity and water to the Emirates Water and Electricity Company, under the Power and Water Purchase Agreement, by operating its natural gas thermal power generation facility, which has a total output of 2,000 MW and a seawater desalination facility of 730,000 tons per day.
- We expect stable earnings early on this project with long-term power sales contracts.
- Kyuden Group is seizing this opportunity to expand overseas business, beyond Asia and America to areas such as Europe, the Middle East and Africa.

### [Overview of Taweelah B project]

Project Site	Taweelah, the Emirate of Abu Dhabi (UAE)
Generation and Production Capacity	Generation Capacity: 2,000 MW[equity output 120MW] Water Production Capacity: 730,000 tons/day
Buyer	Emirates Water and Electricity Company (EWEC)
Generation Type	Natural gas supplied by EWEC
Shareholders	[Taweelah Asia Power Company P.J.S.C. (TAPCO)] Kyuden International Corporation – 6% Marubeni Corporation – 14% BTU Power Company – 10% Pendekar Power (Labuan) – 10% Taweelah Uniter Power Company – 60%  [Asia Gulf Power Service Company Limited] Kyuden International Corporation – 15% Marubeni Corporation – 35% BTU Power Company – 25% Pendekar Power (Labuan) – 25%

## Participation in Philippine Microgrid project

Our 1st overseas off-grid electrification project for remote island

- On January 2020, Kyuden Group participated in a Microgrid Project\*, which PowerSource Group is implementing on the islands Palawan and Cebu in the Philippines.
- Kyuden Group contributes to the supply of environmental-friendly energy and to the expansion of PowerSource's microgrid business, by implementing renewable energy sources and providing technical support, such as improving operation and maintenance of PowerSource's power plants.
- PowerSource Group receives revenue from regulated tariff and Kyuden Group expects stable dividend from the company

\*Local supply of on-site generated electricity (using various sources such as diesel, solar etc.) to customers in off-grid areas by using microgrid technology

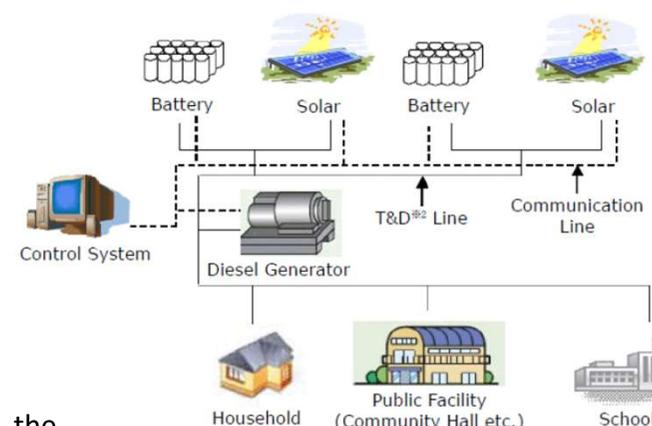
## Opening Tokyo branch office of Kyuden International Corporation

- Kyuden International Corporation (KIC), a subsidiary of Kyuden Group operating in the overseas energy business, has opened a Tokyo branch office in January 2020.
- KIC has opened an office in Tokyo in order to strengthen information gathering on new overseas business opportunities in the Tokyo metropolitan area.
- Another objective of this branch office is to further accelerate overseas business development in the future, as KIC will expand overseas business areas to Europe, the Middle East and Africa. Additionally, KIC will assertively seek opportunities to develop power generation systems that are new to KIC's portfolio, such as offshore wind power.

[Overview of Microgrid project]

Project Site	Palawan island, Cebu island
Commercial Operation	2005
Generation Capacity	100 kW - 2,100 kW
Generation Type	Diesel generation (solar-storage will be implemented in the future)
Customers	Households, public facilities, hotel, factories, etc.

[Microgrid image]



[Overview of Tokyo branch]

Location	Yusen building 7 <sup>th</sup> floor, 3-2, Marunouchi 2 chome, Chiyoda-Ku, Tokyo
Establishment date	January 1, 2020
Number of staff	10

## Participation in a Joint Development Project in Atlanta, U.S.

Kyuden's first overseas real estate development

- In December 2019, we decided to participate in a overseas real estate development project in Atlanta. The project involves an apartment building, which is part of a joint development project in the middle of Atlanta.
- A rental apartment building will be built (five-story building comprising 250 units) jointly with DRI, a US subsidiary of Mitsubishi Corporation, and Wood Partners, a leading developer in the U.S. (total cost: ¥ 6.5 billion; scheduled to be completed in April 2021)
- The leasing of the units will start as construction progresses and we plan to sell the apartments with some homes occupied.

[Image of the project]



## Establishment of Urban Development Business Division

- In July 2020, the Urban Development Business Headquarters will combine the three businesses urban development, real estate, and social infrastructure.
- By integrating the functions of the three businesses, we will undertake various projects, leveraging our comprehensive strengths, while aiming to accelerate the realization of our growth strategies.

## EV sharing service “weev”



- Condominium car sharing service of EV (Electric Vehicle) is scheduled to start in December 2020.
- Charging facilities and EVs will be installed in the parking lot of the condominium, making it an exclusive service that provides security and convenience to the residents.
- The condominiums will be supplied by electricity from Kyuden Group, aiming to increase electricity sales volume.
- For the time being, we plan to provide these EV car sharing services in the Tokyo metropolitan area and Kyushu area. We plan to introduce about 300 units during the next 5 years.
- We are also working on the use of EV as an adjustment power, such as by participating in the VPP demonstration project of METI. In the future, we plan to use the EVs installed at weev for balancing supply and demand, and to make profit as adjustment power.

### [Outline of weev]

Origin of name	Named "weev" based on the concept of "electric vehicle (ev) that can be used only by condominium residents (we)"
Intended locations	Mainly condominiums (new or existing)
Number of cars installed	One or more units depending on the size of the condominiums
Intended users	Only for residents of these particular condominiums
Fee (tax excluded)	<ul style="list-style-type: none"> <li>• Time rate: 200 yen per 15 minutes</li> <li>• Distance charge: 5 yen / km</li> </ul> * Registration fee, monthly fee: 0 yen
Service areas	Tokyo area and Kyushu area (for the time being)
Start of service	Scheduled for December 2020 (construction completed of the first condominium)

### [EV to be used (example)]



■ TESLA/Model3



■ Reference data

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## Promotion of overseas energy business

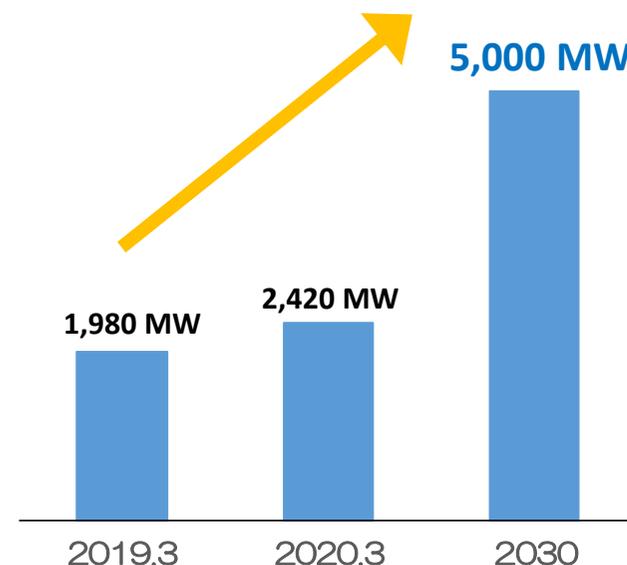
- The aim of our department International Business Office is to build a strategic network, within and outside the Kyuden Group. Kyuden International Co., Inc., which is our wholly-owned subsidiary, promotes IPP investments and overseas consulting business.
- In 2030 we are aiming for 5 GW equity ownership in electricity output by developing projects mainly in Asia where electricity demand is expected to increase, as well as North America and Europe.

[Outline of Kyuden International Co., Inc.]



Location of headquarters	Fukuoka city
Capital fund	38.4 billion yen (Kyuden EPCO CO., INC .100%)
Date of establishment	August 2, 1999
Business content	Overseas energy business Overseas consulting business

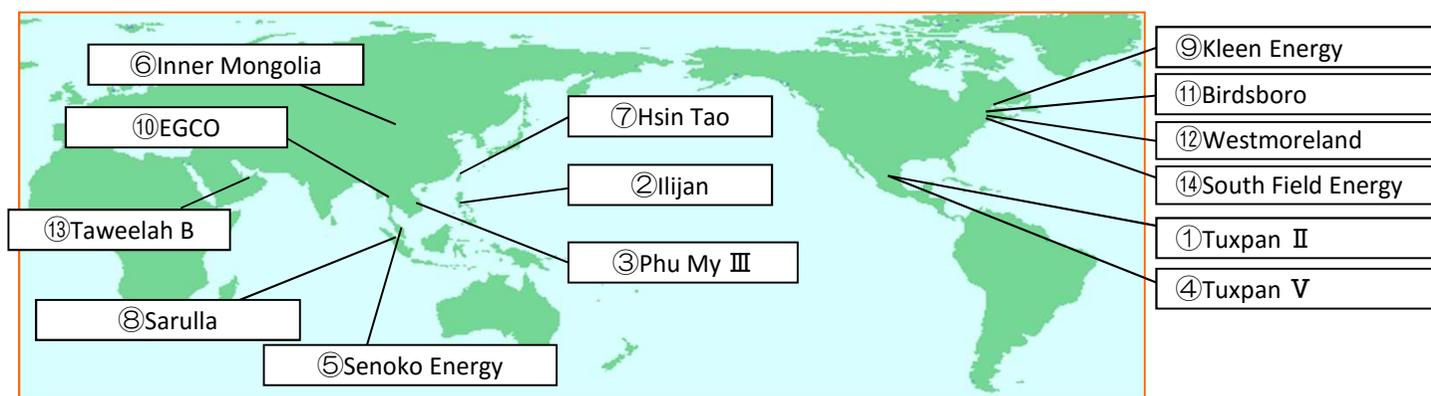
[Equity Ownership Target in 2030]



## Business Development Overseas (as of the end of March 2020)

	Project name	Fuel	Start of Operation /Investment	Output	Ownership	Net Capacity
In operation	① Mexico: Tuxpan II	Gas	2001/12	495 MW	50%	248 MW
	② Philippines: Ilijan	Gas	2002/6	1200 MW	8%	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%	248 MW
	⑤ Singapore: Senoko Energy	Gas	[Investment] 2008/9	2380 MW	15%	357 MW
	⑥ China: Inner Mongolia	Wind	2009/9	50 MW	29%	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%	83 MW
	⑨ USA : Kleen Energy	Gas	[Investment] 2018/5	620 MW	20.25%	126 MW
	⑩ Thailand : EGCO-related power generation assets	Gas/Coal Renewable	[Investment] 2019/5	5646 MW	6.14%	347 MW
	⑪ USA : Birdsboro	Gas	[Investment] 2018/1	488 MW	11.1%	54 MW
	⑫ USA : Westmoreland	Gas	[Investment] 2019/11	940 MW	12.5%	118 MW
	⑬ UAE : Taweelah B	Gas	[Investment] 2020/3	2000 MW	6%	120 MW
Under construction	⑭ USA: South Field Energy (Start of Operation: 2021)	Gas	[Investment] 2018/8	1182 MW	18.1%	214 MW

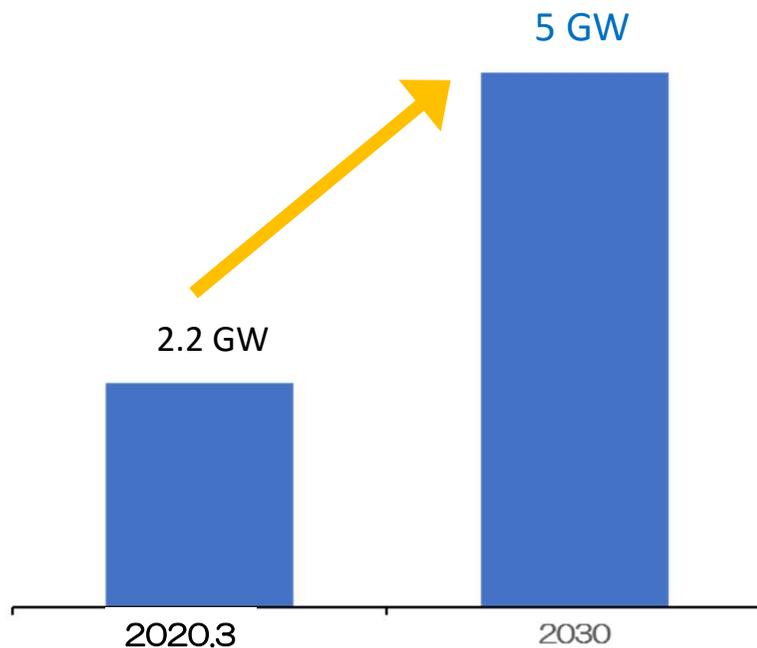
Total 2,420 MW



## Promotion of renewable energy business

- For 2030 we have set a target of 5 GW of output, by promoting geothermal and hydroelectric power generation, both in Japan and overseas.
- In order to respond to the wide range of needs from the local community, Kyuden Mirai Energy is in charge of renewable energy in general (including the research, planning, construction and operations). Kyuden Mirai Energy has been in close coordination with group companies such as West Japan Engineering Consultants (West JEC), which has world-class technological know-how on geothermal development.
- In January 2020, Buzen-biomass power plant started operation, which is funded by Kyuden Mirai Energy (investment ratio 27%, output 74,950 kW). It's Japan's largest wood biomass power plant.
- In March 2020, Kyuden Mirai Energy participated in a woody biomass power generation business in Ishikari City, Hokkaido (investment ratio 30%, output 51,500 kW). It aims to start commercial operation in August 2022.

[Output target 2030]



[List of Kyuden Group's renewable energy facilities]

(as of the end of March 2020)

Solar 94 MW



Wind 115 MW

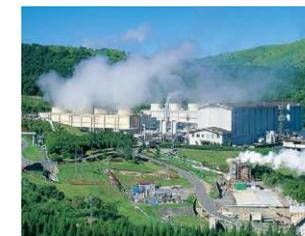


Hydro 1,289 MW

(excluding pumped storage)



Geothermal 548 MW



Biomass 165 MW



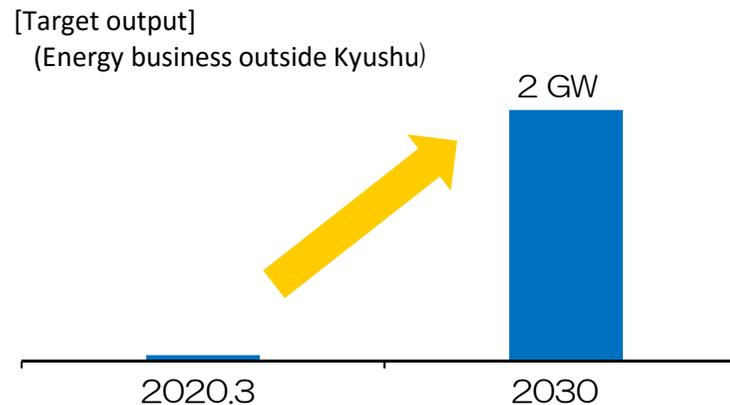
## Development plan of renewable energy (as of March 2020)

\*1 Kyuden Mirai Energy Co., Inc. \*2 Kushima Wind Hill Co., Inc.

	Name	Prefecture	Output (kW)	Notes
Solar	【Outside Kyushu】 Miya river watarai*1	Mie	72,000	Starting operation in FY2023 (scheduled)
	<b>Subtotal</b>		<b>72,000</b>	—
Wind	Kushima wind*2	Miyazaki	64,800	Starting operation in October 2020 (scheduled)
	Karatsu Chinzei wind farm*1	Saga	27,200	Starting operation in FY2021 (scheduled)
	Experimental Study of Next Generation Offshore Floating Wind Power System*1	Fukuoka	3,000	Starting operation in May 2019 [Commissioned project in collaboration with NEDO] (May 2019-FY2021) (Demonstration Phase)
	<b>Subtotal</b>		<b>95,000</b>	—
Geothermal	Ohtake	Oita	14,500	Starting operation in December 2020 (scheduled) Update of existing facility (12,500 kW→14,500 MW)
	<b>Subtotal</b>		<b>14,500</b>	—
Hydro	Tsukabaru No.1-4	Miyazaki	66,600	Starting operation in May 2020 (scheduled) Update of existing facility (62,600 kW→66,600 kW)
	Shin-takeda	Oita	8,300	Starting operation in March 2022 (scheduled) Redevelopment (7,000 kW→8,300 kW)
	<b>Subtotal</b>		<b>74,900</b>	—
Biomass	【Outside Kyushu】 Nagano-biomass*1	Nagano	14,500	Starting operation in FY2020 (scheduled)
	Fukuoka biomass*1	Fukuoka	5,700	Starting operation in FY2020 (scheduled)
	【Outside Kyushu】 Shimonoseki-biomass*1	Yamaguchi	74,980	Starting operation in FY2021 (scheduled)
	Karita biomass*1	Fukuoka	74,950	Starting operation in FY2021 (scheduled)
	【Outside Kyushu】 Okinawa Uruma*1	Okinawa	49,000	Starting operation in FY2021 (scheduled)
	Oita-Biomass*1	Oita	22,000	Starting operation in FY2021 (scheduled)
	【Outside Kyushu】 Ishikari biomass*1	Hokkaido	51,500	Starting operation in FY2022 (scheduled)
	【Outside Kyushu】 Hirohata biomass*1	Hyogo	74,900	Starting operation in FY2023 (scheduled)
<b>Subtotal</b>		<b>367,530</b>	—	
Tidal	Tidal power generation technology commercialization project*1	Nagasaki	500	FY2020 (scheduled) (Demonstration Phase)
	<b>Subtotal</b>		<b>500</b>	—
<b>Total</b>			<b>624,430</b>	—

## Developing LNG power plant in Kanto Area

- Through partner alliances, we are working to develop energy sources outside the Kyushu region, and have set a target of 2 GW of output in 2030.
- In September 2019, Tokyo Gas and Kyuden established Chiba Sodegaura Power Co., Ltd. to conduct a feasibility study of a LNG-fired thermal power plant. Tokyo Gas and Kyuden jointly plan to construct a combined-cycle power plant on the (currently unused) industrial site owned by Idemitsu Kosan Co., Ltd. in Sodegaura City, Chiba Prefecture. We are planning a final investment decision in the early 2020s



[Location of plant]



[Outline of the project]

Location	Sodegaura City, Chiba Prefecture
Generation system	Gas turbine combined cycle system
Output	Max. 2 GW
Fuel	LNG

### The world’s first LNG-fueled large coal carriers

- Kyuden has entered into long term transport agreements with Nippon Yusen Kabushiki Kaisha (“NYK”) and Mitsui O.S.K. Lines (“MOL”) on the deployment of the world’s first LNG-fueled large coal carriers.
- Under the operation of NYK and MOL, the vessels will be used to import coal to Kyuden’s coal-fired power plants.
- The LNG procured for Kyuden’s thermal power plants will be supplied to the vessels as fuel at the loading facility of Kitakyushu Liquefied Natural Gas Co., 75% owned subsidiary of Kyuden (each ship consumes 5,000 to 6,000 tons of LNG annually).
- The use of LNG fuel is expected to virtually eliminate sulphur oxides (Sox) emission and reduce 80% of nitrogen oxides (NOx) emission, as well as 30% of carbon dioxide (CO2 ) emission, in comparison with traditional marine fuels. We contribute to the realization of a low carbon society by implementation of LNG as an environment friendly fuel.

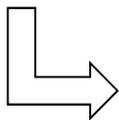
[LNG fuel supply (bunkering) overview]

- The LNG will be supplied using shore LNG loading facility



[Outline of Vessel Specifications]

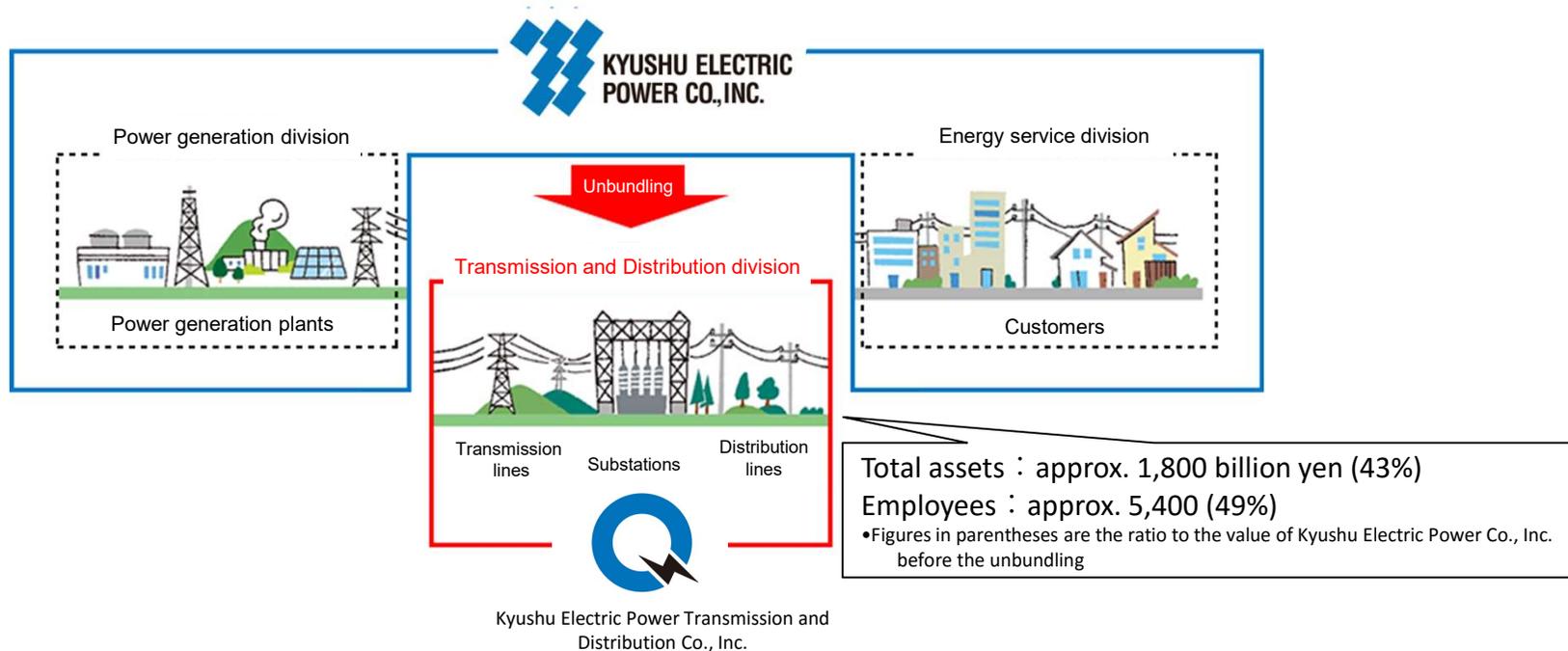
Operator	NYK	MOL
LOA/Beam	235m/38m	235m/38m
DWT	95,000MT	95,000MT
Shipyard	Oshima Shipbuilding	Namura Shipbuilding
Delivery date	April 2023	June 2023



- To reduce environmental impact we plan not only to convert our own coal carriers to LNG fuel, but we also consider LNG bunkering for other transport vessels such as ferries and car transport vessels.
- For that purpose, we are also considering cooperation with overseas companies, next to domestic cooperation initiatives\*  
 \* In August 2018, an alliance was announced with Saibu Gas Co., Chugoku Electric Power Co., and NYK.

## Legal unbundling of transmission/distribution sector

- On April 1<sup>st</sup> 2020, the Group split the general power transmission and distribution business into a 100 percent-owned subsidiary, and established Kyushu Electric Power Transmission and Distribution Co., Inc.



[The role of each company and the vision that Kyuden group aims for]

### Kyushu Electric Power Company

- Providing energy services that contribute to customers' prosperous and more comfortable lives.
- Improving competitiveness.

### Kyushu Electric Power Transmission and Distribution Company

- Further improvement of fairness, transparency and neutrality.
- Combining stable supply of electricity and economic efficiency by improving efficiency and sophistication of security and operational work.

After the unbundling, both companies continue to

- fulfill our obligations as energy companies
- aim to continually improve the value of the entire Kyuden Group