

# Presentation Materials for IR meeting

May 8, 2017

Section1 Business Update

Section2 Financial Results for FY2016



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## ■ Initiatives in Genkai and Sendai Nuclear power stations

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## Progress of the electricity retail market liberalization

- We've comprehensively appealed to customers with new price plans, new services and brand image.
- At the end of March 2017, about 217,000 <sup>\*1</sup> customers had switched contracts from our company to the other (about 2.9% of low-voltage contracts).
- At the end of March 2017, we had received roughly 190,000 <sup>\*2</sup> applications for our new price plans.

<sup>\*1</sup> According to the official announcement by the Organization for Cross-regional Coordination of Transmission Operators, Japan (including a part of high-voltage).

<sup>\*2</sup> Total amount of applications for "Electric Night Select Plan", "Smart Family Plan", "Smart Business Plan".

## Policy regarding electricity retail market liberalization (inside Kyushu)



## Efforts to prevent losses of contracts

- We are aiming to prevent and get back losses of contracts by providing customers some options such as "Electricity and gas bundling", "All-electric", "Kyuden Safety Supports".

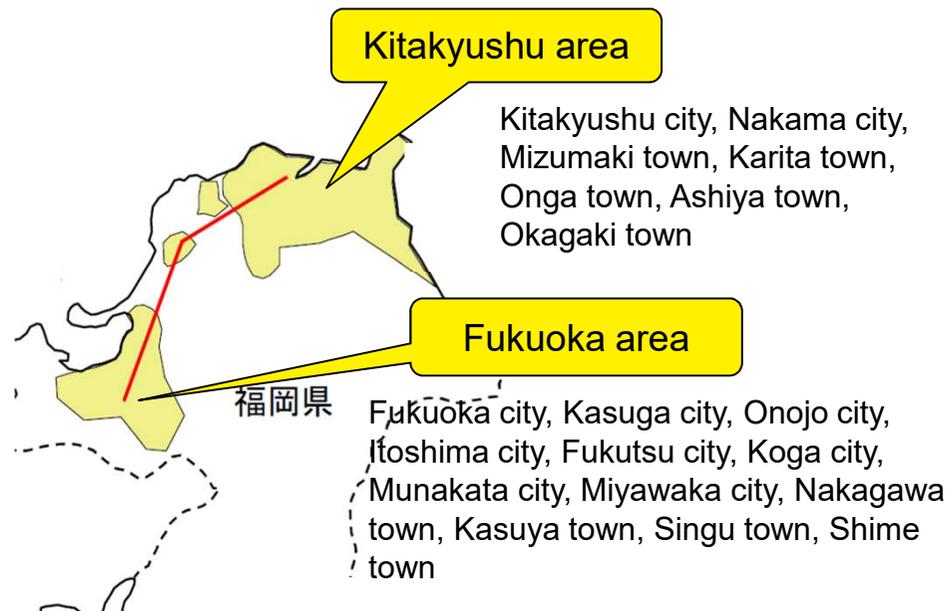
## Sales promotion with “Electricity and gas bundling”

- The full-liberalization of gas retail market began in April 2017. We’ve participated in household gas sales business in Fukuoka and Kitakyushu area, where a major gas company supplies.
- Our strengths are robust customer foundation, which we’ve cultivated through the electricity business, and procurement capabilities of LNG stably and inexpensively.
- The number of contracts of household gas sales is about 7,500 (at the end of April 2017).

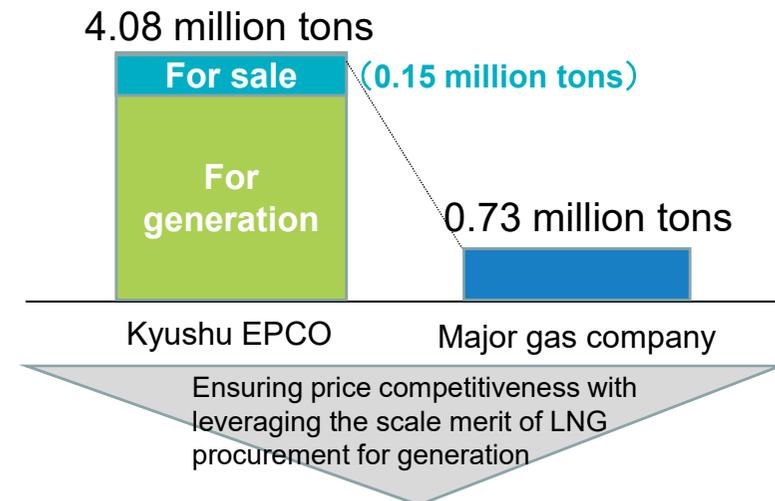
### [Sales target of household gas]

Approx. 5% of market share of the major gas company in our distribution areas  
 ≒ 40 thousand contracts  
 (Approx. 10 thousand tons of sales amount )

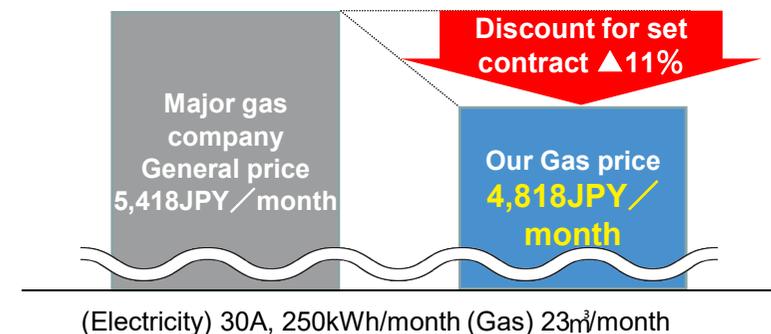
### Distribution areas of gas retail sales



### [Procurement record of LNG (FY2015)]



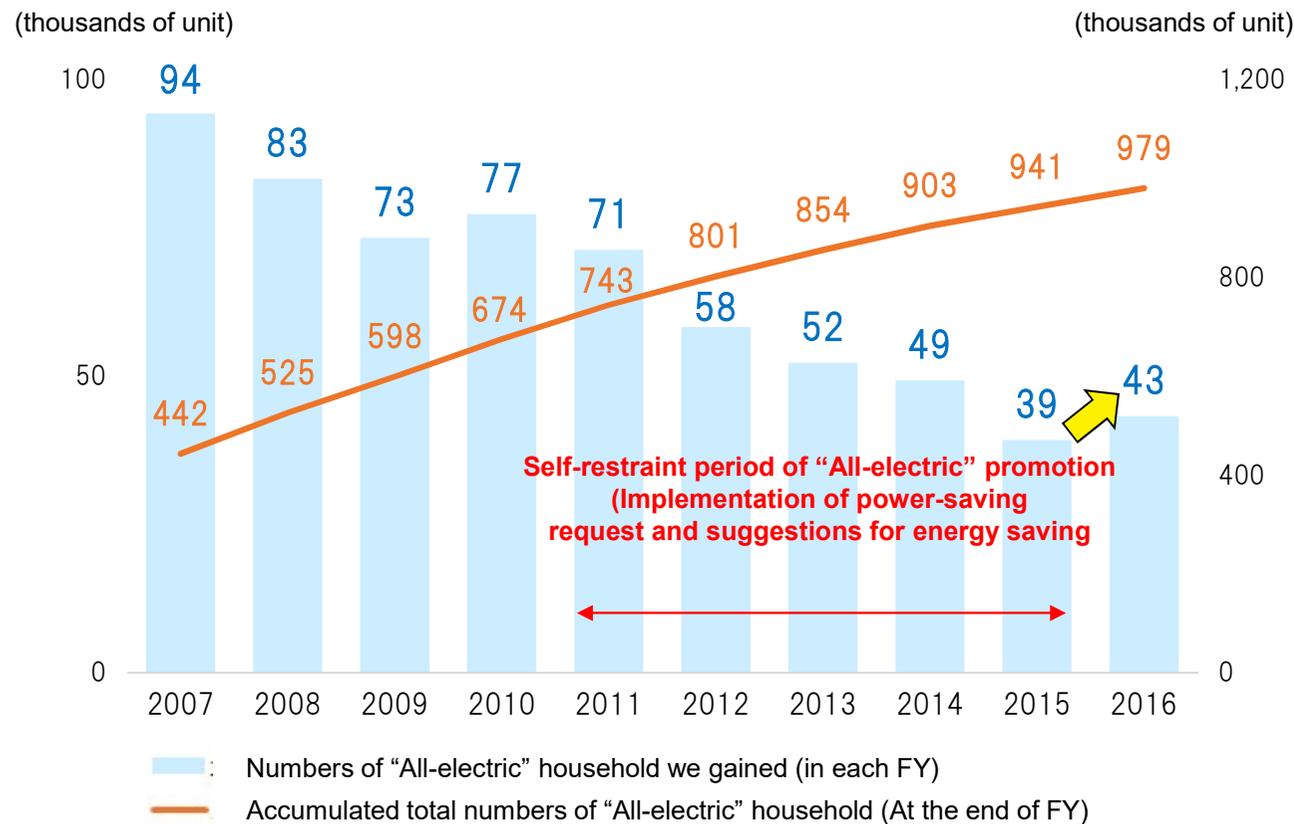
### [Comparison of gas rate with the major (an instance)]



## Sales promotion with “All-electric”

- We restarted promotions of “All-electric” in 2016 for the first time in 6 years, though we had refrained from them after the Great East Japan Earthquake.
- The number of new contracts of “All-electric” increased with restart of promotions compared to the previous fiscal year for the first time in 6 years.
- We’ll actively propose “All-electric”, which provides customers with safe, comfortable and economic life.

[The number of new contracts of “All-electric”]



About 10 thousand new contracts we gained

“All-electric” promotion period  
(October-December 2016)

## Development of “Kyuden Safety Supports”

- We’re providing 7 one-stop services for responding to customers’ needs and troubles.
- We’ll build stronger relationship of mutual trust with customers by providing “Relief”.

## “Kyuden Relieving Supports”

### Filial piety support

We confirm how your parents live apart, and inform you of it.

### Watch over support

We inform you on changes of electricity usage of parent living alone by e-mail.

### Electricity support

We provide one-stop services responding to your problems regarding electricity.

### Daily life trouble support

We provide you with quick fix for life trouble regarding key, wet area and glass 24 hours through the year.

### Vacant house support

We inform you on the status of your or your parents’ vacant house by e-mail with pictures.

### Daily life support

We resolve your problems by taking care of children and helping with housework.

### Graves support

We inform you the status of graves, which you can’t visit, by e-mail with pictures.

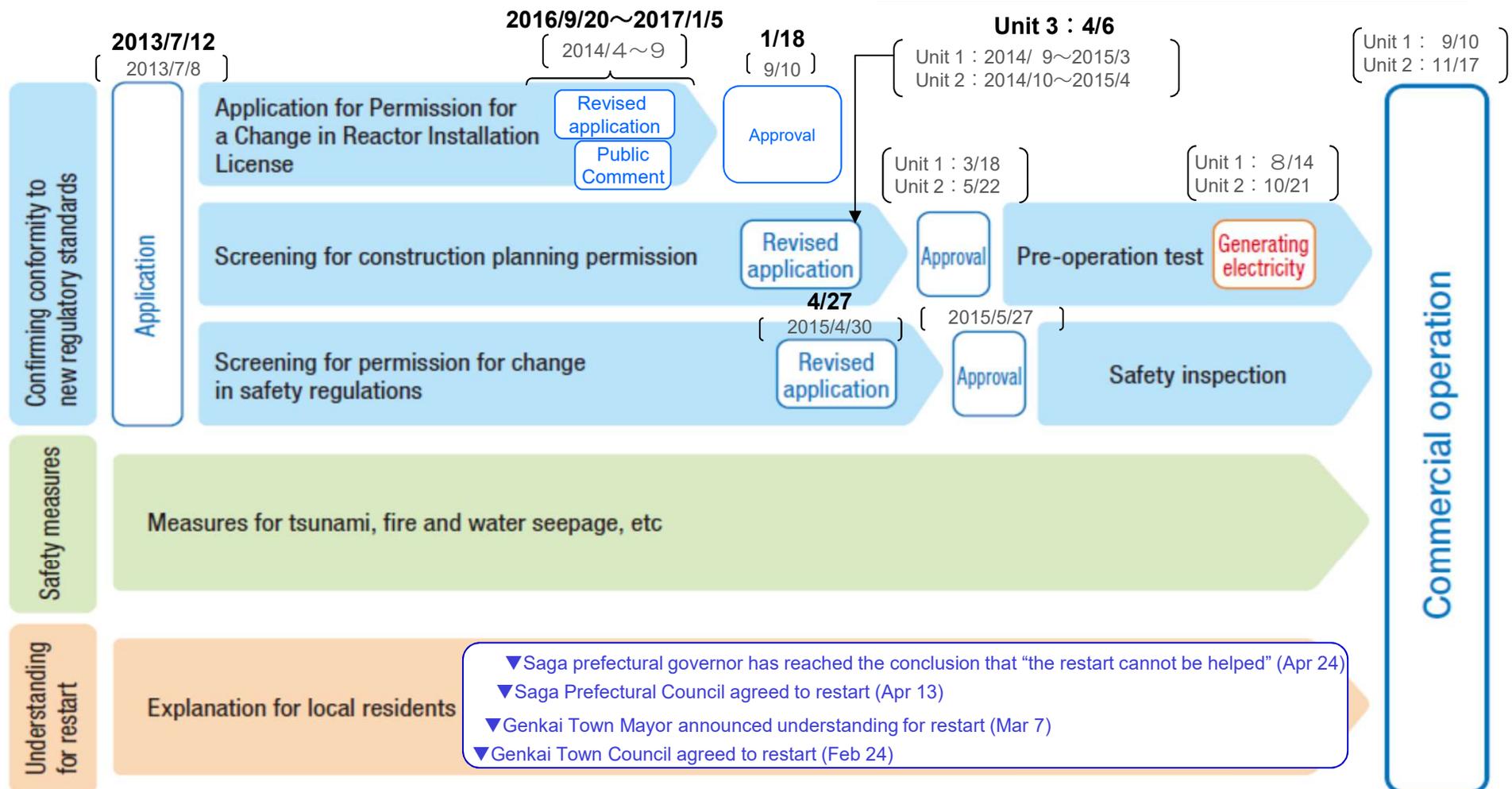


## Status of the conformity assessment of Genkai NPS unit No.3 and 4

- We received the permission for changes in reactor installation from NRA on January 18<sup>th</sup> 2017.
- We submitted applications regarding approval for construction planning of unit No.3 on April 6<sup>th</sup> 2017.
- We submitted applications regarding approval for changes in safety regulations on April 27<sup>th</sup> 2017.

### [Process for commercial operation of Genkai unit No.3 and 4]

Dates in parentheses are actuals of Sendai unit No.1 and 2



## Communication with citizen in Saga prefecture

- We've continued to communicate with citizen as an effort to gain their understanding of safety of Genkai NPS starting January 19<sup>th</sup> 2017.

Visiting mayors of all towns in Saga

Visiting every home in neighboring municipalities  
Genkai town and its neighboring Chinzei town,  
Hizen town, Yobuko town in Karatsu city

Putting movies and documents regarding safety  
initiatives on our website

Explanation at briefing for citizens, organized by Saga  
prefecture

\* We've continued face to face communication in Kyushu as well as neighboring prefecture such like Fukuoka and Nagasaki.

## [Supplementation] Movement of government and municipality regarding restart of Genkai NPS

December 2016 to April 2017	
Government	<ul style="list-style-type: none"> <li>▼ Attending Special Committee of Nuclear Safety Measures in Saga Prefecture Council (2/9, 3/16)</li> <li>▼ Attending Special Commission of Nuclear Safety Measures in Genkai town (2/9)</li> <li>▼ Minister in charge of nuclear disaster prevention visited Genkai NPS and discussed with Saga governor (4/8-4/9)</li> <li>▼ Minister of METI visited Genkai NPS and discussed with Saga governor (4/22)</li> </ul>
Saga prefecture	<ul style="list-style-type: none"> <li>Public hearing committee (12/18, 2/8, 3/30)</li> <li>← Briefing for citizens (2/21 Katarsu, 2/22 Takeo, 2/27 Saga, 2/28 Imari, 3/3 Tosu) →</li> <li>Special Committee of Nuclear Safety (12/27~3/21)</li> <li>→ Saga governor has reached the conclusion that "the restart cannot be helped" (4/24)</li> <li>▼ Saga Prefecture Council agreed to restart (4/13)</li> <li>▼ Extraordinary Saga Prefecture Council had been held (4/11-4/13)</li> <li>▼ GM21 meeting (3/18)</li> <li>▼ Saga governor visited Genkai NPS and discussed with our president Uriu (4/19)</li> </ul>
Genkai town	<ul style="list-style-type: none"> <li>▼ Special Committee of Nuclear Measures (2/9)</li> <li>▼ Genkai Town Mayor announced understanding (3/7)</li> <li>▼ Special Committee of Nuclear Measures agreed to restart (2/24)</li> </ul>

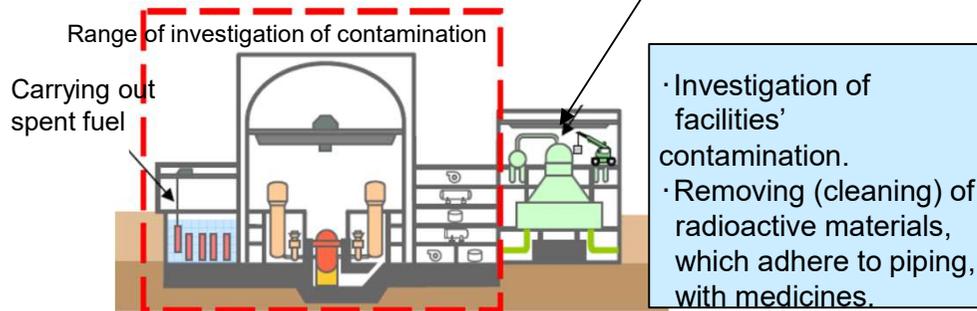
## Approval of “Decommissioning plan” regarding Genkai NPS unit No.1

- We decided to discontinue operation of Genkai NPS unit No.1 in March 2015, and submitted to METI a notification, which specified the date of decommission was April 27<sup>th</sup> 2015.
- In December 2015, we submitted an application for approval of decommissioning plan regarding Genkai NPS unit No.1 (amendments were submitted in February and March 2017).
- In April 2017, we received the approval of decommissioning plan from NRA.
- We’ve already recorded approx. 33.8billion yen (93%) as an allowance for the total decommissioning costs of Genkai NPS unit No.1, which is approx. 36.5 billion yen (at the end of March 2017).
- Un-allowance for decommissioning will be provided in 8 years (by January 2025).

### [Procedures of decommissioning]

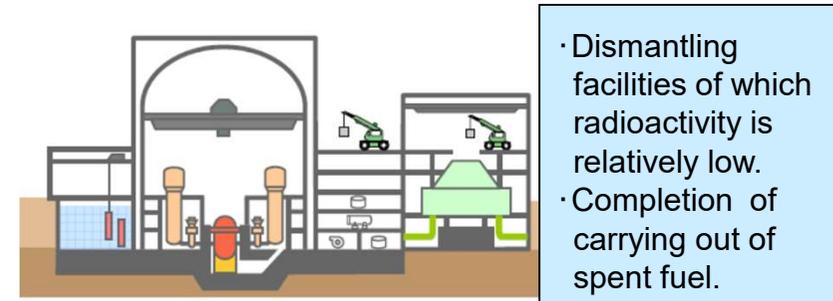
#### I . Preparation phase of dismantling

[FY2017(after approval) to FY2021]



Dismantling of uncontaminated facilities (It will be implemented throughout the period)

#### II . Phase of dismantling of facilities surrounding nuclear reactor [FY2022 to FY2029]



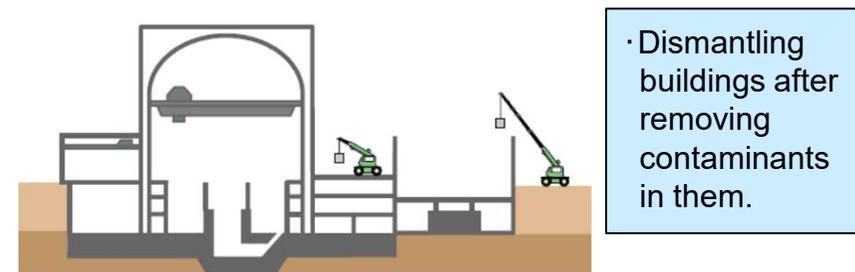
#### III . Phase of dismantling of nuclear reactor

[FY2030 to FY2036]



#### IV . Phase of dismantling of buildings

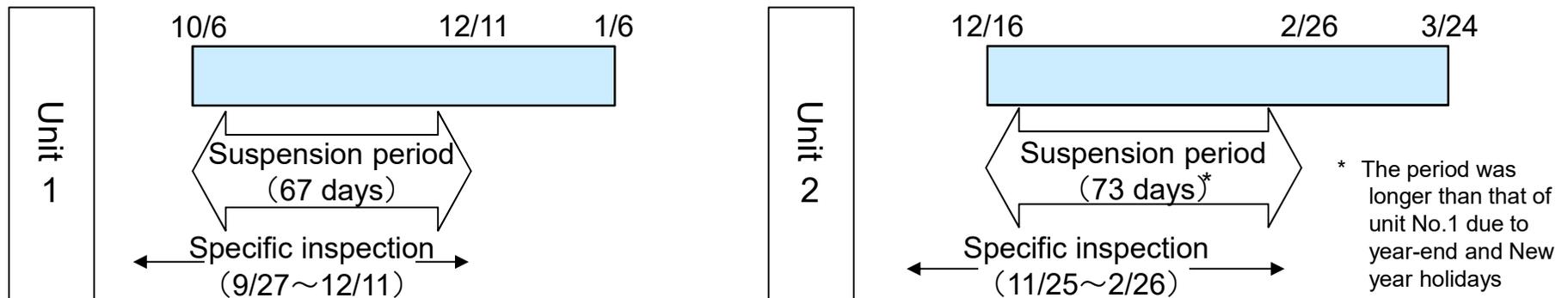
[ FY2037 to FY2043 ]



## Operation status of Sendai NPS

- The periodic inspection of Sendai NPS unit No.1 (No.2) started on October 6<sup>th</sup> 2016 (December 16<sup>th</sup> 2016) and returned to the commercial operation on January 6<sup>th</sup> 2017 (March 24<sup>th</sup> 2017).
- Specific inspection considering Kumamoto earthquake, which is one of the request from Kagoshima governor, had been implemented in the periodic inspection.
- We reported to Kagoshima prefecture that any troubles had not been seen at unit No.1 and 2 (No.1: December 26<sup>th</sup>, No.2: March 16<sup>th</sup>).

### [Schedule]



## Installation of "Specific Safety Facilities (SSFs)" in Sendai NPS

- We need to install SSFs in 5 year transitional period since the approval date of construction planning (No.1: March 18<sup>th</sup> 2015, No.2: May 25<sup>th</sup> 2015).
- In December 2015, we submitted the application of permission for change in reactor installation (amendments were submitted in March 2016, February and March 2017).
- We received the permission for change in reactor installation on April 5<sup>th</sup> 2017.

### \* SSFs

They have a function to prevent damages of containment vessel. They are preparation in case cooling functions for nuclear reactor stop and a reactor core gets fatal damages due to terrorism such like an intentional collision of jumbo airplane toward a reactor support building.

## Energy service business in Kyushu: Expansion of Matsuura unit No.2

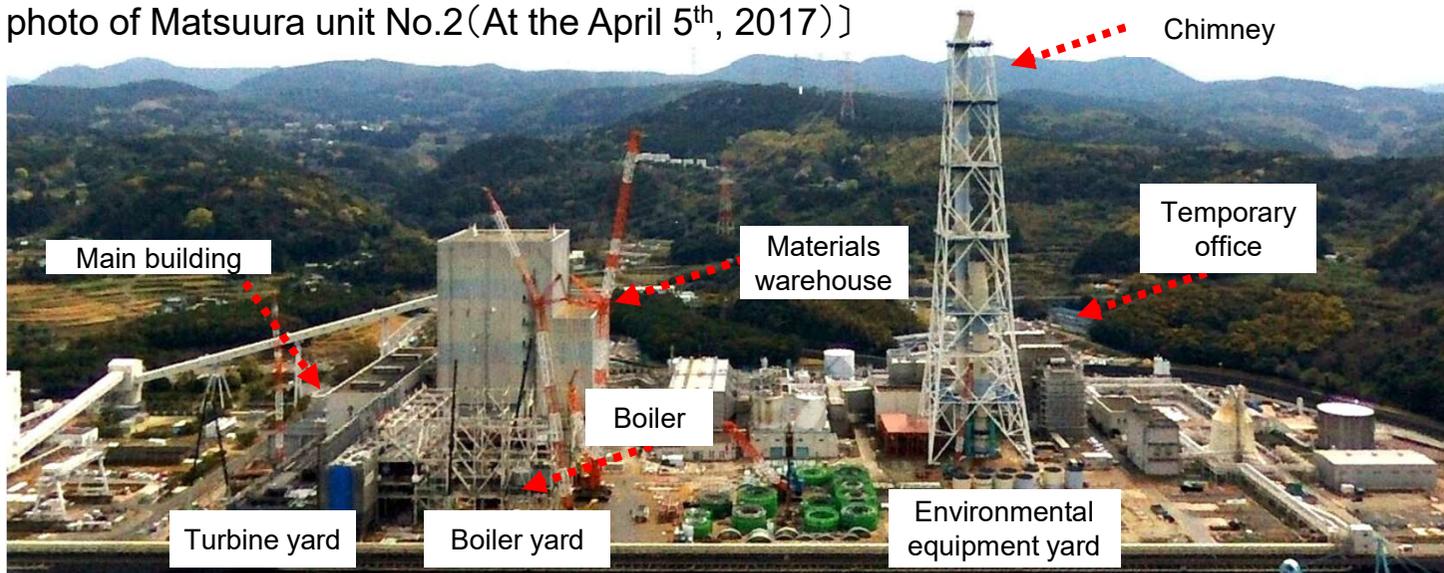
- We have endeavored to develop Matsuura unit No.2, which the latest technology is adopted, for securing a power source that has both competitiveness and reliability.
- We aim to reduce fuel consumption and environmental impact by adopting USC that is high efficiency technology.
- At the end of March 2017, progress rate of construction 17.9%.

### Outline of expansion of Matsuura unit No.2

<b>Location</b>	Matsuura city, Nagasaki prefecture	<b>Output</b>	1,000MW
<b>Generation system</b>	USC ※coal powder thermal	<b>Fuel</b>	coal
<b>Thermal efficiency (generation-end)</b>	Approx. 45% or more (lower calorific value)	<b>Start of operation</b>	December 2019

\* Ultra-super critical (USC): This is a highly efficient method of generating electricity that reduces environmental impact, boosting thermal efficiency by using steam under higher temperatures and pressures to generate electricity.

[Panoramic photo of Matsuura unit No.2 (At the April 5<sup>th</sup>, 2017)]



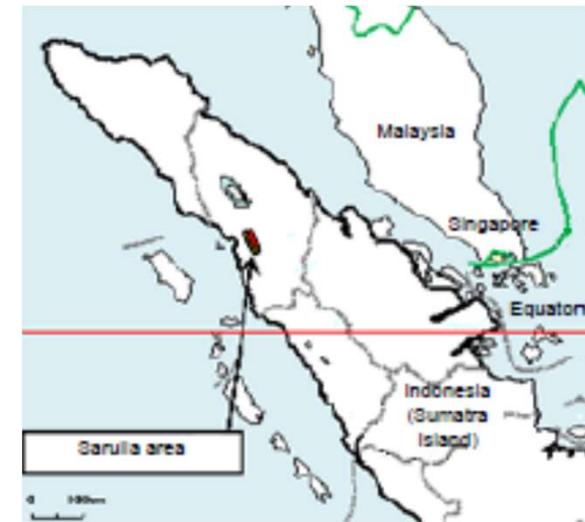
## Overseas energy business: Start of operation of Sarulla geothermal unit No.1

- Sarulla geothermal unit No.1, which is the world's largest scale, started commercial operation on March 18<sup>th</sup> 2017 (output 106MW).
- We had an electricity sales contract for 30 years with EPCO owned by Indonesia government, so stable profits are expected.
- Unit No.2 (No.3) will start commercial operation in 2017 (2018).

### Outline of Sarulla generational IPP project

Location	Sarulla area, the north of Sumatra island, Indonesia
Business outline	<ul style="list-style-type: none"> <li>▪ Total development from geothermal resources development to generation</li> <li>▪ Electricity sales contract with EPCO owned by Indonesia government for 30 years</li> </ul>
Output	320MW (3 units)
Investment ratio	25%
Start of operation	Unit 1: March 2017, Unit 2: 2017 (scheduled) Unit 3: 2018 (scheduled)

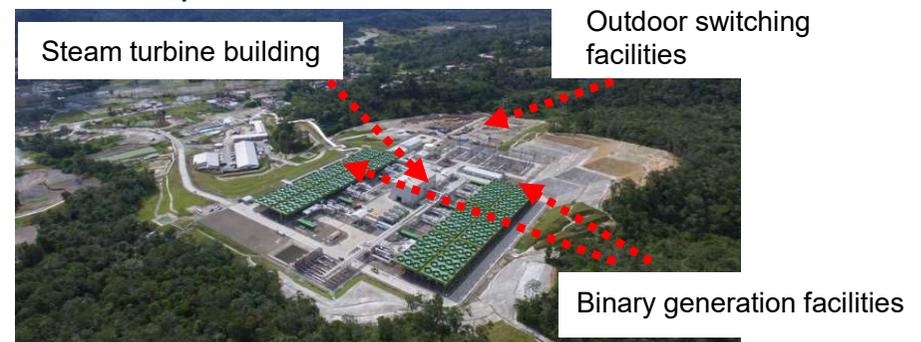
[Location]



[Fumarolic test]



[Panoramic photo of unit No.1]



## Outside Kyushu energy business: Retail electric power business for household in Kanto area

- Group company Kyuden Mirai Energy engages in the retail electric power business for households in the Kanto area since April 2016.
- The number of contracts at the end of April 2017 is Approx. 2.3 thousand.
- We make an effort to strengthen our sales force by having formed business alliance with some companies that have customer base in Kanto, aiming to achieve our target.
- They also started to sale for high voltage customers since January 2017.

### [Services of Kyuden Mirai Energy]

Sales Target: 10 thousand contracts

[For low voltage customers]

**Giving JAL miles**  
**“JAL Milage Plan”**

o Earned 1 mile per 100 yen of electricity bill\*

\* Excluding tax and Renewable Energy Power Promotion Surcharge etc.

[Unique optional services]

**For customers who have families  
living in Kyushu**  
**“Kyushu Filial Piety  
Support”**

[For high voltage customers]

We started sales for high voltage customers since January 2017.

## Renewable energy business: Feasibility studies regarding offshore wind power generation project

- The consortium, composed of Kyuden Mirai Energy and other three companies, was elected as the expected occupant regarding a public recruitment of companies who install and operate Hibikinada offshore wind power generation in Kitakyushu.
- In April 2017, SPC “Hibiki Wind Energy Company”, of which representative is Kyuden Mirai Energy, was established.
- We will judge the business possibility after implementing feasibility studies including investigation of wind and ocean of the expected area.

## Outline of “Hibiki Wind Energy Company”

Name	Hibiki Wind Energy Company	Location
Location	Wakamatsu ward, Kitakyushu city	
Represent	Representative director Yasuji Akiyama ※Representative director and president of Kyuden Mirai Energy	
Business outline	Studies regarding offshore wind power generation business and electricity sales	
Schedule	2017 to March 2021(scheduled)	
Investment ratio	Our group 40% (Kyuden Mirai Energy 30%, Kyudenko 10%)	

## Renewable energy business outside Kyushu

- We announced to start investigation of resources for geothermal generation with Hokkaido EPCO in Sobetsu town, Hokkaido in May 2016.
- In February 2017, East Hiroshima mega solar power plant, which is the first power plant outside Kyushu of Kyuden Mirai Energy, started operation.
- Furthermore, solar power plant is under construction in Fukushima prefecture, and biomass power plant is in preparation for construction in Nagano prefecture.  
※Summary of renewable energy development plan and feasibility studies are mentioned at reference (page 20-21).



## ■ Reference

Strategic alliance in LNG procurement with Tokyo gas	P 13
Outline of supply plan in FY2017	P 14
Outline of organizational revision in April 2017	P 15
Overseas energy, Outside Kyushu energy, Renewable energy businesses	P 16

## Strategic alliance in LNG procurement with Tokyo gas

- In April 2017, we both agreed to consider the strategic alliance for optimizing LNG procurement.
- Details of consideration are as below,
  1. Aiming to achieve further flexible LNG procurement and reduce its cost. These resulted from constructing mutual cooperation in LNG procurement and transportation as well as flexible operation of each other's resources.
  2. Aiming to improve stability of supply resulted from promoting cooperative relationship of flexible dealing including in an emergency.
- We consider possible cooperation in a wide range of business fields in addition to this LNG procurements. Consequently, we'll achieve more inexpensive and stable supply that creates our customers' benefit.

### [Expected results from strategic alliance]

- Reducing procurement costs by optimization of supply and demand through the flexible response to change of requirements. This will result from a swap of shipping allocation and flexible dealing, mutual use of transport ship in addition to reducing procurement costs by joint purchasing.
- We will promote to discuss about other alliances without limiting the scope of partners and business fields.

### [Examples of joint purchasing and transportation]

- In 2009, we have concluded the LNG purchase agreement from Indonesia with JERA, Kansai EPCO, Toho gas and Nippon steel & Sumitomo metal corporation.
- In 2011, we have concluded the LNG purchase agreement from the Ichthys LNG project with JERA, Kansai EPCO, Tokyo gas and Osaka gas.
- In 2013, we have concluded the transport agreement from the Ichthys LNG project with Osaka gas.

**[Power Plant Development Plan]**

Class	Unit	Generating Unit Name	Output	Construction schedule	
				Commencement of construction	Commencement of commercial operation
Under construction	Hydro power	Shin-Kosa	7,200 kW	May 2012	July 2019
	Thermal power (coal)	Matsuura unit 2	1,000,000 kW	March 2001	December 2019
	Thermal power (Internal-Combustion engine power)	Toyotama unit 6 [Tsushima]	8,000 kW		June 2018
In preparation for construction	Thermal power (Internal-Combustion engine power)	Shin-China unit 7 [Okinoerabujima-island]	4,500 kW	/	June 2019
		Shin-Kikai unit 7,8 [Kikaijima-island]	2,200 kW (1,100kW×2)	/	June 2019
		Shin-Yoron unit 4 [Yoronto-island]	1,100 kW	/	June 2019
		Shin-Tanegashima unit 5 [Tanegashima-island]	6,000 kW	/	June 2023
	Nuclear	Sendai unit 3	1,590,000 kW	TBD	TBD
	Geothermal	Otake*	14,500 kW [+2,000kW]	/	TBD

\* Power generation facilities will be replaced ([ ] is the increase of output).

**[Power Plant Discontinuation Plan]**

Type	Power plant & unit	Output	Schedule
Thermal power (heavy clude)	Karita-Shin unit 2	375,000 kW	May 2017
	Ainoura unit 1,2	875,000 kW	FY2018

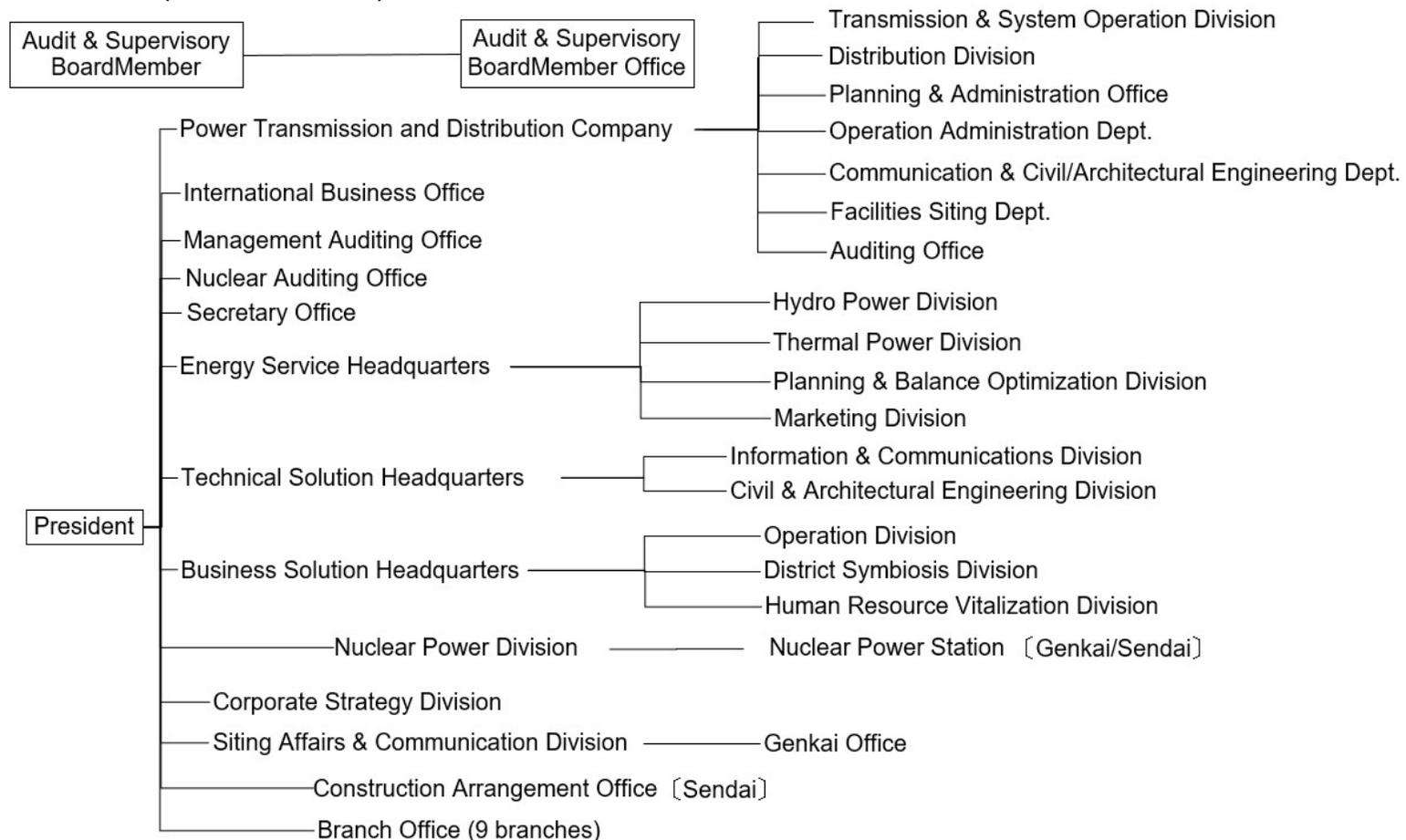
**[Reference] Planned Suspension**

Type	Power plant & unit	Output	Schedule
Thermal power (heavy clude)	Buzen unit 1,2	1,000,000 kW	FY2020-

## Outline of organizational revision in April 2017

- We installed “Distribution company”, which has high independence and neutrality to respond to electricity retail market liberalization and introduction of license system since April 2017.
- We installed “General headquarter of energy services” that promotes integrated and autonomous operation regarding fuel procurement, generating and sales in view of overall optimization. Consequently, we aim to win in the future competitive business environment of generating and retail businesses.

### [Organization chart (As of FY2017)]



Goal for Equity Ownership in Electricity Output on Overseas Energy Business as of 2030

**5,000MW [+3,500MW (compared with that as of 2015)]**

- o We will make the most of the technology and know-how we have accumulated in Japan and abroad to develop overseas electricity business focusing on IPP projects mainly in Asia, whose market has high growth potential. This is how we aim for 5,000MW equity ownership in electricity output.

## Status of achievement in equity ownership in electricity output

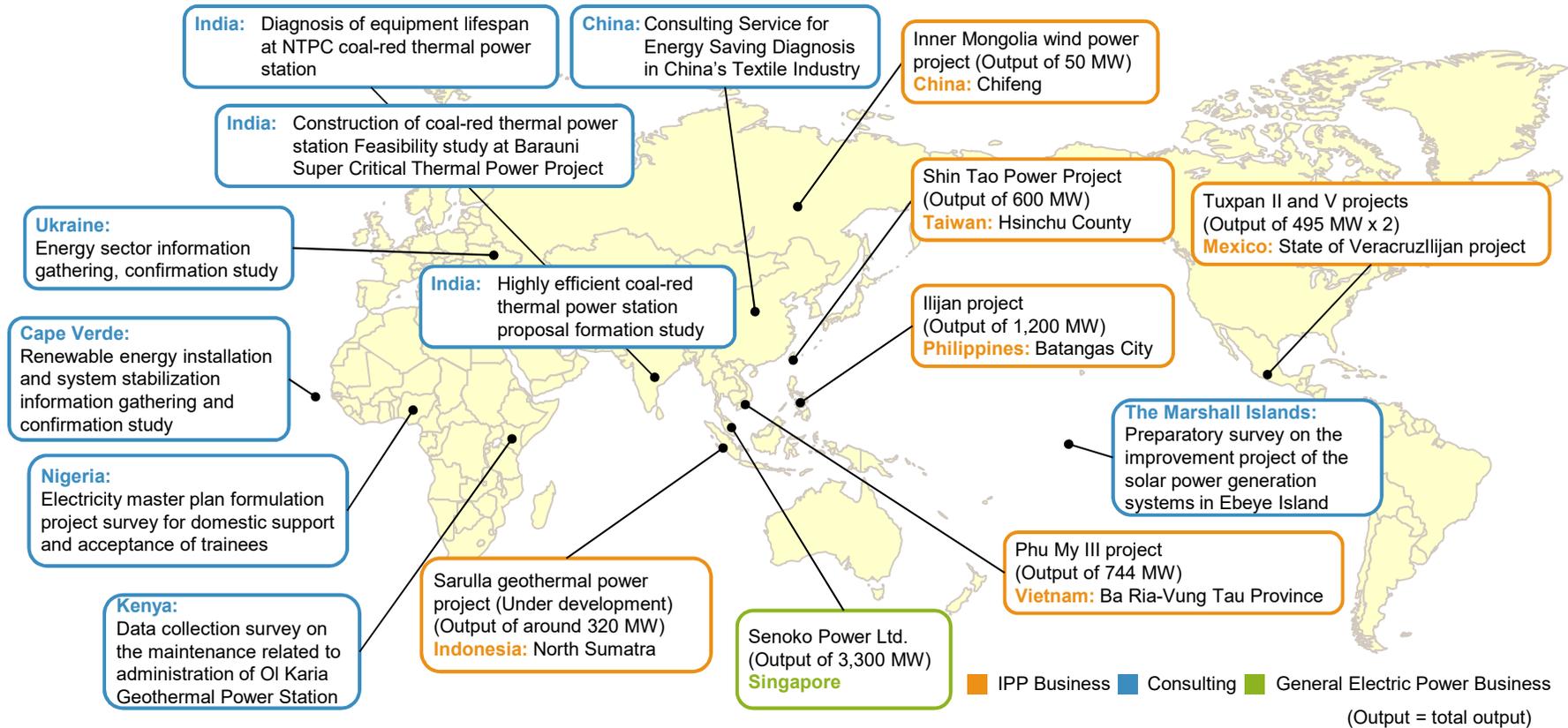
**1,530 MW / 5,000MW**

- o Ongoing development projects: 210MW  
Sarulla geothermal unit No.1 and 2  
(Equity ownership in electricity output: 50MW)  
(At the end of March 2017)

## Ongoing Projects in Overseas Energy Business

Projects	Mexico /Tuxpan II	Philippine /Ilijan	Vietnam /Phu My III	Mexico /Tuxpan V	Singapore /Senoko Power	China /Inner Mongolia Wind Power	Taiwan Hsin Tao Power	Indonesia / Sarulla Unit 1
Resources	Gas	Gas	Gas	Gas	Gas/Oil	Wind	Gas	Geothermal
Start of Operation / Investment	Dec. 2001 (Operation)	Jun. 2002 (Operation)	Mar. 2004 (Operation)	Sep. 2006 (Operation)	Sep. 2008 (Investment)	Sep. 2009 (Operation)	Oct. 2010 (Investment)	Mar. 2017 (Operation)
Equity Ratio	50%	8%	26.7%	50%	15%	29%	33.2%	25%
Equity Ownership (Total:1,526MW )	248MW	96MW	199MW	248MW	495MW	15MW	199MW	26MW

[Business Development Overseas (At the end of April 2017)]



Goal for Development Output on Energy Business Outside Kyushu as of 2030

2,000MW [+2,000MW (compared with that as of 2015)]

- We agreed with Idemitsu Kosan Co., Ltd. and Tokyo Gas Co., Ltd. to form an alliance to consider developing coal-burning thermal power station jointly and then established the Chiba-Sodegaura Energy Co., Ltd (CSE) in May 2015.
- CSE notified the statement of Environmental Impact Assessment to METI, based on the Environmental Impact Assessment Act and the Electricity Business Act in January 2016.
- In July 2016, CSE received the result of the examination from minister of METI stating that the statement considers reasonable environmental conservation and doesn't have to be recommended in respect of Electricity Business Act regulations.

## Outline of Chiba-Sodegaura Energy

<b>Planned site</b>	3-1, Nakasode, Sodegaura City, Chiba Pref.
<b>System</b>	Ultra-super critical (USC) power generation
<b>Output</b>	Maximum 2,000MW (1,000MW × 2Units)
<b>Fuel</b>	Coal (Burning a mixture of biomass and coal is also under consideration)
<b>Start of Operation</b>	Unit No.1 : FY2025 (scheduled) Unit No.2 : FY2026 (scheduled)
<b>Alliance</b>	"Idemitsu Kosan", "Tokyo Gas"



Goal for Development Output on Renewable Energy Business as of 2030

4,000MW [+2,500MW (compared with that as of 2015)]

- o We will make the most of the technology and know-how we have accumulated in Japan and abroad in the past to focus on geothermal/hydroelectric power generation. Also we will work on offshore wind power plant which has growth potential while taking into account the advancement of technological development.
- o Kyuden Mirai Energy is working with us to implement power generation projects making the most of integrated the technology and know-how to offer everything from inspection through planning, construction, and operational control.

Development Output of Renewable Energy by our Group

1,809<sup>\*1</sup> MW / 4,000MW

- o Development Output after setting “medium-term management plan” : Around 110MW
- o Ongoing development projects : Around 520MW

Solar 47MW

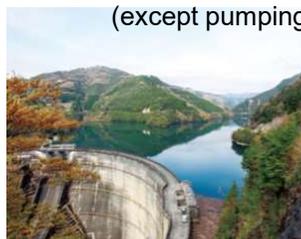


Wind 118MW



Hydro 1,284MW

(except pumping)



Geothermal 319MW



Biomass 41MW



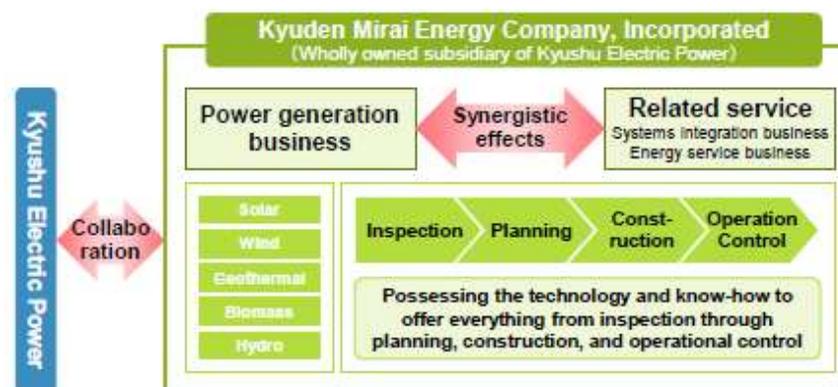
\*1 The total of existing output as of setting “medium-term management plan” and developed output after setting it

(At the end of March, 2017)

[Kyuden Mirai Energy’s Facility]

Source	Output
Solar	40MW
Wind	50MW
Geothermal	5MW
Biomass	11MW
<b>Total</b>	<b>106MW</b>

(At the end of March, 2017)



[Development plans of renewable energy (At the end of March, 2017)]

	Name	Prefecture	Output (MW)	Notes
Solar	Renatos Soma Solar Park	Fukushima	43.50	Starting operation in June 2017 (Scheduled)
Sub total			43.50	—
Wind	Kushima Wind Hill	Miyazaki	64.80	Starting operation in October 2020 (Scheduled)
	Karatsu Chinzei Wind Farm	Saga	28.00(Maximum)	Starting operation in 2022(Scheduled) [Under environmental assessment]
	Experimental Study of Next Generation Offshore Wind Power System	Fukuoka	7.45	Starting operation in 2017(Scheduled) [Commissioned project in collaboration with NEDO]
Sub total			100.25	—
Geothermal	Otake	Oita	2.00	Date of starting operation is undecided Update of existing facility (12.50→14.50MW)
	Yamakawa Binary	Kagoshima	4.99	Starting operation in February 2018 (Scheduled)
	Sarulla, Indonesia (unit 2 & 3)	—	215.40	All units will start operation until 2018
Sub total			222.39	—
Hydro	Tsukabaru	Miyazaki	4.00	Date of starting operation is undecided Update of existing facility (63.05→67.05MW)
	Shin-Kosa	Kumamoto	7.20	Starting operation in July 2019 (Scheduled)
	Kamoshishi	Kumamoto	1.99	Starting operation in July 2018 (Scheduled)
Sub total			13.19	—
Biomass	Buzen-Biomass	Fukuoka	74.95	Starting operation in 2019 (Scheduled)
	Soyano Wood Power	Nagano	14.50	Starting operation in 2019 (Scheduled)
	Nanatsushima Biomass Power	Kagoshima	49.00	Starting operation in 2018 (Scheduled)
Sub total			138.45	—
Tidal	Promoting project of developing technology regarding tidal power generation (public offering business by ministry of the Environment)	Nagasaki	2.00	Starting operation in 2019 (now in preparation for construction)
Sub total			2.00	—
Total			Around 519.78	—

[Cases under resources investigation regarding renewable energy]

(At the end of March 2017)

	Area	Prefecture	Starting schedule	Contents of study
Wind (offshore)	Hibikinada in Kitakyushu	Fukuoka	2017	Investigation of wind, ocean and ground Environmental assessment Basic design of generating facilities
Geothermal	The south of Yamashita pound	Oita	2017	Investigation of the earth's surface Monitoring of hot springs
	Sobetsu town, Oukei	Hokkaido	2016	Investigation of the earth's surface (technical support for Sobetsu town)
	Ibusuki	Kagoshima	2015	Investigation of the earth's surface (technical support for Ibusuki city) *Project has been suspended since October 2016
	Minamiaso village	Kumamoto	2015	Preparation for drilling of wells for investigation Monitoring of hot springs
	The north of Hiijidake	Oita	2013	Drilling of wells for investigation Monitoring of hot springs