# Presentation Materials for IR meeting

**November 7, 2016** 

Section1 Business Update

Section2 Financial Results for the 2Q of FY2016



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#### Vision for 2030

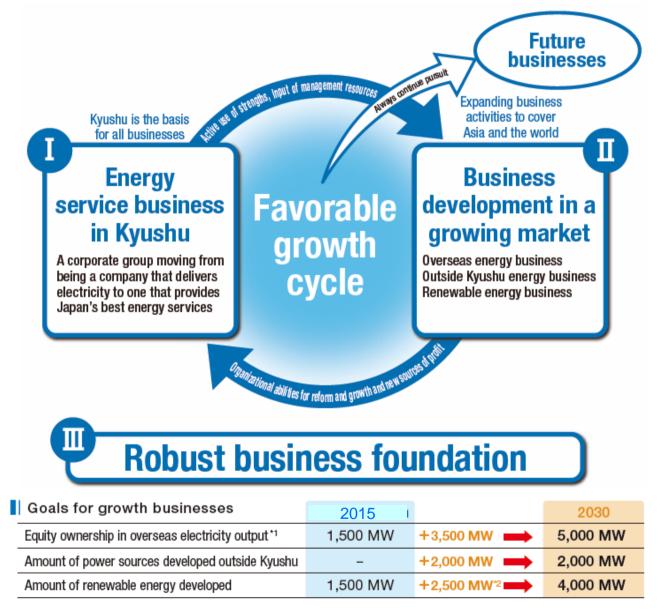
o Various initiatives are underway to achieve becoming "the corporate group that provides Japan's best energy services" as "Vision for 2030" mentioned in the Kyuden Group's medium-term management plan set in April 2015.

## Vision for 2030

# Aiming to become a corporate group that provides Japan's best energy services

## —Everyone eventually asks the Kyuden Group for energy!—

Services	o Aim at Japan's highest level of customer satisfaction by providing diverse services including not only electrical power but also gas and other types of energy, focusing on customers more than any other company, and making swifter managerial decisions.
Competitive power	<ul> <li>Taking maximum advantage and further developing the strengths we have cultivated in various fields to acquire the technological capabilities that we can proudly claim as Japan's best in each field. (Examples include operation of power stations, geothermal development, and response to emergencies and disasters.)</li> <li>Aim at Japan's highest level of productivity through constant daily business improvements and reforms</li> </ul>
Organizational strength	Develop a group of highly motivated employees who view the competitive environment positively and take on new challenges.  Energize communication within the group to create a closely united corporate group that is more vibrant and active in Japan.



<sup>\*1</sup> Equity ownership in overseas electricity output = Electric equipment output for each project × Kyushu Electric Group's investment ratio

<sup>\*2</sup> The breakdown is +800 MW for geothermal power, +200 MW for hydraulic power, +1,100 MW for wind power, and +400 MW for other types of energy in Japan and abroad.

## **Priority initiatives**

o Priority initiatives for the next five years to attain a long-term vision were set.

## Meeting the diverse energy needs of customers in Kyushu

Acquiring more Kyuden fans by providing diverse energy services

o Services closely tied to the lives of customers (for ordinary households)

o Gas business etc.

P5- "Initiatives for Electricity Retail Liberalization"

Enhancing the competitiveness of power sources and fuel procurement abilities

o Firmly determined not to cause accidents like the one that occurred at the Fukushima Daiichi Nuclear Power Station, we will continuously work to improve the safety and reliability of nuclear power and use it as a power source that is effective in ensuring energy security, mitigating global warming, and supplying electrical power economically. etc.

P9- "Initiatives in Genkai and Sendai Nuclear Power Stations"

Improving and effectively using power transmission and distribution network technology

o We will strengthen power transmission and distribution networks under transparent and neutral business administration systems. We will also contribute to the spread of renewable energy and attainment of smart communities.

P15- "Initiatives for accepting power output from renewable energy"







# Making the most of Kyuden Group strengths to develop in growth markets

Strengthening overseas electricity business

Developing electrical power businesses outside Kyushu

Expanding renewable energy business

P23- Reference

## **Establishing a robust business foundation**

Developing innovative human resources who take on new challenges

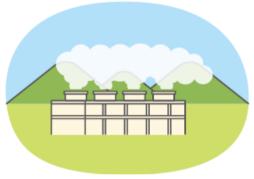
Creating organizations that respond swiftly to changes

Reinforcing our financial foundation and enhancing competitiveness on a group-wide scale

Pursuing safety and security

Promoting thorough CSR (corporate social responsibility) management

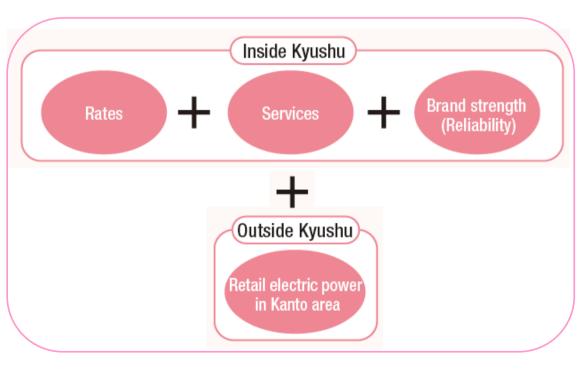




## **Policy Regarding Electricity Retail Liberalization**

- 0 Develop new rate plans, new services such as "Kyuden Safety Support," the member website "Kirei Life Plus", and "Q Point for Comfort" loyalty point system.
- 0 Develop personable marketing based on relationships of trust with customers built over 60 years of operations, to remain the preferred choice of customers.
- 0 Develop retail electric power in the Kanto area to secure a new earnings base.





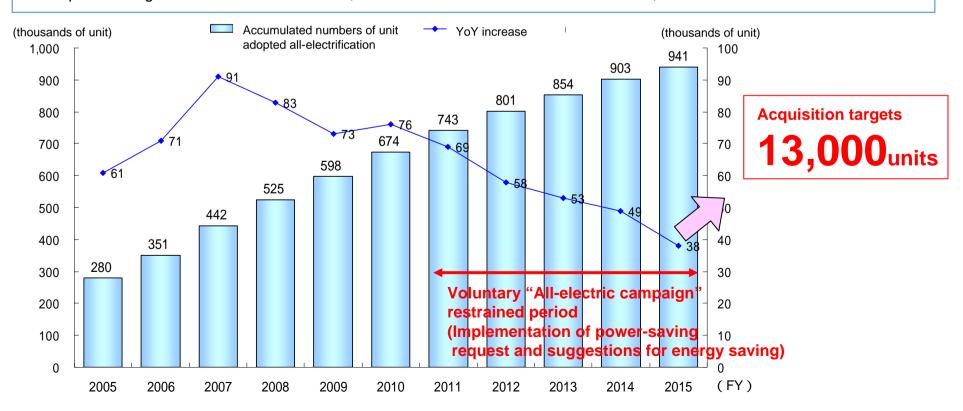
President Uriu explaining about New pricing plan

## Recent progress of liberalization inside Kyushu

- As of September 30, about 96,700<sup>\*1</sup> customers had switched from our company to another (ca. 1.3% of low-voltage agreements).
- o As of September 30, we had received roughly 109,200<sup>\*2</sup> applications for our new pricing plans.
  - \*1 According to the official announcement by the Organization for Cross-regional Coordination of Transmission Operators, Japan.
  - \*2 Total amount of applicants of "Electric Night Select Plan", "Smart Family Plan", "Smart Business Plan".

## Sales promotion with "All-electric campaign"

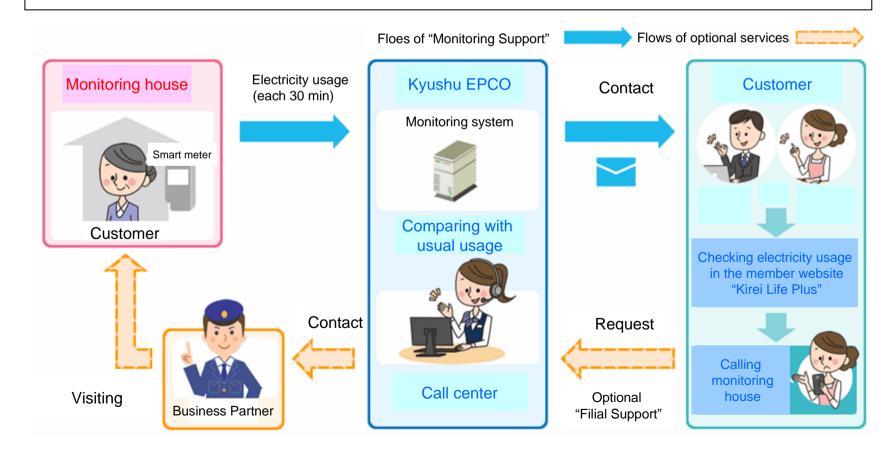
- o Starting from October 2016, "All-electric campaign" has been restarted for the first time in 6 years.
- o Acquisition targets of all-electrification is 13,000 customers from October to December, 2016.



## " Kyuden Safety Support "

- We started to provide "Filial Support", "Help for lifestyle problems Support" and "Daily Lives Support" in July 2016, in the hope of delivering "Safety" in customer's daily lives.
- o In addition, we started to provide "Monitoring Support" newly in October 2016.

The service is to contact customers when the electricity usage in monitoring house, in which their families are living, is abnormally high or low.



## Strategies beyond the Kyushu region

- o Group company Kyuden Mirai Energy engages in the retail electric power business for households in the Kanto area.
- <sup>0</sup> We set "JAL Milage Plan" in June 2016, giving JAL miles customers based on their monthly electric bills.
- We started to provide "Kyushu Filial Support" in July 2016, supporting customer's families who live in Kyushu.
- <sup>0</sup> We've implemented sales & marketing focusing on customers fated to Kyushu and them earning JAL miles.

## (New rate plan)

Giving JAL miles

"JAL Milage Plan"

(Unique optional services)

For customers who have families living in Kyushu

"Kyushu Filial Support"

- o Earned 1 mile per 100 yen\*
  - \* Excluding tax and Renewable Energy Power Promotion Surcharge etc.
- o The plan targets customers who earn JAL miles, use airplane for homecoming, business and traveling.

## **Initiatives in Genkai Nuclear Power Station**

#### Status of the conformity review of Genkai Nuclear Power Station unit No.3 and 4.

- o We have submitted applications for conformity of Genkai Nuclear Power Station No.3 and 4 all together to new regulatory requirements in July 2013.
- o We've submitted a supplementary materials of an application for permission for a change in reactor installation license reflected review contents of the plants and other proceeding ones in September 2016 (submitted a supplementary materials on October 28 and November 4, 2016).

### [Components of supplementary material in September 2016 (Excerpt) ]

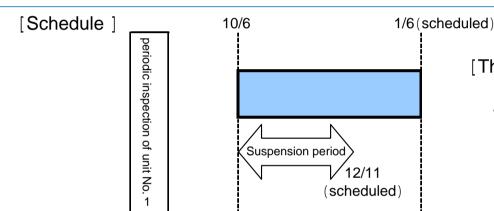
Entry	Main components	
Earthquake ( Standard Seismic Motion )	<ul> <li>Reflecting active faults around the station</li> <li>Largest 540gal</li> <li>Reflecting the earthquake south of the Rumoe Branch Office in Hokkaido and the west in Tottori</li> <li>Largest 620gal</li> </ul>	
Tsunami (Maximum Tsunami Height)	O Sea level + approx. 4m (at high tide)  (the plant site: 11m above sea level)	
Natural disaster (tornados and volcanoes etc.)	<ul> <li>Installation of nets for protecting the important equipment in safety from tornados.</li> <li>Monitoring of calderas experienced catastrophic eruption</li> </ul>	
Management functions of the plant	Installation of Emergency Response Center in the facility, adopted an	

September 20, 2016 October 28, 2016

November 4, 2016 July 12, 2013 Revised Application for Permission for application a Change in Reactor Installation Approval **Public** License Comment Confirming conformity to new regulatory standards Revised Application Generating Screening for construction planning permission Pre-operation test Approval electricity application Commercial operation Screening for permission for change Revised Safety inspection Approval application in safety regulations Safety measures Measures for tsunami, fire and water seepage, etc Understanding for restart Understanding of Explanation for local residents **Local Government** 

## **Outline of periodic inspection**

- 0 Unit No.1 had continued to operate well from recovering commercial operation on September 10, 2015.
- o It has been implemented periodic inspection scheduled suspension period from October 6 to December 11, 2016.
- Unit No.2 is scheduled to be implemented periodic inspection from December 16, 2016 (suspension period is scheduled from December 16, 2016 to February 27, 2017).



[The number of inspection entry ]

- Periodic inspection of facilities: 61 entries\*
- Periodic operators inspection: 124 entries
  - \* 16 entries were newly added with enforcing new regulation

## **Outline of special inspection**

- O Special inspection, which is one of the requests from governor of Kagoshima considering Kumamoto earthquake has been implemented starting from September 27.
- This inspection has been implemented in different view from periodic inspection, checking the impact of earthquake for equipment.

#### [Main components of inspection ]

- o Checking of reactors pressure vessel, containment vessel and spent nuclear fuels pits.
- o Checking base of pumps and fans, which are important in safety, and piping support equipment.
- o The operation tests of equipment, which has functions for ensuring safety of reactor vessel in stopping and cooling it and locking up radioactive materials.
- o Checking of the seismograph for stopping reactor vessel, the important instrumentation in safety processing signals for stopping reactor vessel as well and the promotional seismograph.

## Installation of facility for dealing with specific accident

- As an interim measures, a five-year grace period, calculated from the approval day of construction planning permission (March 18, 2015 (unit No.1), May 22, 2015 (unit No.2)), is set for installation of facility for dealing with specific accident.
- We've submitted an application for permission for change in reactor installation of facility for dealing with specific accident in December 2015 (submitted a supplementary material in March and October 2016).
- 0 Nuclear Regulatory Authority implemented field surveys in July and October 2016.

## **Installation of Emergency Response Center**

- We've submitted an application for permission for change in reactor installation license including an installation "Supporting facility", adopted an earthquake-resistant design, near to Alternate Emergency Response Center in December 2015.
- We've submitted an application for permission for change in reactor installation license including an installation of Emergency Response Center, adopted an earthquake-resistant design, in March 2016 (submitted a supplementary materials in October).
- We will install "Emergency Response Center", adopted an earthquake-resistant design, improved support functions, for example expanding stowage space for laborers and maintenance of resting rooms for that laborers can deal with an specific accident more reliably.

## Supplements Mutual cooperation in the nuclear power business

#### **Overview**

- o In April 2016, an agreement for mutual cooperation in the nuclear power business was signed among Kansai Electric Power Company, Chugoku Electric Power Company, Shikoku Electric Power Company, and our company.
- The four companies and Hokuriku EPCO concluded agreements regarding participation of it to this mutual cooperation in August 2016.

#### [ Cooperation in the event of a nuclear disaster ]

Purpose	To promptly respond through mutual cooperation, including dispatch of supporters and provision of materials and equipment, by making the most of the five companies' geographical proximity.
Key areas of cooperation	<ol> <li>Dispatch of supporters</li> <li>Provision of materials and equipment</li> <li>Assistance such as advice provided from the top management of nuclear departments of other companies to the company experiencing the disaster through videoconferencing</li> <li>Regular drills for participants from each company</li> </ol>

#### [Cooperation in decommissioning]

Purpose: To enhance the safety of decommissioning and respond to reviews

Main areas of cooperation: Discussion of technologies and procurement involved in major construction, information sharing regarding decommissioning status

#### [Cooperation in installation of facilities for responding to specific severe accidents]

Purpose: To enhance safety related to facility installation in order to respond to specific severe accidents and respond to reviews

Main areas of cooperation: Discussion of unified specifications for facilities and information sharing regarding existing plants' statuses

## Outline

o Hokkaido EPCO, Kansai EPCO, Shikoku EPCO and Kyushu EPCO concluded technical cooperation agreements aiming an improvement safety, utilizing the identity of each company's types of reactors in October 2016.

#### [ Outline of technical cooperation agreements aiming an improvement safety ]

Cooperation contents	Key measures
Progressing a safety improvement assessment	<ul> <li>Sharing information regarding measures of PRA and operating equipment in implementing safety improvement assessment</li> <li>Joint consideration of safety measures more improved etc.</li> </ul>
Expanding to share foreign knowledge and know-how regarding operating management	<ul> <li>Sharing information regarding foreign knowledge and know-how of operating management, maintenance and management of radioactive materials</li> <li>Mutual benchmark surveys etc.</li> </ul>
Progressing of surveys and studies of new technology regarding next generation light-water reactor aiming an important of safety of existing reactors	<ul> <li>Joint surveys of new technology of next generation</li> <li>LWR and new type reactors in the world</li> <li>Consideration of more safety implement of existing</li> <li>reactors based on results of surveys</li> </ul>

<sup>\*</sup>We'll implement other measures if they are expected to improve safety

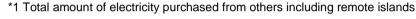
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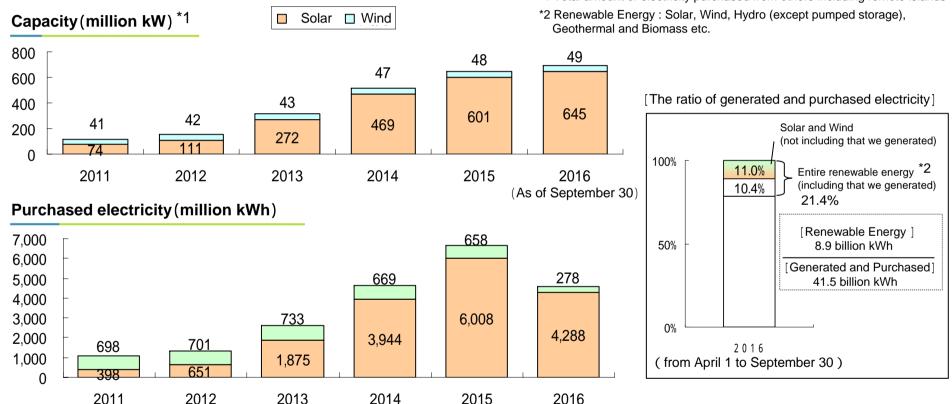
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## Initiatives for accepting power output from renewable energy

#### Situation of accepting power output from renewable energy (Solar and Wind)

- O Since the introduction of the feed-in tariff (FIT) system for renewable energy in 2012, the Kyushu area has seen rapid growth in the deployment of solar power.
- o The ratio of renewable energy in generated and purchased electricity has been around 20%.





[Reference] We had experienced output controls in remote islands with increasing of installation of renewable energy (As of November 4, 2016).

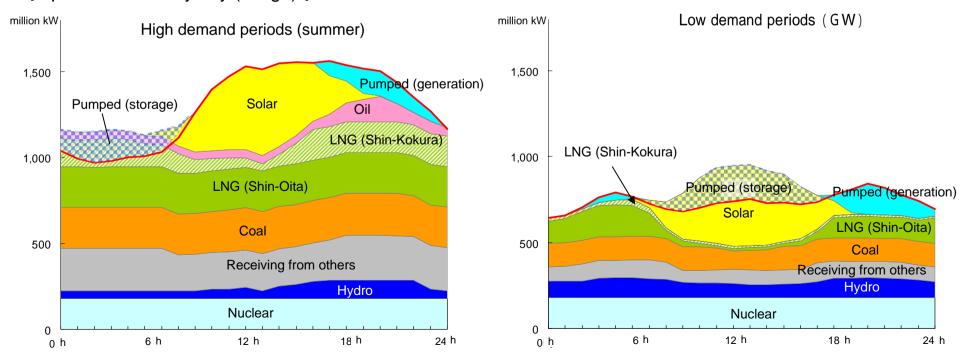
(from April 1 to September 30)

## **Operation of thermal power plants**

We regulate the output of LNG partly to accept solar power in a period of low demands such like Golden Week.
 \*Figures below are the power generation status of each fuels under Supply Plan 2016.

Fuel	Utilization Rate	Operation Status	
Coal	Around 95%	Operation in full output almost throughout a year	
LNG (Shin-Oita)	Around 85%	Operation in full output, excepting daytime in low demand periods	
LNG (Shin-Kokura)	Around 60%	Adjustment operation depending on solar output and demands throughout a year	
Oil	Around 40%	Operation as peak power source mainly in high demand periods (summer, winter)	

#### [Operation of sunny day (image) ]



## Supply and demand operating measures dealing with outputs of renewable energy

o We consider and implement measures to balance supply and demand by adapting to variable output from renewable energy sources that greatly depend on the weather.

[Operations of pumped storage]

We've used pumped storage, pumping with surplus power of solar in daytime and generating electricity in lighting time and nighttime (See the figure at right).

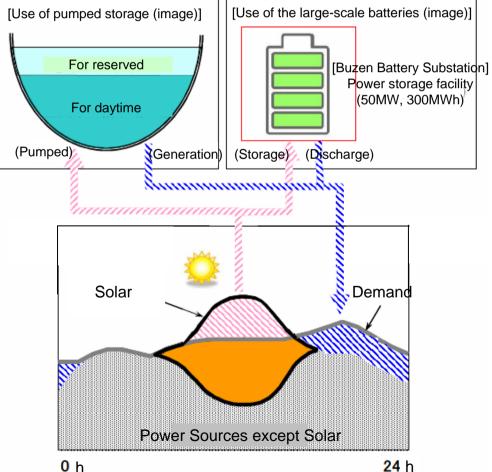
[Practical use of large-scale batteries] We've implemented testing of measures lessening the controlling output period of renewable energy with installing the large-scale batteries (See figure at right).

[Practical use of Kanmon transmission line] We've used limit of capacity of Kanmon transmission line to accept renewable energy as much as possible.

[Demonstration of batteries in remote islands] We've studied about the best controlling measures to restrain frequency changes by changing output of renewable energy.

[Constructing the output controlling system] We've started to construct the output controlling system of solar to remotely control a great number of solar power generators, which are placed separately.

Balance of demand and supply when much solar power is accepted in low demand periods (image)



## Supplements Order of the sources regulated outputs

# Order 으 the sources regulated outputs

- Regulation of Power Sources (generators and those of pumped storage secured by general distribution utilities for adjustment) and pumping operation
   Regulation of Power Sources (generators and those of pumped storage which can be controlled by general distribution utilities) and pumping operation
- 1. Regulation of Power Sources (generators such like thermal power including woody biomass and those of pumped storage which can't be controlled by general distribution utilities) and pumping operation
- 2. Supplying beyond the Kyushu region using transmission line
- 3. Regulation of biomass
- 4. Regulation of biomass using regional resources\*1
- 5. Regulation of power sources fluctuated by natural factors (Solar and wind)
- 6. Measures based on Organization for Cross-regional Coordination of Transmission Operators\*2
- 7. Regulation of long-term fixed power sources (Nuclear, Hydro and geothermal)

<sup>\*1</sup> They will be exempted from restraining output when controlling output is difficult due to technical matters and so on

<sup>\*2</sup> Interchange according to instructions given by Organization for Cross-regional Coordination of Transmission Operators

## Correspondence for large-scale disaster

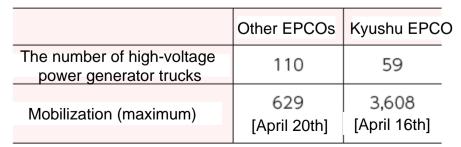
- o In April, Kumamoto earthquake with a maximum intensity of 7 caused blackouts among up to 480 thousands of households.
- o We completed installation of high-voltage power distribution lines to the areas, except in places where restoration was made difficult by landslides, damaged roads and so on in four days after occurring with getting support from EPCOs throughout Japan.



Wiring of temporary steel tower



Recovery of distribution line





Large-scale landslide (Minami Aso, Kumamoto Prefecture) )



Power transmission via high voltage distribution lines (Kansai Electric Power Company)

## **Promoting Female's Empowerment**

0 We've been accredited for "Eruboshi", which is the second grade due to satisfaction 3 entries in 5 such like the average years of service and working hours, based on the low concerning the female success promotion in July 2016.



#### "Eruboshi" accreditation mark

- The ministry of Health, Labor and Welfare certificates excellent corporation in promoting female's empowerment
- "Eru (L)" has the meaning of Lady, Labor and Laudable



Social gathering of female in managerial positions

## Supporting the development of the next generation

We've introduced various working systems and supported employee's taking holidays and child-rearing in order to combine work and child-rearing, and been accredited for the next generation certification "Kurumin".



#### "Kurumin (nickname)"

 Accreditation mark from the ministry of Health, Labor and Welfare based on "Law on the promotion of Measures to support fostering of the next generation"



## **Establishment of "Kyuden Mirai Foundation"**

- º "Kyuden Mirai Foundation" was established in May 2016 to meet the expectations of community members and further enhance activities for contributing to solutions to community issues by conducting environmental activities and activities to support raising future generations.
- o The foundation will enhance environmental protection activities in the Bogatsuru wetlands in Oita Prefecture, which have been conducted together with community members, and our environmental education program that utilizes watershed forestland, and will also provide grants for activities to support the development of future generations that are conducted by local organizations.

Name	General Incorporated association "Kyuden Mirai Foundation"	
Day of established	May 12, 2016	
Activities	Environmental activities  Environmental protection and Environmental education activities mainly in Kuju area, in which Kyushu EPCO has own forests  Activities to support the development of the next generation Subsidy businesses targeting activities, which contribute "Educations of the next generation" by nonprofit organization	

## Supplements Initiatives of "Kyuden Mirai Foundation"

#### **Environmental activities**

o It implements environmental protection and Environmental education activities mainly in Kuju area, in which Kyushu EPCO has own forests

#### [ Environmental protection activities ]

Environmental preservation activities at the Bogatsuru wetlands (Taketa, Oita Prefecture)



Burning fields at Bogatsuru

#### [ Environmental education ]

Environmental education activities at Lake Yamashita (Yufu, Oita Prefecture)

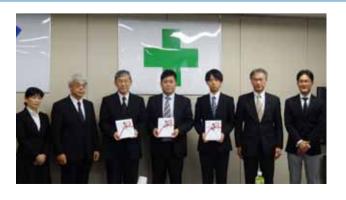


Experience of forestry

### Activities to support the development of the next generation

- o It implements subsidy businesses targeting activities, which contribute "Educations of the next generation" by nonprofit organization
- 0 We've received 67 applications from across Kyushu for subsidy businesses in FY2016, and implemented subsidy about 13.4 million yen for twenty groups resulted from s selection by the committee composed by experts





Presentation ceremony of subsidy

# Reference (Business development in a Growing Market)

Oversea Energy Business	P 23
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## Reference Oversea Energy Business

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

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

0 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 and aim for 5,000MW equity owership in electricity output.

Status of achievement in equity ownership in electricity output

1,500 MW / 5,000MW

Ongoing development projects: 320MW (Equity ownership in electricity output: 80MW)

(As of September 30, 2016)

#### Sarulla Geothermal IPP Project in Indonesia

We will make effective use of the geothermal power generation technology we have gained through geothermal development in Japan to steadily implement the Sarulla geothermal IPP project in Indonesia.

#### < Outline of the Project >

Outline	Consistent project from development to generation (Electricity sales contract with electric power company owened by Indonesia government for 30 years)	
Output	321MW (3 Units) [Our equity Ownership in Electricity Output :80MW]	
Start of Operation	Unit 1:2016, Unit 2:2017, Unit 3:2018	

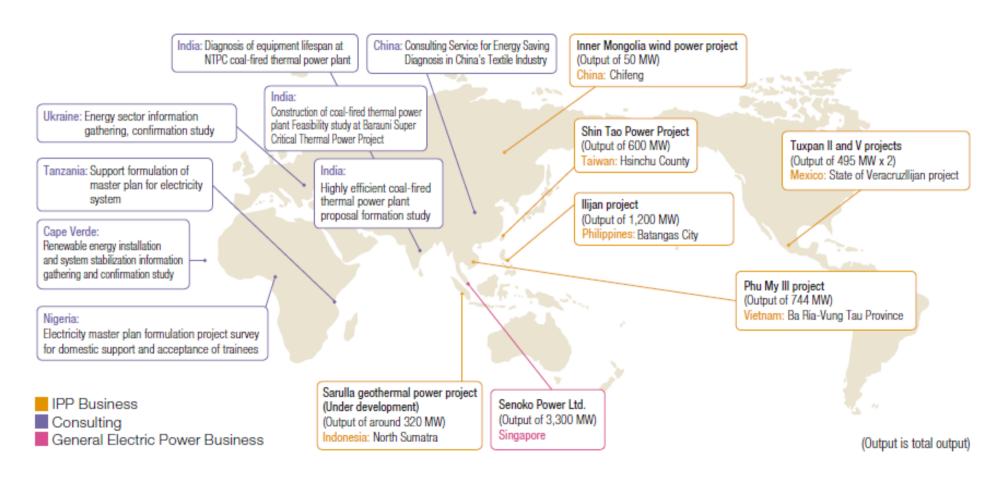


Location of the the project



View from a production test site

## [Business Development Overseas (As of September 30, 2016)]



List of oversea energy business projects (As of September 30, 2016)

Project	Fuel	Year of operation	Output (MW) (Equity)	Equity
Philippine / Ilijan	Gas	June, 2002	1,200 ( 96 )	8.0%
Vietnam / Phu My	Gas	March, 2004	744 ( 199 )	26.7%
Mexico / Tuxpan	Gas	December, 2001	495 ( 248 )	50.0%
Mexico / Tuxpan	Gas	September, 2006	495 ( 248 )	50.0%
Singapore / Senoko Power	Gas Oil	September, 2008 (Investment)	3,300 ( 495 )	15.0%
China / Inner Mongolia Wind Power	Wind	September 2009	50 (15)	29.0%
Taiwan / Hsin Tao Pow	Gas	October, 2010 (Investment)	600 (199)	33.2%
Total			6,884 (1,500)	

## **Reference Outside Kyushu Energy Business**

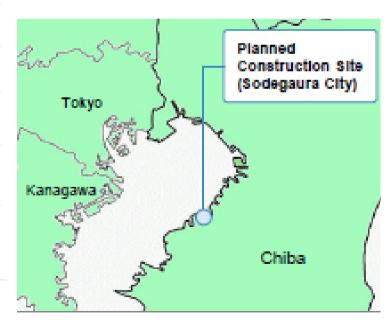
Goal for Development Output on Energy Business Outside Kyushu as of 2030

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 stations jointly. To that end, the three companies established the Chiba-Sodegaura Energy Co., Ltd (CSE) in May 2015.
- o 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.
- o In July 2016, CSE received a complete response letter from METI starting that the statement considers reasonable environmental conservation and doesn thave to be recommended regarding regulations of Electricity Business ACT.

### Outline of Chiba-Sodegaura Energy

Planned site	3-1, Nakasode, Sodegaura City, Chiba Pref.
System	Ultra-super critical (USC) power generation
Output	Maximum 2,000MW (1,000MW × 2Units)
Fuel	Coal (Burning a mixture of biomass and coal is also under consideration)
Start of Operation	Unit 1: FY2025 (scheduled) Unit 2: FY2026 (scheduled)
Alliance	"Idemitsu Kosan", "Tokyo Gas"



## Reference Renewable energy business

Goal for Development Output on Renewable Energy Business as of 2030

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

- 0 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. But we will also work on ocean wind power generation 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 technology and know-how that cover all processes from investigations and planning for various renewable energy sources construction to operation and maintenance.

Introduction Output of Renewable Energy by our Group

**1,702**MW / 4,000MW

- Development Output after setting "medium-term management plan": Around 10MW
- o Ongoing development projects : Around 620MW

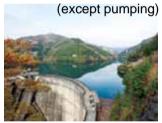
#### Solar 46MW



#### Wind 118MW



Hydro 1,284MW



#### **Geothermal 213MW**



**Biomass 41MW** 



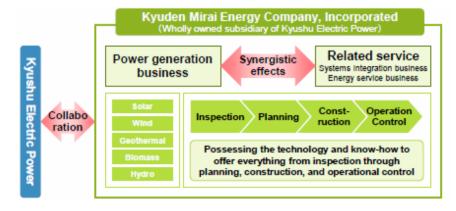
\*1 The total of output as of setting "medium-term management plan" and Development output after setting it

(As of September 30, 2016)

[Kyuden Mirai Energy's Holding Facility] (As of September 30, 2016)

Source	Output	Notes
Solar	39MW	
Wind	50MW	Nagashima Wind Hill *2
Geothermal	5MW	
Biomass	11MW	Miyazaki Biomass Recycle *2

\*2 Subsidiary of Kyuden Mirai Energy



## [Development plans of renewable energy (As of September 30, 2016)]

	Name	Prefecture	Output (MW)	Notes
Solar	Higashi-Hiroshima Mega-Solar	Hiroshima	1.00	Starting operation in February 2017(Scheduled)
	Renatos Soma Solar Park	Fukushima	43.50	Starting operation in June 2017(Scheduled)
Sub total			44.50	-
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 Floating Wind Power System	Fukuoka	7.50	Starting operation in 2017(Scheduled) [ Commissioned project in collaboration with NEDO ]
Sub total			100.30	-
Geothermal	Otake	Oita	2.00	Starting operation in December 2020(Scheduled) Update of existing facility (12,5 14,5MW)
	Yamakawa Binary	Kagoshima	4.99	Starting operation in February 2018(Scheduled)
	Sarulla, Indonesia		320.80	Starting operation in 2016(Scheduled)
Sub total			327.79	-
Hydro	Shin-Kosa	Kumamoto	7.20	Starting operation in July 2019(Scheduled)
	Kamoshishi	Kumamoto	1.99	Starting operation in July 2018(Scheduled)
Sub total			9.19	-
Biomass	Buzen-Biomass	Fukuoka	74.95	
	Soyano Wood Power	Nagano	14.50	
	Nanatsushima Biomass Power	Kagoshima	49.00	
Sub total			138.45	-
Total			Around 620.23	-

## **Developing Geothermal Power Stations**

- 0 We own around 40% of the nation's geothermal power facilities by capacity, including Hatchoubaru Geothermal Power Station (110MW), one of Japan's largest.
- o We own over 50% of the nation's geothermal power facilities by generated and purchased electricity.
- o In geothermal development, we will cooperate with our group companies such as 'West Japan Engineering Consultants' which has eminent technologies on geothermal development.

# Starting operation of Sugawara Binary Cycle Power Station (June 2015)

- o It is the largest in Japan as a binary cycle power station
- Kokonoe town provides the geothermal resources (steam and heated water), and Kyuden Mirai Energy utilizes them to generate power.

# Resource surveys of geothermal in Sobetsu town in Hokkaido

- Sobetsu town, Hokkaido EPCO and Kyushu EPCO concluded agreements regarding resource surveys of geothermal implemented by Sobetsu town (May 2016)
- We plan to consider a commercializing of generating using the geothermal resources after assessing the possible scale of correct developments

#### [ Outline of Sugawara Binary Cycle Power Station ]

Location	Kokonoe in Oita
Output	5MW
Туре	Air-cooled binary cycle (media: pentane)

