

# Presentation Materials for Investors

## 1st Quarter FY2017

August, 2017

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# 01

## Outline of Financial Results for Three-Months Ended June 30, 2017

Note: The company's fiscal year (FY) is from April 1 to March 31 of the following year. FY2017 represents the fiscal year begun on April 1, 2017, and ended on March 31, 2018. 1<sup>st</sup> Quarter(1Q) represents three months period ended June 30, 2017.

- Operating revenues (consolidated and non-consolidated) increased following 2015/1Q, for the first time in 2 years.
- Ordinary income (consolidated and non-consolidated) decreased for 2 consecutive years since 2016/1Q.
- We recorded increased sales and decreased profit following 2012/1Q, for the first time in 5 years.  
(We posted a deficit in 2012/1Q.)

**[Consolidated]**

	2017/1Q (A)	2016/1Q (B)	Change (A-B)	(Billion yen,%) (A-B)/B
Operating revenues	655.4	631.1	24.2	3.8
Operating income	31.9	96.9	(64.9)	(67.0)
Ordinary income	28.4	92.6	(64.2)	(69.3)
Net income attributable to owners of parent	20.6	65.3	(44.6)	(68.3)

\*The number of consolidated subsidiaries [change from the same period of the previous year in parenthesis]  
2017/1Q: 31 subsidiaries (-22 companies), 26 affiliates accounted for under the equity method (-17 companies)

**[Non-consolidated]**

	2017/1Q (A)	2016/1Q (B)	Change (A-B)	(Billion yen,%) (A-B)/B
Operating revenues	604.5	588.1	16.4	2.8
Operating income	28.8	93.9	(65.1)	(69.3)
Ordinary income	25.9	92.1	(66.1)	(71.8)
Net income	19.9	66.6	(46.6)	(70.0)

**[Principal figures]**

		2017/1Q (A)	2016/1Q (B)	Change (A-B)
Electrical energy sold	(TWh)	28.3	28.3	0
CIF price: crude oil	(\$/b)	53.3	41.1	12.2
FX rate (interbank)	(yen/\$)	111.2	108.0	3.2
Nuclear power utilization rate	(%)	-	-	-

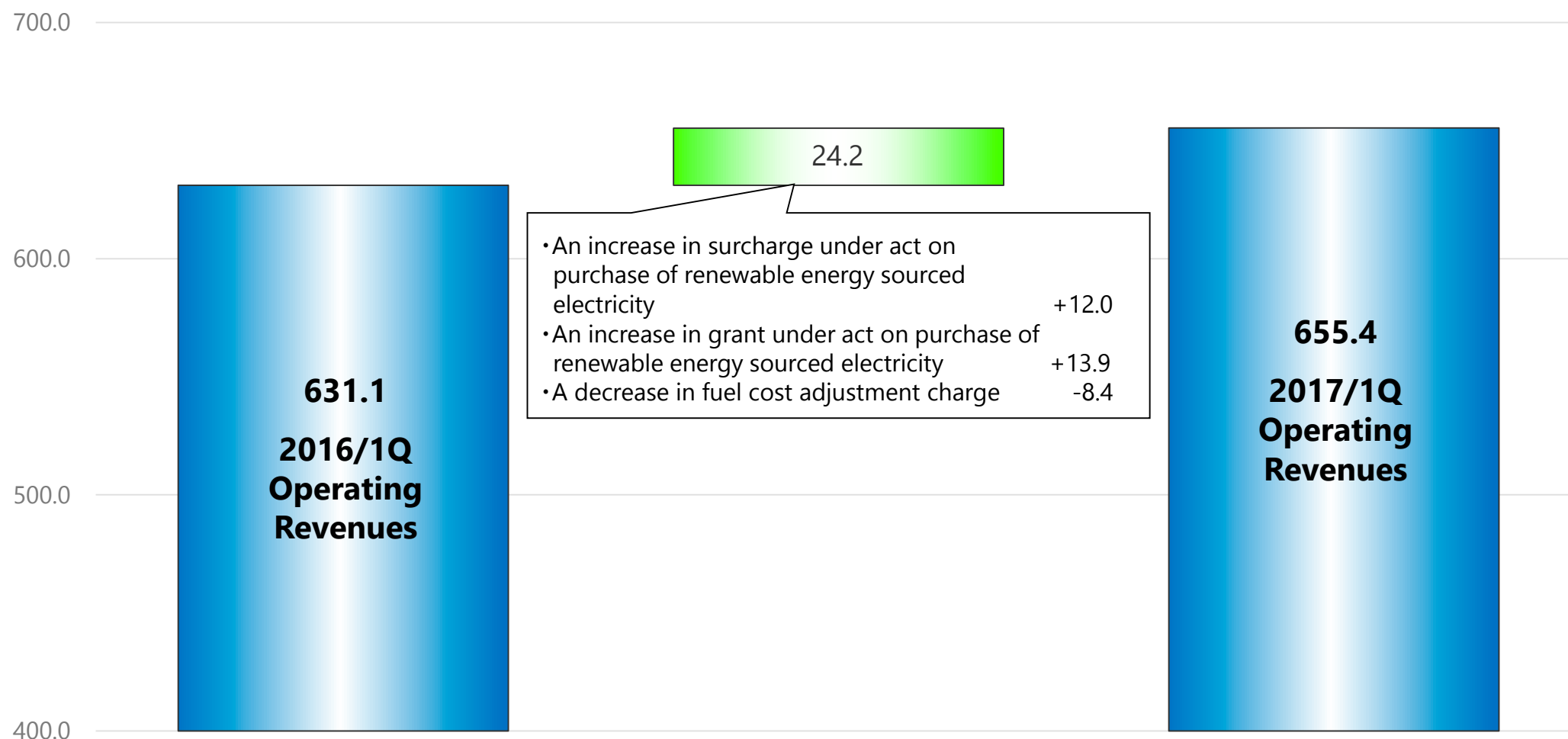
\*CIF crude oil price for 1Q of FY2017 is tentative.

### <Consolidated Operating Revenues>

- Operating revenues increased by 24.2 billion yen compared with 2016/1Q, mainly due to a increase in surcharge and grant based on Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities , in spite of a decrease of fuel cost adjustment charge.

### [Factors contributing to change in consolidated operating revenues]

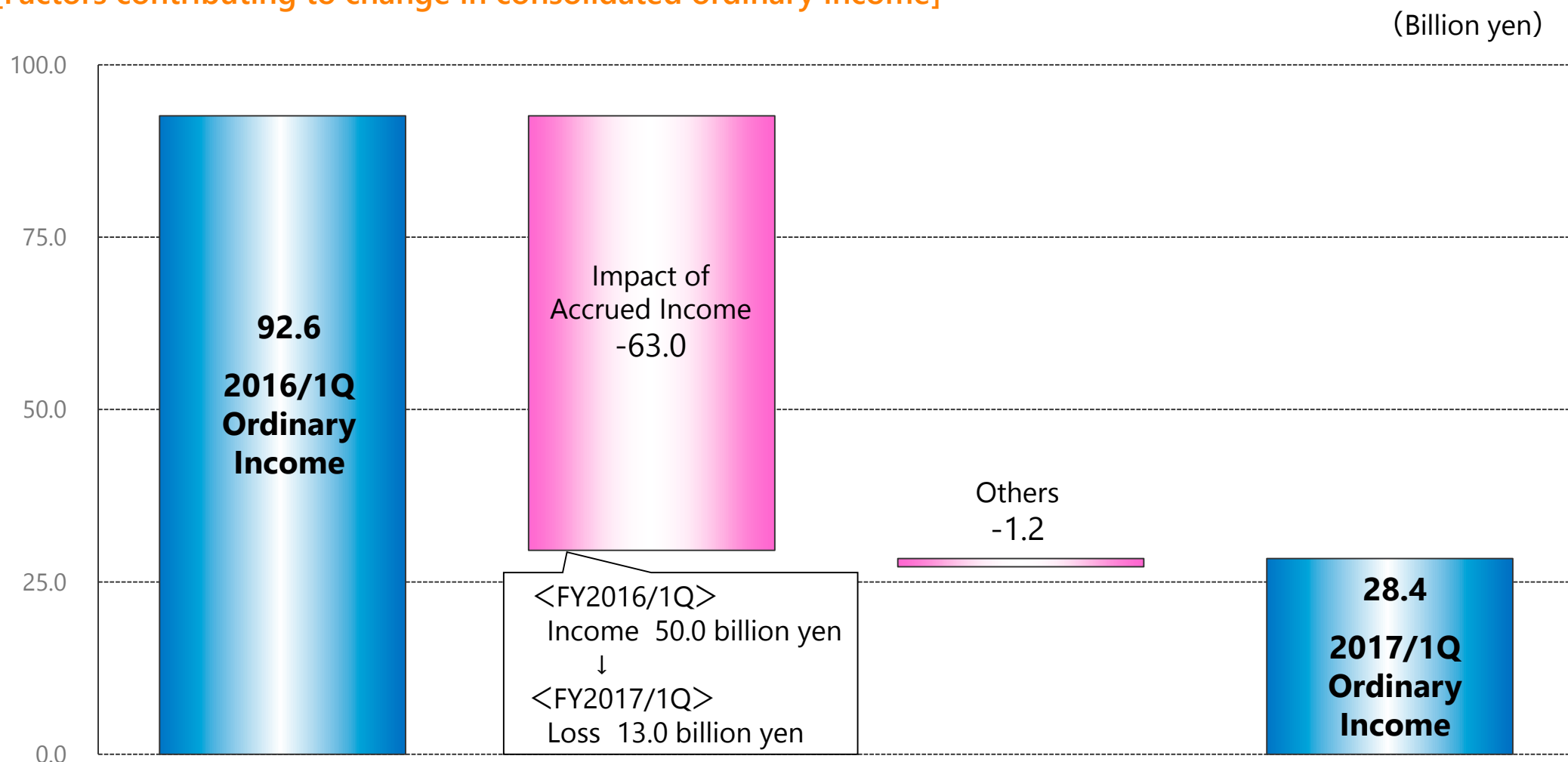
(Billion yen)



## <Consolidated Ordinary Income>

- Consolidated ordinary income decreased by 64.2billion yen compared with 2016/1Q, mainly due to a conversion of income incurred by fuel cost adjustment system time lag into loss.

## [Factors contributing to change in consolidated ordinary income]



### <Electrical Energy Sold>

- **Amounted to 28.3TWh**, almost the same as in 2016/1Q, mainly due to a sales increase in the Tokyo metropolitan area and an increase in air conditioning demand by lower temperature in this early spring, in spite of effect of switches made to other operators due to intensified competition.
- **Low voltage : Increased by 0.9% to 8.5TWh**, compared with 2016/1Q, mainly due to a sales increase in the Tokyo metropolitan area and an increase in air conditioning demand by lower temperature in this early spring, in spite of effect of switches made to other operators.
- **High voltage / Extra-high voltage : Amounted to 19.8TWh**, almost the same as in 2016/1Q, mainly due to a sales increase in the Tokyo metropolitan area and an increase in electrical energy sold accompanied by an increase of production in the automobile and semiconductor industry, in spite of effect of switches made to other operators.

		(TWh,%)			
		2017/1Q (A)	2016/1Q (B)	Change (A-B)      (A-B)/B	
Electrical energy sold	Low voltage	8.5	8.4	0.1	0.9
	High voltage / Extra-high voltage	19.8	19.9	(0.1)	(0.1)
	Total	28.3	28.3	0.0	0.2

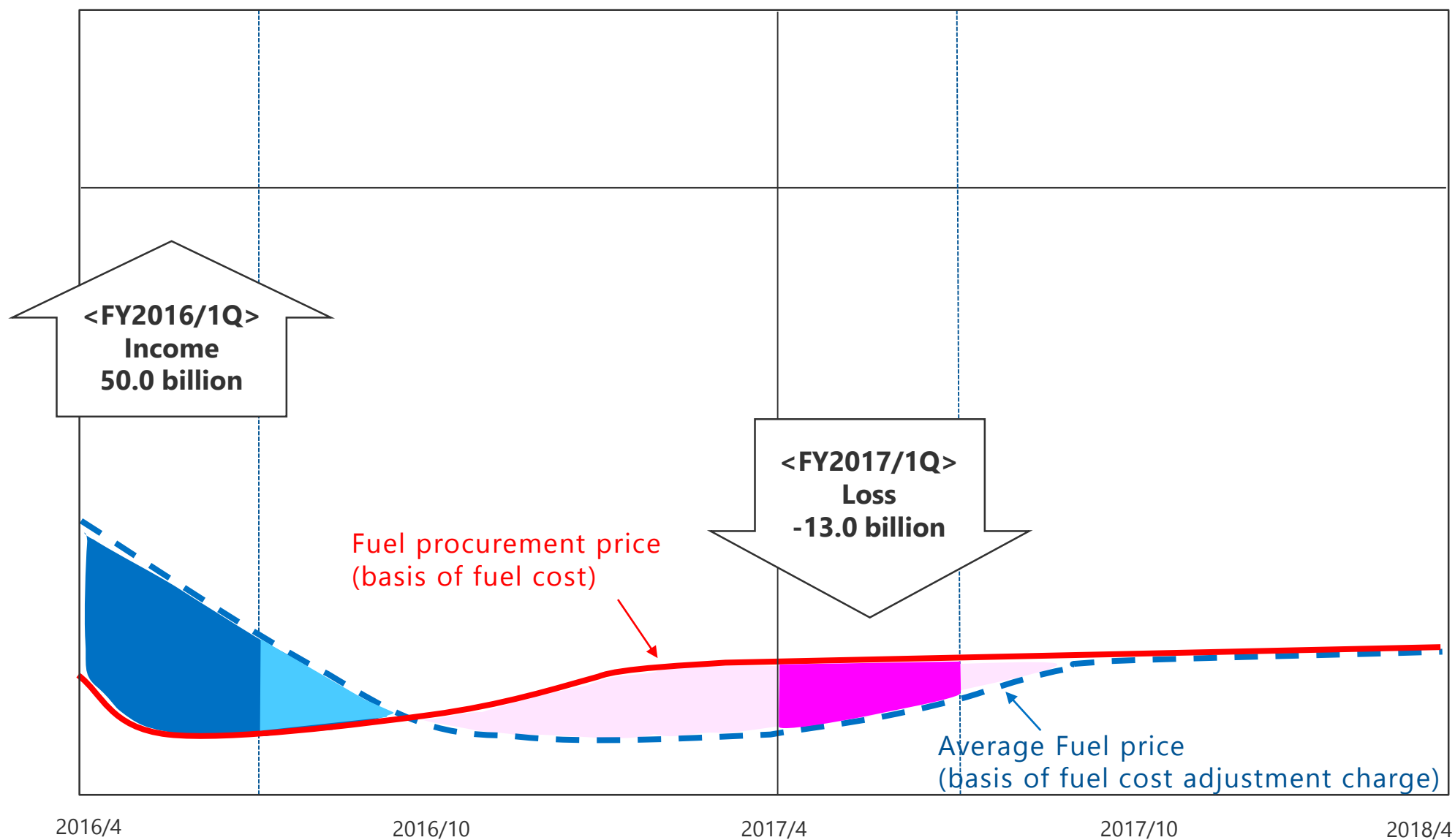
### <Electric Power Supplied>

- **Hydro** : The flow rate fell short of 2016/1Q ; thus hydroelectric power output **decreased by 0.3TWh**.
- **Interchanged, purchased power** : **Increased by 0.6TWh**, mainly due to an increase in purchase of renewable energy.
- **Thermal** : As a result above, thermal power output **decreased by 0.7TWh**.

			(TWh,%)			
			2017/1Q	2016/1Q	Change	
			(A)	(B)	(A-B)	(A-B)/B
Electric power supplied	Internally generated	Hydro	2.2	2.5	(0.3)	(11.7)
		<flow rate>	<82.1>	<96.3>	<(14.2)>	
		Thermal	23.4	24.1	(0.7)	(3.1)
		Nuclear	(0.1)	(0.1)	(0.0)	11.4
		<utilization rate>	<—>	<—>	<—>	
		Renewable energy	0.0	0.0	(0.0)	(0.8)
	Interchanged, purchased power(*)		3.2	2.6	0.6	22.5
	Power used for pumped storage		(0.2)	(0.1)	(0.1)	34.2
Total		28.5	29.0	(0.5)	(1.8)	

\* Interchanged, purchased power represent power output that we grasp at the end of the 2017/1Q.





## <Forecast>

**Forecasts of financial results have not been revised from the previous announcement made in April 28, 2017.**

- Forecast of consolidated and non-consolidated financial results have not been revised as it is expected to be about the same as the previous announcement.

## [Consolidated]

- Operating revenues will increase following FY2014, for the first time in 3 years.
- Ordinary income will decrease for 2 consecutive years since FY2016.

	Current (A)	April 28 (B)	(Billion yen,%) Change (A-B) (A-B)/B	
Operating revenues	2,760.0	2,760.0	-	-
Operating income	115.0	115.0	-	-
Ordinary income	100.0	100.0	-	-
Net income attributable to owners of parent	70.0	70.0	-	-

## [Non-consolidated]

- Operating revenues will increase following FY2014, for the first time in 3 years.
- Ordinary income will decrease for 2 consecutive years since FY2016.

	Current (A)	April 28 (B)	(Billion yen,%) Change (A-B) (A-B)/B	
Operating revenues	2,510.0	2,510.0	-	-
Operating income	95.0	95.0	-	-
Ordinary income	75.0	75.0	-	-
Net income	55.0	55.0	-	-

## [Principal figures]

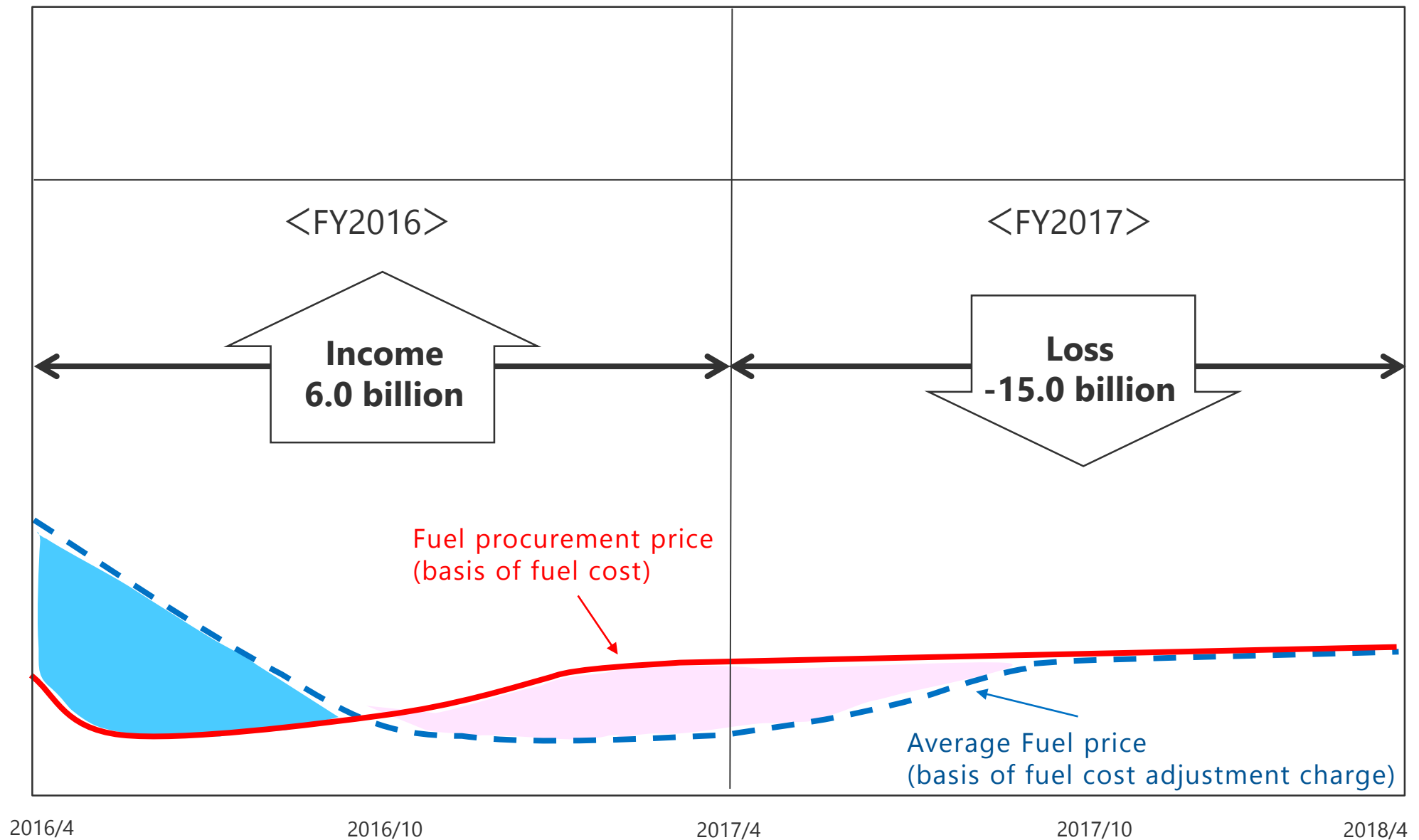
(Electrical energy sold)	Current (A)	April 28 (B)	(TWh,%)	
			Change (A-B)	(A-B)/B
Low voltage	37.7	37.7	-	-
High voltage / Extra-high voltage	81.6	81.6	-	-
Total	119.3	119.3	-	-

(Other principal figures)		Current	April 28
CIF price: crude oil	(\$/b)	approx. 55	approx. 55
FX rate	(yen/\$)	approx. 110	approx. 110
Nuclear power utilization rate	(%)	-	-

(Income sensitivity)		(Billion yen)	
		Current	April 28
CIF price: crude oil	(1\$/b)	7.5	7.5
FX rate	(1yen/\$)	5.5	5.5
Flow rate	(1%)	0.5	0.5
Interest rate	(1%)	5.0	5.0

\*1 These figures represent income sensitivity for fuel expenses. Fluctuation of CIF price (crude oil) and FX rate will be reflected in sales revenue, in cases where average fuel price fluctuates and fuel cost adjustment system will be applied.

\*2 The impact value of crude oil price includes the impact of LNG price because LNG price is subject to crude oil price.



# 02

## Reference Data(1): Financial Results

(Rounded down to nearest 100 million yen.) (Billion yen,%)

		2017/1Q (A)	2016/1Q (B)	Change (A-B) (A-B)/B	
	Operating revenues	655.4	631.1	24.2	3.8
	Non-operating revenues	5.0	3.6	1.3	35.8
Ordinary revenues		660.4	634.8	25.5	4.0
	Operating expenses	623.4	534.2	89.2	16.7
	Non-operating expenses	8.5	7.9	0.5	7.1
Ordinary expenses		632.0	542.2	89.8	16.6
<Operating income>		<31.9>	<96.9>	<(64.9)>	<(67.0)>
Ordinary income		28.4	92.6	(64.2)	(69.3)
Reserve for fluctuation in water levels		(0.7)	(0.3)	(0.4)	-
Income taxes		8.1	27.4	(19.3)	(70.3)
Net income attributable to non-controlling interests		0.3	0.1	0.1	111.5
Net income attributable to owners of parent		20.6	65.3	(44.6)	(68.3)

# 11 | Non-consolidated Statements of Income <1>: Operating Revenues

(Rounded down to nearest 100 million yen.) (Billion yen,%)

	2017/1Q (A)	2016/1Q (B)	Change (A-B) (A-B)/B		【Major factors for change】
Electricity sales revenues	490.7	495.5	(4.7)	(1.0)	- A decrease in fuel cost adjustment charge
Sold power to other electric utilities, and transmission revenue, etc. *	25.5	15.3	10.2	66.8	
Grant under act on purchase of renewable energy sourced electricity	70.4	56.5	13.9	24.6	- An increase in purchase of renewable energy sourced electricity
Other	6.0	5.6	0.3	7.0	
Electricity business operating revenues	592.8	573.0	19.8	3.5	
Incidental business operating revenues	11.7	15.1	(3.4)	(22.6)	
Total operating revenues	604.5	588.1	16.4	2.8	

\* Sold power to other utilities, Sold power to other suppliers, Transmission revenue and Settlement revenue among utilities

# 12 | Non-consolidated Statements of Income <2>: Operating Expenses

(Rounded down to nearest 100 million yen.) (Billion yen,%)

	2017/1Q (A)	2016/1Q (B)	Change (A-B) (A-B)/B		【Major factors for change】
Salaries and employee benefits	44.4	44.0	0.3	0.8	
Fuel	153.6	120.3	33.2	27.6	- An increase in fuel price
Nuclear back-end expenses *1	3.2	3.5	(0.2)	(8.0)	
Purchased power, and transmission charges, etc. *2	118.9	93.6	25.2	27.0	- An increase in purchase of renewable energy sourced electricity
Maintenance	47.0	42.3	4.6	11.0	
Depreciation	58.1	56.3	1.8	3.2	- An increase in maintenance expense for thermal power plants
Taxes other than income taxes	29.3	29.4	(0.0)	(0.3)	
Levy under act on purchase of renewable energy sourced electricity	61.6	49.5	12.0	24.2	
Other	47.8	44.0	3.8	8.6	
Electricity business operating expenses	564.1	483.4	80.7	16.7	
Incidental business operating expenses	11.5	10.7	0.7	7.3	
Total operating expenses	575.7	494.1	81.5	16.5	

\*1 Reprocessing of irradiated nuclear fuel, Preparation of reprocessing of irradiated nuclear fuel, Contributions for reprocessing of irradiated nuclear fuel, Designated radioactive waste disposal expenses, Decommissioning nuclear power plants

\*2 Sold power to other utilities, Sold power to other suppliers, Portion of the existing power generation expenses such as spent fuel reprocessing for which contracts have been signed, Transmission charges, Supply connection transmission charges, Settlement revenue among utilities



# 13 | Non-consolidated Statements of Income <3>: Net Income

(Rounded down to nearest 100 million yen.) (Billion yen,%)

【Major factors for change】

	2017/1Q (A)	2016/1Q (B)	Change (A-B) (A-B)/B	
Operating income	28.8	93.9	(65.1)	(69.3)
Non-operating revenues	5.2	5.7	(0.5)	(10.0)
Non-operating expenses	8.1	7.6	0.4	5.9
Ordinary revenues	609.8	593.9	15.8	2.7
Ordinary expenses	583.8	501.8	82.0	16.3
Ordinary income	25.9	92.1	(66.1)	(71.8)
Reserve for fluctuation in water levels	(0.7)	(0.3)	(0.4)	-
Income taxes	6.7	25.7	(19.0)	(74.0)
Net income	19.9	66.6	(46.6)	(70.0)

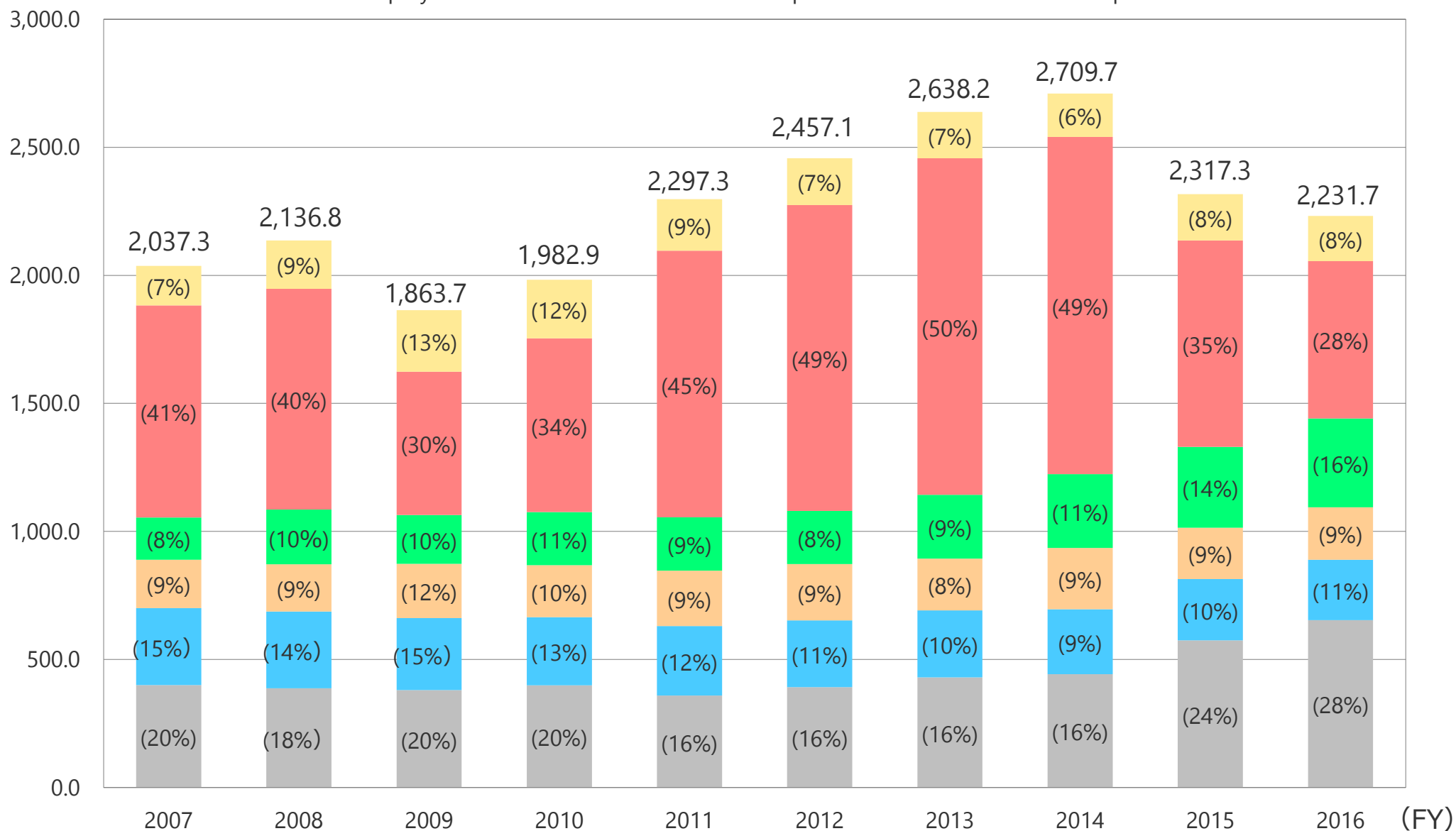
- Electricity business : -60.9
- Incidental business : -4.2

	(Rounded down to nearest 100 million yen.)		(Billion yen)
	2017.6 (A)	2017.3 (B)	Change (A-B)
Assets	5,387.5 <4,918.4>	5,412.3 <4,956.5>	(24.7) <(38.1)>
Liabilities	3,636.8 <3,487.5>	3,687.5 <3,535.9>	(50.7) <(48.3)>
Net assets	1,750.6 <1,430.8>	1,724.7 <1,420.5>	25.9 <10.2>
Shareholders' equity ratio (%)	31.4 <29.1>	31.1 <28.7>	0.3 <0.4>
Outstanding interest-bearing debt	2,664.3 <2,655.5>	2,674.7 <2,662.8>	(10.4) <(7.2)>

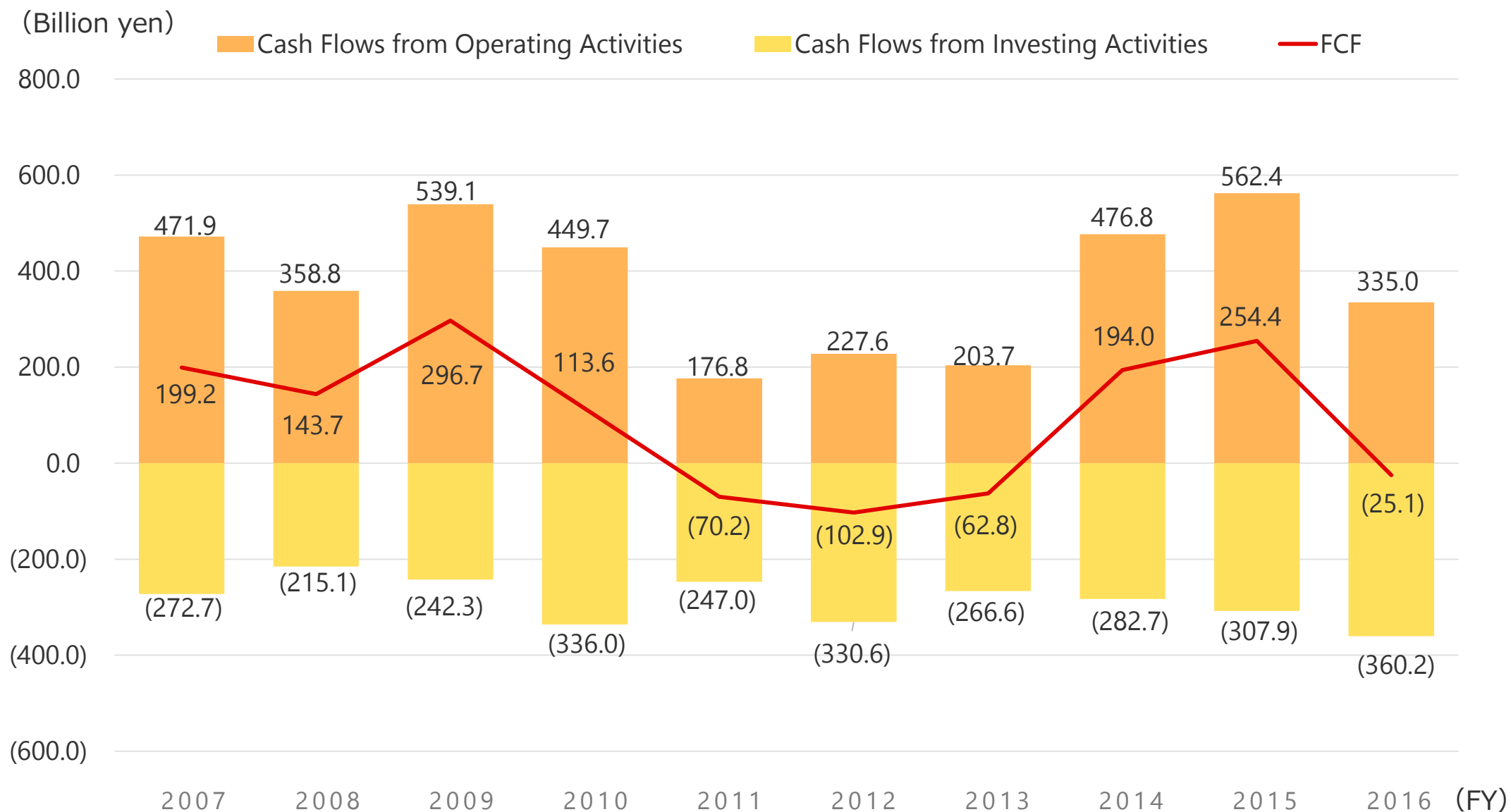
Non-consolidated figures in <>.

(Billion yen)

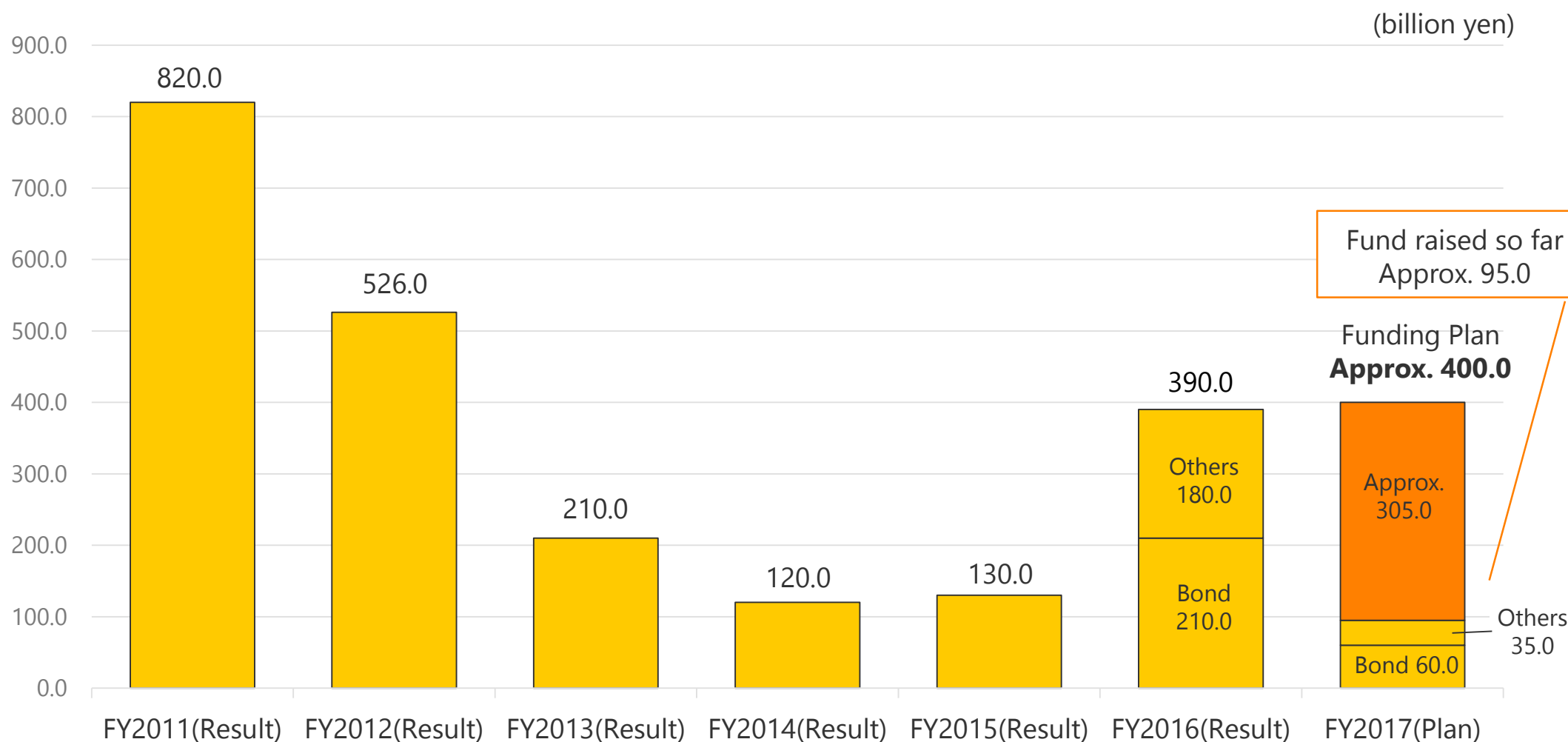
■ Salaries and employee benefits 
 ■ Fuel 
 ■ Purchased power 
 ■ Maintenance 
 ■ Depreciation 
 ■ Other



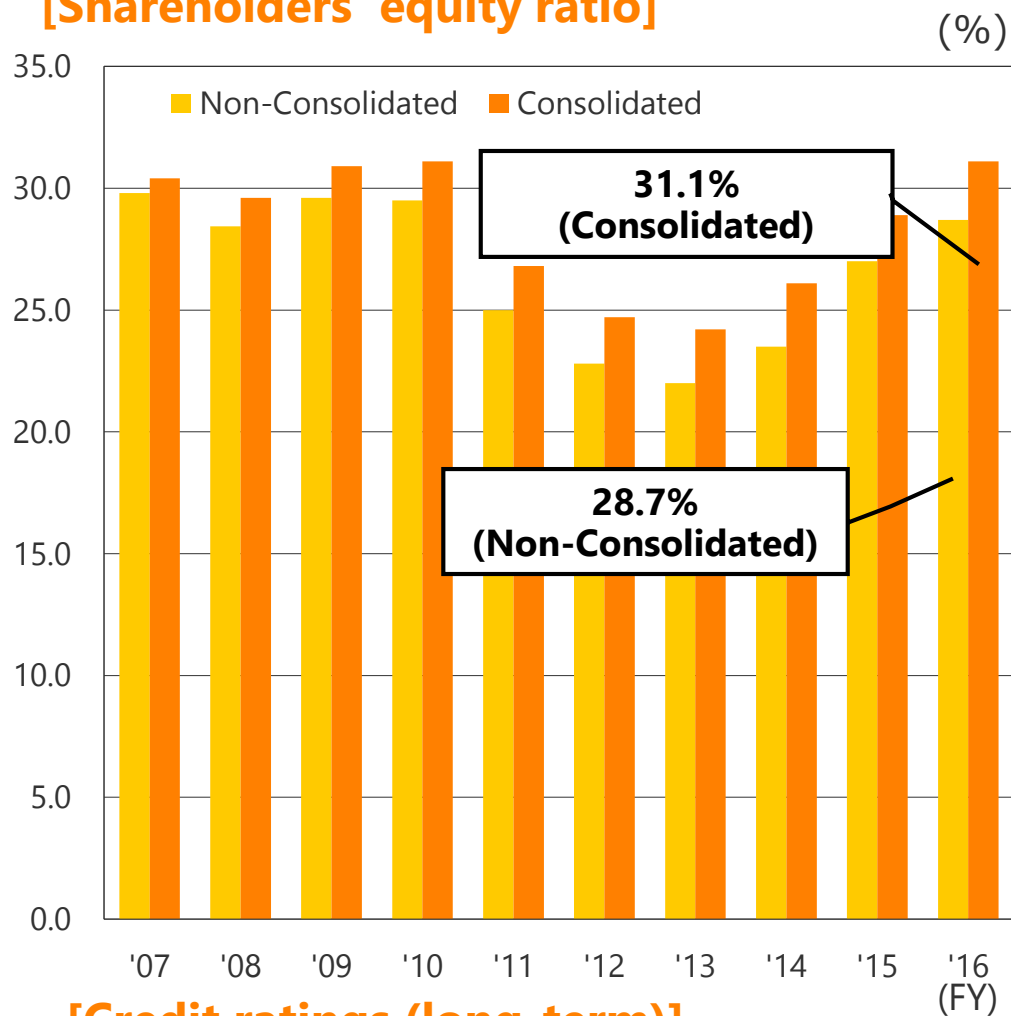
# 16 | Cash Flow (Consolidated)



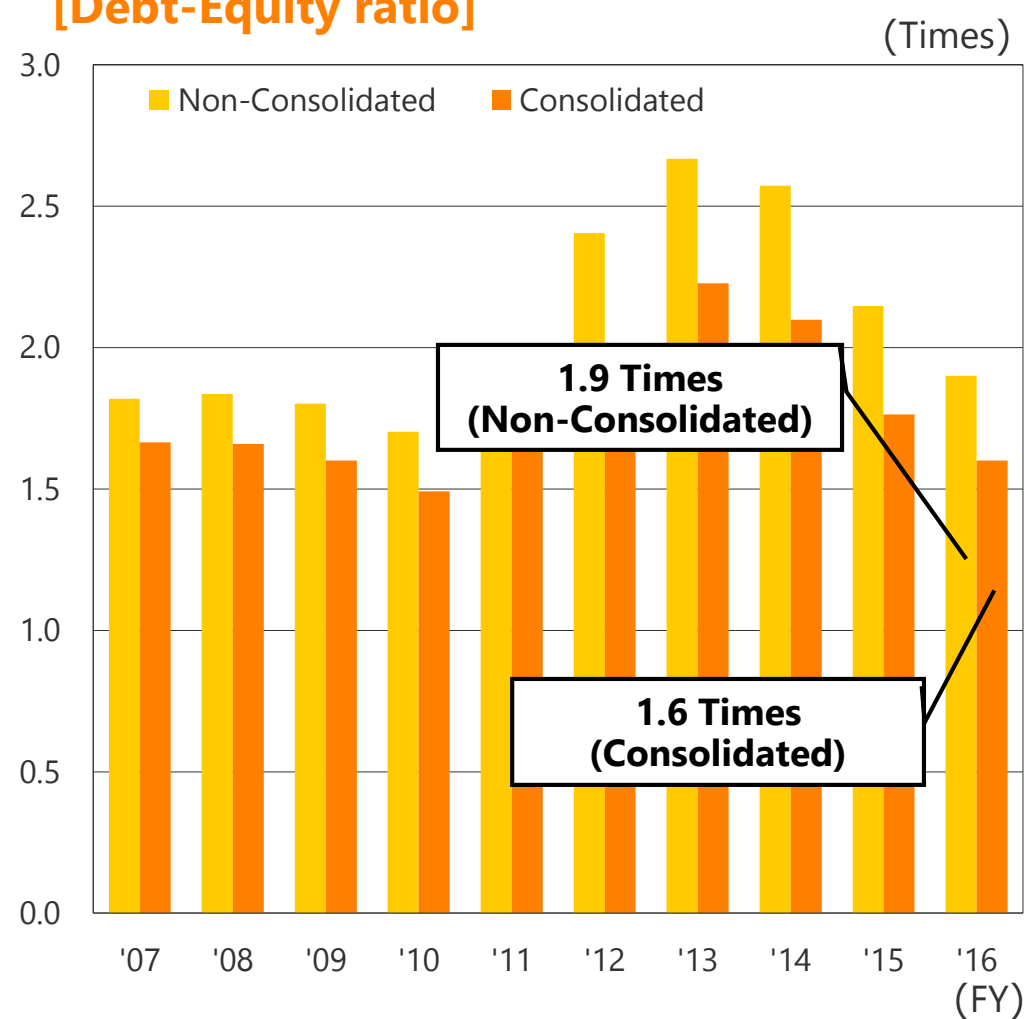
- We raised total approximately 1,500 billion yen in long-term funding for 3 years since the shutdown of Hamaoka Nuclear Power Station.
- We raised 390 billion yen in long-term funding in FY2016.
- We plan to raise approximately 400 billion yen in long-term funding in FY2017.



### [Shareholders' equity ratio]



### [Debt-Equity ratio]



### [Credit ratings (long-term)]

Moody's	R&I	JCR
A3	A+	AA

03

## Management Situation

Chubu electric  
Power Group  
**"What We Aim For"**

- As a leading company that provides services that exceed expectations to customers ahead of our competitors, we will aim to become a **"total energy service corporate group that is one step ahead."**

To achieve "What We Aim For,"  
we will implement **four priority measures**

Measures to increase the safety of  
the Hamaoka Nuclear Power  
Station

Measures to accelerate growth

Measures to ensure stable power  
supply for new era

Measures to construct a business  
framework to make swift responses

## Quantitative mid-term target toward the achievement of "What We Aim For"

Chubu electric  
Power Group  
**Mid-term target**

We will aim to achieve  
**"consolidated ordinary income of over 150 billion yen"** in FY2018.



# 20 | Development of High Efficiency Thermal Power Plants

## [Outline of development of Nishi-Nagoya

### Thermal Power Plant Unit No.7]

Output (at the generation end)	2,376 MW
Thermal efficiency (LHV basis)	Approx. 62%
Fuel	LNG



Effect due to start of operation

- LNG consumptions  
Reduce 0.5 million tons per year
- CO<sub>2</sub> emissions  
Reduce 1.4 million tons per year

## [Outline of development of Taketoyo

### Thermal Power Plant Unit No.5]

Output (at the generation end)		1,070 MW
Thermal efficiency (LHV basis)		46%
Fuel		Coal・Wood biomass
Wood biomass	Mixed fuel burning ratio	Approx. 17% (Heating value ratio)
	Annual use of fuel	Approx. 0.5 million tons
	Electricity generated by Biomass power	Approx. 1.2 TWh per year



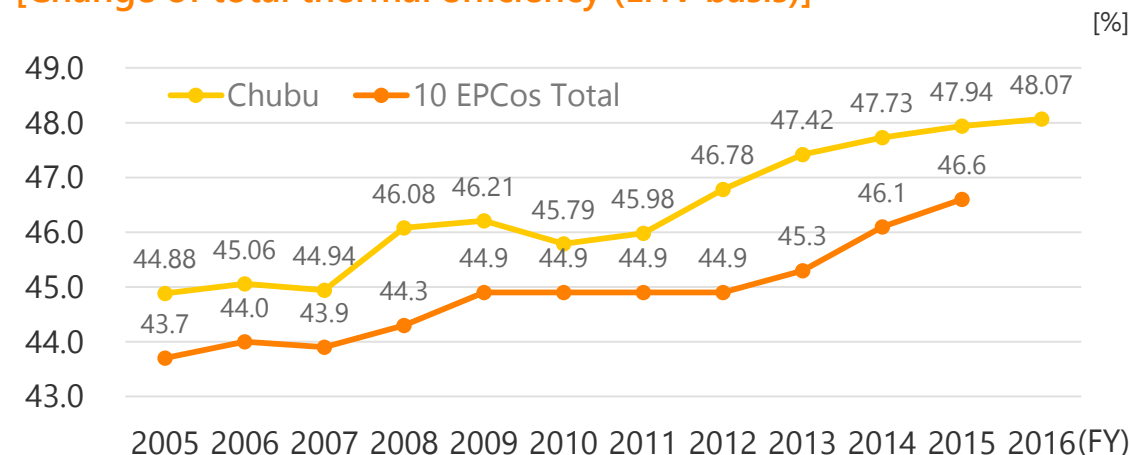
Effect due to start of operation

- Secure the stable and reasonably priced base load power source
  - CO<sub>2</sub> emissions  
Reduce 0.9 million tons per year\*
- \* Comparison with single combustion of coal

## (Reference) Development schedule

2013	2014	2015	2016	2017	2018	.....	2021 (FY)
					▼Mar.-14 : construction started		
					Nishi-Nagoya group No.7(Unit7-1) 1,188MW		
					▼Sep.-14 : construction started		
					Nishi-Nagoya group No.7(Unit7-2) 1,188MW		
					▼Sep.-17 : operation to start		
					▼Mar.-18 : operation to start		
					▼May.-18 : construction to start		
					Taketoyo Thermal Power Plant Unit 5 1,070MW		
					Mar.-22 : operation to start▲		

## [Change of total thermal efficiency (LHV basis)]

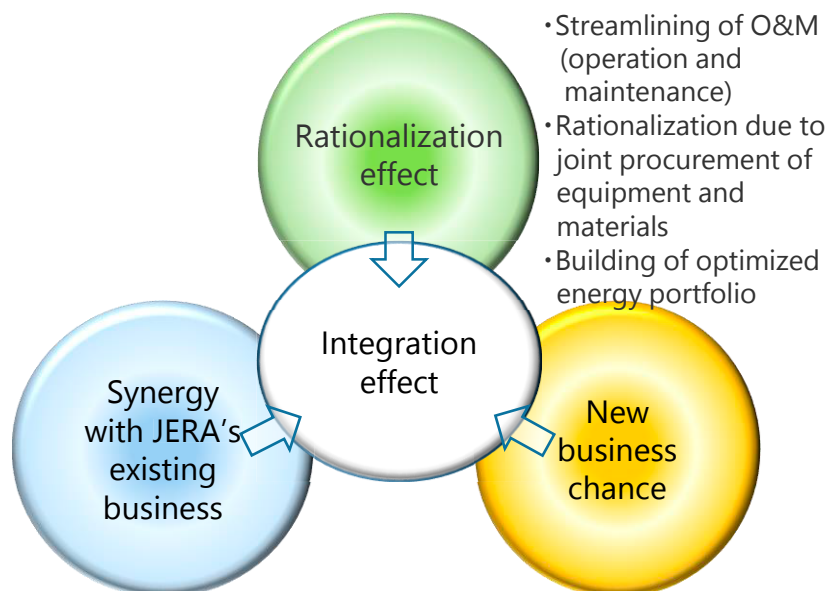


(Note)"10 EPCOs Total" values are based on " Environmental Action Plan by the Japanese Electric Utility Industry" published by The Federation of Electric Power Companies of Japan (FEPC)

- TEPCO Fuel & Power, Incorporated and Chubu Electric established "JERA Co., Inc.", as a new company that implements "a comprehensive alliance covering the entire energy supply chain, from upstream fuel and procurement through power generation." After establishing JERA, business was gradually transferred from both companies to JERA.
- In business that has been transferred so far, actions that could not be realized by Chubu Electric Power alone are initiated, and in June 2017, it has been concluded the joint-venture agreement on integration of fuel receiving/storage and gas transportation businesses, and existing thermal power generation businesses to JERA.
- In order to develop continuous growth strategies and further improve corporate values of JERA, examinations will be made in detail toward integration.

## [Integration synergy effects]

**100 billion yen/year within five years** of integration



- Optimization of procurement due to integrated management of existing fuel contract
- Incorporation of know-how cultivated in overseas energy market into domestic thermal power business

- Acquisition of revenue due to market transactions and sales by a third party
- Direct sales of O&M (operation and maintenance)
- Acquisition of revenue due to expansion of sales of gas and LNG

## [Roadmap of the comprehensive alliance]

April 30, 2015	Established JERA Start new fuel procurement and fuel related business, new establishment and replacement of domestic thermal power stations and new overseas power generation business
October 1, 2015	Integration of fuel transportation business and fuel trading business to JERA
July 1, 2016	Integration of existing fuel businesses(upstream/procurement) and existing overseas power generation/energy infrastructure business to JERA
March 28, 2017	Agreement on to integrate fuel receiving/storage and gas transportation businesses and existing thermal power generation business to JERA
June 8, 2017	Conclusion of joint-venture agreement on integration of fuel receiving/storage and gas transportation businesses, and existing thermal power generation businesses to JERA.
1st half FY 2019	Integration of fuel receiving/storage and gas transportation businesses, and existing thermal power generation business (target)

## [Overview of measures to prevent the restriction on JERA business activities]

### ① Dividend rules

- After retained earnings required to invest JERA for business growth, deal with risks and maintain investment grade rating, dividend amounts shall be determined after agreement by both shareholders referring "market average payout ratio" "as a guideline".

### ② Mechanism for complying with dividend rules

- If material concerns arise over the financial situation of a shareholder, the right of the aforementioned shareholder to set dividends shall be immediately restricted.
- If the aforementioned concerns are materialized, the other shareholder shall become the majority shareholder by acquiring one additional share.

- Taking full liberalization of entry to gas business from April 2017 as an opportunity, gas has begun to be sold to household customers in addition to conventional customers for industrial use and business use.
- With competitive procurement capacity of JERA as a lever, total energy service will be expanded through development and provision of new services centering on "gas and power".

## [Full liberalization of the electricity retail markets (April 1, 2016)]

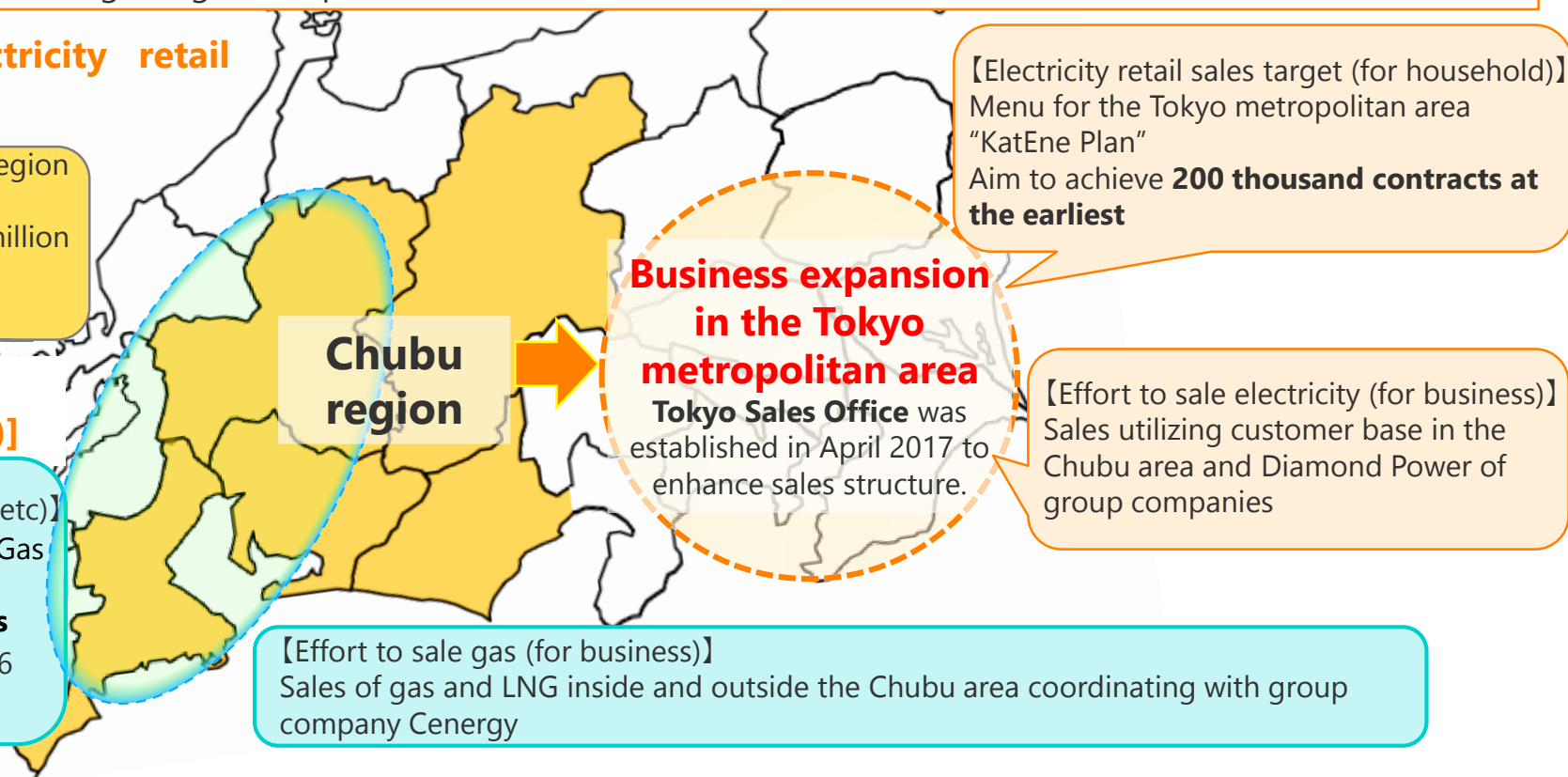
New electric tariff menu in Chubu region (for household)  
The number of applications : 1.18 million (As of the end of July, 5)  
Change rate : **Approx. 30%\***

## [Full liberalization of the gas retail markets (April 1, 2017)]

【Gas retail sales target (for household, etc)】  
Sales for household and other in Toho Gas area (Aichi, Gifu and Mie Pref.)

**200 thousand customers in five years**

The number of applications : Approx.46 thousand (As of the end of July, 20)



## Expansion of gas & electric power in the Chubu region and the Tokyo metropolitan area

Electricity sales outside Chubu region, primarily Tokyo metropolitan area in 2030

→ Aim for increase to **20 TWh per year**

Gas/LNG sales in and outside Chubu region → Aim for increase to **3 MTPA**

\* Estimated value of customers with benefit of electricity rate due to switch from conventional menu to new price menu ("Otoku Plan", "Toku-toku Plan", "Biji-toku Plan"). (estimated value in March 2016)



# 23 | Safety Improvement Measures on Hamaoka Nuclear Power Station <Onsite>

- Major construction works at Unit 4 have been completed excluding some construction works including re-examination of construction work details based on the situation in the field. We are presently undergoing inspections by the Nuclear Regulation Authority to ensure that the power plant is safe and complies with the new regulatory standards.

(Reference) On-site survey was conducted by members of the Nuclear Regulation Authority regarding items concerning the plant in June 2015 and items concerning tsunami and earthquake in March 2017.

- We are strongly committed to preventing similar accidents that happened at Fukushima Daiich Nuclear Power Station, and will continue to strengthen our equipment "onsite" abilities, while fostering collaboration with related organizations to enhance our "offsite" abilities to prepare against nuclear accidents.

## Onsite (in the premises of the plant)

The risk of nuclear accidents

### 1 Prevent the occurrence of any problems

We designed the nuclear power plant to be free from problems that could lead to accidents, and work to maintain and manage the quality.

Even if a problem takes place,

### 2 Prevent any problem from developing into an accident

We work to identify a problem as early as possible and suspend the operation of the reactor as necessary, thereby preventing the problem from developing into an accident

Even if the problem leads to an accident,

### 3 Be prepared for an accident; prevent an accident from escalating to a severe accident

We ensure that the plant has enough functions to cool the reactors and their containers. We also take multifaceted measures to prepare for the loss of these functions, thereby preventing a serious meltdown of the reactor core (severe accident).

Even in the event of a reactor core meltdown,

### 4 Mitigate the influence of a severe accident

We will mitigate the influence of a severe accident by making flexible responses, including using portable power sources and water injection and heat removal equipment.

Reduced to the minimum  
Still some risks remain

Low

**Offsite (next page)**

Preventing accidents

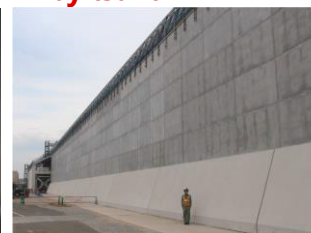
## <Enhancement of the equipment measures>

**Resistance against large earthquakes**



Work to reinforce supports for pipes

**Do not allow flooding by tsunami**



Protection wall (height:22m above sea level)

**Secure multi-layered measures, including power source and water injection heat removal equipment**

**More power supply**



Gas turbine generator

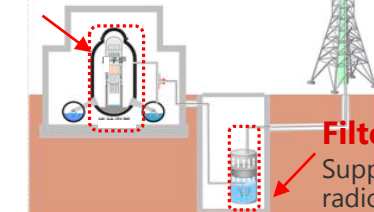
**More water injection**



Mobile water injection pump

**Prevent breakage of containers**

Installation of equipment for cooling top cover of containment vessel



**Filter vent equipment**

Suppress the serious release of radioactive substances

## <Enhancement of onsite staff's abilities>

**Efforts for effectively functioning equipment**



Emergency Response Force (ERF)  
Securing of initial response personnel 24 hours a day, 365 days a year

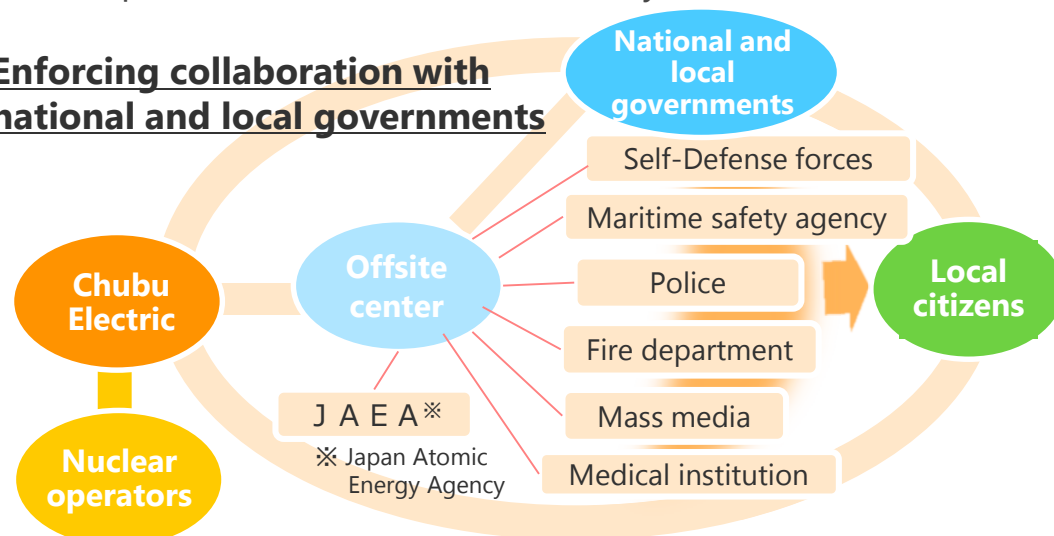


Operation of Mobile water injection pump

## Offsite (outside of the power plant site)

As preparation for nuclear disasters, coordination with the national government and local governments will be enhanced so that support and cooperation concerning evacuation of residents can be provided with the local community.

### Enforcing collaboration with national and local governments



### Strengthen the system for issues on resident evacuation

### Nuclear disaster training held by Shizuoka Prefecture



Training to check the contamination level



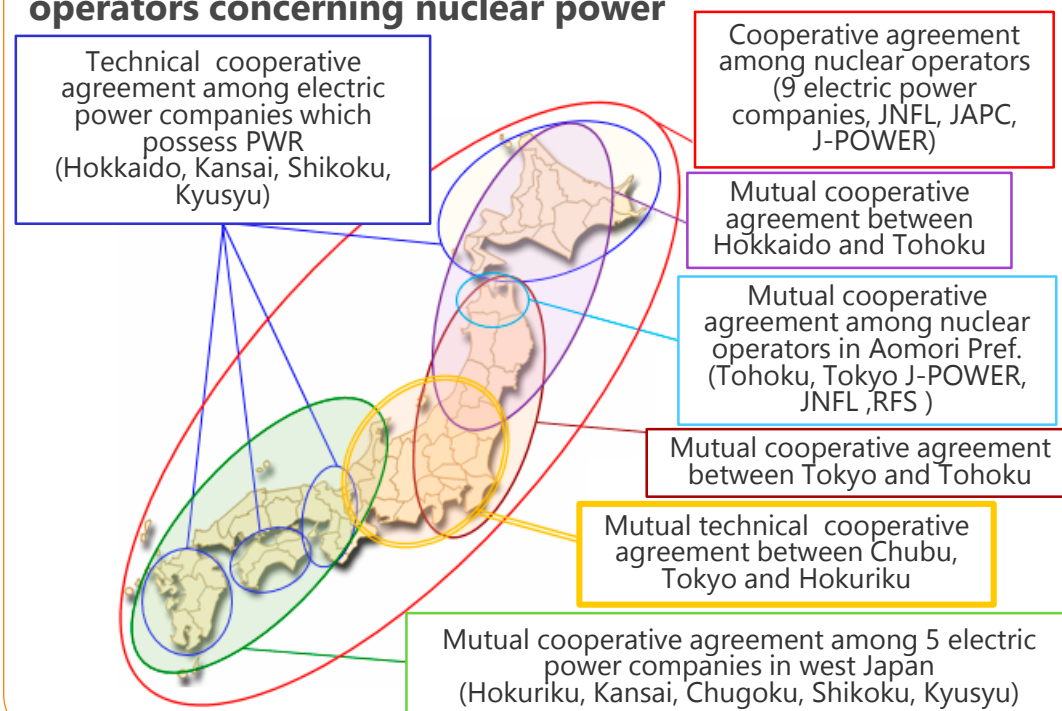
Training of transport of patients with risk of exposure to medical institutions

## Mutual cooperative systems

On March 7, 2017, Chubu Electric Power concluded an agreement on mutual technical cooperation regarding improvement of nuclear safety with TEPCO Holdings and Hokuriku Electric Power.

By having knowledge shared among the 3 companies, safety is further enhanced, and due to mutual cooperation in support for settling the accident and support for evacuation of residents when a nuclear disaster occurs, effectiveness of response actions for a nuclear disaster is further improved.

### Nationwide expansion of cooperative agreement of operators concerning nuclear power



## [Reinforcement of business foundation utilizing ICT and expansion of business areas]

- ICT such as IoT, big data and AI will be utilized for reinforcement of business foundation, and examinations will be made for provision of new services.

<Specific examples>

Operation support service of thermal power generation	Monitoring of signs of equipment failure by utilizing big data and analysis technology
New service due to IoT of telegraph poles	Watching service for children and senior citizens by installing various sensors to telegraph poles
Achieve the sophistication and efficiency power transmission/distribution business	Use of advanced technology for formation, maintenance and management of equipment
Services for household	Energy management service utilizing IoT

## [Development of business structure according to change of market structure]

- Outlook that electricity demand in Japan will drastically decrease and will not structurally expand in the future
- Increase of share of new electricity due to further intensified competition as an impact of full liberalization of entry to electricity business



Development of business structure where efforts are proactively made for establishment of new revenue base including gas & power  
Further improvement of corporate values by continuing to realize efficient management and creating new business and innovative service ahead of other companies

# 04

## Reference Data (2) : Management Information

### [Schedule of the electricity system reform]

	Schedule for implementing the measures	Schedule for Enacted the bill
3 <sup>rd</sup> phase: Further securing the neutrality of the power transmission/distribution sector through legal unbundling; Fully liberalizing electricity rates	In April 2020	Enacted on June 17, 2015

### <Reference> Development of markets and rules for competitive activation (Subcommittee for accomplishment of the electricity system reform)

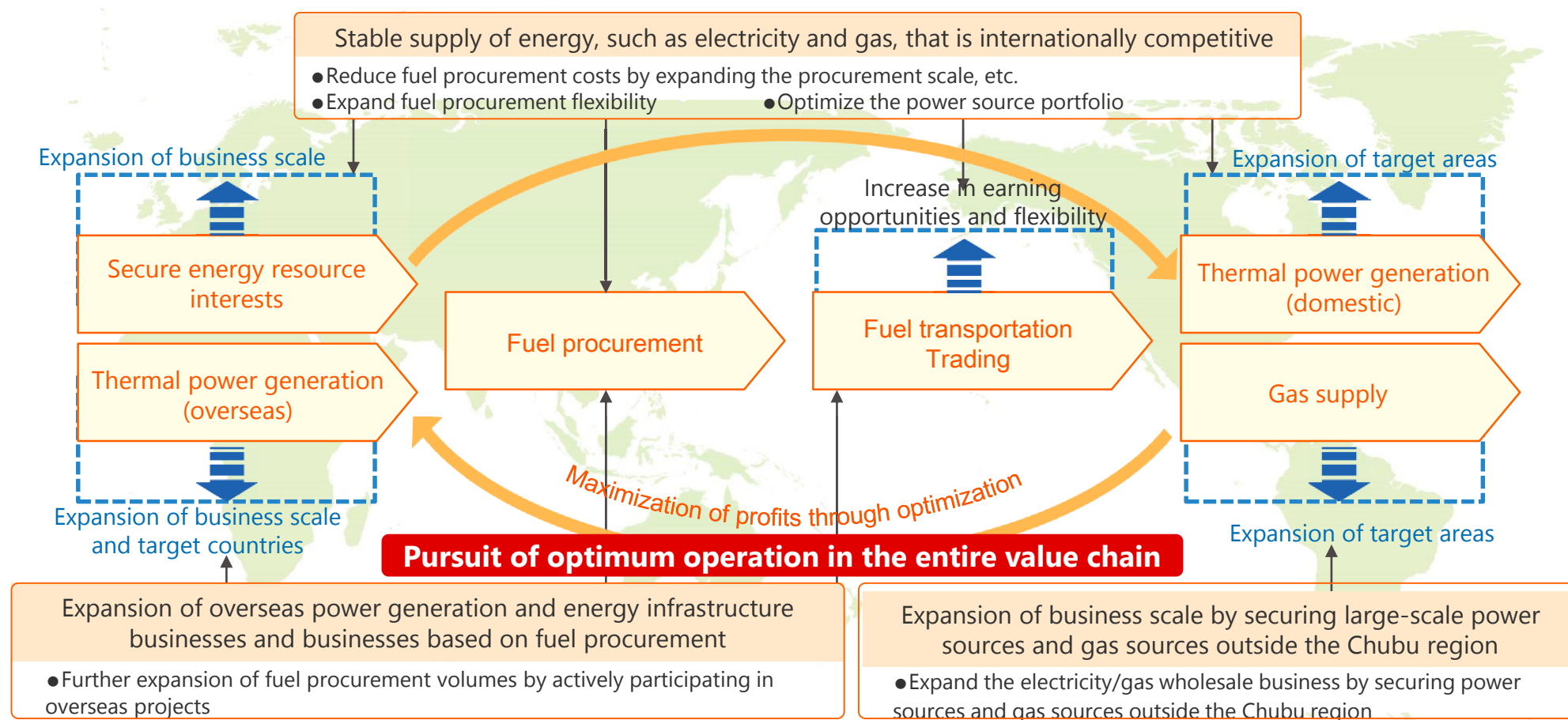
	Timing for the introduction	Contents
Establishment of the Base-load power market	FY2019	<ul style="list-style-type: none"> <li>• Establishment of a market that provides PPS with easy access to base-load power</li> <li>• Institutionalizing major electric power companies' supply of base-load power to the market</li> </ul>
Revision of utilization rule of interconnection line	FY2018	<ul style="list-style-type: none"> <li>• Change the current utilization rule of interconnection line from "first-come priority" to an indirect auction system via spot market based on market principle</li> </ul>
Introduction of Capacity mechanism	FY2020	<ul style="list-style-type: none"> <li>• Introduction of a framework to ensure power supply and coordination capabilities that are required over the medium- to long-term</li> </ul>
Establishment of the Non-fossil value trading market	FY2019	<ul style="list-style-type: none"> <li>• Establishment of a market where retailers can procure non-fossil value</li> </ul>

### [Revision of the gas business act]

	Scheduled for implementing the measures	Scheduled for enacted the bill
Full liberalization of the gas retail market	In April 1, 2017	Enacted on June 17, 2015
Legal unbundling of the gas pipeline business (Tokyo Gas Co., Ltd., Osaka Gas Co., Ltd., and Toho Gas Co., Ltd)	In April 2022	



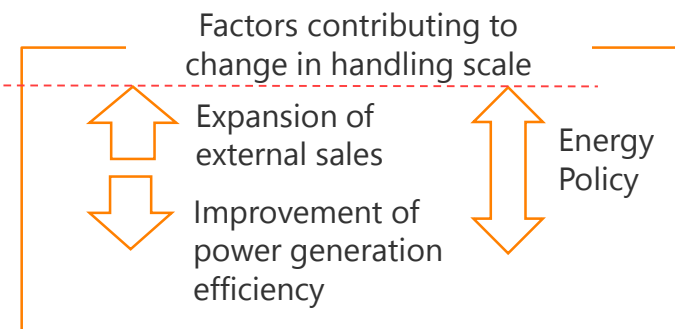
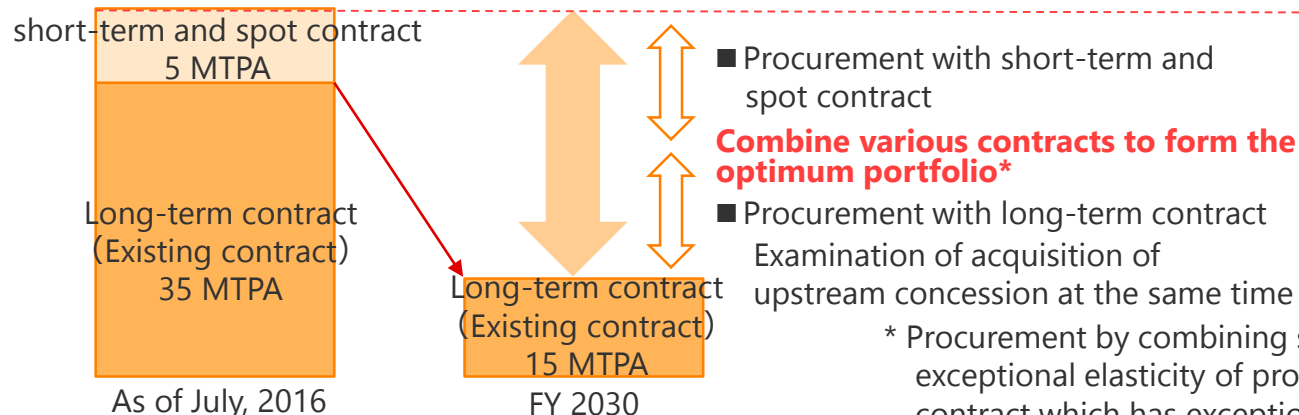
- JERA will expand business based on investment profits from each business and profits generated from the optimization of the value chain.
- We will divide the value chain from the securing of interests of energy resources to procurement, transportation, gas supply and power generation (domestic and abroad) for each business, and aim to increase the investment returns of each business domain.
- At the same time, on the operation side we will establish a system that can control profits and risks by optimizing the allocation of managerial resources and operations, in view of the activities of the entire value chain. As a competitive and innovative supplier, we intend to survive the competition both in the Japanese and global markets.



## [Fuel business (Upstream, procurement, transportation, trading)]

Optimum portfolio is create using the world's largest procurement scale and trading, and fuel procurement that can flexibly respond to change of business environment in the future is realized.

### ○Creation of optimum portfolio of LNG

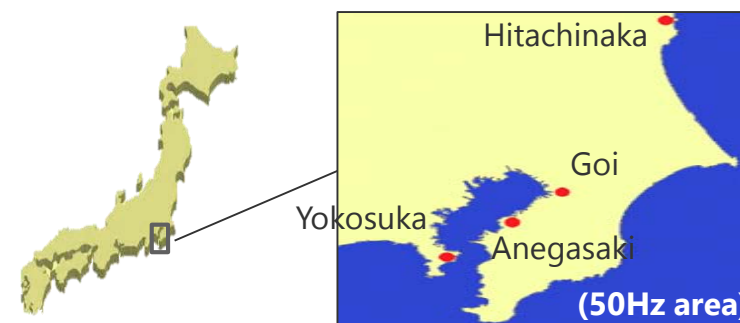


\* Procurement by combining short-term and spot contract which has exceptional elasticity of procurement amount and long-term contract which has exceptional economy and stability

## [Domestic power generation business (New establishment and replacement)]

Bring together the knowledge and technology of both companies to establish and replace thermal power stations, and thereby seek a balance between achieving improved competitiveness and addressing global warming issues.

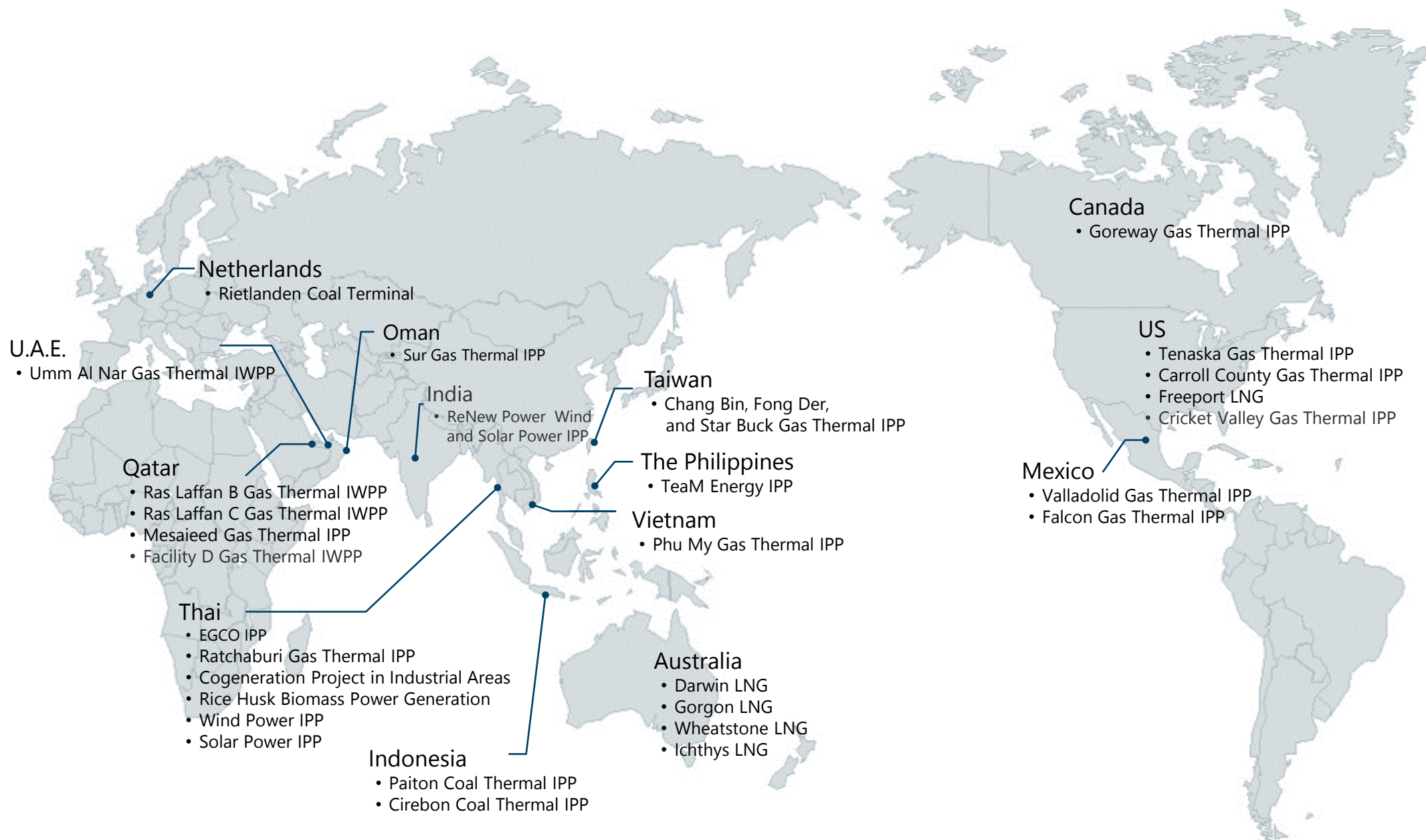
Place (Fuel)	Output	Start of operation
Hitachinaka (Coal)	650 MW	1st half FY 2021
Goi (LNG)	Approx. 2,340 MW	FY 2022 - FY 2023
Anegasaki (LNG)	Approx. 1,950 MW	FY 2022 - FY 2023
Yokosuka (Coal)	Approx. 1,300 MW	FY 2023



## [Overseas power generation business]

By expanding power generation and energy infrastructure business overseas, economic growth and reduction of environmental load in developing countries are supported and new revenue source is acquired.

(US) Participation in Cricket Valley Gas Thermal IPP	Jan, 2017	The first new power generation project outside of Japan in which JERA will take part, after succession of overseas power generation business
(India) Participation in Renewable Energy Business	Feb, 2017	Acquisition of a part of shares from ReNew in India. Aim to construct the power generation portfolio that includes renewable energy.

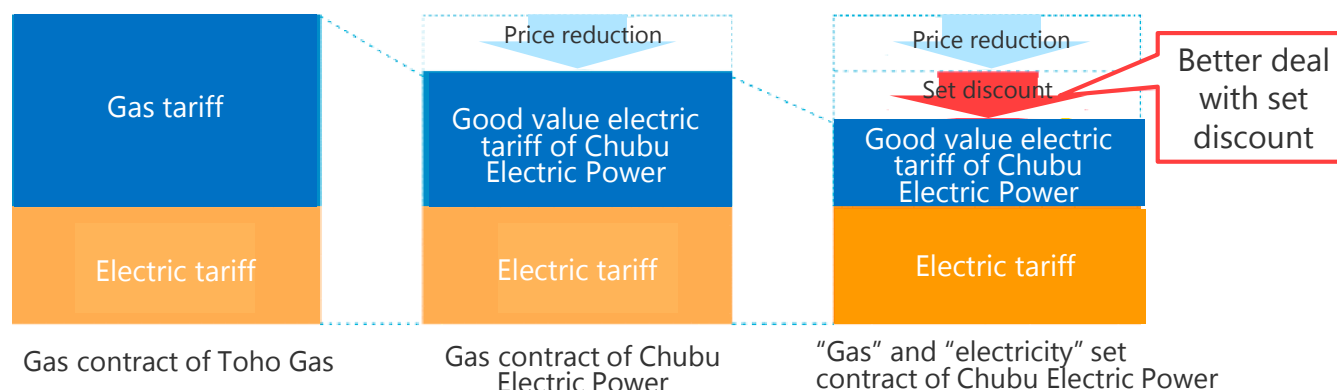
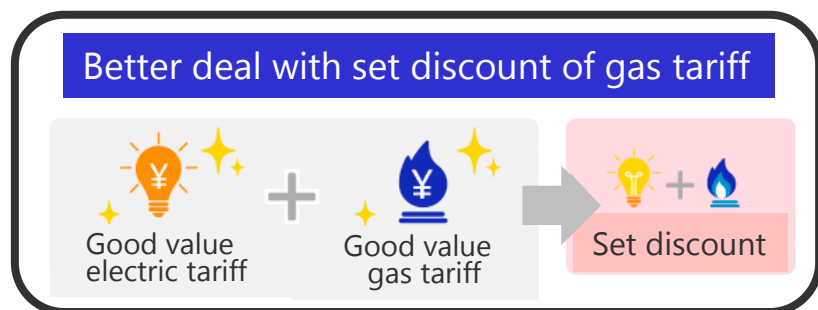


# 30 | Sales Strategy <1> : Optimum Proposal of Gas & Electric Power

- We arranged seven gas tariff menus, i.e. the KatEne Gas Plan for households and the BizEne Gas Plan geared toward businesses. They have been set at prices lower than the gas tariff menu offered by Toho Gas. Prices will be lower than the Gasuteki-Tokutoku menu (new Toho Gas tariff menu).
- We arranged a KatEne/BizEne Gas Set, which discounts 2% off the gas tariff by signing a contract both for electricity and gas.

Menu			Discount rate *1
Gas	Household	KatEne Gas Plan 1	Be equal to 5-6%
		KatEne Gas Plan 2	Be equal to 6%
		KatEne Gas plan 3	Be equal to 6%
	Business	BizEne Gas Plan 1	Be equal to 6-8%
		BizEne Gas Plan 2	Be equal to 7%
		BizEne Gas Plan 3	Be equal to 5%
		BizEne Gas Plan 4	Its merit varies significantly depending on the gas usage pattern and volume.

Menu			Discount rate *1
Electricity	Electric lightning	Point Plan (10-30A)	Be equal to 1%
		Otoku Plan (40-60A, 6kVA)	Be equal to 3%
		Toku-Toku Plan (7kVA or more)	Be equal to 4-5%
		Smart Life Plan *2	Advantages according to the state of use of each time zone
	Power	Biji-Toku Plan *3	Be equal to 5-7%



\*1 Both menus are compared based on model cases at the time of release.

\*2 We developed new tariff menu "Smart Life Plan for Smart Airls" with TOYOTA HOUSING CORPORATION and the sales begun in April 2017.

\*3 Biji-Toku Plan is excluded from the set discount offer.

# 31 | Sales Strategy <2> : Gas Sales Framework

- In 2001, Chubu Electric Power launched a natural gas sales operation geared towards large factories, harnessing its own pipelines. The company has since then been taking incremental steps to strengthen and expand its gas business.
- We started to sale gas to household and restaurant and other in April, 2017. (Approx.46 thousand applications as of end of July 20, 2017)

## [Entering into the gas retail business]

Chubu Electric Power  
Energy Department  
Gas retail section  
(Directly-managed team)

### Promotion methods

Door-to-door sales

TVCM DM  
KatEne BizEne



Partners for  
sales

Sales by agent, etc  
•Chubu  
Telecommunications (ctc)  
•Community Network  
Center (CNCi) Group  
11 companies  
•CCJ Group 2 companies  
•TOENEC

Partners for  
security

Security  
•Iwatani  
•GASTEC SERVICE  
•Ogaki gas  
•CHUBU SEIKI

Security operation  
framework  
(including directly-  
managed team)  
28 office, 300 persons

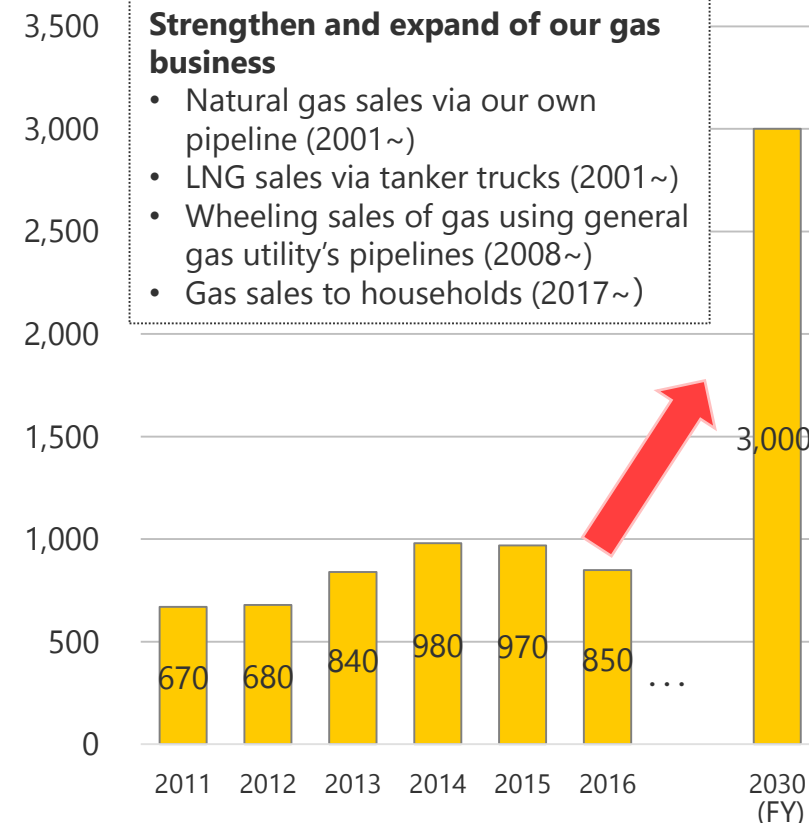
Aichi Pref., Gifu Pref. and Mie Pref.  
Customers using city gas provided by Toho Gas  
(Approx. 2.3 million customers)

Perfect opportunity to expand our share in the gas market.  
Our aim is to attract **200 thousand customers** by the end of FY 2021  
(Around 10% of Toho Gas customers)

## [Sales volume and sales target of gas and LNG]

Accelerating gas and LNG sales in and outside the  
Chubu region  
Sales target in FY2030 **3MTPA**

(Thousand ton)





## [Electricity tariff menu in the Tokyo metropolitan area (KatEne Plan) ]

### Features

#### ① Top-class low price

- Discount rate is 5-10% (KatEne point included) compared with TEPCO Energy Partner's existing menu.

#### ② Benefit arising for all customer in various consumption

- By adopting a 3-stage fee system, the unit price of the basic charge and energy charge is reduced respectively.

**[Partners]** Promote electric sales through multiple sales channels, including sales through partner companies as well as direct sales

	Procurement	Sales channels	Overview
House hold	Chubu Electric	Chubu Electric	Sales of the KatEne plan
		BIGLOBE	Joint development menu (KatEne Plan + Communication)
		Shizuoka Bank	Joint development menu (KatEne Plan + Home loan)
		Chubu Telecommunications (ctc)	Joint development menu (KatEne Plan + Communication)
	Diamond Power	14 city gas companies	We provides electricity through Diamond Power to city gas companies. Each city gas company sells tariff menus that suit each customer.
Business	Chubu Electric		Negotiation-based sales in the Tokyo metropolitan area through the customer bases in the Chubu area
	Diamond Power		Negotiation-based sales in the Tokyo metropolitan area through the customer acquisition

## [Securing power sources]

Power sources	Output	Fuel	Operation commences
Suzukawa Energy Center Co., Inc. (Fuji-shi, Shizuoka)	100MW	Coal	September 2016
Hitachinaka Generation Co/, Inc. (Tokai-mura, Naka-gun, Ibaraki)	650MW	Coal	FY2020

## <Low voltage >

- Various services with high added values that contribute to convenient and comfortable life as "daily-life coordinator" are developed and provided.

## <High voltage・Extra-high voltage >

- Total energy solution is proactively promoted for various problems of corporate customers, thereby contributing to business of customers.
- Energy service activities coordinating with Cenergy Co. and Toenec Co. in the Chubu Electric Power group are carried out.

## [Web service for household "KatEne" ]

### Member acquisition situation



More than 1.7 million Club KatEne members (As of July, 2017)

Aim for 2 million members by the end of FY2017

### Main service

- Energy consumptions visualization
- Energy saving consultation
- Point service (KatEne Point)
- Shopping
- Home service



## [Total energy solution service]

### Energy solution

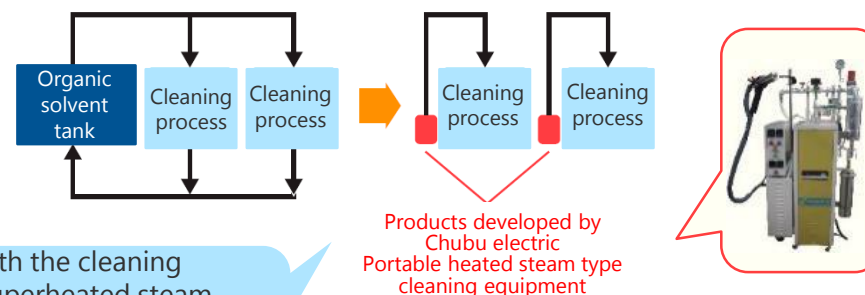
Response to wide range of needs of customers associated with from improvement of operation to repair of equipment  
Proactively engage in needs concerning saving of gas, more than ever

### Energy saving support service in overseas

Support energy conservation of customers in overseas offices where there is more room for energy conservation compared to Japan

### Development-integrated solution

Chubu Electric Power provides "development-integrated solution" which repeats trial and error with customers including technical development for diversified and complicated problems of customers.



Improvement with the cleaning method using superheated steam was adopted by Toyota Motor Corporation in its degreasing process.

Compact line due to distributed installation of cleaning equipment  
Environment is improved with clean cleaning method that does not use organic solvent

- For Unit 4, application for review for checking conformity to New Regulatory Standards was submitted on February 14, 2014. For Unit 3, application for review for checking conformity to New Regulatory Requirements was submitted on June 16, 2015.
- For Unit 5, examination of restoration plan for the equipment where sea water entered due to damage of main condenser tube that occurred in 2011 will be advanced and actions for conformity to New Regulatory Standards will continue to be examined.

	Unit 3	Unit 4	Unit 5
Output	1,100 MW	1,137 MW	1,380 MW
Start of operation	August 28, 1987	September 3, 1993	January 18, 2005
Passed years (As of the end of July, 2017)	29 years	23 years	12 years
Application for examination to check for compliance with the new regulatory standards	June 16, 2015	February 14, 2014	— (Dealing with the seawater infiltration event)

Unit 1	Unit 2
In the decommissioning process (End of operation on January 30, 2009)	
Shift to the 2nd phase of the decommissioning process on February 3, 2016	



- As to Unit No.4, the application form for Change in reactor establishment permission that we submitted has been reviewed by the Nuclear Regulation Authority in two separate categories (matters related to earthquakes/tsunami, etc., and the plant).
- On March 27 and 28 this year, on-site survey was conducted by the Nuclear Regulation Authority regarding items concerning earthquake and tsunami.

As of the end of July 2017

Matters subject	Matters related to earthquakes/tsunami, etc.	Matters related to the plant
Number of examination meetings to be held	19 times	58 times
	Joint meetings: 2 times	
Main item subject	Earthquakes / Tsunami / Volcanoes	Design basis measures Severe accidents, etc.
Main topics of discussion in recent examination meetings	<p>Assessment of seismic motion</p> <p>-Explanation pertaining to the interplate earthquakes that have dominant effects on the seismic ground motion at the premises and oceanic intraplate earthquakes</p> <p>Assessment of geological features and geological structure around the premises</p> <p>-Explanation pertaining to the impact of the fold zone identified around the premises, on the evaluation of activity / seismic motion</p> <p>On-site survey</p> <p>-On-site survey was conducted concerning geological features and geological structure of the premises as well as the area around the premises.</p>	<p>Spent fuel dry storage facility</p> <p>-Explanation pertaining to the method of evaluating fires caused due to crashing of airplanes, tornados, thunderbolts with respect to the spent fuel dry storage facility</p> <p>Effectiveness assessment of severe accidents</p> <p>-Answers about selection of the accident sequence, and effectiveness assessment of prevention of core damage</p>
Future schedule	-Tsunami assessment, stability of foundation ground etc.	<p>- Probabilistic risk assessment</p> <p>- Tornados impact assessment, etc.</p>

## [Fact]

- On May 14, 2011, when preparing for cold shutdown after reactor No. 5 was suspended, a portion of the tubes in the main condenser, through which seawater flowed to cool steam, was damaged. 400 tons of seawater flowed into the main condenser and 5 tons of sea water into the reactor.

## [Inspection results]

### ❑ Reactor Pressure Vessels and Structure in the Reactor

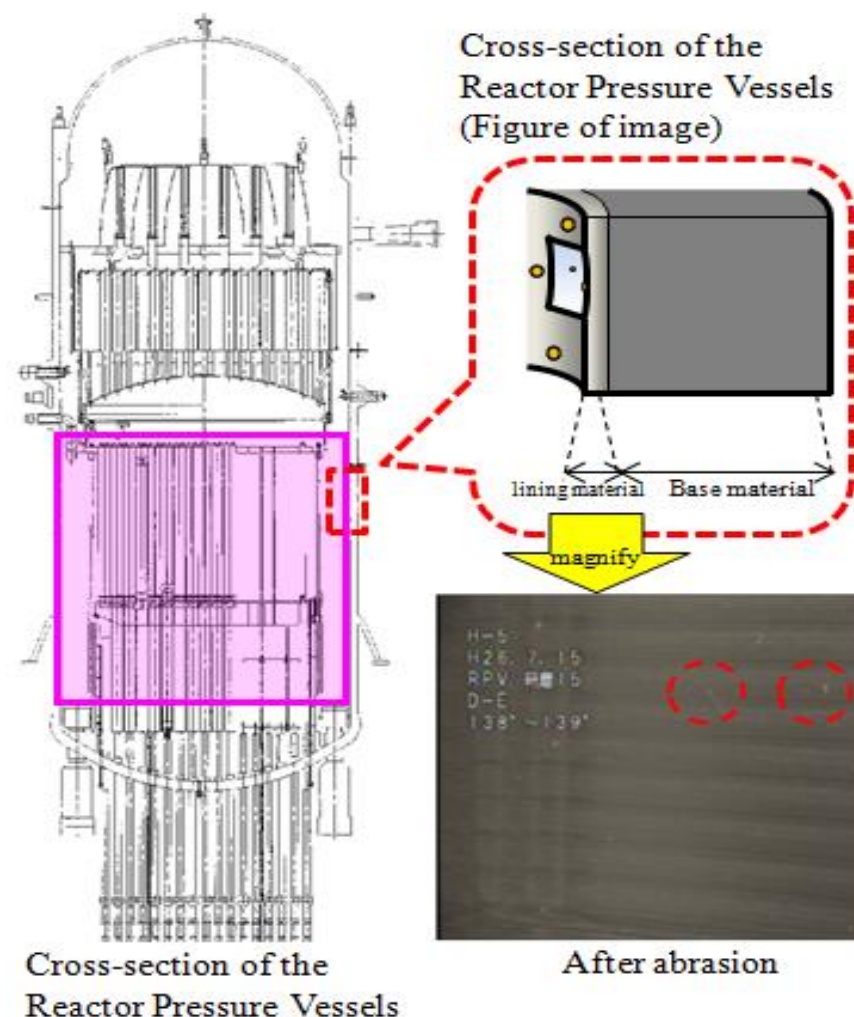
- We found parts of lined portions in the nuclear pressure vessels and in some equipment were corroded. However, the evaluation results showed that the control rods and neutron detectors needed to be replaced but that other devices could continue to be used.

### ❑ Other Reactor and Turbine Equipment

- We found corrosion in some equipment. However, We assessed that we would be able to maintain the functions of each equipment by repairing or replacing the defective parts.

## [Future plan]

- We plan to consider restoration plans such as examining the necessary specific measures toward individual devices.
- As for Reactor No.5, we will summarize the total plan, which is not only the restoration plan in the event of seawater inflow but also such as anti-tsunami measures that conform to the new regulations.
- Our total plan will be evaluated at the Nuclear Regulation Authority.



## Hamaoka Nuclear Power Station <4> : Activities to Take Part in Dialogue with Local Residents

- On the Hamaoka Nuclear Power Station, we have been steadily promoting further safety measures including facilities measures and disaster prevention measures together with gaining public understanding as a package.
- The Company will endeavor more than ever to focus on interactive communication with local residents and our stakeholders by transmitting information including risks in an easy-to-understand manner and with respect, listening with sincerity to customers' voices on uncertainty and doubts, concerns and questions them respectfully.

### [Activities to take part in dialogue for 4 cities concerned]

#### Tour of the Hamaoka Nuclear Power Station

We provide opportunities to confirm the safety measures at the Hamaoka Nuclear Power Station on the spot directly for local residents. In addition, we are making efforts to communicate with local residents by setting up opportunities to engage in dialogue with employees who works in Hamaoka Nuclear Power Station actually.

Visitors : 31 thousand people in a year (Average for FY2012-FY2016)



Displaying a movable water pump▶

#### Caravan activities

About once or twice each month the caravan team visits shopping centers and other facilities in the vicinity of the Hamaoka Nuclear Power Station to communicate the progress of the safety measures to locals and to directly ask for their opinions.

FY2016 (result) : 19 times and 1,939 persons listened to our explanations.

#### Visit and dialogue

We visit people living in the vicinity of the Hamaoka Nuclear Power Station to engage in dialogue with them and we introduce our measures to as many people as possible and to solicit the opinions of local residents.

Visiting targets : Approx. 84 thousand households

\*And we implement third round of visit and dialogue from May 2017. (Visiting result : Approx. 9 thousand end of June 2017)

#### Opinion-exchange meetings

We plan and hold opinion-exchange meetings with local government and woman's organizations and participate in the meeting held by the governments in order to exchange opinions with various organization continuously, thereby increasing the opportunities to engage in dialogue with people living in the vicinity

"Shaberi-ba"▶

<Opinion-exchange meetings targeting women, "Shaberi-ba">

We hold "Shaberi-ba" that is opinion-exchange meeting with women's organizations in the vicinity of the Hamaoka Nuclear Power Station by group work in order to share concerns and questions about nuclear power.

FY2016 (result) : 14 times

<Participating in opinion-exchange meetings held by the government>

We are making an effort to communicate with as many people as possible by participating in opinion-exchange meetings held by Omaezaki city and Makinohara city.

FY2016 (result) : 23 times

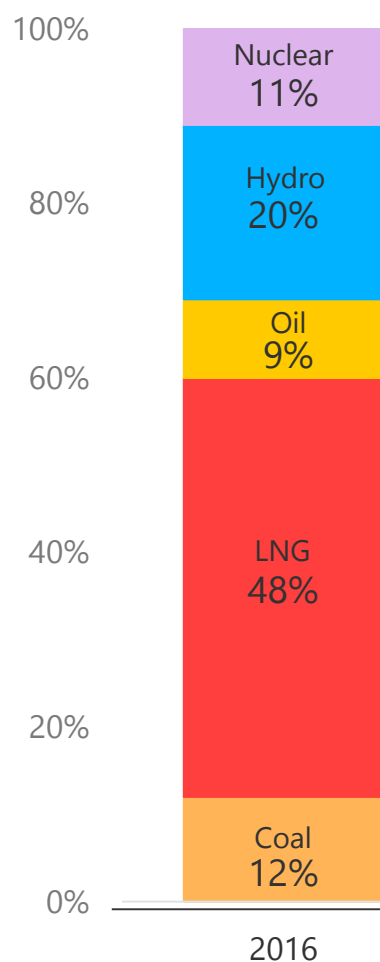
Opinion-exchange meeting held by Omaezaki city▶



# 38 | Composition of Power Sources and Electric Power Output (FY2016)

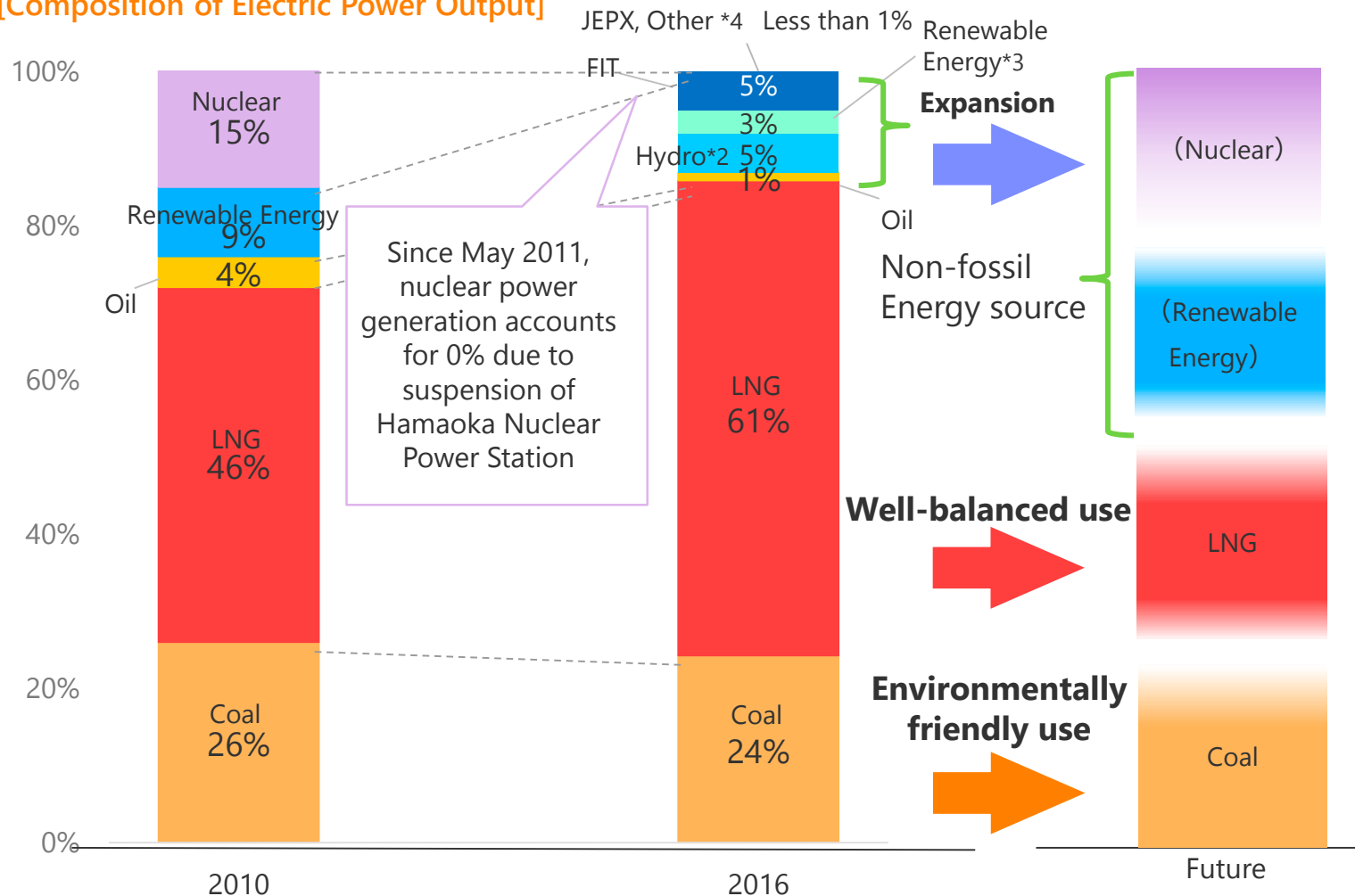
- Based on energy mix of Japan, aim for optimum composition of power sources by combining various types of power source, such as nuclear power, thermal power and renewable energy, in a well-balanced manner from the standpoint of "S+3E" while taking aging of equipment into account.

[Composition of power sources]



(Note) Figures include purchased power

[Composition of Electric Power Output]



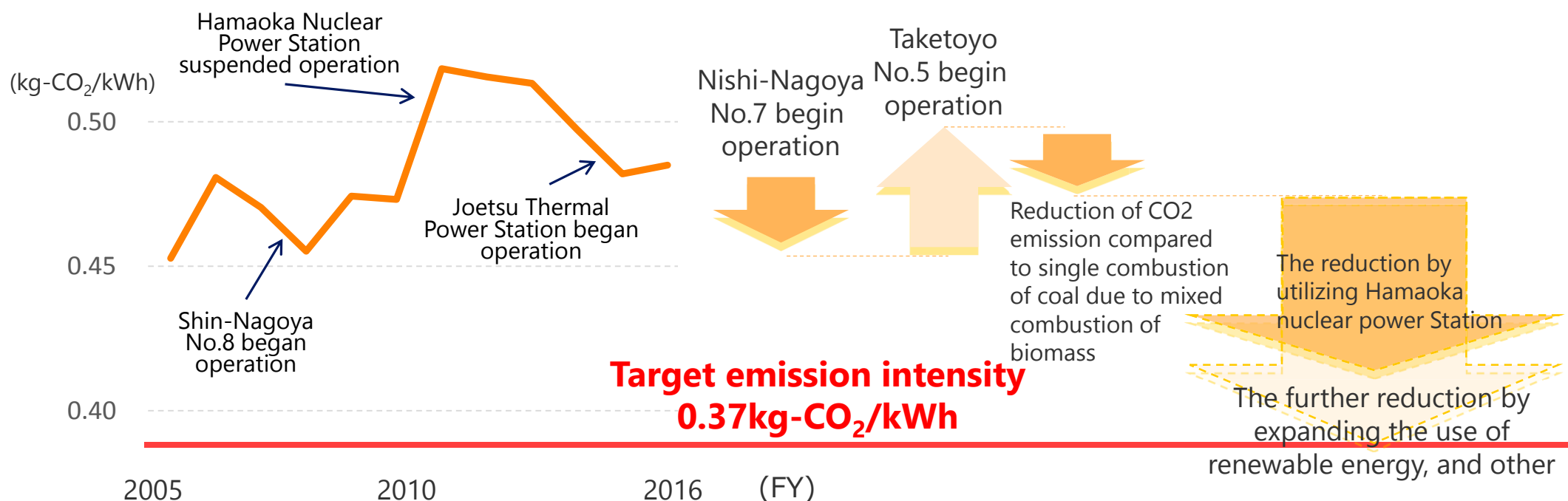
\*1 Figures include interchanged, purchased power \*2 Over 30 MW

\*3 Excluding over 30 MW hydro and FIT-based

\*4 Figures in JEPX represent procurement from Japan Electric Power Exchange and Others represent output from purchased power of which we cannot specify the power source.

- In order to achieve the target value of the country's CO<sub>2</sub> emission rate in FY2030 through voluntary frameworks structured in the entire electric utility industry, take various actions such as making thermal power facilities highly efficient and continuously utilizing nuclear power generation which largely contributes to reduction of CO<sub>2</sub> emission.

## [Trends and outlook of CO<sub>2</sub> emission intensity (before reflecting CO<sub>2</sub> credits)]





(As of the end of June, 2017)

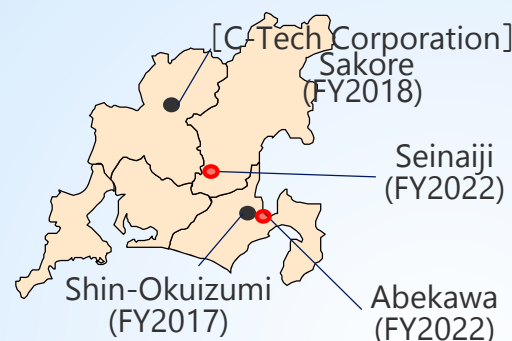
		Chubu Electric	(Reference) Chubu Electric Group
Hydro	operating	196 Site : 5,450MW	Akigami : 0.29MW(FY2016)
	plan	Shin-Okuizumi : 0.29 MW (FY2017) Seinaiji : 5.6 MW (FY2022) Abekawa : 7.1 MW (FY2022) 1 Site : 1.9MW	Sakore : 0.37MW(FY2018)
Wind	Operating	Omaezaki : 22MW	158MW
	Plan	—	—
Solar	Operating	Mega Solar Iida : 1.0 MW Mega Solar Shimizu : 8.0 MW Mega Solar Kawagoe : 7.5 MW	252MW
	plan	—	4 Site : 15 MW (FY2017) 4 Site : 59 MW (FY2018)
Biomass	operating	Mixture of wooden chip Mixture of fuel from carbonized sewage sludge	Taki bio power : 6.7 MW (FY2016) Aichi clean : 0.549 MW (FY2016)
	plan	Biomass power generation facility at Yokkaichi Thermal Power Station : 49MW	CEPO Handa biomass : 50 MW (FY2019)

\* Joint businesses are recorded in their entire amount instead of by equity interest.  
(Reference) "Summary of electric power supply plan FY2017"

## Development locations of hydroelectric power station

- Conventional hydro
- Generation with minimum water level

Parentheses denote the commercial operation start year.

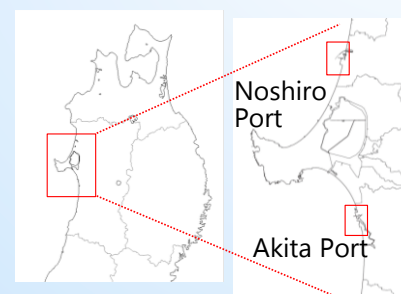


Shin-Okuizumi Hydroelectric Power Station under construction

## Wind Power Generation

Akita Port and Noshiro Port survey of development possibility of offshore wind power generation business in Akita Pref. (joint survey)

### 【Site map】



### 【Summary of Project】

Power generation method

: Offshore wind power generation

Site : Akita port area and Noshiro port area in Akita Pref.  
(Total : Approx. 730ha)

Output

: Supposition total output 145 MW  
(Akita port 65 MW,  
Noshiro port 80 MW)

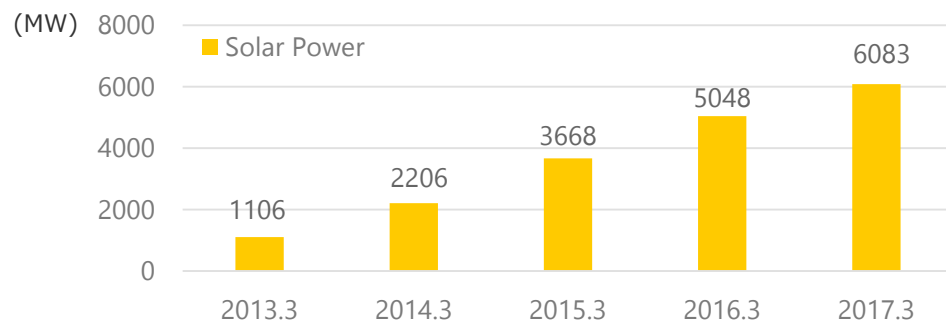
Project Period : 20 years (planned)

# Renewable Energy <2>: Actions for Expansion of Introduction of Renewable Energy

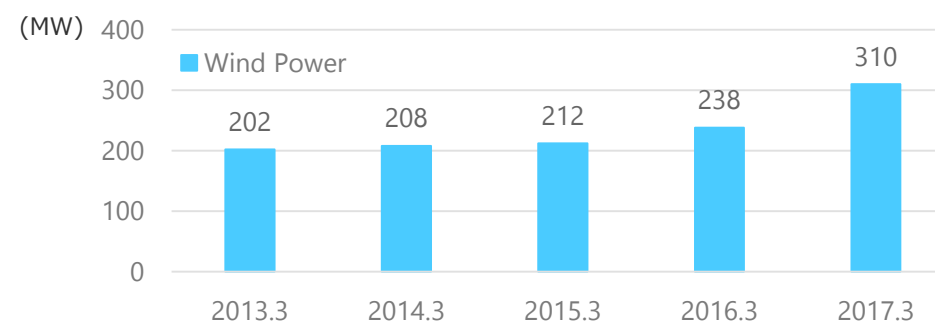
- To realize energy mix of Japan, take actions for expansion of introduction of renewable energy such as efforts for adjusting supply and demand in a wide range for change of output of renewable energy and efforts for structuring distribution system to respond to change of voltage which tends to occur due to change of output.

## [Introduction of renewable energy in Chubu region]

### ◆ Solar Power Generation



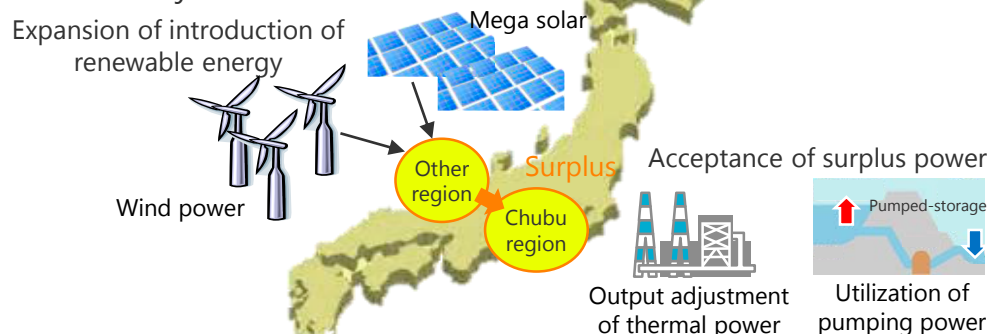
### ◆ Wind Power Generation



### Utilization of wide-range adjustment scheme

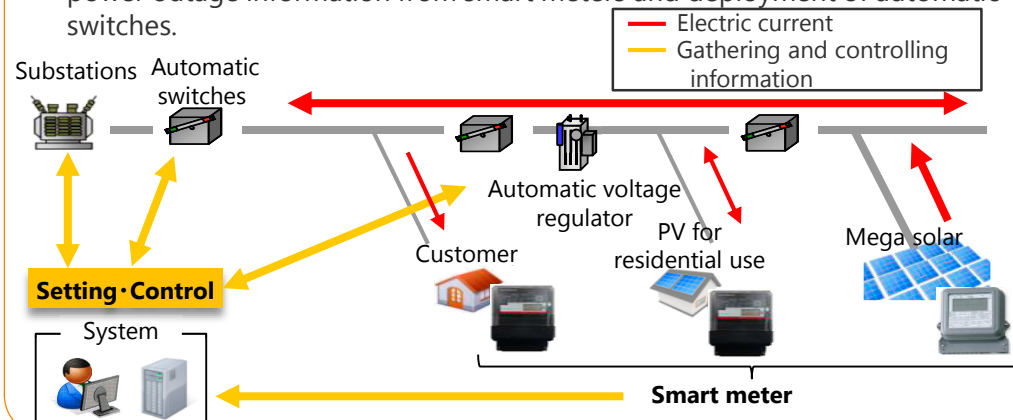
- When introduction of renewable energy expands, output largely changes due to weather conditions. It could be difficult to prepare all adjusted power sources for responding to such output change, in the supply area.
- Thus, expansion of introduction of renewable energy is supported such as lending electric power necessary for adjustment of supply and demand in a wide range through inter-regional interconnection lines.

#### <Image diagram of wide-range adjustment scheme>



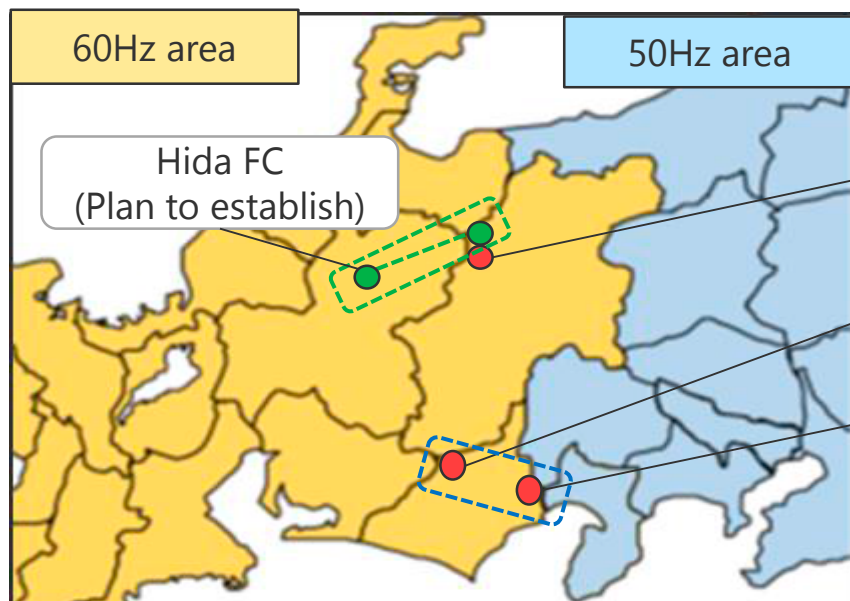
### Structuring of next-generation distribution system

- When introduction of renewable energy, which has the characteristic of unstable output, expands, voltage tends to change easily. By utilizing measurement data of smart meters that are currently being installed, voltage can be precisely controlled.
- During power outage, failure zone will be kept as minimum as possible due to power outage information from smart meters and deployment of automatic switches.



## 42 | Reinforcement of the Frequency Converter (FC)

- In order to stably supply electricity when power outage occurs in a wide range due to stoppage of large-scale power source, efforts will be made to increase FC by 900 MW to a total of 2,100 MW in FY2020 so that lending of electricity between regions with different frequency can be expanded.
- Furthermore, in order to increase FC to a total of 3,000 MW in FY2027, in accordance with the Cross-regional Network Development Plan drawn up in the Organization for Cross-regional Coordination of Transmission Operators, reinforcements including development of surrounding systems will be aimed for.



	Present	End of FY2020	End of FY2027
Shin-Shinano FC	600MW	1,500MW (+900MW)	1,500MW
Sakuma FC	300MW	300MW	600MW (+300MW)
Higashi-Shimizu FC	300MW	300MW	900MW (+600MW)
Total	1,200MW	2,100MW (+900MW)	3,000MW (+900MW)

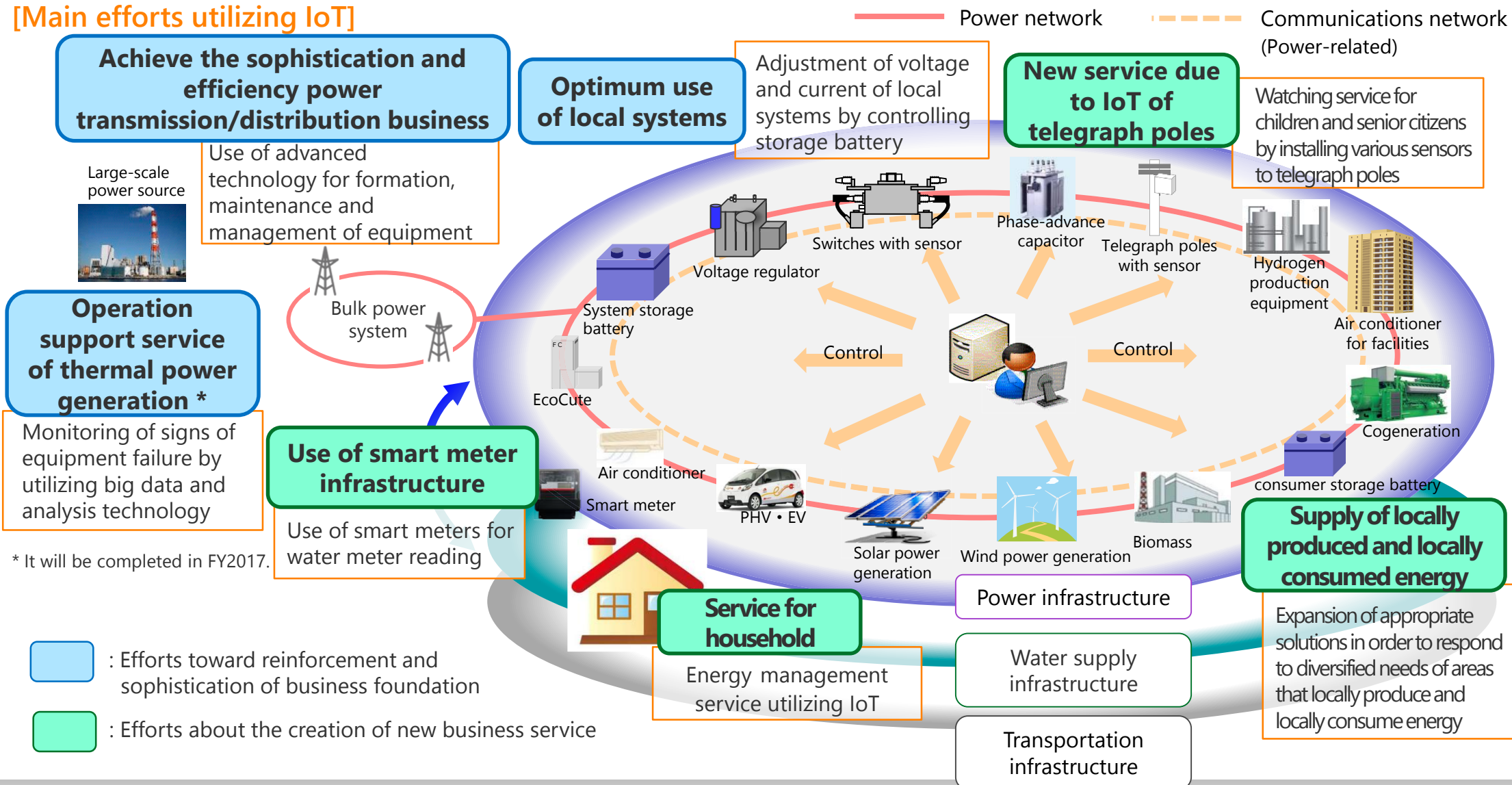
### [Joint procurement and competitive ordering of equipment and materials]

- Equipment and materials intended for reinforcement of New Shinano FC are jointly procured by Chubu Electric Power and TEPCO Power Grid with the purpose of reducing procurement price due to economy of scale.
- For equipment and materials intended for reinforcement of East Shimizu FC and Sakuma FC, manufacturers desiring to make a bid will be jointly advertised for with joint procurement by Chubu Electric Power and J-POWER in mind.



- ICT such as IoT, big data and AI will be utilized for reinforcement of business foundation, and examinations will be made for provision of new services.

## [Main efforts utilizing IoT]



## DISCLAIMER

This presentation contains assumptions and forward-looking statements with respect to the financial conditions, and forecasts of the company, which are based on information currently available.

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