

Summary of FY2018 First Quarter Earnings Results



Electric Power Development Co., Ltd.

July 31, 2018

The following contains statements that constitute forward-looking statements, plans for the future, management targets, etc. relating to the Company and/or the J-POWER group. These are based on current assumptions of future events, and there exist possibilities that such assumptions are objectively incorrect and actual results may differ from those in the statements as a result of various factors.

Furthermore, information and data other than those concerning the Company and its subsidiaries/affiliates are quoted from public information, and the Company has not verified and will not warrant its accuracy or appropriateness.

※Display of Figures

- ✓ All figures are consolidated unless stated otherwise.
- ✓ Amounts less than 100 million yen and electric power sales volume less than 100 million kWh shown in the consolidated financial data have been rounded down. Consequently, the sum of the individual amounts may not necessarily agree with figures shown in total columns.

▶ Summary of FY2018 First Quarter Earnings Results	3
▶ Key Data	4
▶ FY2018 First Quarter Earnings Results (Main Factors for Change)	6
▶ Revenue / Expenditure Comparison	7
▶ Balance Sheet	8
▶ Summary of FY2018 Earnings Forecast	9
▶ APPENDIX	10

Summary of FY2018 First Quarter Earnings Results



(Unit: billion yen)

Consolidated	FY2017 1st Quarter (Apr.-Jun.)	FY2018 1st Quarter (Apr.-Jun.)	Year-on-year change	
Operating Revenue	189.7	197.5	7.8	4.1 %
Operating Income	27.5	31.1	3.5	13.0 %
Ordinary Income	28.4	35.7	7.2	25.5 %
Profit attributable to owners of parent	19.2	25.1	5.9	30.9 %

Non-consolidated	FY2017 1st Quarter (Apr.-Jun.)	FY2018 1st Quarter (Apr.-Jun.)	Year-on-year change	
Operating Revenue	134.4	140.5	6.0	4.5 %
Operating Income	14.1	17.7	3.6	25.8 %
Ordinary Income	19.1	30.7	11.5	60.3 %
Profit	16.2	26.8	10.5	65.3 %

Growth indicator	FY2017 1st Quarter (Apr.-Jun.)	FY2018 1st Quarter (Apr.-Jun.)	Year-on-year change	
J-POWER EBITDA ^{*1}	48.2	52.8	4.5	9.5 %

*1 J-POWER EBITDA = Operating income + Depreciation and amortization cost + Share of profit of entities accounted for using equity method

Key Data (Electric Power Sales)

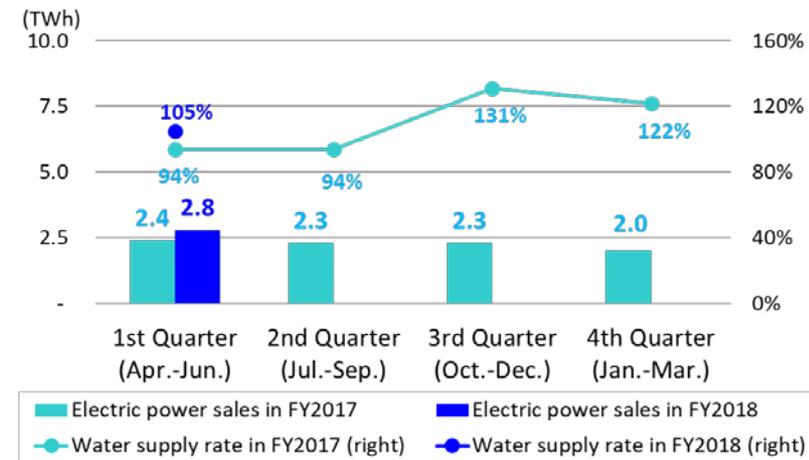
	FY2017 1st Quarter (Apr.-Jun.)	FY2018 1st Quarter (Apr.-Jun.)	Year-on-year change	
Electric Power Sales (TWh)				
Electric Power Business	13.6	14.3	0.6	4.8%
Hydroelectric Power	2.4	2.8	0.4	16.8%
Thermal Power	11.0	11.2	0.2	2.1%
Wind Power	0.1	0.1	0.0	5.8%
Overseas Business ^{*1}	3.8	3.3	(0.5)	(13.1)%
Water supply rate	94%	105%	+ 11 points	
Load factor ^{*2}	61%	63%	+ 2 points	

*1 Electric power sales volume of overseas consolidated subsidiaries (Electric power sales volume of equity method affiliated companies is not included.)

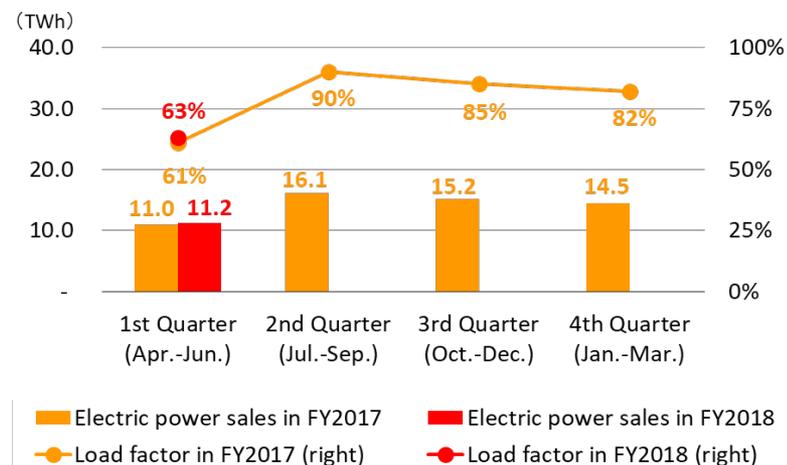
*2 Load factors of thermal power show the results for non-consolidated only.

Electric Power Sales for each Quarter

[Domestic Hydroelectric Power]



[Domestic Thermal Power]



Key Data (Operating Revenue)



	FY2017 1st Quarter (Apr.-Jun.)	FY2018 1st Quarter (Apr.-Jun.)	Year-on-year change	
Operating Revenue (Billion yen)	189.7	197.5	7.8	4.1%
Electric Power Business	138.8	145.4	6.6	4.8%
Electric Power Generation Business	126.2	132.8	6.5	5.2%
Transmission / Transformation Business	12.2	12.2	0.0	0.4%
Overseas Business ^{*1}	37.2	36.7	(0.5)	(1.4)%
Other Business ^{*2}	13.6	15.3	1.7	12.8%
Foreign exchange rate at the end of March (Yen/US\$)	112.19	106.24		
Foreign exchange rate at the end of March (Yen/THB)	3.26	3.40		
Foreign exchange rate at the end of March (THB/US\$)	34.45	31.23		
Average foreign exchange rate (Yen/US\$)	111.09	109.10		

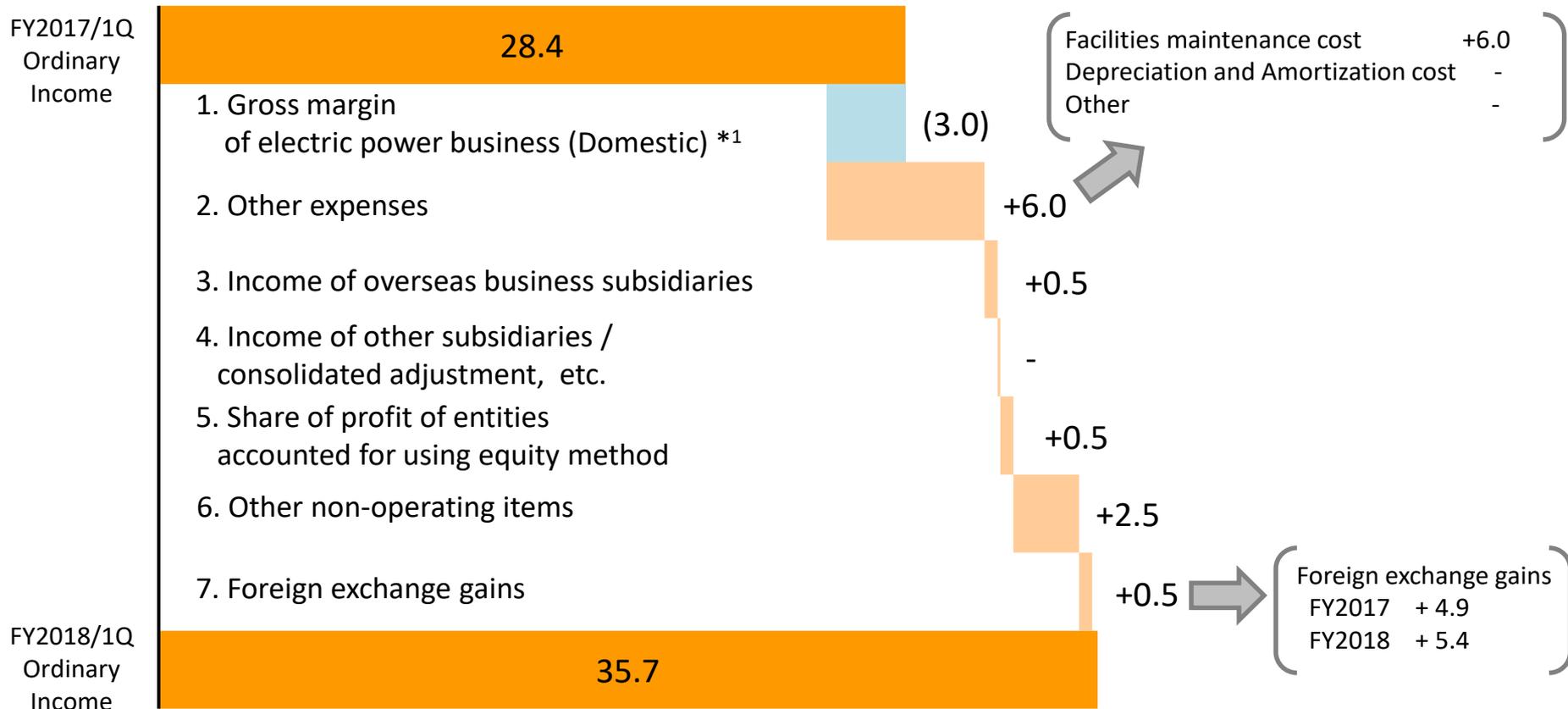
*1 Sales for the overseas business segment (Sales from overseas consolidated subsidiaries and overseas consulting business, etc.)

*2 "Other Business" is composed of "Electric Power-Related Business" segment and "Other Business" segment.

FY2018 First Quarter Earnings Results (Main Factors for Change)



(Unit: billion yen)



(Note) Although facilities maintenance cost in FY2018/1Q has decreased compared with FY2017/1Q due to the difference in the timing of occurrence, it is expected to be leveled out in the full year

*1 Gross margin of electric power business (Domestic) : Domestic electric power business revenue (hydro, thermal and wind) – fuel costs, etc.

Revenue / Expenditure Comparison



(Unit: billion yen)

	FY2017 1st Quarter (Apr.-Jun.)	FY2018 1st Quarter (Apr.-Jun.)	Year-on-year change	Main factors for change
Operating Revenue	189.7	197.5	7.8	
Electric power business	138.8	145.4	6.6	
Overseas business	37.2	36.7	(0.5)	
Other business	13.6	15.3	1.7	
Operating Expenses	162.1	166.4	4.2	Electric power business +4.6, Overseas business (1.0), Other business +0.7
Operating Income	27.5	31.1	3.5	
Non-operating Revenue	8.6	12.0	3.3	
Share of profit of entities accounted for using equity method	1.6	2.1	0.5	
Foreign exchange gains	4.9	5.4	0.5	
Other	2.1	4.4	2.3	
Non-operating Expenses	7.7	7.5	(0.2)	
Interest expenses	7.1	6.4	(0.7)	
Other	0.6	1.0	0.4	
Ordinary Income	28.4	35.7	7.2	Electric power business +4.9, Overseas business +1.7, Other business (0.0)
Profit attributable to owners of parent	19.2	25.1	5.9	

Balance Sheet



(Unit: billion yen)

	FY2017 End of FY	FY2018 End of 1Q	Change from prior year end	Main factors for change
Non-current Assets	2,325.2	2,295.8	(29.4)	
Electric utility plant and equipment	951.1	947.5	(3.6)	Non-consolidated (2.1), Subsidiaries and others (1.5)
Overseas business facilities	341.4	333.0	(8.3)	Subsidiaries including power generation projects in Thailand (8.3)
Other non-current assets	93.4	88.1	(5.2)	Australian coal mine investment subsidiary (5.5)
Construction in progress	525.7	530.1	4.3	Non-consolidated +1.0, Subsidiaries and others +3.3
Nuclear fuel	73.8	74.3	0.5	
Investments and other assets	339.7	322.7	(17.0)	
Current Assets	321.7	333.9	12.1	
Total Assets	2,647.0	2,629.8	(17.2)	
Interest-bearing debt	1,561.3	1,558.4	(2.9)	Non-consolidated +10.9, Subsidiaries (13.8) [Corporate bonds +10.0, Long-term loans (12.9)]
Other	249.5	219.8	(29.7)	
Total Liabilities	1,810.9	1,778.2	(32.6)	
Shareholders' equity	745.1	763.0	17.8	Increase in retained earnings
Accumulated other comprehensive income	42.1	34.6	(7.4)	
Non-controlling interests	48.8	53.8	5.0	
Total Net Assets	836.1	851.5	15.4	
D/E ratio (x)	2.0	2.0		
Shareholders' equity ratio	29.7%	30.3%		

Summary of FY2018 Earnings Forecast



✂ The earnings forecasts released on April 27, 2018 remain unchanged.

(Unit: billion yen)

	Consolidated		
	FY2017 Result	FY2018 Forecast	Comparison with FY2017 result
Operating Revenue	856.2	863.0	6.7 0.8 %
Operating Income	104.3	84.0	(20.3) (19.5) %
Ordinary Income	102.4	70.0	(32.4) (31.7) %
Profit attributable to owners of parent	68.4	50.0	(18.4) (27.0) %

(Unit: billion yen)

	Non-consolidated		
	FY2017 Result	FY2018 Forecast	Comparison with FY2017 result
Operating Revenue	614.5	611.0	(3.5) (0.6) %
Operating Income	43.0	26.0	(17.0) (39.6) %
Ordinary Income	52.4	49.0	(3.4) (6.6) %
Profit	41.9	45.0	3.0 7.3 %

(Unit: billion yen)

Growth indicator	FY2017 Result	FY2018 Forecast	Comparison with FY2017 result
J-POWER EBITDA	196.3	175.0	(21.3) (10.9) %

Cash dividends per share

	Interim	Year end	Annual
FY2017	35 yen	40 yen	75 yen
FY2018 (Forecast)	35 yen	40 yen	75 yen

APPENDIX

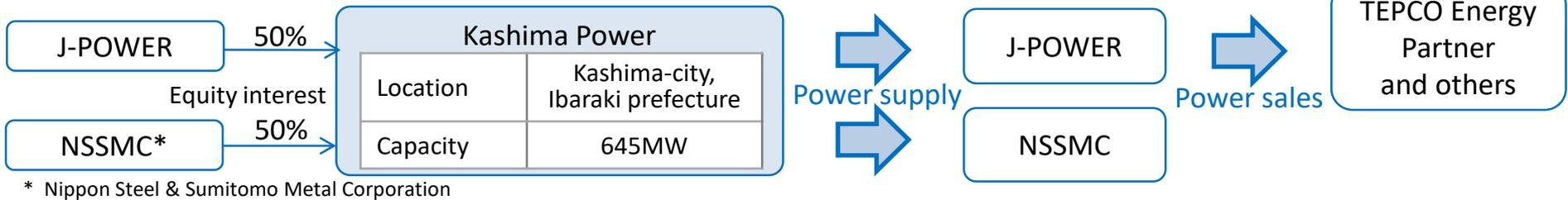
▶ New Coal-fired Power Projects in Japan	••• 12
▶ Ohma Nuclear Power Project	••• 13
▶ Response to the New Safety Standards at the Ohma Nuclear Power Plant	••• 14
▶ Overseas Projects under Development	••• 17
▶ Osaki CoolGen Project: Demonstration Test of Oxygen- blown IGCC	••• 19
▶ Consolidated: Revenues and Expenses	••• 20
▶ Non-consolidated: Revenues and Expenses	••• 21
▶ Consolidated: Segment Information	••• 22
▶ Consolidated: Cash Flow	••• 23
▶ Consolidated: Key Ratios and Key Data	••• 24
▶ Monthly Electricity Sales	••• 25

Takehara Thermal Power Plant New Unit No.1 (Replacement)

Location	Takehara-city, Hiroshima prefecture
Status	Under construction
Start of operation	Scheduled for June 2020
Capacity	600MW (Unit No.1 &2) → 600MW (New Unit No.1) (Replacement in the same capacity)
Steam Condition	Sub-Critical → Ultra-supercritical

Kashima Power (New Capacity)

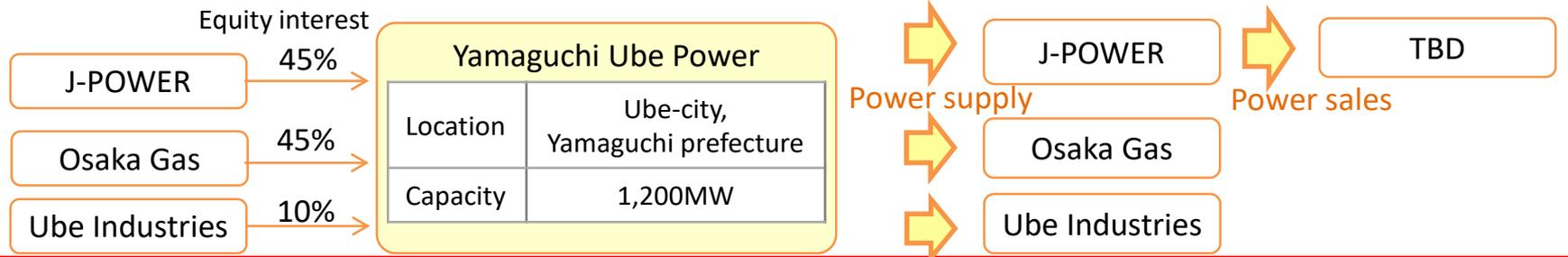
- ✓ Status : Under construction (Commenced in November 2016)
- ✓ Start of operation : Scheduled for July 2020



* Nippon Steel & Sumitomo Metal Corporation

Yamaguchi Ube Power (New Capacity)

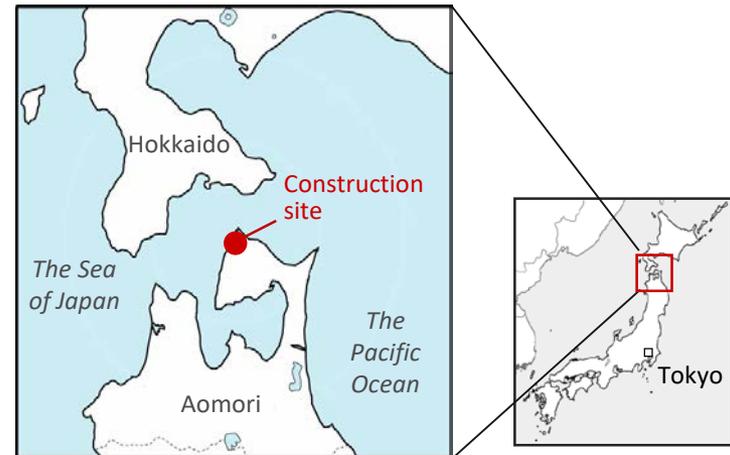
- ✓ Status : Implementing environmental assessment



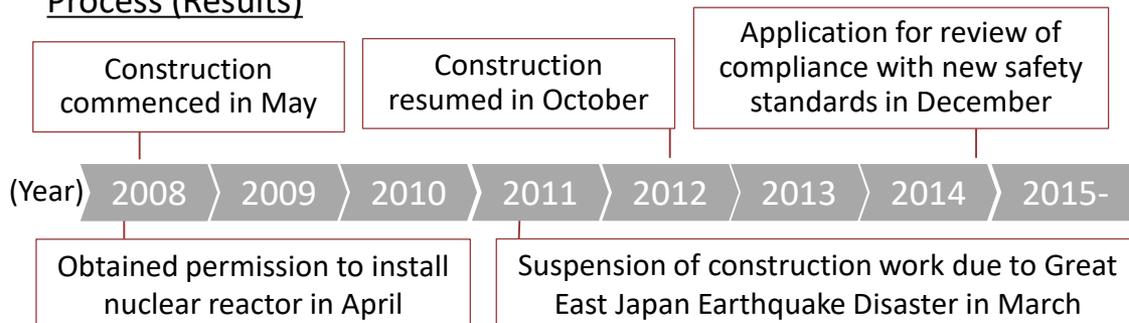
- ▶ In December 2014, J-POWER submitted to NRA* an application for permission for alteration of reactor installment license and an application for construction plan approval in order to undertake review of compliance with the new safety standards
- ▶ Pursue further improvements in safety continuously
- ▶ Sincerely and appropriately respond to compliance reviews and aim to restart full scale construction work quickly
- ▶ Strive for more polite information communication and mutual communication so that we can gain the understanding and trust of the community

Overview of the Project

Location	Ohma-machi, Shimokita-gun, Aomori Prefecture
Capacity	1,383MW
Type of nuclear reactor	Advanced Boiling Water Reactor (ABWR)
Fuel	Enriched uranium and uranium-plutonium mixed oxide (MOX)
Commencement of operations	To be determined



Process (Results)



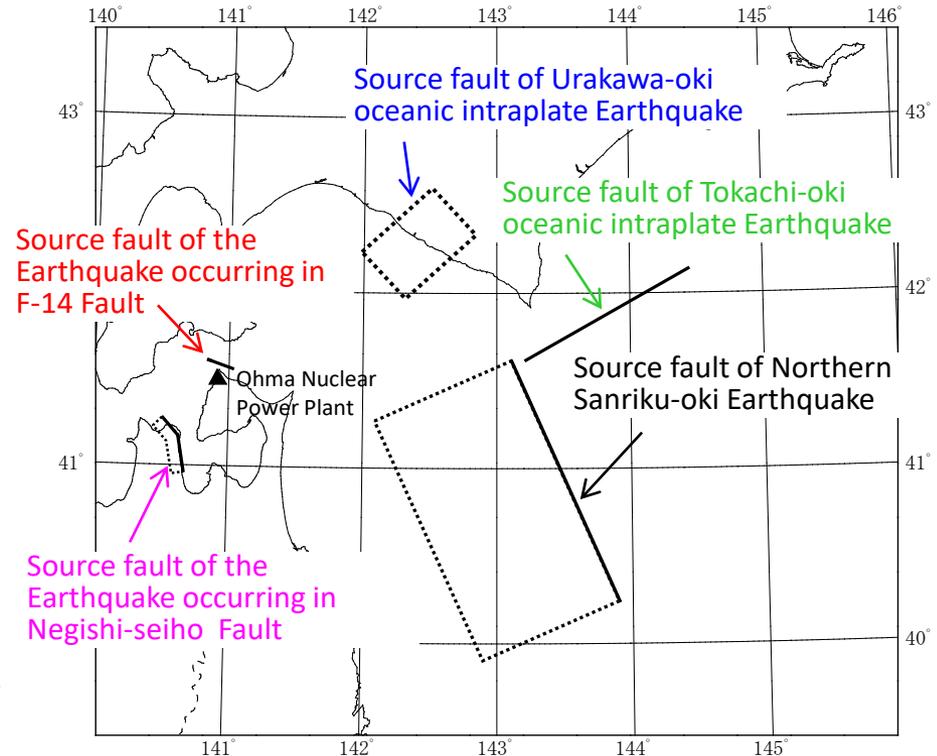
* Nuclear Regulatory Authority

Earthquakes for Investigation

✓ Earthquakes listed below by earthquake type have been investigated

Earthquake type	Earthquake for investigation	Magnitude
Interplate earthquakes	Northern Sanriku-oki Earthquake*	Mw8.3
Oceanic intraplate earthquakes	Urakawa-oki oceanic intraplate Earthquake	M7.5
	Tokachi-oki oceanic intraplate Earthquake	M8.2
Inland crustal earthquakes	Earthquake occurring in Negishi-seiho Fault	M7.5
	Earthquake occurring in F-14 Fault	M6.7

* Evaluation considering uncertainty of simultaneous rupture of north-off Sanriku area and off Tokachi and off Nemuro areas along Kuril trench (Mw9.0), based on experience of the 2011 off the Pacific coast of Tohoku Earthquake



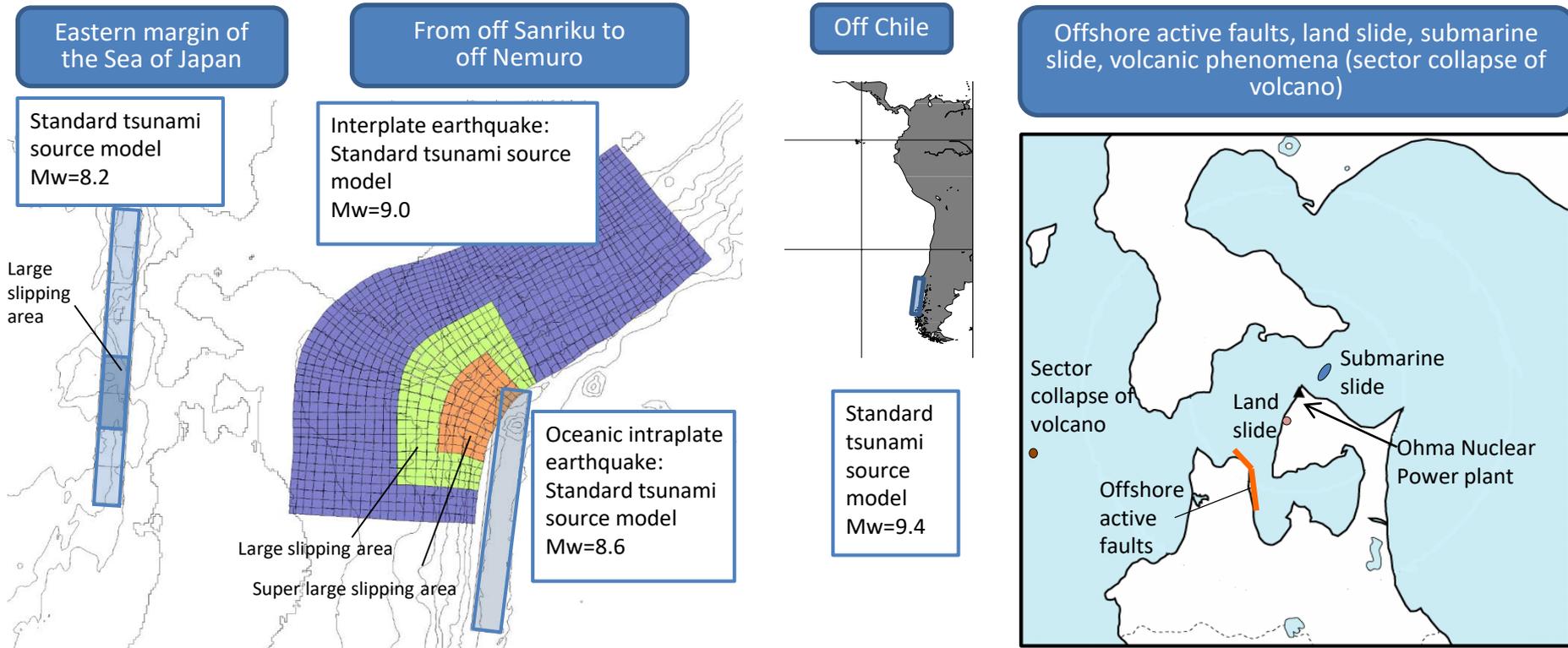
Source faults of earthquakes for investigation



Standard seismic motion: Horizontal 650 cm/s²
(Maximum acceleration) Vertical 435 cm/s²

■ Design Basis Tsunamis

- ✓ Tsunami source models based on the latest knowledge such as the 2011 off the Pacific coast of Tohoku Earthquake Tsunami
- ✓ Estimated earthquakes larger than ever considered as tsunami sources at the eastern margin of the Sea of Japan, from off Sanriku to off Nemuro, off Chile and offshore active faults
- ✓ Taking into consideration of non-earthquake-oriented tsunamis (caused by land slide, submarine slide, sector collapse of volcano)



The highest sea water level by design basis tsunami: approx. T.P.+6.3m
The lowest sea water level by design basis tsunami: approx. T.P.-4.1m

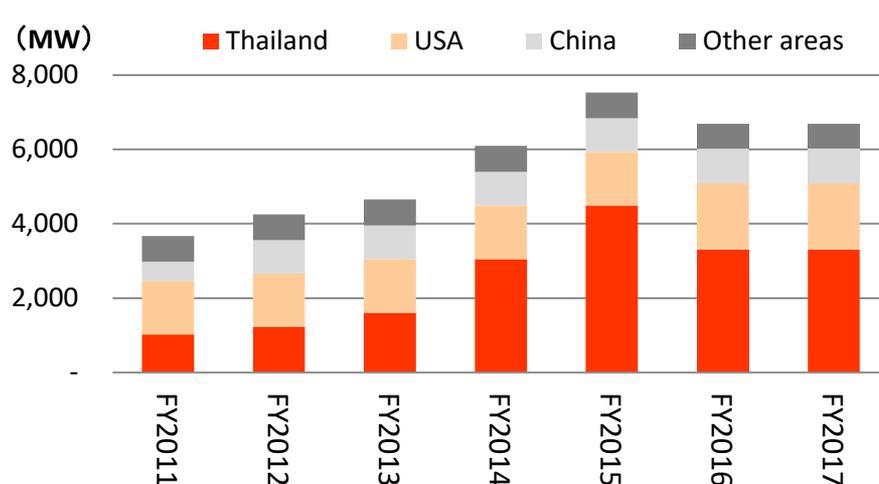
Overseas Projects under Development (As of June 30, 2018)



[Overseas projects under Development]

Project	Type	Output capacity (MW)	Ownership	Owned capacity (MW)	Power purchaser	Validity period of purchase agreement	Scheduled start of operation	Status
Indonesia		2,000		680				
Central Java	Coal	2,000	34%	680	PT Perusahaan Listrik Negara* ¹	25 years	2020	Under construction
USA		926		232				
Westmoreland	CCGT* ²	926	25%	232	Operating as a merchant in the PJM* ³	-	2018	Under construction

[Owned capacity of overseas project (in operation)]



Countries/Regions	In operation	Under development	Total
Thailand	3,300	-	3,300
USA	1,785	232	2,016
China	944	-	944
Other areas	656	680	1,336
Total	6,685	912	7,596

*1 PT Perusahaan Listrik Negara: State-owned electric power utility in Indonesia

*2 CCGT: Combined Cycle Gas Turbine

*3 PJM: The independent system operator in the Eastern US that operates the largest wholesale electricity market in the US as well as runs its electric power system.

Project	Overview	Location of the power plant
<p>Central Java (Indonesia)</p> <p>Capacity: 2,000MW (1,000MW x 2) Type: Coal (USC*1) Ownership: 34% Status: Under construction Start of operation No.1: Jun. 2020 No.2: Dec. 2020</p>	<ul style="list-style-type: none"> • IPP project (newly developed coal-fired power plant) awarded through international tender in Indonesia in 2011. • The plan is to construct a high-efficiency coal-fired power plant in Batang city, Central Java Province. • After startup of operation, the plant will sell electricity to Indonesia's state-owned electric power utility for a period of 25 years. 	<p>The map shows the island of Java, Indonesia, with a red dot indicating the location of the power plant in Batang, Central Java Province. Jakarta is also marked. An inset map shows the location of Java within the Indonesian archipelago.</p>

Westmoreland (USA)

Capacity: 926MW
 Type: CCGT *2
 Ownership: 25%
 Status: Under construction
 Start of operation: 2018

- Acquisition of equity interest (25%) in January 2017
- The power plant is expected to start its commercial operation in late 2018 and supply electricity to PJM*3, the largest deregulated electricity market in the US.
- Our investment in the US will expand to 11 projects with the aggregated owned capacity exceeding 2GW after it starts commercial operation.



*1 USC: Ultra - Supercritical
 *2 CCGT: Combined Cycle Gas Turbine
 *3 PJM: The independent system operator in the eastern US that operates the largest wholesale electricity market in the US as well as runs its electric power system.

Large-scale demonstration test on oxygen-blown IGCC, IGFC and CO₂ capture to verify total system performance before commercialization

Organization	Osaki CoolGen Corporation (Ownership: J-POWER 50%, Chugoku Electric Power Company 50%)
Location	Chugoku Electric Power Company Osaki Power Station premises (Hiroshima)
Output	166MW (Coal consumption: 1,180 t/day)



- Integrated Coal Gasification Combined Cycle (IGCC):
An integrated power generation system with a twin-turbine configuration; the gas produced from coal is used as fuel to drive a gas turbine, the exhaust gas from which is used in a steam turbine
- Integrated Coal Gasification Fuel Cell Combined Cycle (IGFC):
Most efficient coal-fired power generation system combining fuel cells with gas and steam turbines in a triply integrated power generation configuration

Demonstration Test Schedule

Demonstration test of IGCC commenced in March 2017

(Fiscal Year)		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Phase 1	Oxygen-blown IGCC	Design/manufacture/installation					Demonstration tests					
Phase 2	IGCC with CO ₂ separation and capture					Design/manufacture/installation			Demonstration tests			
Phase 3	IGFC with CO ₂ separation and capture						Design/manufacture/installation			Demonstration tests		

Consolidated: Revenues and Expenses



(Unit: 100 million yen)

	FY2014	FY2015	FY2016	FY2017	FY2017 1Q	FY2018 1Q
Operating revenue	7,506	7,800	7,444	8,562	1,897	1,975
Electric utility operating revenue	5,881	5,708	5,385	6,319	1,388	1,454
Overseas business operating revenue	1,089	1,559	1,498	1,630	372	367
Other business operating revenue	535	532	559	612	136	153
Operating expenses	6,777	6,921	6,626	7,519	1,621	1,664
Operating income	728	879	817	1,043	275	311
Non-operating revenue	227	178	205	291	86	120
Share of profit of entities accounted for using equity method	156	108	132	97	16	21
Other	70	69	72	193	70	98
Non-operating expenses	362	472	351	309	77	75
Interest expenses	282	304	297	283	71	64
Other	79	167	53	25	6	10
Ordinary income	593	585	671	1,024	284	357
Extraordinary income	21	-	-	-	-	-
Extraordinary losses	-	-	-	33	-	-
Profit attributable to owners of parent	432	400	414	684	192	251

Non-consolidated: Revenues and Expenses



(Unit: 100 million yen)

	FY2014	FY2015	FY2016	FY2017	FY2017 1Q	FY2018 1Q	YOY change
Operating revenue	5,579	5,523	5,224	6,145	1,344	1,405	60
Electric power business	5,485	5,430	5,109	6,014	1,320	1,368	47
Sold power to other suppliers	4,953	4,902	4,579	5,456	1,191	1,238	46
Transmission and other	532	527	529	558	129	130	0
Incidental business	93	93	115	131	23	36	13
Operating expenses	5,133	5,107	4,948	5,715	1,203	1,227	24
Electric power business	5,049	5,023	4,842	5,593	1,181	1,193	11
Personnel expense	285	318	436	342	83	81	(2)
Amortization of the actuarial difference in retirement benefits	(43)	(23)	107	(1)	(0)	(3)	(3)
Fuel cost	2,284	2,184	1,968	2,573	456	534	77
Repair and maintenance cost	610	583	683	634	195	132	(62)
Depreciation and amortization cost	778	734	496	534	127	124	(2)
Other	1,090	1,202	1,257	1,508	318	320	1
Incidental business	84	84	105	122	21	34	12
Operating income	445	415	276	430	141	177	36

Consolidated: Segment Information



(Unit: 100 million yen)

		Electric power	Electric power -related	Overseas	Other	Subtotal	Elimination*	Consolidated
FY2018 1Q	Sales	1,458	822	367	74	2,723	(747)	1,975
	Sales to customers	1,454	88	367	65	1,975	-	1,975
	Ordinary income	185	39	125	4	354	3	357
FY2017 1Q	Sales	1,392	874	372	49	2,689	(791)	1,897
	Sales to customers	1,388	93	372	42	1,897	-	1,897
	Ordinary income	135	40	107	4	287	(3)	284
year-on-year change	Sales	66	(51)	(5)	24	34	44	78
	Sales to customers	66	(5)	(5)	22	78	-	78
	Ordinary income	49	(1)	17	0	66	6	72

“Electric Power Business”

J-POWER group’s hydroelectric, thermal power (including subsidiaries’ thermal power (IPPs, for PPSs and others)), wind power and transmission business. The majority of consolidated revenue is derived from this segment.

“Electric Power-Related business”

This focuses on peripheral business essential for the operation of power plants and transmission facilities, such as designing, executing, inspecting and maintaining power facilities and importing and transporting coal. Intra-group transactions account for a large portion of this segment, such as Company’s power plant maintenance, coal transportation activities.

“Overseas business”

Overseas power generation business, overseas engineering and consulting business

“Other business”

Diversified business such as telecommunication, environmental and the sale of coal

* Elimination includes elimination of intersegment sales

Consolidated: Cash Flow



(Unit: 100 million yen)

	FY2014	FY2015	FY2016	FY2017	FY2017 1Q	FY2018 1Q
Operating activities	1,478	1,461	1,154	1,603	246	183
Profit before income taxes	615	584	671	990	284	357
(reference) Non-consolidated depreciation and amortization	778	734	496	534	127	124
Investing activities	(1,429)	(1,315)	(1,376)	(1,096)	(201)	(169)
Capital expenditure for subsidiaries (reference)	(879)	(375)	(175)	(147)	(33)	(26)
Non-consolidated CAPEX*	(611)	(1,063)	(998)	(941)	(164)	(119)
Free cash flow	48	145	(222)	506	44	13

* Non-consolidated capital expenditure: Increase in tangible and intangible noncurrent assets

Consolidated: Key Ratios and Key Data



(Unit: 100 million yen)

	FY2014	FY2015	FY2016	FY2017	FY2017 1Q	FY2018 1Q
(PL) Operating revenue	7,506	7,800	7,444	8,562	1,897	1,975
Operating income	728	879	817	1,043	275	311
Ordinary income	593	585	671	1,024	284	357
Profit attributable to owners of parent	432	400	414	684	192	251
(BS) Total assets	26,591	25,407	26,062	26,470	26,063	26,298
Construction in progress	5,069	4,410	4,761	5,257	4,788	5,301
Shareholders' equity	6,887	6,665	7,238	7,872	7,360	7,976
Net assets	6,962	6,754	7,640	8,361	7,804	8,515
Interest-bearing debt	17,236	16,287	16,200	15,613	16,023	15,584
(CF) Investing activities	(1,429)	(1,315)	(1,376)	(1,096)	(201)	(169)
Free cash flow	48	145	(222)	506	44	13
(Ref) Non-consolidated CAPEX*1	(611)	(1,063)	(998)	(941)	(164)	(119)
(Ref) Non-consolidated depreciation	778	734	496	534	127	124
ROA (%)	2.4	2.3	2.6	3.9	-	-
ROA (ROA excl. Construction in progress) (%)	2.9	2.8	3.2	4.8	-	-
ROE (%)	7.2	5.9	6.0	9.1	-	-
EPS (¥)	284.43	218.97	226.33	373.93	105.10	137.58
BPS (¥)	3,762.52	3,641.59	3,954.22	4,300.98	4,021.10	4,357.82
Shareholders' equity ratio (%)	25.9	26.2	27.8	29.7	28.2	30.3
D/E ratio	2.5	2.4	2.2	2.0	2.2	2.0
Number of shares issued*2 (thousand)	183,050	183,049	183,049	183,049	183,049	183,049

*1 Non-consolidated capital expenditure: Increase in tangible and intangible noncurrent assets

*2 Number of shares issued at the end of the fiscal year (excluding treasury stock)

Monthly Electricity Sales:

Domestic Power Generation Business (Thermal Power)



▶ Apr. 2017 - Jun. 2017 Results (Cumulative)

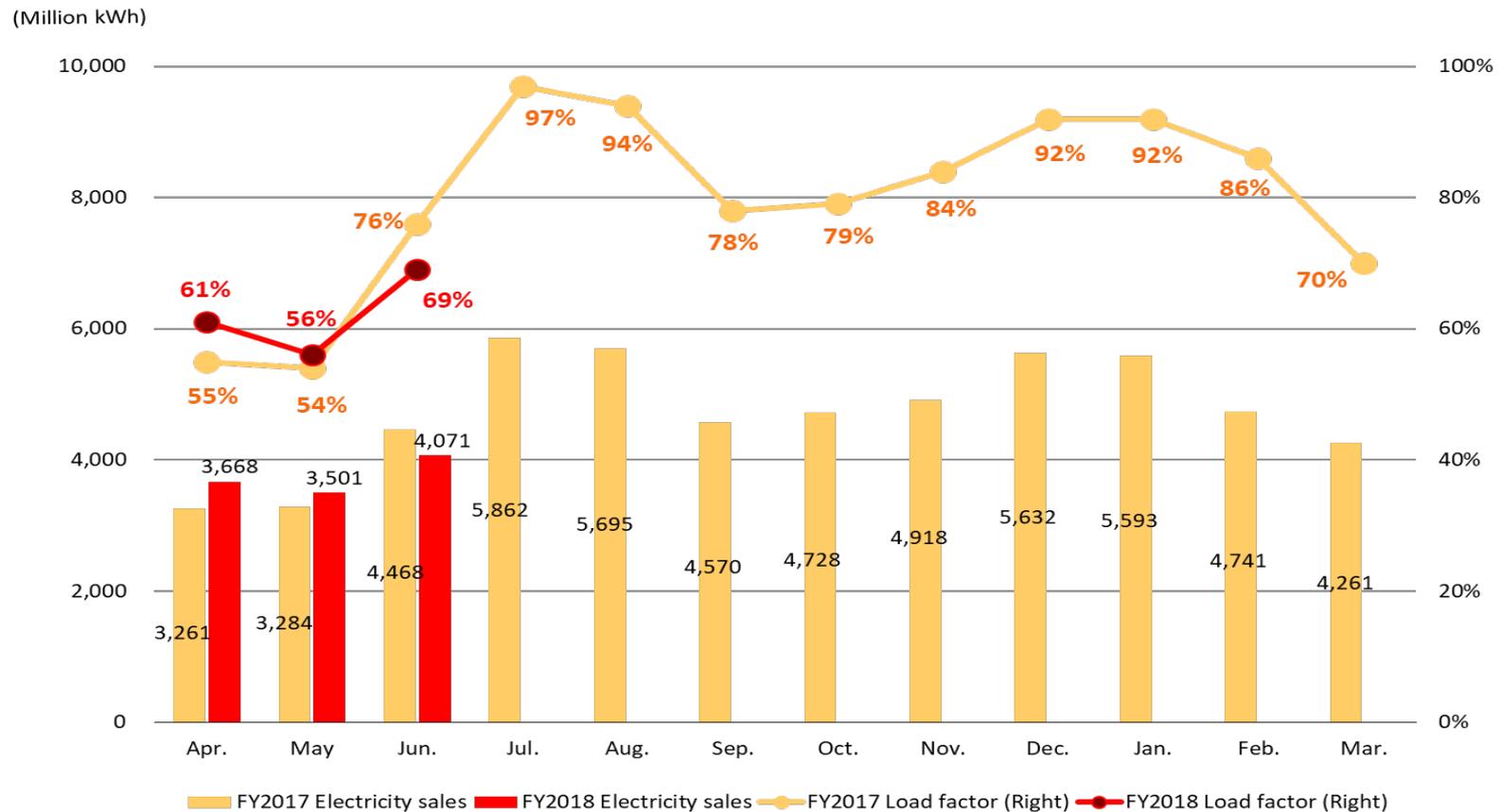
Load factor ⇒ 61%

Electricity sales ⇒ 11.0TWh

▶ Apr. 2018 - Jun. 2018 Results (Cumulative)

Load factor ⇒ 63%

Electricity sales ⇒ 11.2TWh



* Load factors of thermal power show the results for non-consolidated only.

* Proportion of equity holding is not taken into account.

Monthly Electricity Sales:



Domestic Power Generation Business (Hydroelectric Power)

▶ Apr. 2017 - Jun. 2017 Results (Cumulative)

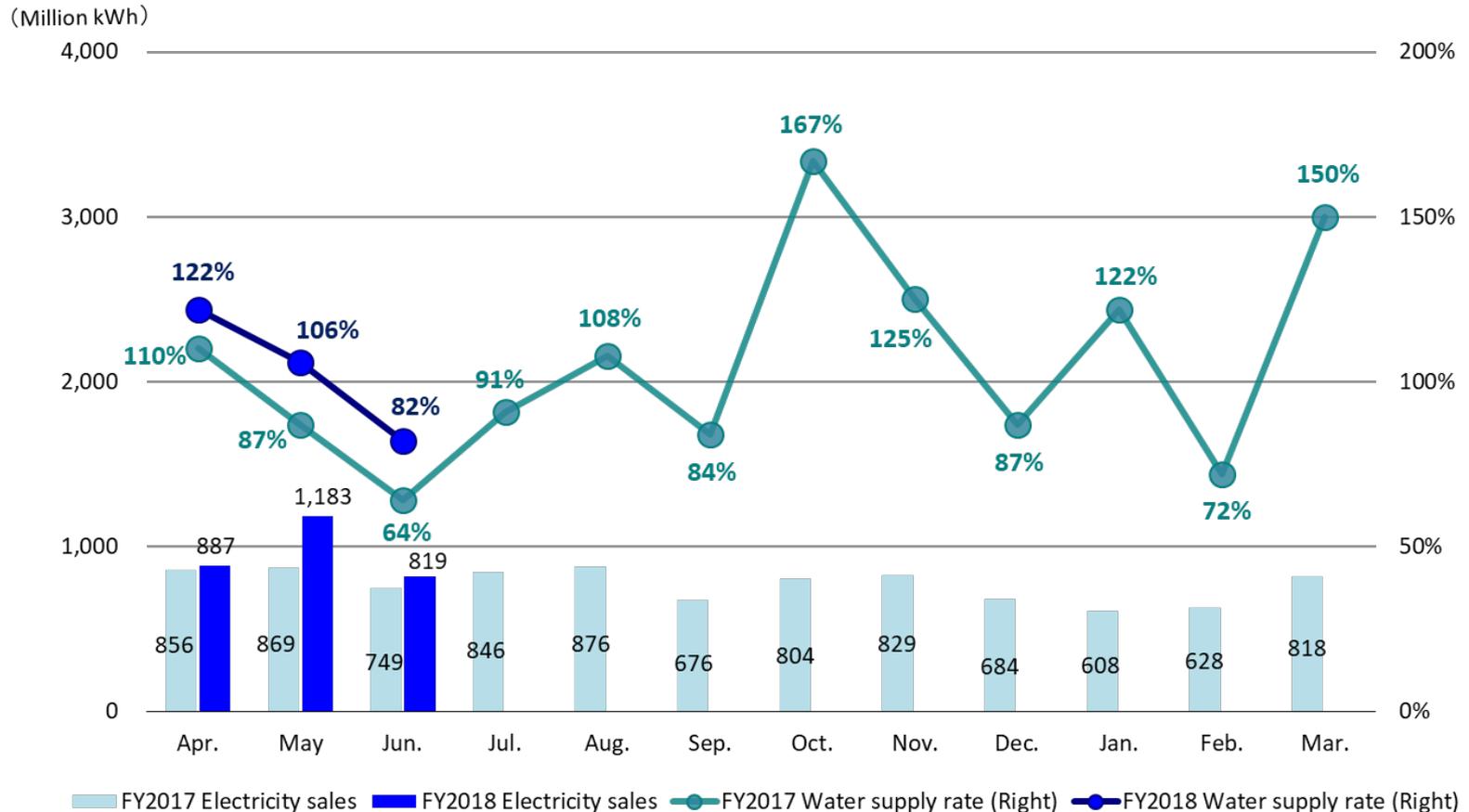
Water supply rate ⇒ 94%

Electricity sales ⇒ 2.4 TWh

▶ Apr. 2018 - Jun. 2018 Results (Cumulative)

Water supply rate ⇒ 105%

Electricity sales ⇒ 2.8 TWh



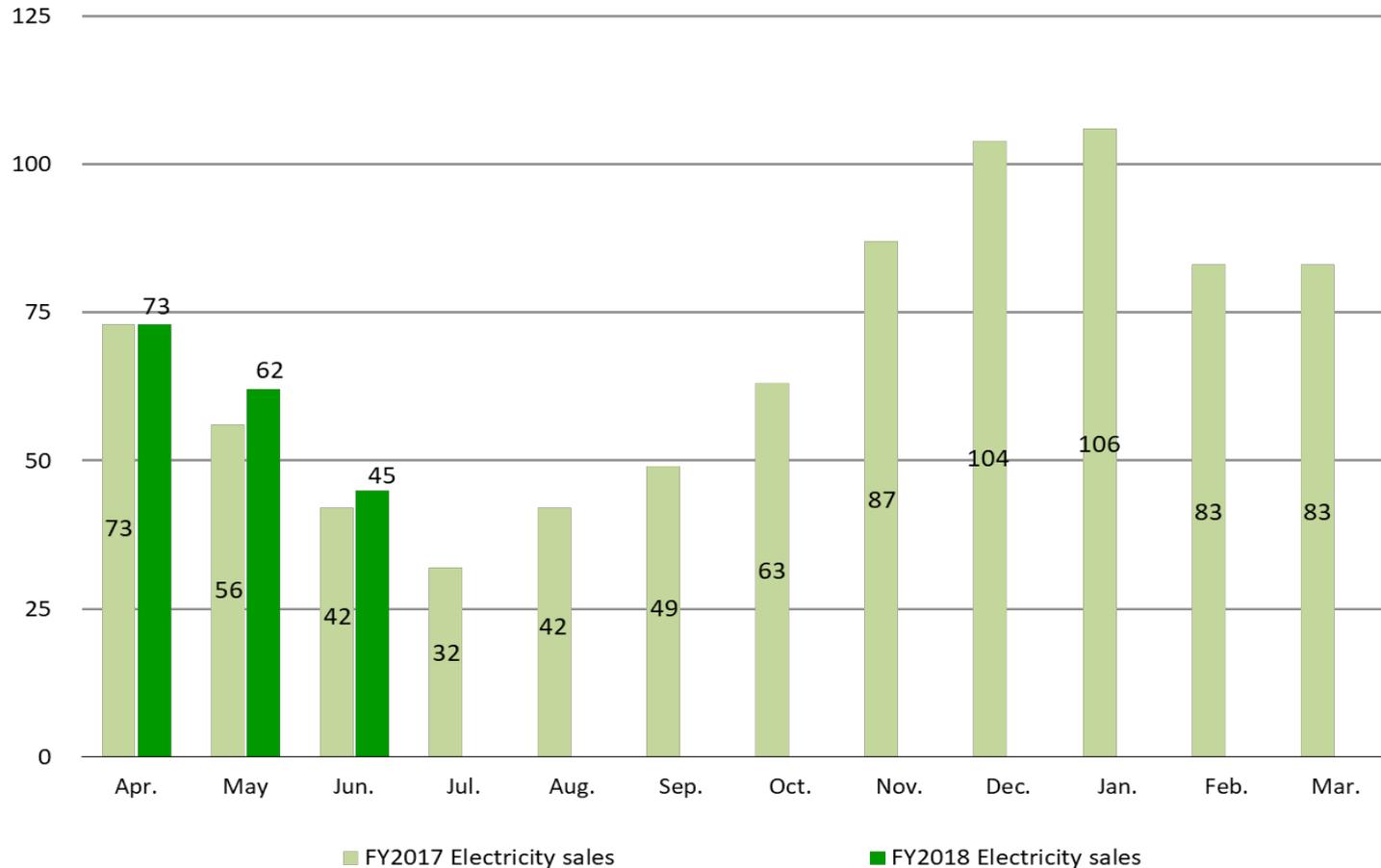
Monthly Electricity Sales:

Domestic Power Generation Business (Wind Power)



- ▶ Apr. 2017 - Jun. 2017 Results (Cumulative) ⇒ 0.17TWh
- ▶ Apr. 2018 - Jun. 2018 Results (Cumulative) ⇒ 0.18TWh

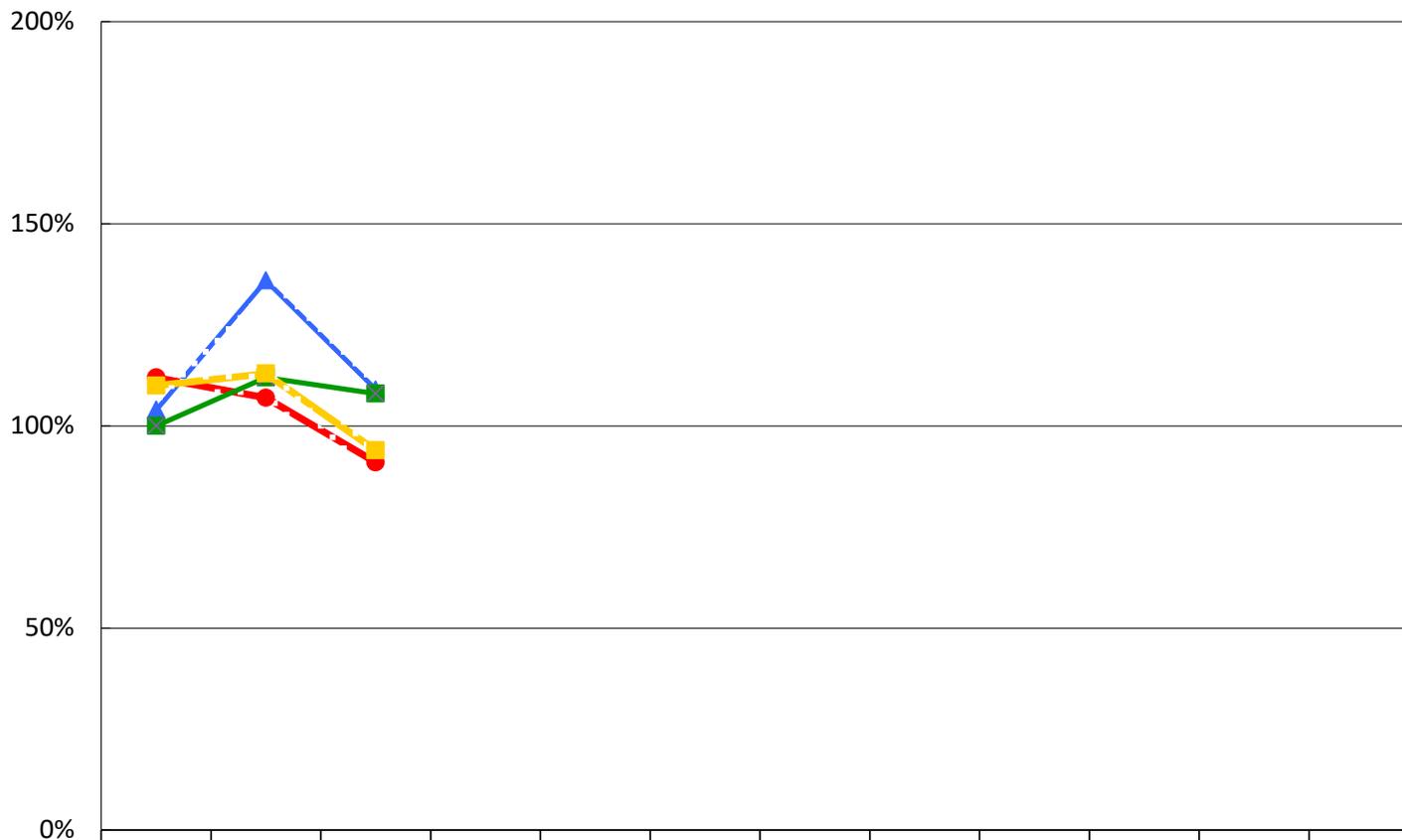
(Million kWh)



* Proportion of equity holding is not taken into account.

Change in Monthly Electricity Sales:

Domestic Power Generation Business



	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. - Jun.
Year-on-year (Hydro)	104%	136%	109%										117%
Year-on-year (Thermal)	112%	107%	91%										102%
Year-on-year (Wind)	100%	112%	108%										106%
Year-on-year Total	110%	113%	94%										105%



電源開発株式会社

<http://www.jpowers.co.jp/english/>