

# Financial Summary

## FY2014

( April 1, 2014 – March 31, 2015)

April 30, 2015

 Tohoku Electric Power Co., Inc.

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# FY2014 Financial Results

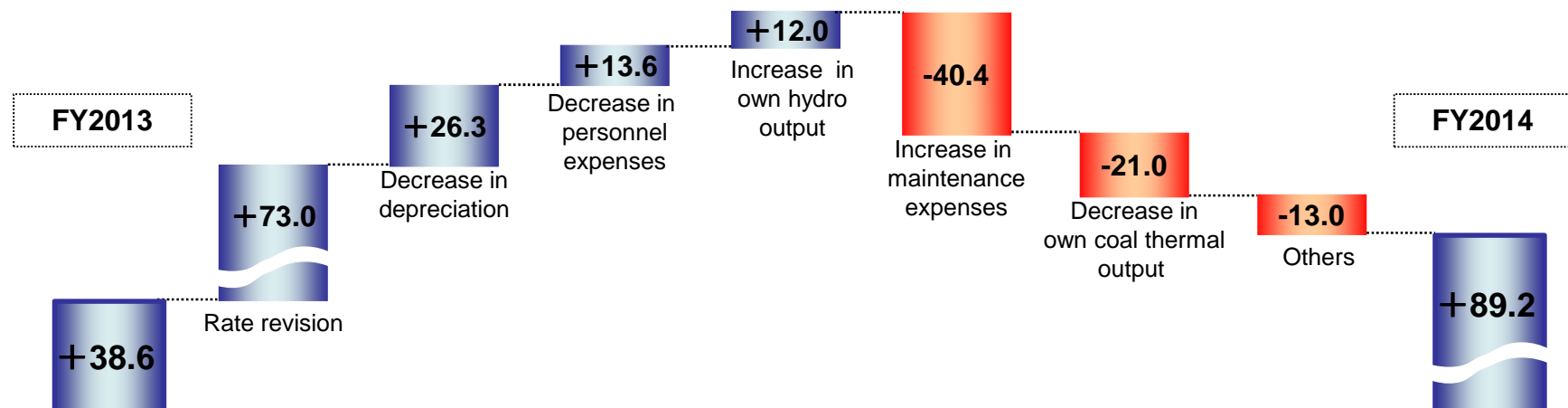
(billions of yen)

	Consolidated (A)			Non-consolidated (B)			(A) / (B) (times)	
	FY2014	FY2013	Change	FY2014	FY2013	Change	FY2014	FY2013
Operating Revenues	2,182.0	2,038.8	143.1	1,951.6	1,833.1	118.4	1.12	1.11
Operating Income	169.7	85.6	84.0	140.5	84.0	56.4	1.21	1.02
Ordinary Income	116.6	39.0	77.5	89.2	38.6	50.5	1.31	1.01
Net Income	76.4	34.3	42.1	62.4	36.0	26.4	1.22	0.95

	Mar. 31, 2015	Mar. 31, 2014	Change	Mar. 31, 2015	Mar. 31, 2014	Change
Equity Ratio	14.6%	12.6%	2.0%	13.0%	11.4%	1.6%

## Year-on-year Comparison of Non-consolidated Ordinary Income (Increase of 50.5 Billion Yen)

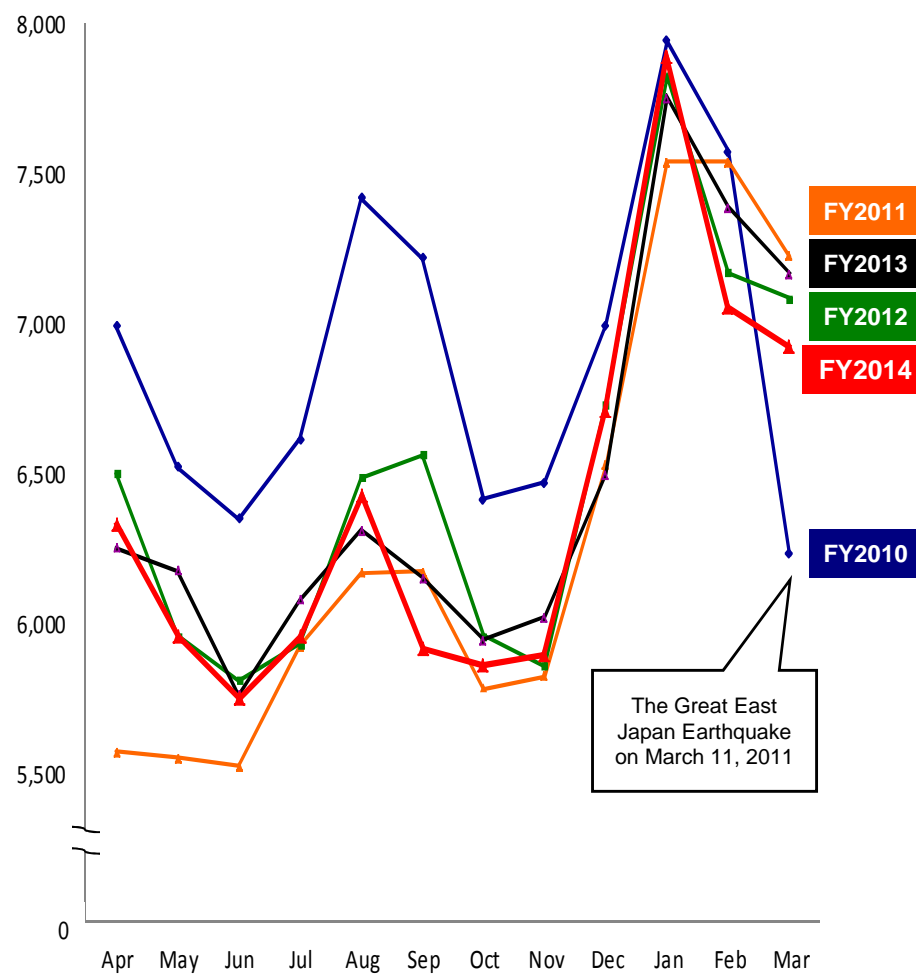
(billions of yen)



Segment		FY2014 (A)	FY2013 (B)	Comparison	
				(A) - (B)	(A) / (B)
Regulated	Residential	24,266	24,815	(549)	97.8%
	Commercial	3,745	3,784	(39)	99.0%
	Sub-total	28,011	28,599	(588)	97.9%
Deregulated		48,612	48,853	(241)	99.5%
Total		76,623	77,452	(829)	98.9%

**【 Sub Segment 】**

Large Industrial	24,922	24,988	(66)	99.7%
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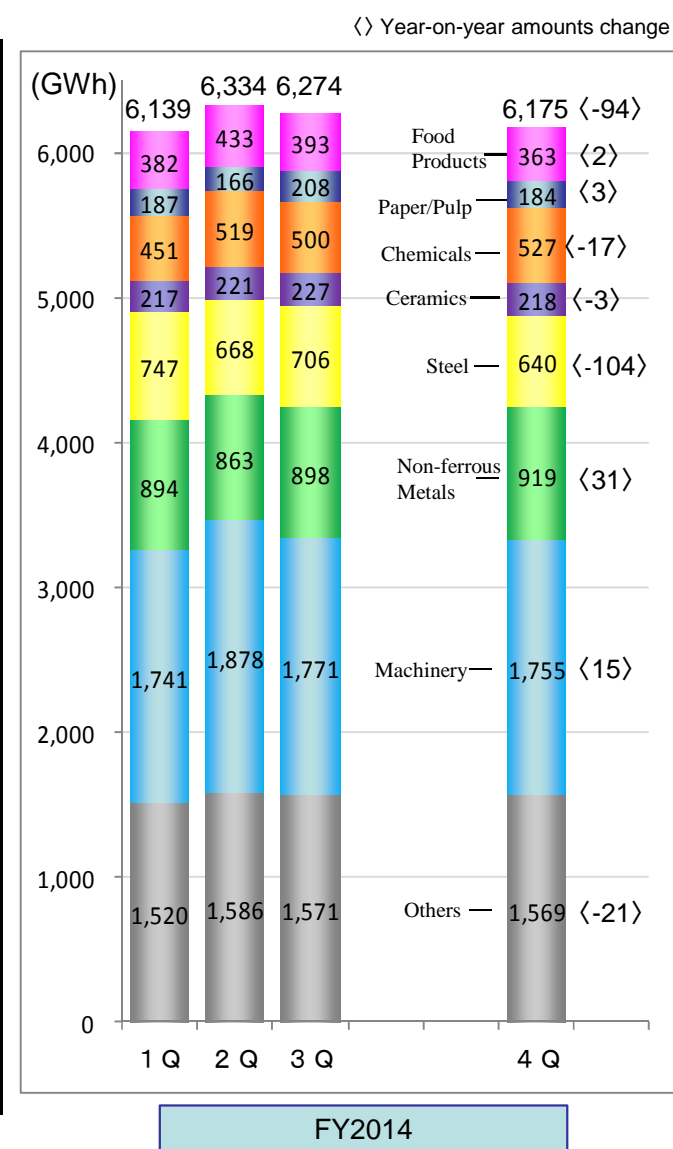
**Changes in Electricity Sales (monthly)**


## Year-on-year Changes in Large Industrial Sales

(%)

	FY2013					FY2014				
	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total
Food Products	3.4	1.4	3.7	3.1	2.8	2.8	0.3	0.0	0.7	0.9
Paper/Pulp	(1.3)	0.6	(2.3)	(4.8)	(1.9)	(13.6)	(15.5)	7.4	2.3	(5.3)
Chemicals	(0.3)	(5.4)	(3.5)	7.5	(0.3)	(2.7)	11.7	11.2	(3.2)	3.9
Ceramics	9.0	1.9	4.9	(0.1)	3.8	1.7	3.4	(0.5)	(1.7)	0.7
Steel	5.7	3.7	5.7	3.8	4.7	(6.0)	(10.4)	(11.6)	(14.0)	(10.4)
Nonferrous Metals	(16.0)	(7.4)	5.9	9.3	(3.0)	5.3	6.3	3.8	3.5	4.7
Machinery and Equipment Manufacturing	(4.5)	(3.1)	1.2	2.0	(1.2)	1.7	0.2	0.8	0.8	0.9
Others	1.6	0.9	2.9	2.1	1.9	1.5	0.0	(1.3)	(1.3)	(0.3)
<b>Total</b>	<b>(2.4)</b>	<b>(1.6)</b>	<b>2.6</b>	<b>3.4</b>	<b>0.5</b>	<b>0.3</b>	<b>0.2</b>	<b>(0.0)</b>	<b>(1.5)</b>	<b>(0.3)</b>

## Changes in Large Industrial Sales



(GWh)

		FY2014 (A)	FY2013 (B)	Comparison	
				(A) - (B)	(A) / (B)
Electricity Generated and Purchased	Own Generated power	65,772	69,323	(3,551)	94.9%
	Hydro	8,235	7,432	803	110.8%
	Thermal	56,599	61,014	(4,415)	92.8%
	Nuclear	—	—	—	—
	Renewable	938	877	61	106.9%
	Purchased Power	24,831	23,941	890	103.7%
	Power Interchanges (Transmitted)	(14,368)	(15,771)	1,403	91.1%
	Power Interchanges (Received)	7,650	7,726	(76)	99.0%
	Used at Pumped Storage	(56)	(50)	(6)	113.9%
	Total, Generated and Purchased	83,829	85,169	(1,340)	98.4%

# Major Factors and Sensitivity to Major Factors (Non-consolidated)

Major Factors	FY2014 (A)	FY2013 (B)	Comparison (A) – (B)
Crude Oil CIF Price (\$/bbl.)	90.4	110.0	(19.6)
FX Rate (¥/\$)	110	100	10
Hydro Power Flow Rate (%)	103.3	105.5	(2.2)
Nuclear Power Capacity Factor (%)	—	—	—

(billions of yen)

Sensitivity to Major Factors	FY2014 (A)	FY2013 (B)	Comparison (A) – (B)
Crude Oil CIF Price (per \$1/bbl.)	3.6	3.9	(0.3)
FX Rate (per ¥1/\$)	4.7	5.5	(0.8)
Hydro Power Flow Rate (per 1%)	1.1	1.0	0.1
Nuclear Power Capacity Factor (per 1%)	2.5	2.6	(0.1)



# Comparison Statements of Revenues and Expenses (Non-consolidated)

(billions of yen)

		FY2014 (A)	FY2013 (B)	Comparison		Major factors for change	
				(A) - (B)	(A) / (B)		
Revenues	Residential	627.6	600.1	27.4	104.6%	Rise in electricity rate, increase in revenue from fuel cost adjustments, etc.	
	Commercial	1,007.3	909.0	98.3	110.8%		
	Sub total	1,634.9	1,509.1	125.7	108.3%		
		Sales of power to other utilities	203.3	222.6	(19.3)	91.3%	Decrease in Haramachi thermal output due to maintenances, etc.
		Sales of power to other companies	13.9	21.9	(8.0)	63.4%	
		Other revenues	108.6	86.3	22.2	125.8%	Increase in grants on the act of renewable energy, etc.
		[Operating revenues]	[ 1,951.6 ]	[ 1,833.1 ]	[ 118.4 ]	[ 106.5% ]	
	Total revenues	1,960.8	1,840.2	120.6	106.6%		
Expenses		Personnel	122.2	135.9	(13.6)	89.9%	Decrease in retirement allowances and salaries, etc.
		Fuel	574.7	598.2	(23.4)	96.1%	Drop in CIF etc.
		Maintenance	158.6	118.1	40.4	134.3%	Increase in maintenance expenses for thermal power equipment, etc.
		Depreciation	203.5	229.9	(26.3)	88.5%	Decrease in depreciation for thermal power, etc.
		Power purchased from other utilities	138.9	131.5	7.3	105.6%	
		Power purchased from other companies	281.6	271.8	9.8	103.6%	
		Interest	53.3	45.7	7.5	116.6%	
		Taxes, etc.	84.7	83.1	1.5	101.9%	
		Nuclear power back-end cost	9.3	7.7	1.5	120.6%	
		Other expenses	244.4	179.2	65.1	136.3%	Increase in payment on the act of renewable, etc.
		Total expenses	1,871.6	1,801.5	70.0	103.9%	
	[Operating income]	[ 140.5 ]	[ 84.0 ]	[ 56.4 ]	[ 167.1% ]		
	Ordinary Income	89.2	38.6	50.5	230.7%		
	Extraordinary gain	19.6	24.9	(5.3)	78.7%	Decrease in insurance income, etc.	
	Net income	62.4	36.0	26.4	173.3%		

# Balance Sheets (Non-consolidated)

(billions of yen)

	Mar. 31, 2015 (A)	Mar. 31, 2014 (B)	Comparison (A) - (B)	Major factors for change
Total Assets	3,850.3	3,982.7	(132.4)	
Fixed Assets	3,382.1	3,433.5	(51.3)	
Current Assets	468.1	549.1	(81.0)	Short-term investments: (50.5) Cash and deposits: (37.3)
Liabilities	3,349.9	3,526.4	(176.5)	
Net Assets	500.3	456.2	44.1	
Interest-Bearing Liabilities	2,529.3	2,719.5	(190.1)	Bonds: (232.4), CP: (3.0), Loans: 45.3

(billions of yen)

<b>Statements of Income</b>	FY2014 (A)	FY2013 (B)	Comparison (A) - (B)	Major factors for change
Operating Revenues	2,182.0	2,038.8	143.1	Electric power: 116.8, Others: 26.3
Operating Expenses	2,012.3	1,953.2	59.0	Electric power: 49.6, Others: 9.4
Operating Income	169.7	85.6	84.0	
Ordinary Income	116.6	39.0	77.5	
Extraordinary Gain	19.6	24.9	(5.2)	Decrease in insurance income, etc.
Net Income	76.4	34.3	42.1	

(billions of yen)

<b>Balance Sheets</b>	Mar. 31, 2015 (A)	Mar. 31, 2014 (B)	Comparison (A) - (B)	Major factors for change
Total Assets	4,131.2	4,243.0	(111.8)	
Fixed Assets	3,497.2	3,536.5	(39.3)	
Current Assets	633.9	706.4	(72.4)	Cash and deposits:(31.8)
Liabilities	3,480.0	3,668.4	(188.4)	
Net Assets	651.2	574.5	76.6	
Interest-Bearing Liabilities	2,561.9	2,763.9	(202.0)	Bonds:(232.4), CP:(3.0), Loans:33.4

(billions of yen)

	FY2014 (A)	FY2013 (B)	Comparison (A) - (B)	Major factors for change
Cash Flow from Operating Activities	374.2	236.4	137.7	Income before income taxes and minority interests:72.2
Cash Flow from Investing Activities	(247.7)	(247.5)	(0.1)	
Cash Flow from Financing Activities	(211.2)	45.4	(256.7)	Bonds : (138.3) [Proceeds: 10.0, Redemption: (148.3)] Loans: (81.0) [Proceeds: (264.7), Repayment: 183.6] CP: (32.0) [Proceeds:78.0, Redemption:(110.0)]
Net Cash Flow	(84.8)	34.4	(119.2)	
Free Cash Flow	179.2	31.8	147.3	

Note; Our definition of the free cash flow =(Cash flow from operating activities) + (Cash flow from investing activities) – (Interest and dividend income) – (Interest expense)

(billions of yen)

	FY2014 (A)	FY2013 (B)	Comparison (A) - (B)
Sales <sup>1)</sup>	2,182.0	2,038.8	143.1
Electric Power	1,935.0	1,818.4	116.5
Construction	286.8	242.2	44.6
Gas	49.3	44.2	5.0
IT	40.2	35.1	5.0
Others	127.1	115.8	11.3
	40.0	35.9	4.0

	FY2014 (A)	FY2013 (B)	Comparison (A) - (B)
Segment income [Operating income]	169.7	85.6	84.0
Electric Power	141.8	85.4	56.3
Construction	13.6	(5.5)	19.2
Gas	2.1	1.6	0.4
IT	6.0	2.6	3.4
Others	5.9	(1.5)	7.5

1) Lower is net sales to outside customers.

**【 Major Consolidated Subsidiaries 】<sup>2)</sup>**

(billions of yen)

	FY2014		Year-on-year	
	Sales	Operating income	Sales	Operating income
<b>[ Electric Power ]</b>				
Tousei Kougyo Co., Inc.	4.4	1.8	(0.2)	(0.2)
Sakata Kyodo Power Co., Ltd.	36.9	(0.0)	(0.1)	0.0
<b>[ Construction ]</b>				
Yurtec Corp.	205.7	9.8	29.7	12.0
Tohoku Electric Engineering & Construction Co., Inc.	60.0	2.4	11.7	5.3
<b>[ Gas ]</b>				
Nihonkai LNG Co., Ltd.	16.7	0.6	0.5	0.2
<b>[ IT ]</b>				
Tohoku Intelligent Telecommunication Co., Inc.	25.5	5.8	2.3	1.9
Tohoku Information Systems Co., Inc.	16.9	0.7	4.4	2.0
<b>[ Others ]</b>				
Kitanihon Electric cable Co., Ltd.	29.5	0.1	6.0	2.1

2) Before elimination of inter-company transaction

## ■ Dividends Per Share

	Interim	Year-end	Annual
<b>FY2013</b>	0 yen	5 yen	5 yen
<b>FY2014</b>	5 yen	10 yen	15 yen
<b>FY2015 (Forecast)</b>	—	—	—

## ■ Business Results Forecast for FY2015

(billions of yen)

	Consolidated	Non-Consolidated
Operating Revenues	2,100.0	1,900.0
Operating Income	—	—
Ordinary Income	—	—
Net Income	—	—

## ■ Major Factors

	FY2015
Electricity Sales (TWh)	Approx.77.9
Crude oil CIF price (\$/bbl.)	Approx.60
FX rate (¥/\$)	Approx.120

# Topics

## ■ Power Demand Outlook

- The outlook for power demand is envisaged based on the close examination of several factors, including current demand trends, Tohoku's economic and demographic outlook, and post-earthquake reconstruction process.

	FY2013 (Actual)	FY2014 (Estimated)	FY2015	FY2016	FY2024	FY2013 - FY2024 Average Annual Growth Rate
Electricity Sales (TWh)	77.5 [77.0]	76.9 [76.8]	77.9	78.4	83.4	0.7% [0.7%]
Maximum Demand Power (GW)	12.50 [12.53]	13.14 [12.86]	12.96	13.07	13.72	0.9% [0.8%]

(Note 1) Figures in parentheses indicate figures after air temperature correction. (actual performance – impact of abnormal temperature)

(Note 2) Maximum demand power represents the average power of three days of peak demand in August. (transmission end)

## ■ Power Supply Capacity Outlook

- Due to the uncertainty about the resumption of operation of nuclear power stations, the outlook for power supply capacity remains “undecided”.

## ■ Plan for Development of Power Sources

Power source	Location / Name	Output (MW)	Start of construction	Start of operation
Hydro	Tsugaru	8.5	August 2010	May 2016
	Dai-ni Yabukami	4.5	July 2013	March 2016
Thermal	Shin-Sendai No.3 series	980	November 2011	December 2015 (Half) July 2016 (Half)
	Hachinohe Unit 5	394 ⇒ 416 Fuel shift (Light oil ⇒ LNG)	October 2013	July 2015
	Noshiro Unit 3	600	January 2016	June 2020
	Joetsu Unit 1	572	May 2019	June 2023
	Awashima Unit 7-10	0.9 in total	September 2014	FY2017 - FY2019
Nuclear	Higashidori Unit 2	1,385	Not yet determined	Not yet determined
Renewable (solar)	Ishinomaki-Hebita Solar	0.3	April 2015	March 2016





### Major Thermal Power Stations and Power Development Plan



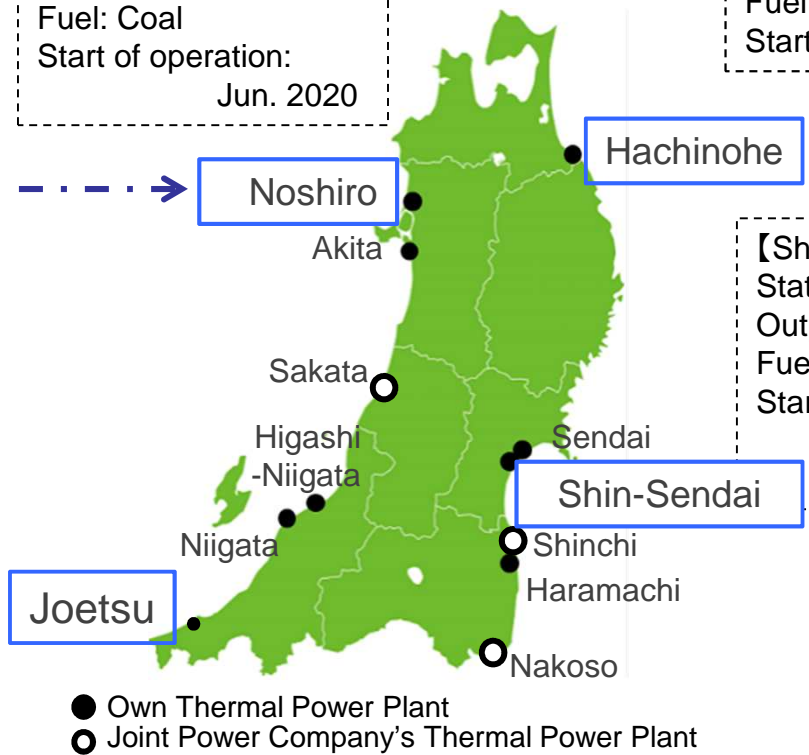
Expansion of Noshiro Thermal Power Station

【Noshiro Unit 3】  
 Status: Before construction  
 Output: 600MW  
 Fuel: Coal  
 Start of operation: Jun. 2020

【Hachinohe Unit 5】  
 Status: Under fuel shift  
 Output: 416MW  
 Fuel: LNG  
 Start of operation: Jul. 2015

【Joetsu Unit 1】  
 Status: Before construction  
 Output: 572MW  
 Fuel: LNG  
 Start of operation: Jun. 2023

【Shin-Sendai No.3 Series】  
 Status: Under construction  
 Output: 980MW  
 Fuel: LNG  
 Start of operation:  
 Dec. 2015 (490MW)  
 Jul. 2016 (490MW)



### Thermal Power Supply for a bid

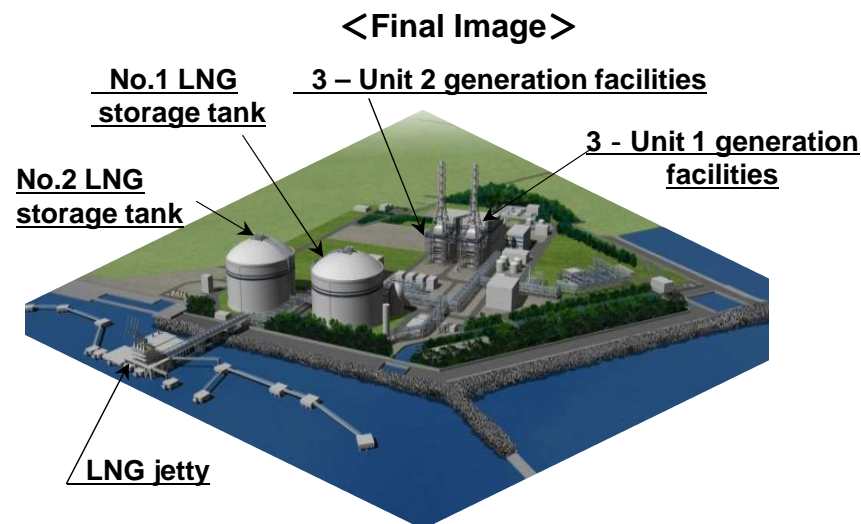
➤ We opened bids for thermal power supply in FY2014, with aims to replace our aging thermal power units in a systematic manner and to strengthen our competitiveness, and we made successful bids for our coal-fired Noshiro Thermal Power Unit 3 and high-efficiency combined-cycle Joetsu Thermal Power Unit 1.

## ■ Commencement of Operation of New LNG Thermal Power Units

- We have enhanced our cost competitiveness and reduced environmental impact by fuel shift from light oil to LNG at Hachinohe Thermal Power Station Unit 5 and by constructing high-efficiency combined-cycle Shin-Sendai Thermal Power Station No.3 series.

### (1) Newly-constructed Shin-Sendai Thermal Power Station No.3 series (980MW)

- No.3 series - Unit 1 Output: 490MW  
Start of operation: December 2015  
(Trial operation : July 2015)
- No.3 series - Unit 2 Output: 490MW  
Start of operation : July 2016  
(Trial operation : April 2016 )
- Thermal efficiency: 60% or more, the highest global standards (lower heating value, LHV, standard)
- Installation of our first LNG storage tanks (160 thousand kl × 2) in the premises



### (2) Fuel Shift at Hachinohe Thermal Power Station Unit 5

- Hachinohe Unit 5 Output: 416MW  
Start of operation: July 2015  
(Trial operation : March 2015)
- Combined cycle generation has already introduced in August 2014; in addition, fuel shift from light oil to LNG.
- Thermal efficiency: from 49% to approx. 55% (LHV standard)



- In FY2014, we have achieved cost reduction of 124 billion yen. Thanks to accelerating the structural cost cut in overall company's management securing safety and supply stability, the amount surpassed 113.9 billion yen, the sum of our cost reduction target and the assessed amount by the authorities.
- We intend to continue reducing structural costs in FY2015.

## ■ Management Efficiency in FY2014

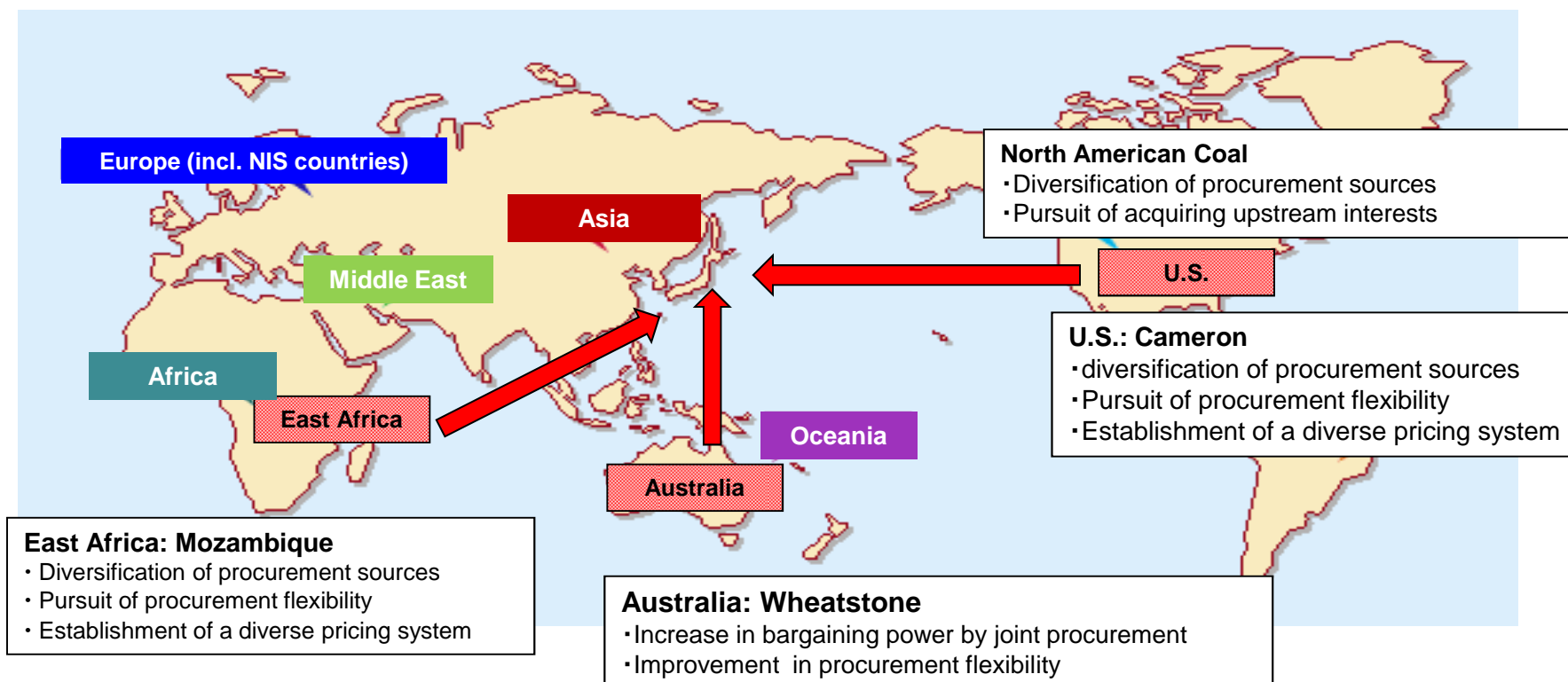
(billions of yen)

Items	Cost reduction in FY2014	【Reference】 Cost reduction target included in our application for electricity rate hike	
		FY2014	Average of rate base between FY2013 and FY2015
Personnel	27.6	32.1	32.1
Fuel and Power Purchased	65.3	19.5	19.2
Capital Expenditure	2.1	2.3	2.4
Maintenance	14.4	11.8	11.8
Others	14.6	15.4	15.1
<b>Total</b>	<b>124.0</b>	<b>81.1</b>	<b>80.6</b>

<b>【Reference】</b> Sum of our cost reduction target, 80.6 billion yen, and the assessed amount, 33.3 billion yen, by the authorities in applying for electricity rate hike	<b>113.9</b>
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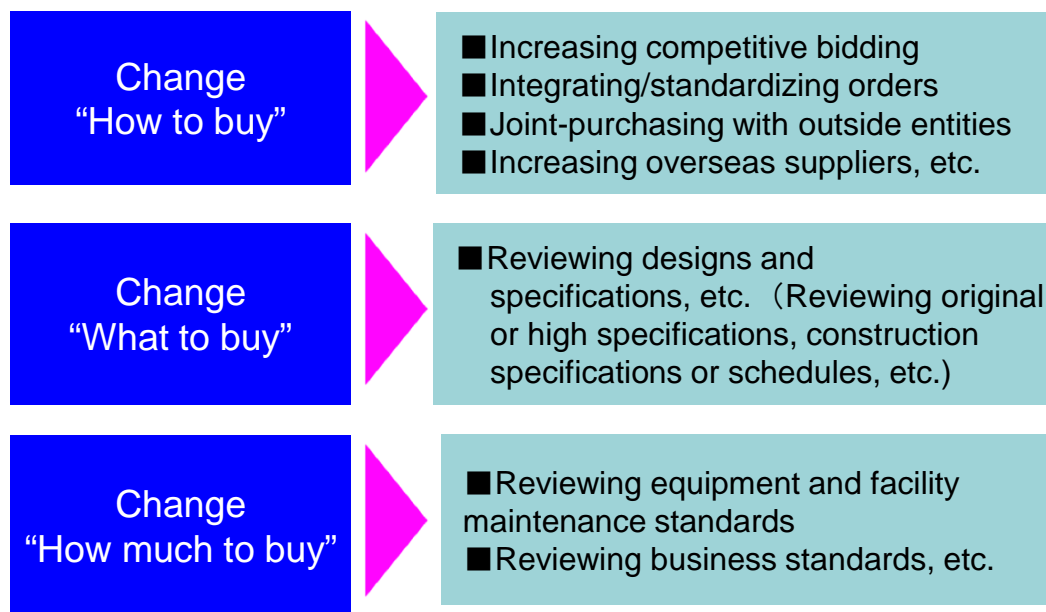
## ■ Initiatives for Mid- and Long- Term Fuel Cost Reduction

- With the aim of improving flexible and efficient LNG procurement, we have concluded an agreement with Tokyo Electric Power Co., Inc. and the seller to jointly purchase LNG from the Wheatstone Project in Australia in October 2013 (supply starts in FY2017).
- To diversify LNG pricing system, we have decided to procure LNG from the U.S. Cameron Project whose price index is Henry Hub Natural Gas Spot Price, our first effort; consequently, we have concluded Heads of Agreement concerning long term sale and purchase with Diamond Gas International Pte. Ltd. on April 24, 2014 (supply starts in FY2022), and GDF Suez S.A. on May 19, 2014 (supply starts in FY2018).
- Furthermore, we have been proactively considering procuring LNG from Mozambique, East Africa, getting involved in new coal project in North America, and increasing acceptance of economically efficient sub bituminous coal.

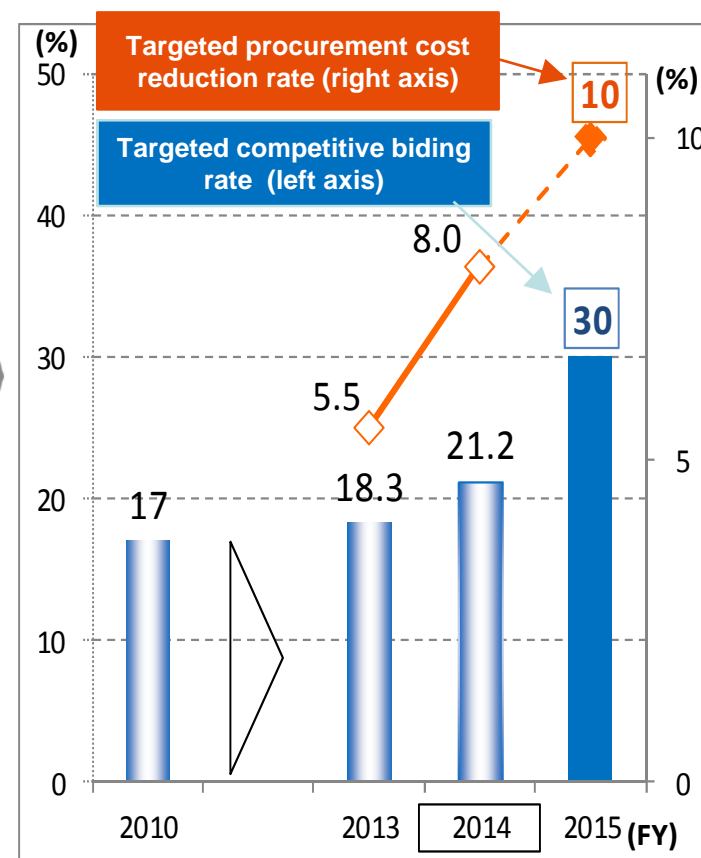


## Efforts to Curtail Material/Service Procurement Costs

- With opinions from outside experts at the “Procurement Reform Committee” established in July 2013, we continue to driving down procurement costs of and increasing competitive bidding for procurement of materials and services\* to meet our FY2015 target.
- As of FY2014, our competitive bidding increased to 21.2%, and procurement costs decreased by 8% or 39.1 billion yen.



\* Procurement of materials and services include material purchase, contract work, entrusting work.



## ■ Outlook for Resumption of Operation

- Onagawa: We have been conducting construction work on safety measures towards the restart of the station in April 2016 or later.
  - As for Unit 2, we submitted an application for examination with new regulatory requirements of Japanese Nuclear Regulation Authority (NRA) in December 2013, and the unit is now under examination.
  - As for Unit 3, as soon as we ready for application, we will also submit an application for NRA's examination of the new regulatory requirements.
- Higashidori: We have been conducting construction work on safety measures towards the restart of the station in March 2016.
  - As for Unit 1, we submitted an application for examination of the new regulatory requirements of NRA in June 2014, and the unit is now under examination.

## ■ Current Status (The following safety measures are to be conducted to improve safety in nuclear power stations.)

Safety Measures	Aims	Time of Completion	
		Onagawa	Higashidori
Filtered Containment Vent	To release the gas in the container through the filter to the air to prevent containment failure and to curb the discharge of radioactive material into the environment in case the pressure in the reactor container increases.	Within FY2015	Mar. 2016
Super Seawall	To prevent flooding to the premises in case conceivable maximum tsunami hits. ■ Conceivable tsunami height...Onagawa: approx. 23.1m (upgrading to O.P. approx. 29m), Higashidori: approx. 10.1m (seawall of O.P. approx. 16m has been installed)	Mar. 2016	Completed May 2013
Seismic Isolated Building	To improve command function. The building is to use for on-site emergency headquarters in the event of large-scale nuclear disaster.	Aug. 2016	Mar. 2016
Reinforcement Work	To secure sufficient seismic safety margins against a conceivable maximum earthquake (basic earthquake ground motion), construction work has been conducting, such as adding supports to or strengthening piping and conduit. ■ Basic earthquake ground motion...Onagawa: from 580gals to 1,000gals, Higashidori: from 450gals to 600gals	Within FY2015	Mar. 2016

### Super Seawall at Onagawa

- Structural type: Steel pipe pile, vertical wall (approx. 680m) and wall of cement improved soil (approx. 120m)
- Height: O.P. approx. 29m (the existing height: O.P. approx. 17m)
- Length: Approx. 800m

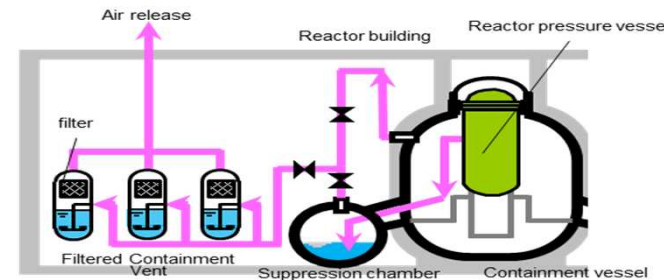
Working platform to erect steel pipe piles



Steel pipe pile being erected (Upper pile)  
 • Diameter: 2.2m  
 • Length: 13.5m  
 • Weight: Approx. 24t

### Filtered Containment Vent

In case of severe accident, curbing particulate radiological release to one-thousandth or less.



image

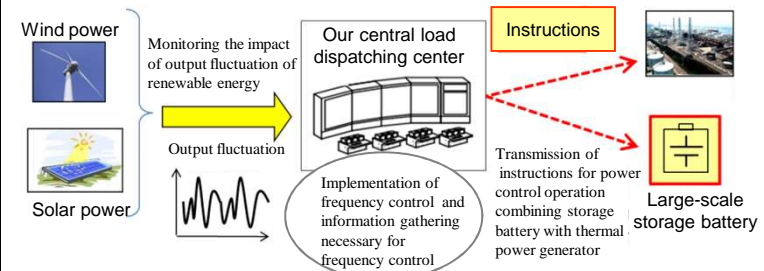
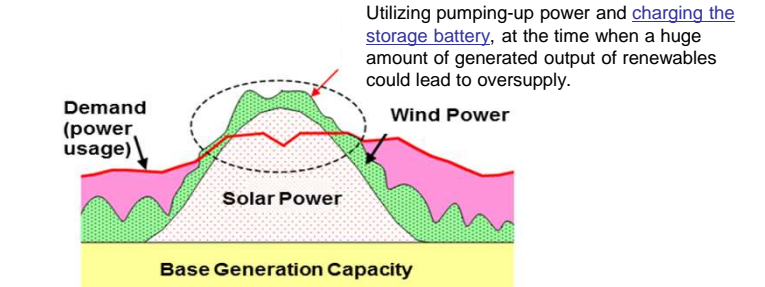
← Air flow from containment vessel

# References

## Storage Battery System Verification Projects

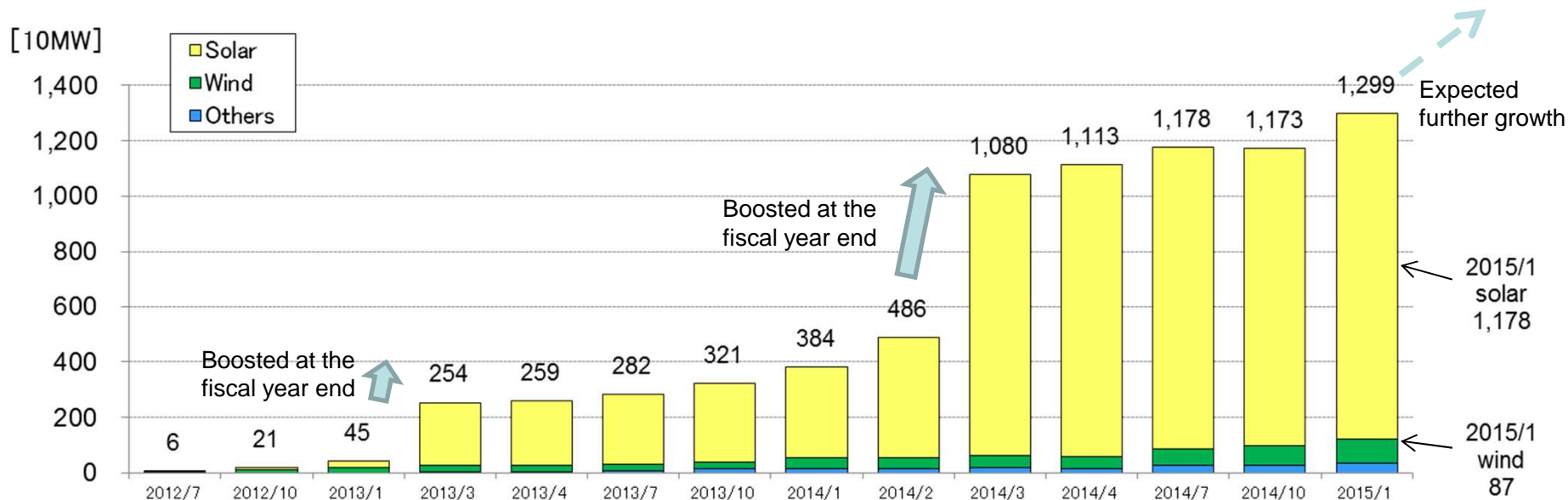
### ■ Outline of Verification Projects

- To deal with assumed frequency fluctuation when a huge amount of renewable energy is connected, we are conducting a verification test utilizing the large-scale storage battery to devise an optimal control technique.
- Connecting the storage battery whose output is 20MW to a grid is the first large scale project in Japan.
- We are setting up the large-scale storage battery in Fukushima Prefecture to facilitate reconstruction.

Names		Nishisendai Storage Battery Verification Project - to enhance frequency control ability -	Minamisoma Storage Battery Verification Project - to improve supply-demand balance -
Targets		To verify that the combination of frequency control, mainly conducted by thermal power generation, and the storage battery will enhance the frequency control ability by implementing automatic charge/discharge control of the battery from the Central Load Dispatching Center.	To verify that supply-demand balance improvement will increase the amount of renewable energy capacity connected to grids by charging the battery with surplus power after the large-scale storage battery is connected to a grid
Details	Location	Nishisendai Substation [Sendai City, Miyagi Prefecture ]	Minamisoma Substation [Minamisoma City, Fukushima Prefecture]
	Specifications	Lithium-ion battery Output : 20MW (short term : 40MW) Capacity : 20MWh	Lithium-ion battery Output : approx. 40MW Capacity : approx. 40MWh
	Start	February 20, 2015 (to the end of FY2017)	Plan to start at the end of February 2016
	Image	 <p>Wind power</p> <p>Solar power</p> <p>Monitoring the impact of output fluctuation of renewable energy</p> <p>Output fluctuation</p> <p>Our central load dispatching center</p> <p>Implementation of frequency control and information gathering necessary for frequency control</p> <p>Instructions</p> <p>Transmission of instructions for power control operation combining storage battery with thermal power generator</p> <p>Large-scale storage battery</p>	 <p>Demand (power usage)</p> <p>Solar Power</p> <p>Wind Power</p> <p>Base Generation Capacity</p> <p>Utilizing pumping-up power and <a href="#">charging the storage battery</a>, at the time when a huge amount of generated output of renewables could lead to oversupply.</p>



## Total capacity of approved FIT projects in Tohoku area



## Solar and Wind power generations connected to Tohoku EPCO's grid and estimated grid access volumes (as of Mar. 2015)

	Connected		Will be connected under old rule		Will be connected under new rule		(A)+(B)+(C)	
	(A)		(B)		(C)			
	Projects	MW	Projects	MW	Projects	MW	Projects	MW
Solar	142,358	1,529	1,596	4,524	627	1,025	144,581	7,078

	Connected		Will be connected		(A)+(B)	
	(A)		(B)			
	Projects	MW	Projects	MW	Projects	MW
Wind	113	660	106	1,106	219	1,766

※Totals may not equal the sum of individual figures due to rounding

## Response to Renewables Connection Applications (2/2)

### New Rule Applicable to Grid Connection Applications in accordance with Application Date

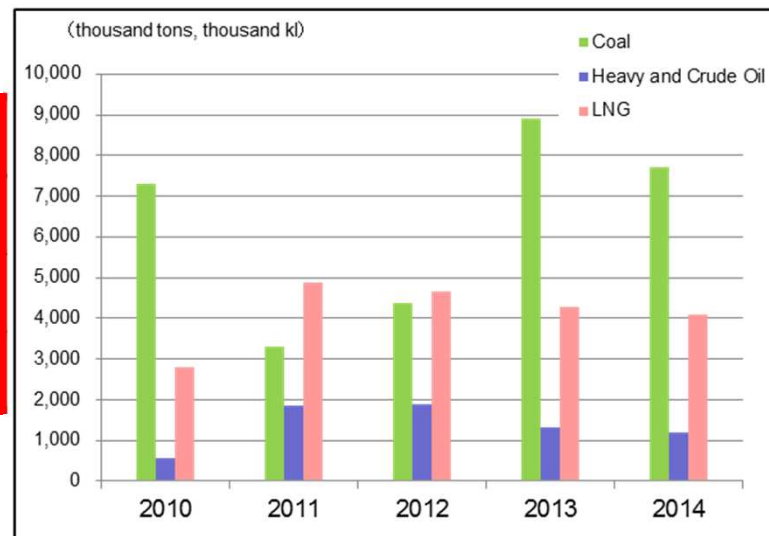
Generation	Voltage		Accepted <u>by September 30, 2014</u>	Accepted <u>on and after October 1, 2014</u>	Accepted <u>after January 26, 2015</u> (enforcement date of new rule)
Solar	Over 10kW	Extra-high High	Acceptance in accordance with the old rule • <u>Output curtailment</u> for over 500kW (No penalty for <u>up to 30</u> days a year)	Resumption of response based on the new rule • <u>Output curtailment</u> (The Specified Electricity Utilities System stipulates no penalty for <u>over 360</u> hours a year.)	Acceptance in accordance with the new rule • <u>Output curtailment</u> (The Specified Electricity Utilities System stipulates no penalty for <u>over 360</u> hours a year.)
		Low	Acceptance in accordance with the old rule	• <u>No</u> output curtailment	
	Under 10kW	Acceptance in accordance with the old rule • <u>No</u> output curtailment	<p>■ <u>Acceptance by March 31, 2015</u> Acceptance in accordance with the <u>old rule</u> • <u>No</u> output curtailment</p> <p>■ <u>Acceptance on and after April 1, 2015</u> Acceptance in accordance with the <u>new rule</u> • <u>Output curtailment</u> (<u>Preferential selection</u>: Precedent output curtailment would be applied to non-residential solar power of 10kW or more.)</p>		
Hydro Geothermal	Extra-high High Low	Acceptance in accordance with the old rule • <u>No</u> output curtailment	Acceptance in accordance with the new rule • <u>No</u> output curtailment		
Biomass	Extra-high High Low	With regard to unaccepted applications as of January 25, 2015, applicants can chose either old or new rule. • <u>Output curtailment</u> for both old and new rule	Acceptance in accordance with the new rule • <u>Output curtailment</u> (Except for regional biomass in case load limitation is difficult due to difficulty in fuel storage and technical constraint)		
Wind*	Over 20kW	Extra-high High	Acceptance in accordance with the old rule up to 2,000MW of our capacity for wind • <u>Output curtailment</u> for over 500kW (No penalty for <u>up to 30</u> days a year)	Acceptance in accordance with the new rule up to 2,000MW of our capacity for wind • <u>Output curtailment</u> (No penalty for <u>up to 720</u> hours a year)	
		Low	Acceptance in accordance with the old rule up to 2,000MW of our capacity for wind • <u>No</u> output curtailment		
	Under 20kW	Acceptance in accordance with the old rule up to 2,000MW of our capacity for wind • <u>No</u> output curtailment	For the time being, acceptance in accordance with the new rule • <u>No</u> output curtailment		

\*: Since the total output of wind power connected to our grid is still below our acceptable capacity (2,000MW), we apply rules as described above. After the total reaches our capacity limit, conditions will be separately discussed.

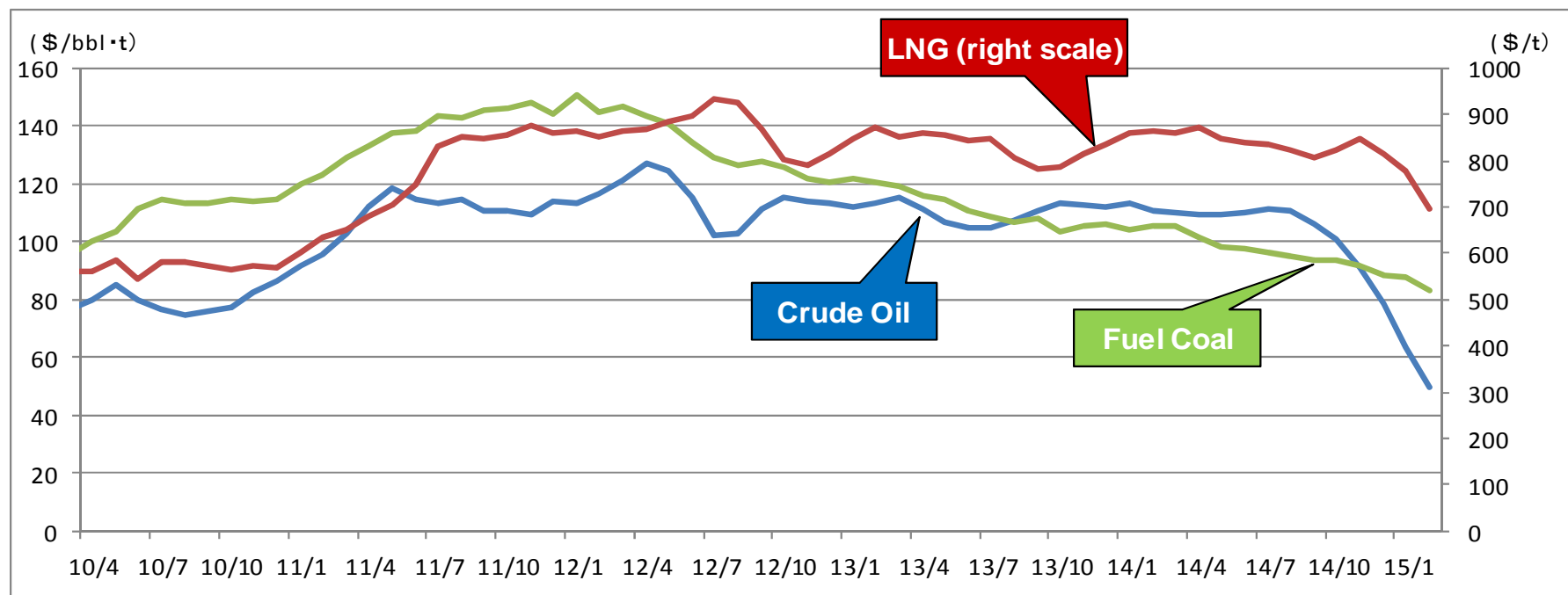
## Fuel Consumption

(thousand tons, thousand kl)

	FY2010	FY2011	FY2012	FY2013	FY2014
Coal	7,300	3,310	4,380	8,900	7,710
Heavy and Crude Oil	570	1,860	1,880	1,320	1,200
LNG	2,790	4,890	4,660	4,280	4,080

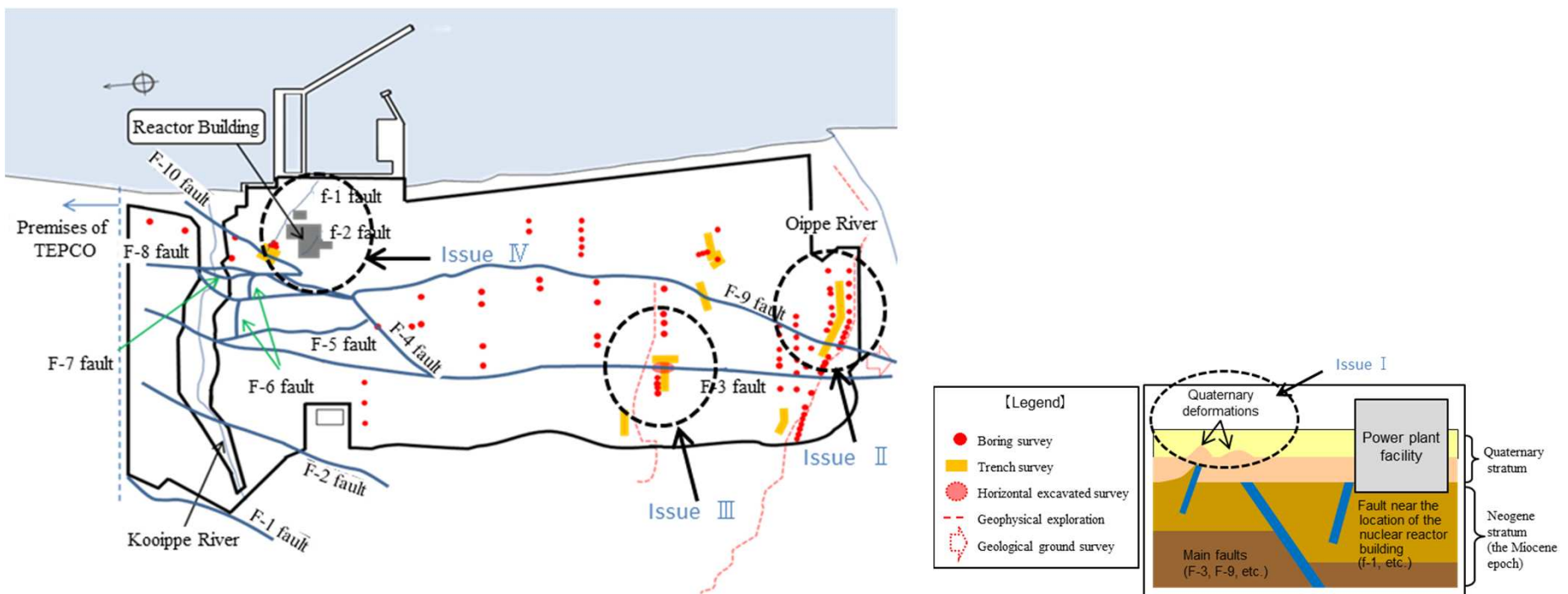


## [Reference] Historical Prices of CIF Crude Oil, Fuel Coal and LNG



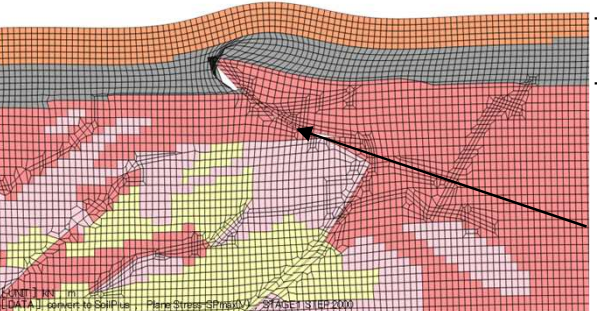
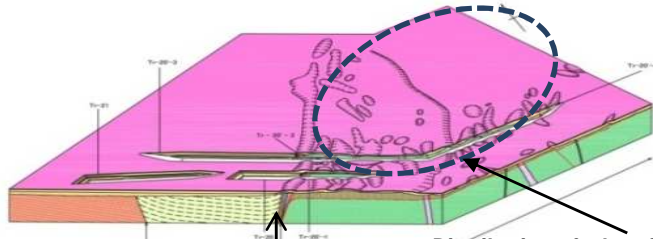
- Nuclear Regulation Authority Experts Meeting ('Experts Meeting') held on March 25, 2015, submitted 'Evaluation of Fracture Zones at the Higashidori Nuclear Power Station' ('Evaluation Statement') to the Nuclear Regulatory Commission (NRA).
- Evaluation Statement, without specific reasons for activity of F-3 and F-9 faults, "have judged that those are faults that will be active in the future because the idea that the deformation originates from the dilation of deteriorated bedrock is unpersuasive". As for f-1 fault just below main facilities, due to disagreement on the origin of small fractures at the upper, a conclusion could not be reached. As for f-2 fault just below the reactor building, the Statement says that the existing data shows no deformation signifying fault activity, but does not describe its evaluation.
- We, based on accumulated huge amount of data, are convinced that faults in the premises have not been active since at least the Quaternary Late Pleistocene; consequently, we judge that Quaternary deformation is not tectonic relating to fault activity.
- Faults in the premises are to be examined under NRA's examination of the new regulatory requirements, and we are determined to assert our positions based on accumulated data to be comprehensively and rationally judged.

## Locations of faults in the premises and additional geological survey, and issues at Experts Meeting (I to IV)




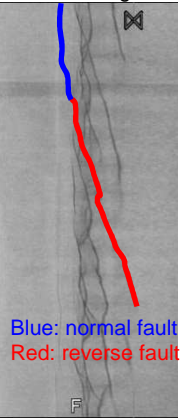
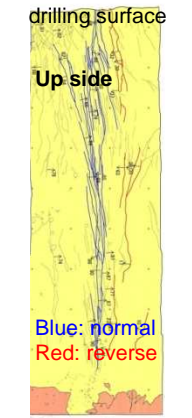
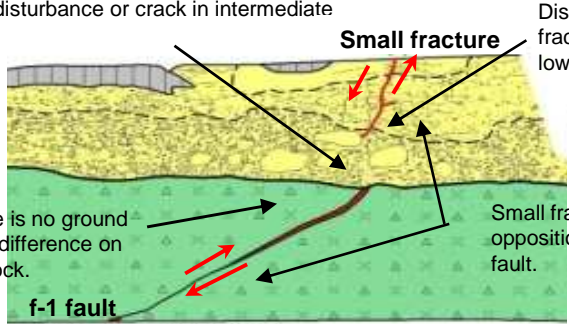
- While Evaluation Statement has concluded that main faults, F-3 fault and F-9 fault, in the premises are “faults that will be active in the future” based on overall evaluation of issue I to III, reasons for the conclusion remain unspecific.

## ■ Evaluation Statement, our comments, and outside experts’ opinions on faults

Issue	I. Origin of ‘Quaternary Deformation’	II. Origin of Uplift in the Site
Evaluation Statement	<ul style="list-style-type: none"> <li>■ Tohoku EPCO’s claim that origin of ‘Quaternary deformation’ is not tectonic displacement is not supported by sufficient data.</li> <li>■ It is unthinkable that ‘Quaternary deformation’ is tectonic, and consequently dilation should be considered.</li> </ul> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 20px;">Pros and Cons</div>	<p>There is no sufficient information that can deny the existence of faults or any structures underground which cause deformation. The main origin of uplift found in the premises cannot explain the dilation of the deteriorated bedrock.</p>
Our comments	<p>Observation of trench walls obviously shows that <u>dilation of deteriorated bedrock</u> originates in the premises, <u>signifying the origin of Quaternary deformation</u>. However, <u>Evaluation Statement adheres to details</u>, such as clay mineral and bedrock weathering/deterioration, and <u>denies the idea that the dilation is the origin because of slight remaining questions</u>. <u>The judge of the Statement does not emphasize data, non-objective.</u></p>	<p>The result of ground penetrating radar (GPR) survey shows the distribution of <u>a lot of flexure</u> found in the uplift is random, that is, <u>the flexure has no relation with F-9 fault</u>. However, Experts Meeting did not discuss this matter, reflecting no rational judgment.</p>
Outside experts’ opinions	<p>While structural observation of outcrop has already determined that the fault is not active, argumentation continues because the reason is not clear. However, <u>both the fault structure within the bedrock and density and chemical composition of rocks verify that dilation undoubtedly originated, which led to Quaternary deformation</u>. (Opinions from Professor Masahiro Chigira, Reference 2-3, 11<sup>th</sup> meeting)</p>	<p>I support the idea that the flexure based on the GPR survey shows that the direction of Quaternary deformation indicates nearly random distribution (which means the origin is not tectonic). (Opinions from Professor Shinji Tooda, Reference 2-4, 11<sup>th</sup> Meeting)</p>
Illustrations	 <p>Numerical analysis of dilation at deteriorated bedrock</p>	 <p><b>Block diagram of periphery of F-9 fault</b></p>

➤ As for issue IV, the Statement says that disagreement on the origin of small fracture at the upper of f-1 fault (just below main facilities) hampered the Meeting reaching a conclusion, and did not evaluate f-2 fault (just below the reactor building) mentioning that “the existing data does not show the displacement that signifies fault activity”.

■ Evaluation Statement, our comments, and outside experts’ opinions on faults

Issue	III. Strike-slip Component in the Fault in the Premises	IV. Fault Activity near the Reactor Building
Evaluation Statement	<p>Even though Quaternary deformation related to F-3 fault is not strike-slip fault, it includes significant left-lateral strike-slip component, so the notion that the deformation originates from the dilation of deteriorated bedrock is unpersuasive.</p>	<p>■ f-1 fault</p> <ul style="list-style-type: none"> <li>• Possibility that small fracture of the upper of f-1 fault is tectonic.</li> <li>• Small fracture is not tectonic.</li> <li>• No sufficient data to judge the origin of small fracture.</li> </ul> <p>■ f-2 fault <span style="border: 1px solid black; padding: 2px;">Due to disagreement on the origin, no conclusion.</span></p> <ul style="list-style-type: none"> <li>• No evaluation.</li> </ul>
Our comments	<p>Observation of trench walls, horizontal drilling exploration, and data from model experiment show that F-3 fault does not have phyletic left-lateral strike-slip fault and Quaternary deformation is non-tectonic; consequently, the theory that the deformation originates from dilation is rational.</p>	<p>The small fracture found in Quaternary deformation <u>gradually gets smaller downward and disappears</u>. In addition, the fracture <u>does not correspond to the movement or direction of f-1 fault</u>. Numerical analysis also indicates that the origin of the small fracture is not fault activity but dilation.</p>
Outside experts’ opinions	<p>The slip of F-3 fault is <u>protrusion out of the bedrock along the fault</u>. The deformation disappears around five meters from F-3 fault and <u>is originated from dilation</u> of Gamanosawa Foundation Tuff. (Opinions from Professor Masahiro Chigira, Reference 2-3, 11<sup>th</sup> Meeting)</p>	<p><u>There can be geologically no claim</u> that, in around one meter thick stratum, the lower fault displacement can heave the upper stratum without causing any deformation in the intermediate stratum. (Opinions from Professor Masahiro Chigira, Reference 2-3, 11<sup>th</sup> Meeting)</p>
Illustrations	<div style="display: flex; justify-content: space-around;"> <div data-bbox="394 1082 725 1358">  <p>The characteristic of cluster of small fracture near F-3 fault of trench vastly differs from that of faults observed with the oblique-slip fault model experiment.</p> </div> <div data-bbox="779 1062 958 1501"> <p>CT image</p>  <p>Blue: normal fault Red: reverse fault</p> </div> <div data-bbox="965 1062 1155 1501"> <p>Sketch of horizontal drilling surface</p>  <p>Up side</p> <p>Blue: normal Red: reverse</p> </div> </div> <p>Oblique-slip fault model experiment with XCT</p>	<p>There are small fracture on gravel layer and f-1 fault below gravel layer, but there is no disturbance or crack in intermediate layer.</p>  <p>Small fracture</p> <p>Displacement of small fracture disappears in lower part.</p> <p>There is no ground level difference on bedrock.</p> <p>f-1 fault</p> <p>Small fracture moves in the opposition direction to f-1 fault.</p> <p>Sketch of f-1 fault upper part</p>

(Note)

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