

# Reference materials

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This document is a common information packet for “Direction of Management and Near-Term Managerial Policy of the J-POWER Group” and “FY2011 Full Year Earnings Results” announced on April 27, 2012.

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# (1) Financial section

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# (1)- 1. Consolidated: Revenues and Expenses



(Unit: ¥100 million)

	FY2007	FY2008	FY2009	FY2010	FY2011
<b>Operating revenues</b>	<b>5,877</b>	<b>7,049</b>	<b>5,844</b>	<b>6,359</b>	<b>6,546</b>
Electric power operating revenues	5,317	6,483	5,302	5,844	6,097
Other operating revenues	560	565	541	515	448
<b>Operating expenses</b>	<b>5,370</b>	<b>6,478</b>	<b>5,355</b>	<b>5,653</b>	<b>6,048</b>
<b>Operating income</b>	<b>507</b>	<b>571</b>	<b>489</b>	<b>705</b>	<b>498</b>
<b>Non-operating revenues</b>	<b>215</b>	<b>132</b>	<b>187</b>	<b>149</b>	<b>153</b>
Equity income of affiliates	88	74	117	90	95
Others	126	58	70	58	57
<b>Non-operating expenses</b>	<b>293</b>	<b>307</b>	<b>259</b>	<b>292</b>	<b>285</b>
Interest expenses	227	226	230	223	220
Others	66	81	28	68	65
<b>Ordinary income</b>	<b>428</b>	<b>395</b>	<b>416</b>	<b>563</b>	<b>366</b>
Extraordinary income	-	121	-	16	-
Extraordinary loss	-	196	-	191	33
<b>Net income</b>	<b>293</b>	<b>194</b>	<b>291</b>	<b>195</b>	<b>161</b>

# (1)-2-1. Non-consolidated: Revenues and Expenses



(Unit: ¥100 million)

	FY2007	FY2008	FY2009	FY2010	FY2011	YOY change
<b>Operating revenues</b>	<b>5,292</b>	<b>6,458</b>	<b>5,304</b>	<b>5,832</b>	<b>5,999</b>	<b>167</b>
<b>Electric power operating revenues</b>	<b>5,173</b>	<b>6,314</b>	<b>5,186</b>	<b>5,738</b>	<b>5,905</b>	<b>166</b>
Hydroelectric	1,145	1,109	1,089	1,081	1,084	3
Thermal	3,427	4,603	3,496	4,064	4,244	179
Transmission	600	601	599	592	576	(15)
<b>Incidental business</b>	<b>119</b>	<b>143</b>	<b>117</b>	<b>93</b>	<b>94</b>	<b>0</b>
<b>Operating expenses</b>	<b>4,893</b>	<b>6,011</b>	<b>4,895</b>	<b>5,205</b>	<b>5,576</b>	<b>370</b>
<b>Electric power operating expenses</b>	<b>4,785</b>	<b>5,882</b>	<b>4,790</b>	<b>5,133</b>	<b>5,490</b>	<b>356</b>
Personnel costs	376	435	361	312	344	31
Amortization of the actuarial difference	63	107	34	(22)	17	39
Fuel costs	1,853	2,551	1,739	2,099	2,384	285
Repair and maintenance costs	327	554	453	506	542	36
Depreciation and amortization costs	1,097	1,097	1,155	1,060	1,004	(56)
Others	1,130	1,243	1,079	1,154	1,213	59
<b>Incidental business</b>	<b>107</b>	<b>128</b>	<b>104</b>	<b>71</b>	<b>86</b>	<b>14</b>
<b>Operating income</b>	<b>398</b>	<b>447</b>	<b>409</b>	<b>626</b>	<b>423</b>	<b>(202)</b>

# (1)-2-2. Non-consolidated: Revenues and Expenses



	FY2007	FY2008	FY2009	FY2010	FY2011
Electricity sales (million kWh)	60,786	57,532	55,760	64,353	64,074
Hydroelectric	8,287	8,384	9,214	10,267	10,318
Thermal	52,499	49,147	46,546	54,086	53,756
Water supply rate (%)	85	88	96	106	115
Load factor of coal-fired thermal power plants (%)	81	76	68	78	77

## 【 Personnel costs 】

(Unit: ¥ 100 million)

	FY2007	FY2008	FY2009	FY2010	FY2011
Amortization of the actuarial difference	63	107	34	(22)	17
Others	313	327	327	334	326
<b>Total</b>	<b>376</b>	<b>435</b>	<b>361</b>	<b>312</b>	<b>344</b>

## (Amortization of the actuarial difference)

Balance at the beginning of the fiscal year	(17)	29	49	(32)	25
Actuarial difference in the fiscal year	110	128	(48)	35	*2
<b>Amortization *1</b>	<b>63</b>	<b>107</b>	<b>34</b>	<b>(22)</b>	<b>17</b>
Balance at the end of the fiscal year	29	49	(32)	25	*2

\*1 Up to 2008: Actuarial difference are amortized by the declining-balance method over two years from the year in which they occurred.  
From FY2009 onward: Actuarial differences are amortized by the declining-balance method over two years from the year following the year in which they occurred.

\*2 Calculation of the figures in FY2011 has not been completed.

# (1)-2-3. Non-consolidated: Revenues and Expenses



	FY2007	FY2008	FY2009	FY2010	FY2011
Fuel costs (¥ 100 million)	1,853	2,551	1,739	2,099	2,384
Coal consumption (10 thousand ton)	2,023	1,940	1,814	2,114	2,078
Australian coal FOB price* (US\$)	55 ~ 56	125	71	97 ~ 98	130
Average exchange rate (¥/US\$)	114	101	93	86	79

\* Reference Price

## 【 Repair expense 】

(Unit: ¥ 100 million)

	FY2007	FY2008	FY2009	FY2010	FY2011
Hydroelectric	68	145	80	81	130
Thermal	224	361	332	387	357
Transmission	18	25	23	22	37
Others	15	21	18	14	17
Total	327	554	453	506	542

## 【 Depreciation and amortization costs 】

(Unit: ¥ 100 million)

	FY2007	FY2008	FY2009	FY2010	FY2011
Hydroelectric	254	249	240	235	234
Thermal	610	619	693	613	567
Transmission	190	184	177	168	160
Others	42	43	44	43	42
Total	1,097	1,097	1,155	1,060	1,004

# (1)-3. Consolidated: Segment Information



(Unit: ¥ 100 million)

		Electric power	Electric power -related	Overseas power generation	Others	Subtotal	Elimination*	Consolidated
FY2011	Sales	6,129	3,413	20	223	9,786	(3,240)	6,546
	Sales to customers	6,097	231	20	196	6,546	-	6,546
	Ordinary income	222	83	34	(0)	341	24	366
FY2010	Sales	5,875	3,346	18	261	9,502	(3,143)	6,359
	Sales to customers	5,844	262	18	233	6,359	-	6,359
	Ordinary income	418	104	50	(15)	557	5	563
year-on-year change	Sales	253	66	1	(37)	283	(97)	186
	Sales to customers	253	(31)	1	(36)	186	-	186
	Ordinary income	(195)	(20)	(15)	15	(216)	19	(197)

## “Electric Power Business”

**Wholesale power business:** J-POWER’s hydroelectric, thermal power and transmission business. The majority of consolidated revenue is derived from this segment.

**Other electric power businesses:** Subsidiaries’ thermal power (IPP, for PPSs) and wind power

## “Electric Power-Related Businesses”

These focus on peripheral businesses 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 Businesses”

Overseas power generation businesses, overseas engineering and consulting businesses

## “Other Businesses”

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

\* The elimination includes elimination of intersegment sales

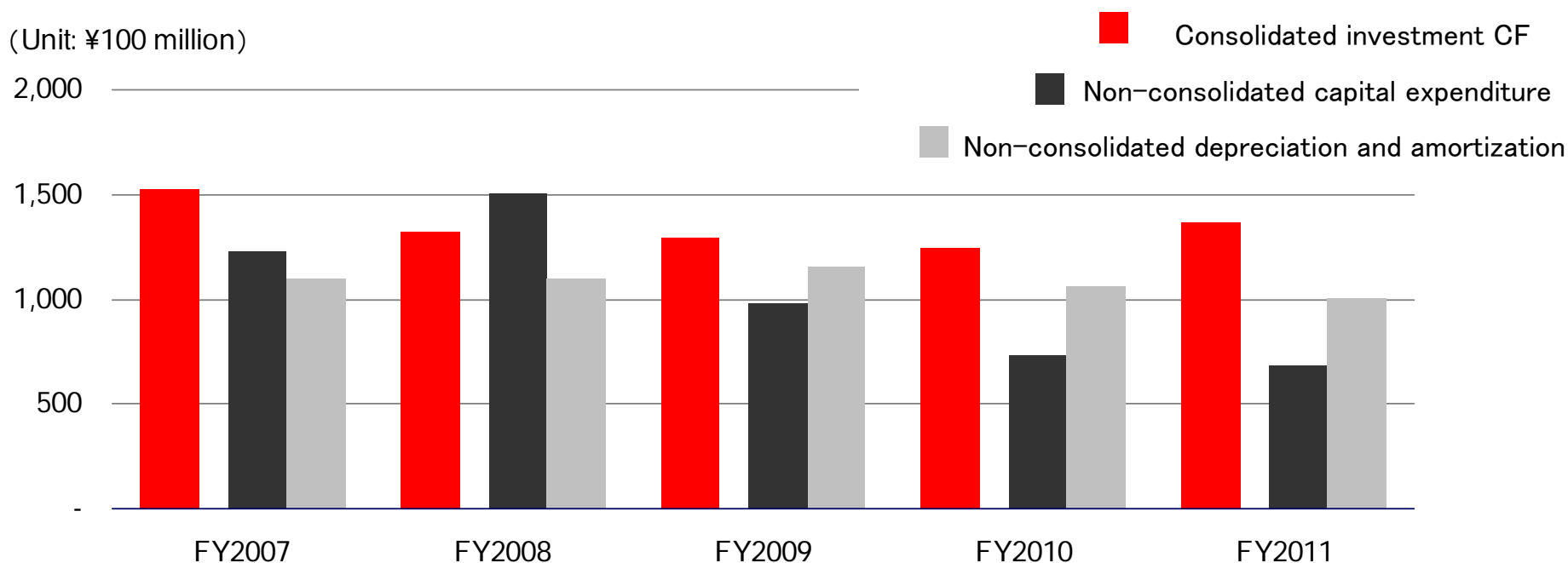
# (1)-4. Consolidated: Cash Flow



(Unit: ¥100 million)

	FY2007	FY2008	FY2009	FY2010	FY2011
<b>Operating activities</b>	<b>1,362</b>	<b>1,586</b>	<b>1,691</b>	<b>1,512</b>	<b>1,258</b>
Income before income taxes and minority interests	434	325	421	387	332
Depreciation and amortization	1,150	1,146	1,203	1,116	1,052
<b>Investing activities</b>	<b>(1,525)</b>	<b>(1,323)</b>	<b>(1,295)</b>	<b>(1,246)</b>	<b>(1,368)</b>
Capital expenditure for subsidiaries	(165)	(156)	(135)	(302)	(642)
(reference) Non-consolidated CAPEX*	(1,228)	(1,502)	(979)	(737)	(684)
<b>Free cash flow</b>	<b>(162)</b>	<b>262</b>	<b>396</b>	<b>265</b>	<b>(109)</b>

(Unit: ¥100 million)



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



# (1)-5. Consolidated: Key Ratios and Key Data



(Unit: ¥ 100 million)

	FY2007	FY2008	FY2009	FY2010	FY2011
<b>(PL)</b> Operating revenues	5,877	7,049	5,844	6,359	6,546
Ordinary income	428	395	416	563	366
Net income	293	194	291	195	161
<b>(BS)</b> Total assets	20,131	20,054	20,240	20,123	20,163
Construction in progress	3,274	3,218	3,097	3,016	3,804
Shareholders' equity	4,663	3,801	4,126	4,157	4,073
Interest-bearing debts	14,238	14,707	14,525	14,290	14,357
<b>(CF)</b> Investing activities	(1,525)	(1,323)	(1,295)	(1,246)	(1,368)
(Ref) Non-consolidated CAPEX*1	(1,228)	(1,502)	(979)	(737)	(684)
Free cash flow	(162)	262	396	265	(109)
ROA (%)	2.1	2.0	2.1	2.8	1.8
ROA (excl. Construction in progress) (%)	2.7	2.3	2.4	3.3	2.2
ROE (%)	6.3	4.6	7.4	4.7	3.9
EPS (¥)	175.99	121.65	194.26	130.51	107.39
BPS (¥)	2,800.18	2,533.28	2,750.20	2,770.77	2,714.94
Shareholders' equity ratio (%)	23.2	19.0	20.4	20.7	20.2
D/E ratio	3.1	3.9	3.5	3.4	3.5
Number of shares issued*2 (thousand)	166,554	150,054	150,053	150,053	150,052

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

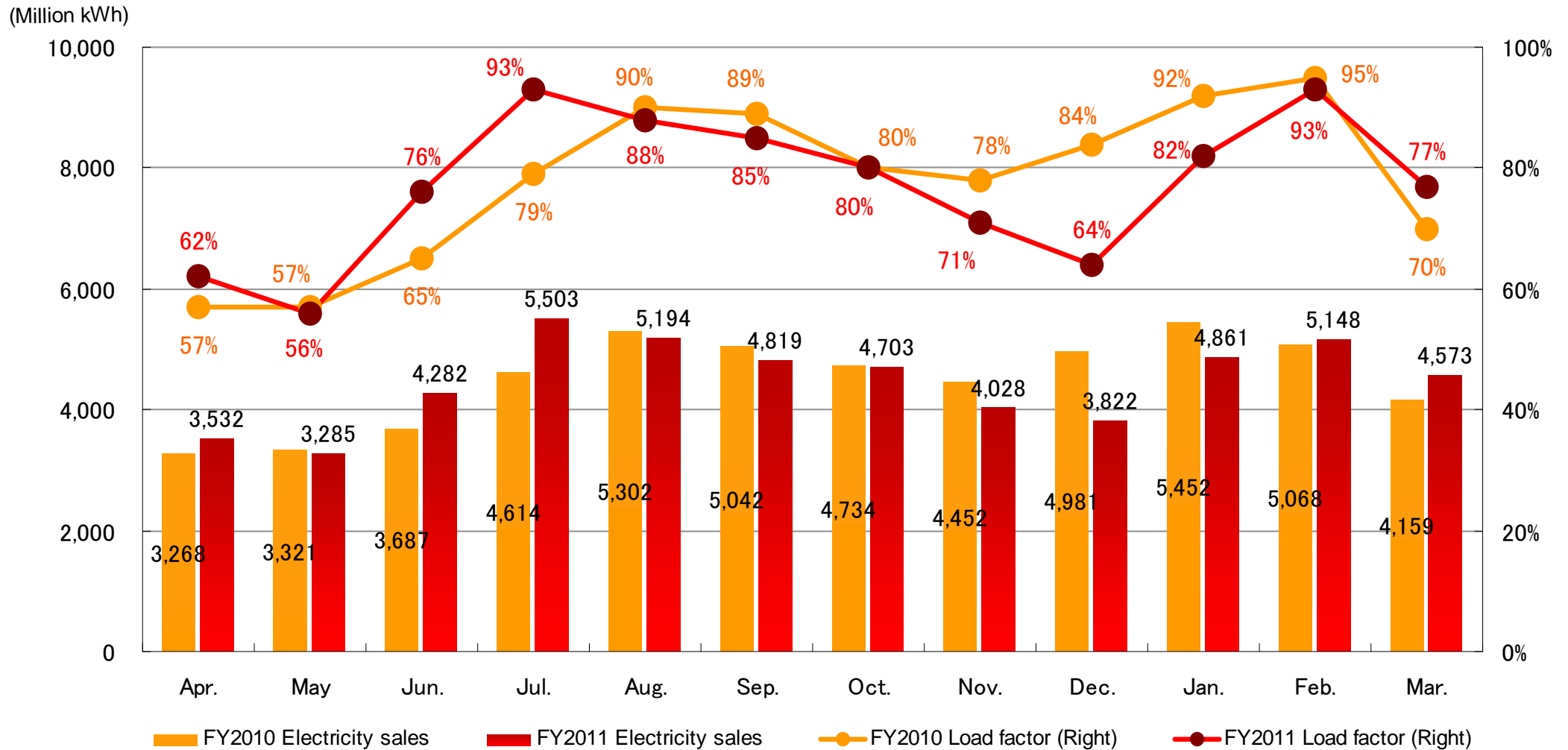
\*2 Number of shares issued at the end of the fiscal year (excluding treasury stock)

# (1)-6-1. Monthly Electricity Sales:

## Wholesale Electric Power Business (Thermal Power)



<p>▶ <b>Apr. 2010 - Mar. 2011 Results (Cumulative)</b></p> <p>Load factor ⇒ 78%</p> <p>Electricity sales ⇒ 54.0B kWh</p>	<p>▶ <b>Apr. 2011 - Mar. 2012 Results (Cumulative)</b></p> <p>Load factor ⇒ 77%</p> <p>Electricity sales ⇒ 53.7B kWh</p>
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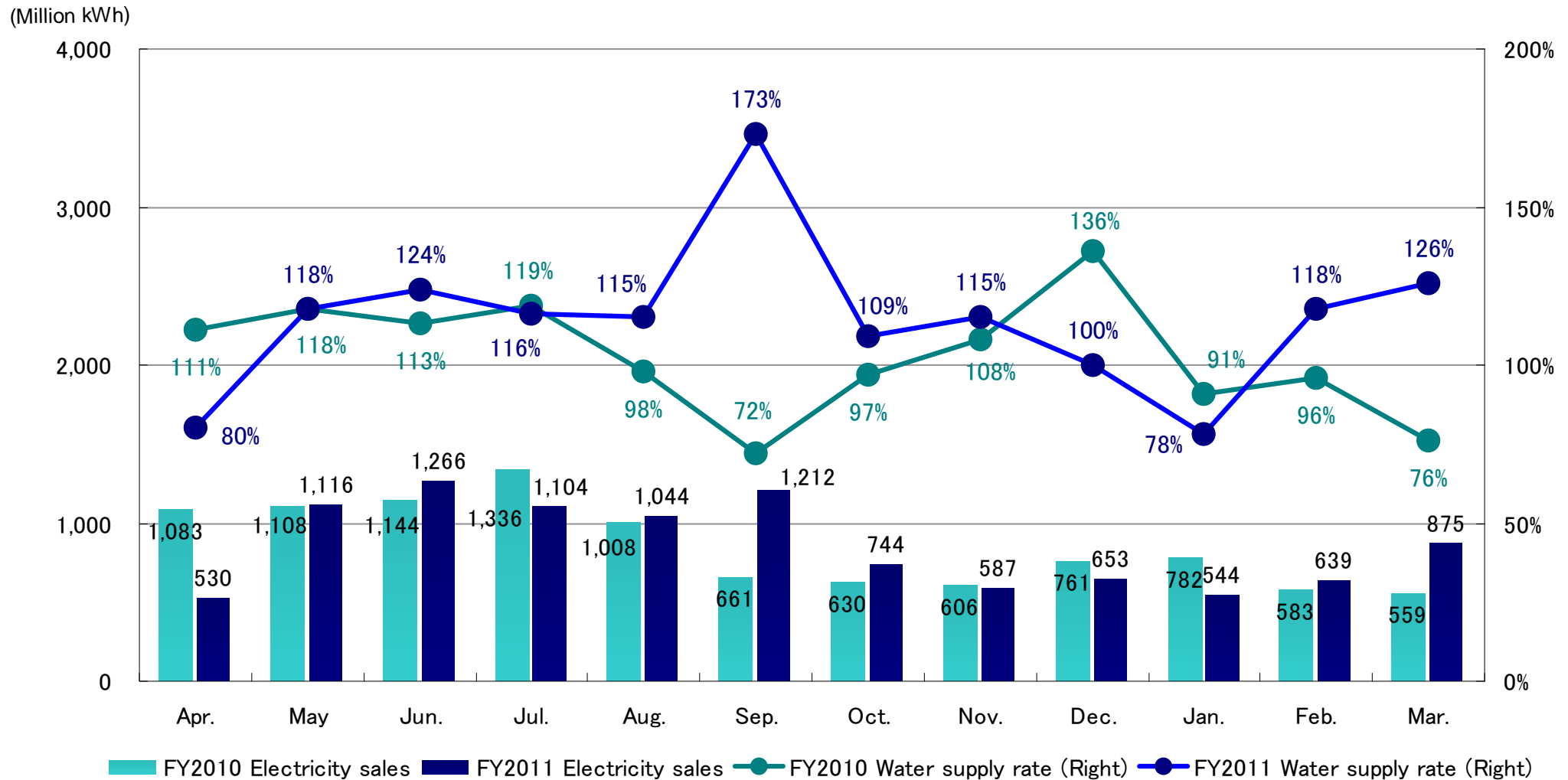


# (1)-6-2. Monthly Electricity Sales:

## Wholesale Electric Power Business (Hydroelectric Power)

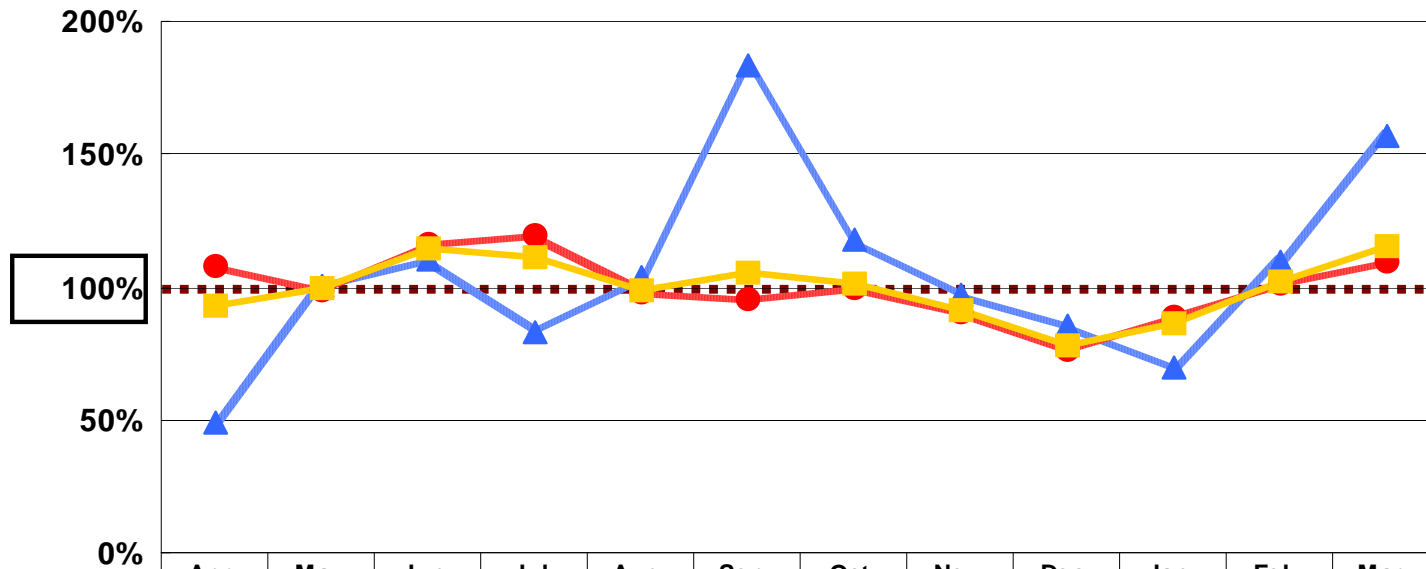


<p>▶ <b>Apr. 2010 - Mar. 2011 Results (Cumulative)</b>                  Water supply rate ⇒ 106%                  Electricity sales ⇒ 10.2B kWh</p>	<p>▶ <b>Apr. 2011 - Mar. 2012 Results (Cumulative)</b>                  Water supply rate ⇒ 115%                  Electricity sales ⇒ 10.3B kWh</p>
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# (1)-6-3. Wholesale Electric Power Businesses:

## Changes in Monthly Electricity Sales

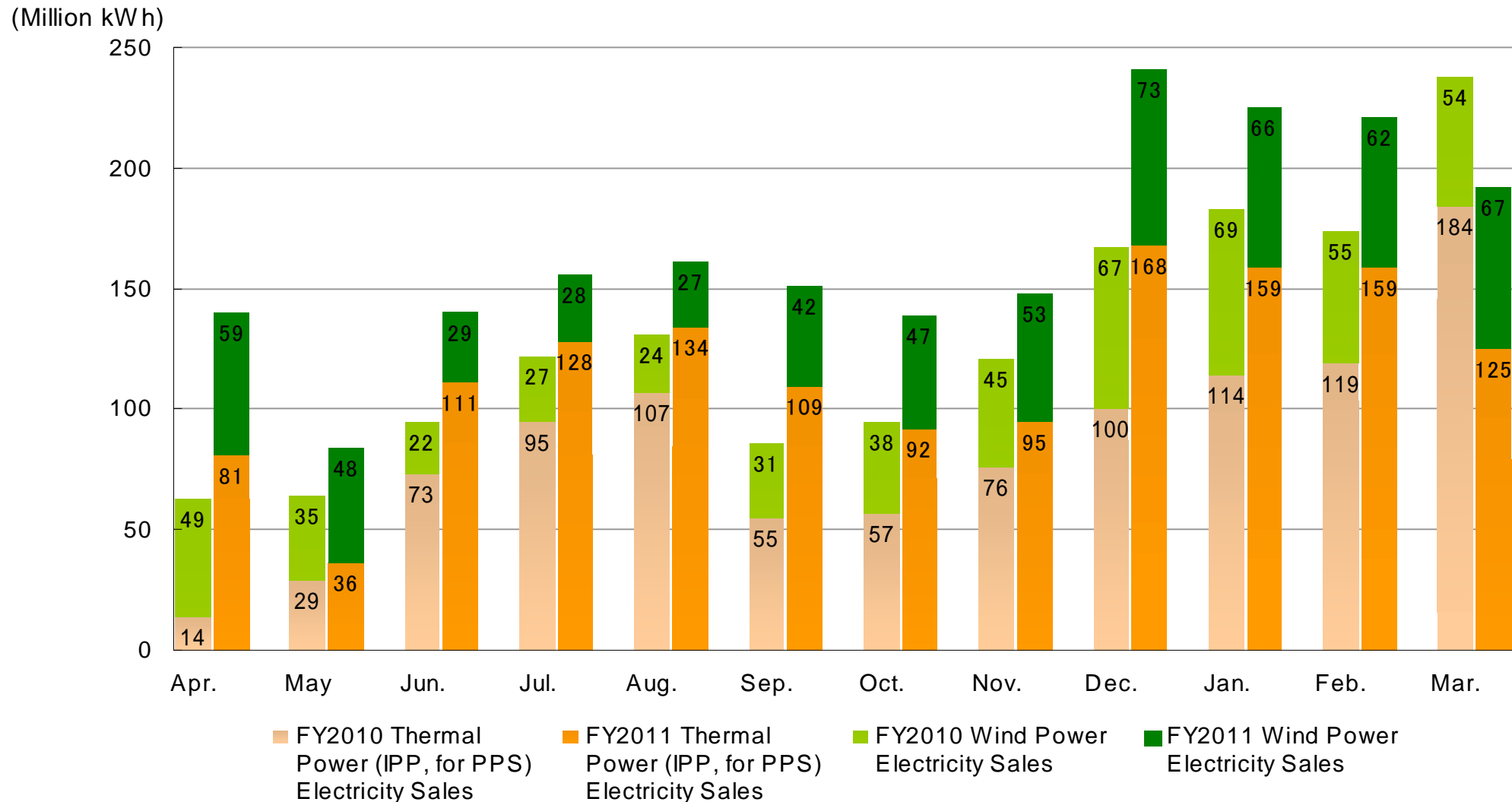


	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr - Mar
▲ Year-on-year (Hydro)	49%	101%	111%	83%	104%	183%	118%	97%	86%	70%	110%	157%	100%
● Year-on-year (Thermal Power)	108%	99%	116%	119%	98%	96%	99%	90%	77%	89%	102%	110%	99%
■ Year-on-year Total	93%	99%	115%	111%	99%	106%	102%	91%	78%	87%	102%	115%	100%

# (1)-6-4. Monthly Electricity Sales: IPP, for PPS, Wind Power



- ▶ Apr. 2010 - Mar. 2011 Results (Cumulative) ⇒ 1.5B kWh
- ▶ Apr. 2011 - Mar. 2012 Results (Cumulative) ⇒ 2.0B kWh



\* Does not take proportion of equity holdings into account

## (2) Business Section

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## (2)-1. Consolidated: Power Generation Capacity



<u>In operation</u>		Number of power stations	Output capacity (MW)	Owned capacity (MW)
Japan	Wholesale electric power business (J-POWER)	67	16,993	
	Hydroelectric	59	8,566	
	Thermal (including geothermal)	8	8,427	
	Other electric power businesses	24	1,197	820
	IPP/for PPS thermal	6	844	496
	Wind power	18	353	324
	Subtotal	91	18,190	17,813
Over-seas	Thailand	9	2,770	1,020
	U.S.A.	10	4,486	1,438
	China	4	6,045	523
	Other countries/region	6	2,196	691
	Subtotal	29	15,497	3,672
<b>Total</b>		<b>120</b>	<b>33,686</b>	<b>21,485</b>
<u>Under construction/ in planning stage</u>		Start of operation	Output capacity (MW)	Owned capacity (MW)
Japan	Ohma nuclear	To be determined	1,383	
Over-seas	China (Hezhou)	FY2012	2,000	340
	Thailand (2 IPP, 7 SPPs)	FY2013-2015	3,980	3,582
	Indonesia (Central Java)	FY2017	2,000	680

(As of March 31, 2012)

## (2)-2. Domestic Power Generation Facilities in Operation



### Wholesale electric power business

	Power plant	Start of operation	Output	
<b>Coal-fired</b>	Isogo (Kanagawa)	No. 1	2002	600
		No. 2	2009	600
	Takasago (Hyogo)	No. 1	1968	250
		No. 2	1969	250
	Takehara (Hiroshima)	No. 1	1967	250
		No. 2	1974	350
		No. 3	1983	700
	Tachibanawan (Tokushima)	No. 1	2000	1,050
		No. 2	2000	1,050
	Matsushima (Nagasaki)	No. 1	1981	500
		No. 2	1981	500
	Matsuura (Nagasaki)	No. 1	1990	1,000
		No. 2	1997	1,000
	Ishikawa coal (Okinawa)	No. 1	1986	156
No. 2		1987	156	
	<b>Subtotal</b>		<b>8,412</b>	
<b>Geothermal</b>	Onikobe (Miyagi)	1975	15	
<b>Total</b>			<b>8,427</b>	

(Output unit: MW)

	Number of power plants	Output	
<b>Hydro-electric</b>	Conventional	52	3,596
	Pumped-storage	7	4,970
	<b>Total</b>	<b>59</b>	<b>8,566</b>

### Other electric power businesses

	Power plant	fuel	Owned capacity*
<b>IPP</b>	Itoigawa	Coal	134 (80%)
	Tosa	Coal	150 (45%)
	Genex Mizue	Gas oil Residue	238 (40%)
<b>for PPS</b>	Bayside Energy	Gas	108 (100%)
	Ichihara		
	Ichihara Power	Gas	110 (60%)
	Mihama Seaside Power Shinminato	Gas	105 (50%)
<b>Total</b>			<b>496</b>
	Number of power plants	Output	Owned capacity
<b>Wind power</b>	18	353	324

\* Percentages in parentheses give J-POWER's investment ratios

(As of March 31,2012)



## (2)-3. List of Domestic Wind Power Facilities in Operation

Name	Location	Output capacity (kW)	Investment ratio	Owned capacity (kW)	Start of operation
Sarakitomanai Wind Farm	Hokkaido	14,850	49%	7,277	FY2001
Tomamae Winvilla Wind Farm	Hokkaido	30,600	100%	30,600	FY2000
Shimamaki Wind Farm	Hokkaido	4,500	100%	4,500	FY2000
Setana Seaside Wind Power Farm	Hokkaido	12,000	100%	12,000	FY2005
Green Power Kuzumaki Wind Farm	Iwate	21,000	100%	21,000	FY2003
Nikaho Kogen Wind Farm	Akita	24,750	67%	16,583	FY2001
Hiyama Kogen Wind Farm	Fukushima	28,000	100%	28,000	FY2010
Koriyama-Nunobiki Kogen Wind Farm	Fukushima	65,980	100%	65,980	FY2006
Tokyo Bayside Wind Power Plant	Tokyo	1,700	100%	1,700	FY2002
Irozaki Wind Farm	Shizuoka	34,000	100%	34,000	FY2010
Tahara Bayside Wind Farm	Aichi	22,000	100%	22,000	FY2004
Tahara Wind Farm	Aichi	1,980	100%	1,980	FY2003
Awara-Kitagata Wind Farm	Fukui	20,000	100%	20,000	FY2010
Yokihi no Sato Wind Park	Yamaguchi	4,500	100%	4,500	FY2003
Aso-Oguni Wind Farm	Kumamoto	8,500	88%	7,459	FY2006
Aso-Nishihara Wind Farm	Kumamoto	17,500	88%	15,356	FY2004
Nagasaki-Shikamachi Wind Farm	Nagasaki	15,000	70%	10,500	FY2004
Minami Oosumi Wind Farm	Kagoshima	26,000	80%	20,800	FY2002
<b>Domestic: 18 projects</b>		<b>352,860</b>		<b>324,234</b>	

## (2)-4-1. List of Overseas Power Generation Projects in Operation



Power plant/project	Type	Output capacity	Investment ratio	Owned capacity	Power purchaser	Validity of purchase agreement
<b>Thailand</b>						
Roi-Et	Biomass (Chaff)	10MW	24.7%	2MW	EGAT	21 years
Rayong	Gas (Combined Cycle)	112MW	20.0%	22MW	EGAT / Companies in the industrial park	21 years
Thaioil Power	Gas (Combined Cycle)	113MW	19.0%	21MW	EGAT / Companies within the Thai Oil Refinery	25 years
Independent Power	Gas (Combined Cycle)	700MW	10.6%	74MW	EGAT	25 years
Gulf Cogeneration	Gas (Combined Cycle)	110MW	49.0%	54MW	EGAT / Companies in the industrial park	21 years
Samutprakarn	Gas (Combined Cycle)	117MW	49.0%	57MW	EGAT / Companies in the industrial park	21 years
Nong Khae	Gas (Combined Cycle)	120MW	49.0%	59MW	EGAT / Companies in the industrial park	21 years
Yala	Biomass (Rubber Wood Waste)	20MW	49.0%	10MW	EGAT	25 years
Kaeng Khoi #2	Gas (Combined Cycle)	1,468MW	49.0%	719MW	EGAT	25 years
<b>Subtotal</b>		<b>2,770MW</b>		<b>1,020MW</b>		
<b>China</b>						
Tianshi	Coal Waste	50MW	24.0%	12MW	Shanxi Province Power Corporation	Renewed every year
Hanjiang (Xihe)	Hydroelectric	180MW	27.0%	49MW	Shaanxi Electric Power Company	Renewed every year
Hanjiang(Shuhe)	Hydroelectric	270MW	27.0%	73MW	Shaanxi Electric Power Company	Renewed every year
Gemeng*	Mainly Coal	5,545MW	7.0%	390MW	Shanxi Province Power Corporation	-
<b>Subtotal</b>		<b>6,045MW</b>		<b>523MW</b>		

\* Gemeng International Energy Co., Ltd., is an electric power company that owns 14 power generation companies.

## (2)-4-2. List of Overseas Power Generation Projects in Operation



Power plant/project	Type	Output capacity	Investment ratio	Owned capacity	Power purchaser	Validity of purchase agreement
<b>USA</b>						
Tenaska Frontier	Gas (Combined Cycle)	830MW	31.0%	257MW	Exelon Generation Company, LLC	20 years
Elwood Energy	Gas (Simple Cycle)	1,350MW	25.0%	338MW	Exelon Generation Company, LLC / Constellation	valid to 2012 / 2016 / 2017
Green Country	Gas (Combined Cycle)	795MW	50.0%	398MW	Exelon Generation Company, LLC	20 years
Birchwood	Coal	242MW	50.0%	121MW	Virginia Electric and Power Company	25 years
Pinelawn	Gas (Combined Cycle)	80MW	50.0%	40MW	Long Island Power Authority	valid to 2025
Equus	Gas (Simple Cycle)	48MW	50.0%	24MW	Long Island Power Authority	valid to 2017
Fluvanna	Gas (Combined Cycle)	885MW	15.0%	133MW	Shell Energy North America	valid to 2024
Edgewood	Gas (Simple Cycle)	80MW	50.0%	40MW	Long Island Power Authority	valid to 2018
Shoreham	Jet-fuel (Simple cycle)	80MW	50.0%	40MW	Long Island Power Authority	valid to 2017
Orange Grove	Gas (Simple Cycle)	96MW	50.0%	48MW	San Diego Gas & Electric	25 years
<b>Subtotal</b>		<b>4,486MW</b>		<b>1,438MW</b>		
<b>Other countries/ regions</b>						
Caliraya(Philippines)	Hydroelectric	23MW	50.0%	11MW	National Power Corporation	25 years
Botocan(Philippines)	Hydroelectric	21MW	50.0%	10MW	National Power Corporation	25 years
Kalayaan(Philippines)	Pumped-up Hydroelectric	685MW	50.0%	342MW	National Power Corporation	25 years
Chiahui(Taiwan)	Gas (Combined Cycle)	670MW	40.0%	268MW	Taiwan Power Company	25 years
Zajaczkowo(Poland)	Wind Power	48MW	45.0%	22MW	ENERGA OBROT S.A.	15 years
Nhon Trach 2(Vietnam)	Gas (Combined Cycle)	750MW	5.0%	38MW	Vietnam Electricity	*
<b>Subtotal</b>		<b>2,196MW</b>		<b>691MW</b>		

(As of March 31, 2012)

\* The agreement is under negotiation.

## I . Tsunami Assessment and Plan for Emergency Power Supply

### (1) Tsunami Assessment

Based on historical records and hypothetical tsunami generating mechanisms, it is estimated that the maximum height of potential tsunami is +4.4m, and the facilities necessary for cooling the nuclear reactor are to be installed in major structures (reactor building, turbine building, etc.) built on a compound site with an elevation of +12m.

### (2) Emergency Power Supply

Three emergency diesel engine generators will be installed inside the reactor building at a site with an elevation +12m. In addition, there are two 500kV lines and a 66kV line capable of supplying electric power to emergency facilities.

## II . Measures to Reinforce Safety

### 1. Tsunami Countermeasures, Safety Enhancement Measures for Ensuring Emergency Power Supply

#### (1) Tsunami Countermeasures

Countermeasures will be implemented to reduce the shock of potential tsunami, prevent the flooding of major structures, and protect equipment in buildings from seawater.

#### (2) Power Supplies

Countermeasures will be implemented in an emergency if power supply from external power sources is cut off and emergency diesel engine generators cannot be utilized.

#### (3) Ensuring Ultimate Heat Removal Functions

Countermeasures will be implemented in an emergency to ensure capabilities for cooling the reactor and spent fuel storage pool.

### 2. Ensuring Capabilities for Managing Severe Accidents

Measures will be implemented for responding rapidly and managing situations even in the event of a severe accident.

### 3. Response Based on the Proposal of the Aomori Prefecture Nuclear Safety Measures Examination Committee

Efforts will be made to respond appropriately to the proposal of the Aomori Prefecture Nuclear Safety Measures Examination Committee.

## Image of measure for reinforcing safety

-1. Tsunami Countermeasures, Safety Enhancement Measures for Ensuring Emergency Power Supply

-2. Ensuring Capabilities for Managing Severe Accidents

-3. Response based on the Proposal of the Aomori Prefecture Nuclear Safety Measures Examination Committee

Installation of reactor containment vessel vent with filter as a continuing initiative to improve safety is under discussion.

Preparation of supplies of such materials and equipment as protective clothing designed to cope with high level of radiation and creation of a radiation management system

Ensure power supply for central control room ventilation and climate control systems, communications systems, etc.

Establishment of emergency response office with seismic isolation functions

Measures to improve the watertightness of important rooms for safety purposes

Preparation of spare parts for seawater pump electric motors, etc.

Installation of hydrogen venting units and interior hydrogen detection units

Installation of emergency generators

Deployment of power supply vehicles

Deployment of heavy equipment for debris removal

Waterproofing of doors in exterior walls

Waterproofing of doors in exterior walls

Deployment of additional fire engines

Reinforcement of water tank

Installation of seawall

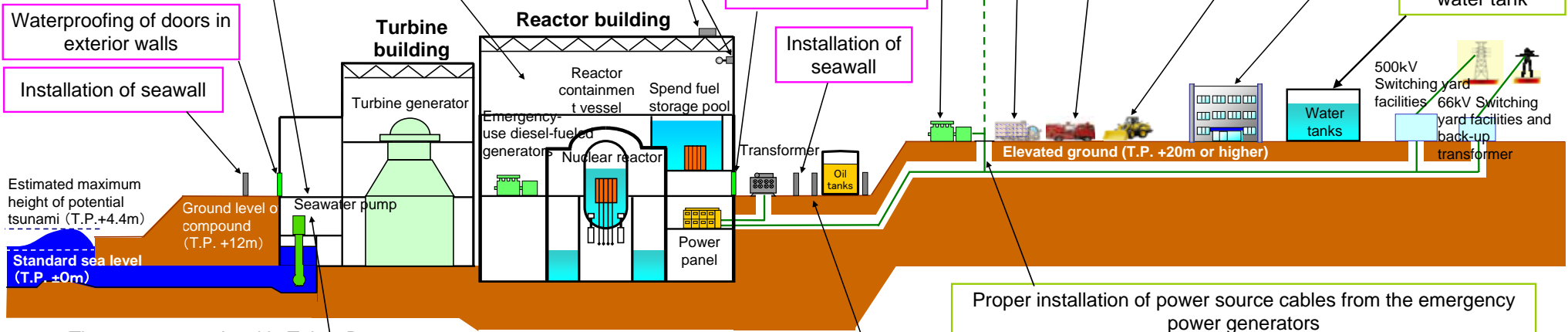
Installation of seawall

Estimated maximum height of potential tsunami (T.P.+4.4m)  
Ground level of compound (T.P. +12m)  
Standard sea level (T.P. +0m)

T.P.: The average sea level in Tokyo Bay

Design allowance for enabling prompt installation of alternative seawater pump

Height extension of oil fences around the oil tanks



Proper installation of power source cables from the emergency power generators

## (2)-6. Coal Mine Development

Mine name	Location	Loading port	Production volume*	Investment ratio	Commercial production
Blair Athol	Queensland	Dalrymple Bay	Approx. 10 million t/yr	10%	1984
Clermont	Queensland	Dalrymple Bay	Approx. 12 million t/yr	15%	2010
Narrabri	New South Wales	Newcastle	Approx. 6-7 million t/yr	7.5%	2010
Maules Creek*	New South Wales	Newcastle	Approx. 10 million t/yr	10%	2013

\* Production volume represents figures for peak production


Note: On September 30, 2011 J-POWER entered into an agreement with Aston Resources Limited to acquire a 10% interest in the Maules Creek mine that Aston is currently developing in Australia. In the future J-POWER plans to conclude a formal agreement to acquire the interest in the mine and to enter into a long-term thermal coal purchase agreement with Aston subject to the satisfaction of conditions precedent including approval of relevant administrative authorities.



Transport of coal on J-POWER's vessel



## (2)-7. New Projects in Thailand

Start of operation	Project name	Type & output	Overview	Current status
2013	7 SPPs	Type: gas-fired Output: 780MW  ( 110MW x 6 120MW x 1 )	<ul style="list-style-type: none"> <li>✓ Projects based on the SPP program* of the Thai government.</li> <li>✓ Development of seven 100MW-class gas-fired thermal power plants in and around industrial parks in Saraburi Province.</li> <li>✓ After startup of operations, the plants will sell electricity to Electricity Generating Authority of Thailand and customers within the industrial parks for a period of 25 years (will also provide steam and cold water to customers in the industrial parks).</li> </ul>	<ul style="list-style-type: none"> <li>✓ Steadily progressing following commencement of construction in October 2010.</li> </ul> <p style="text-align: center;"><u>Rate of construction progress</u> about 50 to 90%</p>  <p style="text-align: center;">GKP1 (As of April 2012)</p>
2014	Nong Saeng	Type: gas-fired Output: 1,600M ( 800MW x 2 )	<ul style="list-style-type: none"> <li>✓ IPP project successfully tendered in 2007 in an international tender under the Thai government's electric power development plan.</li> <li>✓ Development of 1,600MW gas-fired thermal plants in Nong Saeng, Saraburi Province and U-Thai in Ayutthaya Province respectively.</li> <li>✓ After startup of operation, plants will sell electricity to Electricity Generating Authority of Thailand for a period of 25 years.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Signed project finance contract and EPC contract.</li> <li>✓ Commenced construction in December 2011</li> </ul> <p style="text-align: center;"><u>Rate of construction progress</u> About 30%</p>
2015	U-Thai	Type: gas-fired Output: 1,600M ( 800MW x 2 )		<ul style="list-style-type: none"> <li>✓ Making preparations for groundbreaking in FY2012.</li> </ul>

\* SPP (Small Power Producers) program represents the secured long-term power purchase scheme established by the Thai Government. This scheme promotes cogeneration systems, renewable energy, and so forth, and aims at reducing the import and use of fuel oil. The Electricity Generating Authority of Thailand guarantees the purchase of electricity generated from eligible suppliers up to 90MW of capacity.

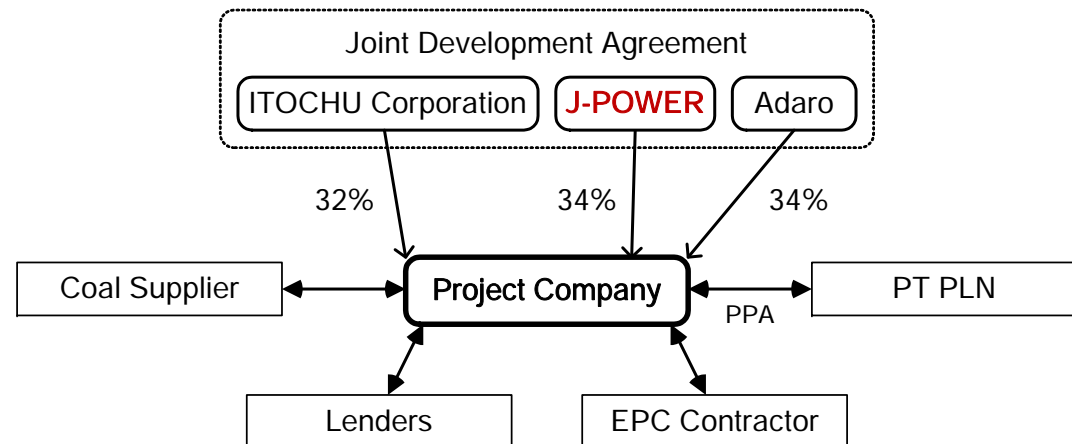
## (2)-8. New Project (Central Java) in Indonesia

### ▶ J-POWER's first overseas coal-fired power development project

Start of operation	Type & output	overview	Current status
2016 2017	Type: Coal-fired Output: 2,000MW (USC 1,000MW x 2)	<ul style="list-style-type: none"> <li>✓ J-POWER successfully acquired preferential negotiation rights for a new coal-fired power development project in June 2011 in an international tender. (Total cost: approx. 4 billion US dollar)</li> <li>✓ The plan is to construct a high-efficiency coal-fired power plant in the north central part of the island of Java, Republic of Indonesia.</li> <li>✓ After commencement of operation, the new plant will sell electricity to PT Perusahaan Listrik Negara (PLN), Indonesia's national power utility, for a 25-year period.</li> </ul>	<ul style="list-style-type: none"> <li>✓ concluded a long-term purchase agreement (PPA) in Oct. 2011</li> <li>✓ Making preparations for groundbreaking in 2012.</li> </ul>



### Outline of the Scheme



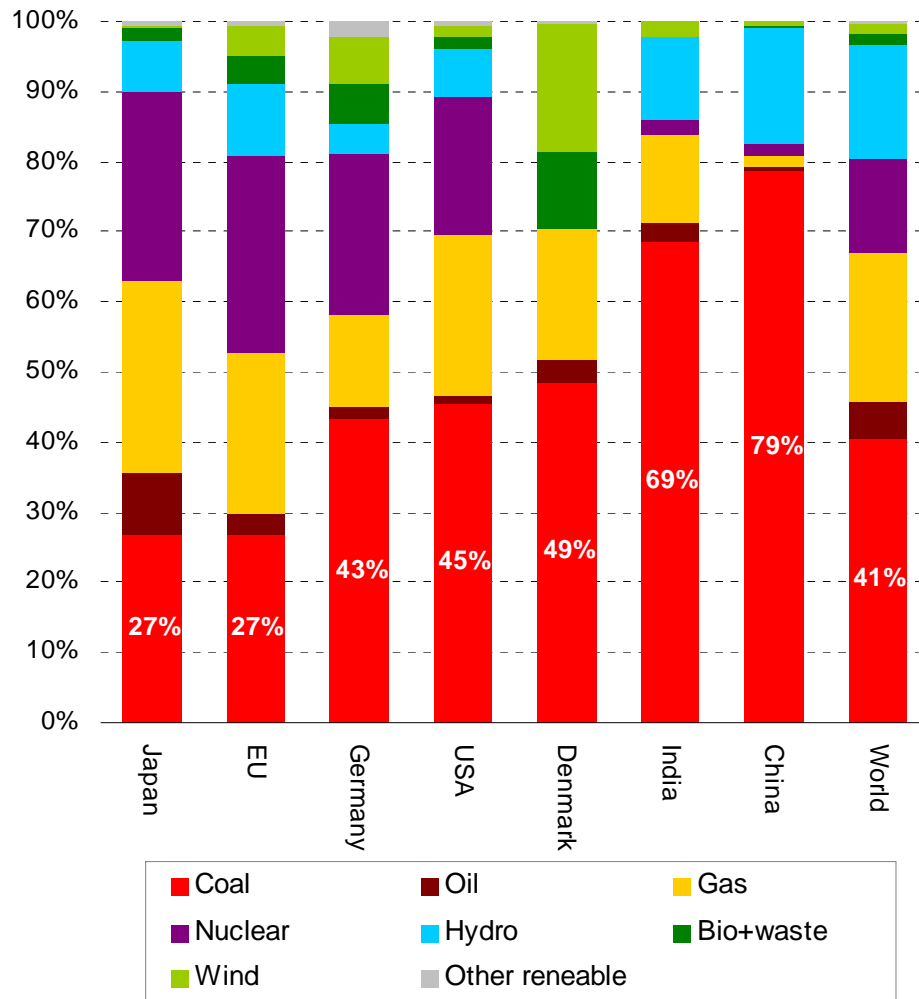


# (2)-9-1. International Comparison of Japan's and J-POWER's Coal-fired Thermal Power



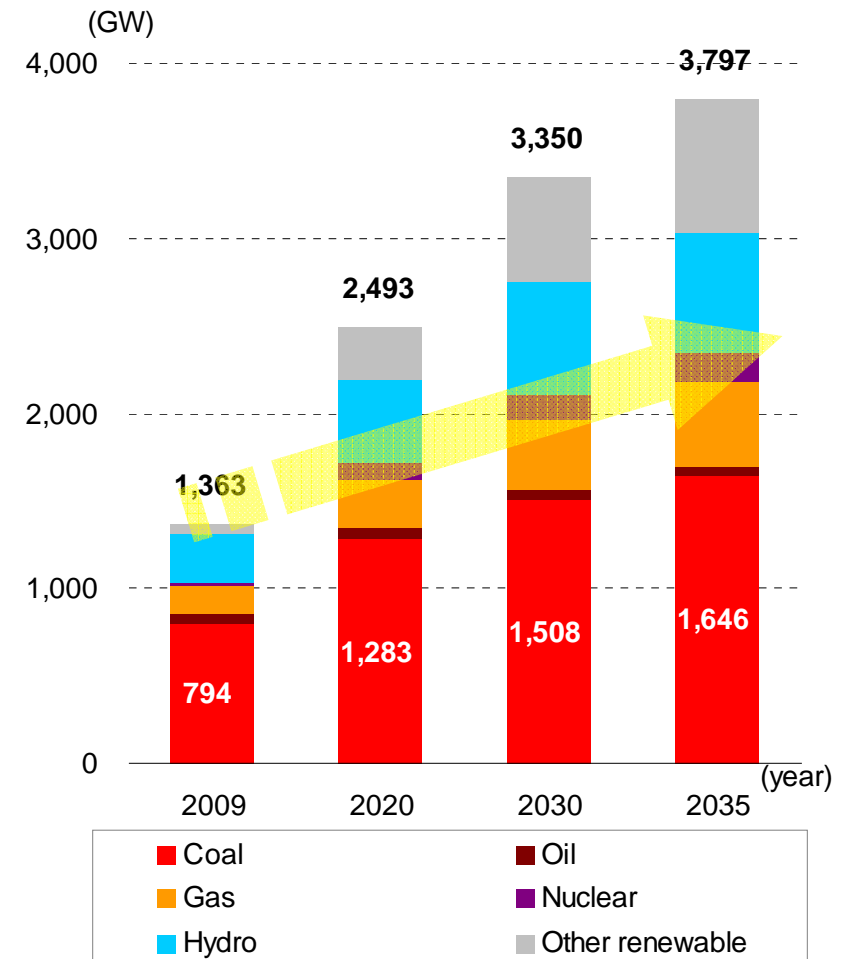
▶ Coal is the world's main energy source for generating electric power.

Breakdown of power generation volume by power source for each country/region



Source: IEA World Energy Outlook 2011, IEA Electricity Information 2011

Estimated power plant capacity by power source in Asia (excluding OECD)



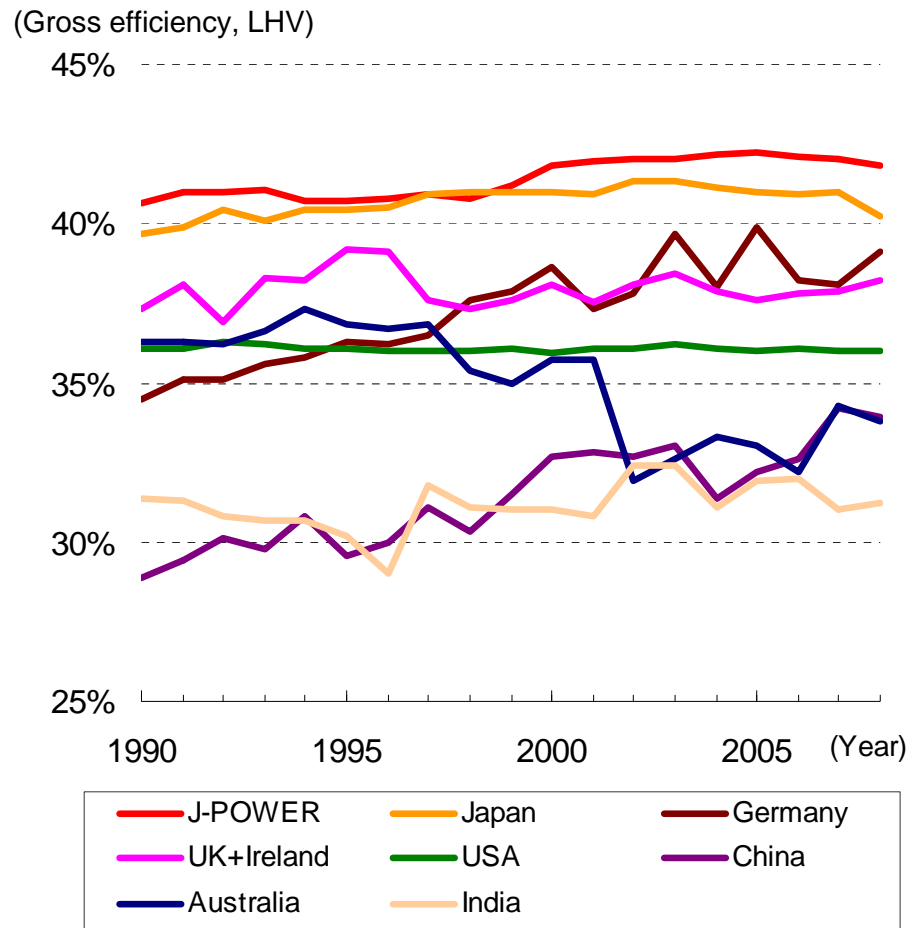
Source: IEA World Energy Outlook 2011

# (2)-9-2. International Comparison of Japan's and J-POWER's Coal-fired Thermal Power

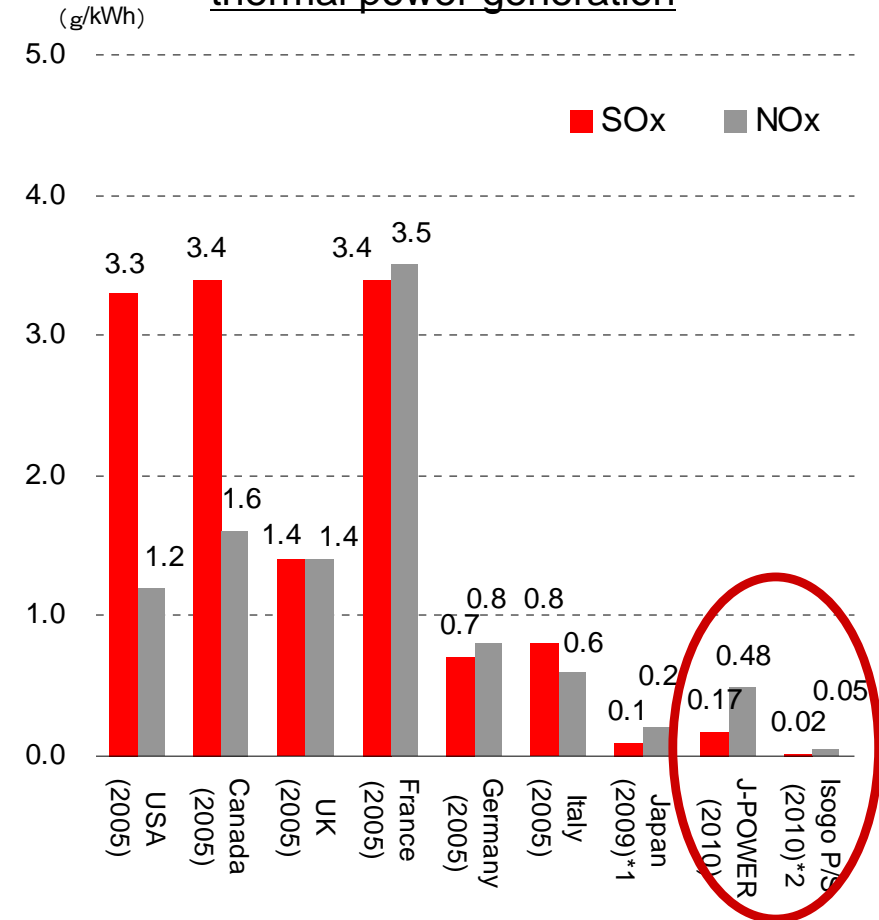


▶ J-POWER has the cutting-edge technologies throughout the world .

Average thermal efficiency of world's coal-fired thermal power plants



SOx and NOx emissions per unit of thermal power generation



Source: Ecofys International Comparison of Fossil Power Efficiency and CO2 Intensity 2011

Source: The Federation of Electric Power Companies of Japan

\*1 Japan: 10 electric power companies & J-POWER

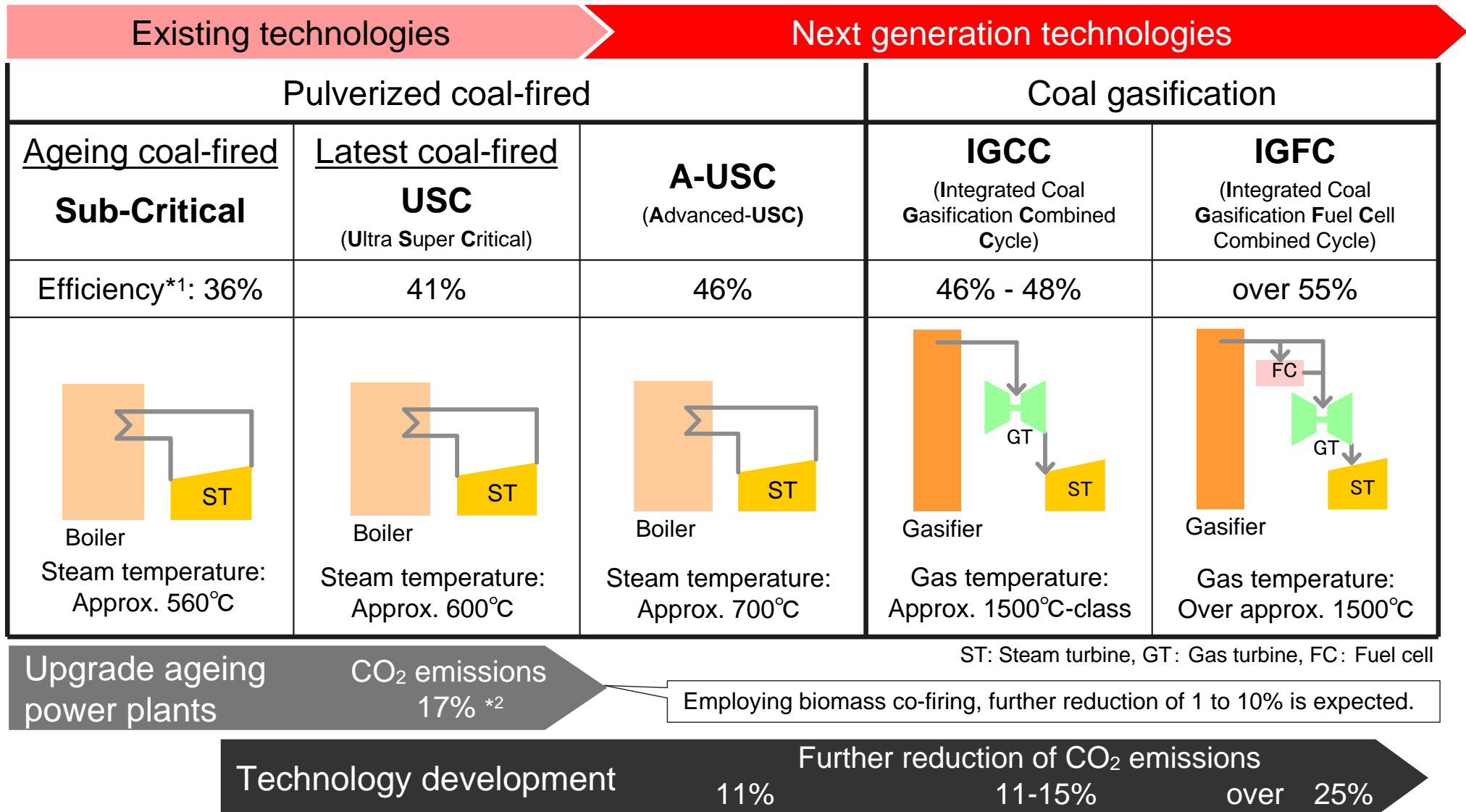
\*2 Isogo: Actual results in 2010

Note: Other than for J-POWER and Isogo, emissions intensity for a combination of coal-,oil-, and gas-fired generation is shown.

# (2)-10. Next-Generation High-Efficiency Coal-Fired Thermal Power Technologies



▶ We aim to significantly increase power generation efficiency and reduce CO<sub>2</sub> emissions through the application of oxygen-blown integrated coal gasification combined cycle.



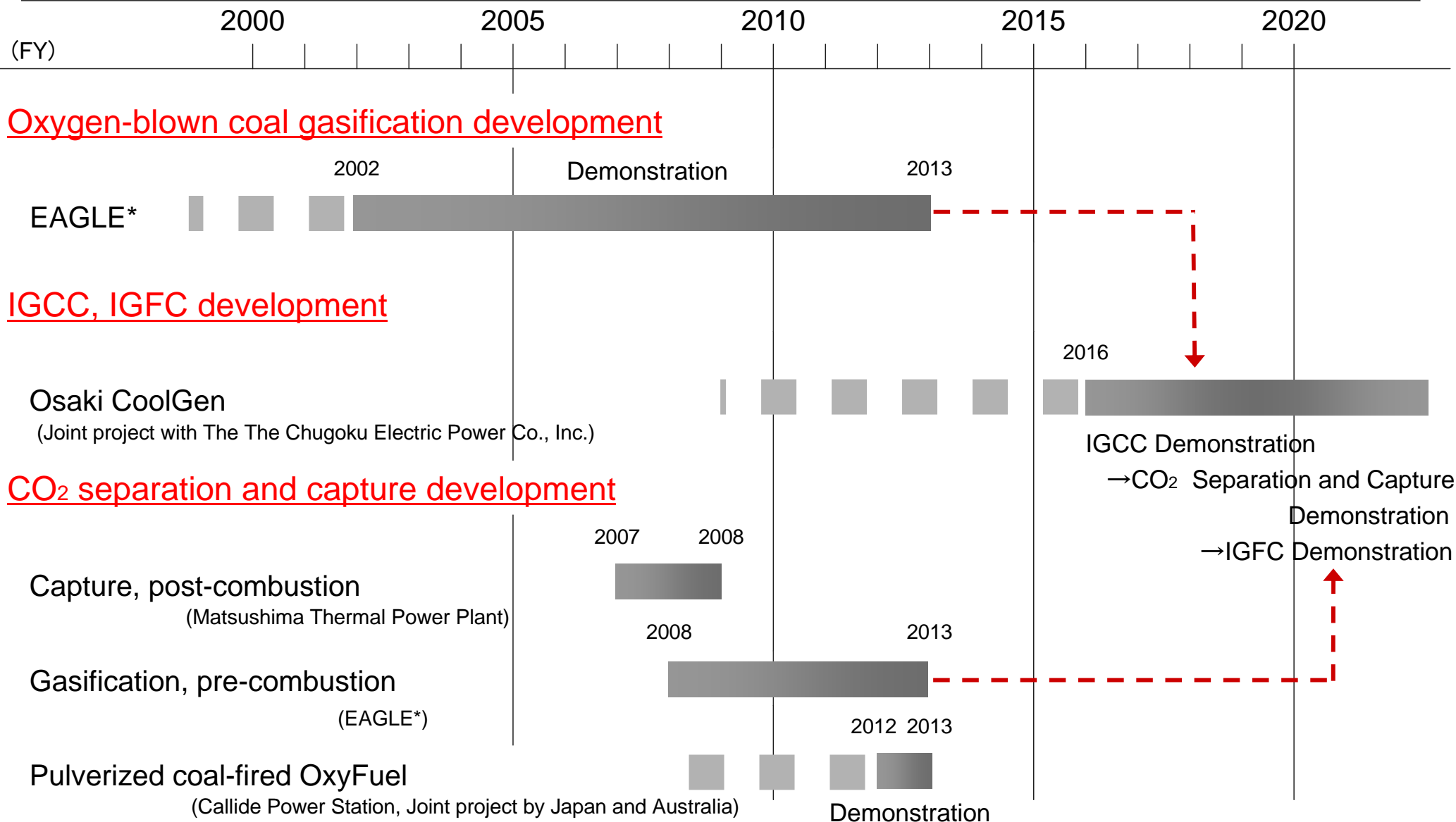
ST: Steam turbine, GT: Gas turbine, FC: Fuel cell

\*1 Net efficiency, HHV

\*2 Actual results through the replacement of J-POWER's Isogo Thermal Power Plant

## (2)-11. Development Roadmap for Clean Coal Technology

▶ Oxygen-blown IGCC & CO<sub>2</sub> separation and recovery technology under development



\*EAGLE: A project of Coal Energy Application for Gas, Liquid & Electricity developed in J-POWER's Wakamatsu Research Institute



Electric Power Development Co., Ltd.

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

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