

Short-Term Energy Supply and Demand Outlook for Japan

- Analysis on Scenario through FY2013 -

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< Points of the Analysis >

1 . Japanese Economy

- In FY2012, the Japanese economy is expected to recover gradually from the damage caused by the Great East Earthquake, achieving GDP growth rate at 0.9%.
- In FY2013, the **Japanese economy is projected to achieve GDP growth rate at 1.4%, pushed up** by the worldwide recovery and domestically by rush demand in anticipation of the consumption tax hike in April 2014.

2 . Energy supply and demand

- In FY2012, energy demand in Japan is expected to decline by 1.0% from previous year to reach 484 MTOE, decreasing for the second year in a row.
- In FY2013, energy demand in Japan **will remain roughly flat** compared with FY2012.

3 . Nuclear power

- In the “Standard Scenario”, it was assumed that 9 nuclear power plants will restart in FY2013, following the new safety standard that will be made by the Nuclear Regulation Authority.
- If 26 nuclear power plants restart, **fossil fuel imports will be reduced by JPY1.1 trillion** and **CO2 reduction will be 59 million ton** (“Restart Scenario”).

4 . Impact of increase in power tariffs

- Several electric utilities are planning to increase their power tariffs in FY2013.
- Higher power tariffs would increase cost of production for Japanese industry. It is concerned that **an additional power tariff cost of about JPY50 billion** for the manufacturing sector in Japan may result in a factor for **shifting their plant activities overseas**.

Table 1 Summary

	FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)	
		1st half	2nd half	Total	1st half	2nd half	Total		
Key energy indicators	Primary energy supply (10 ¹⁰ kcal = KTOE)	513,288 (4.7)	235,596 (-6.1)	253,739 (-3.3)	489,335 (-4.7)	234,722 (-0.4)	249,516 (-1.7)	484,238 (-1.0)	483,919 (-0.1)
	Oil (GL)	232.2 (1.0)	107.7 (-1.5)	130.8 (6.4)	238.5 (2.7)	118.5 (10.1)	127.3 (-2.7)	245.9 (3.1)	235.9 (-4.1)
	Natural Gas (Million tons)	73.2 (5.8)	40.1 (14.0)	45.8 (20.3)	85.8 (17.2)	43.0 (7.2)	47.3 (3.5)	90.3 (5.2)	91.4 (1.2)
	Coal (Million tons)	184.6 (10.2)	84.4 (-8.9)	90.0 (-2.2)	174.4 (-5.5)	86.1 (1.9)	91.3 (1.5)	177.4 (1.7)	177.2 (-0.1)
	Final energy consumption (10 ¹⁰ kcal = KTOE)	343,317 (3.8)	158,140 (-4.3)	176,542 (-0.9)	334,682 (-2.5)	157,539 (-0.4)	173,637 (-1.6)	331,175 (-1.0)	330,610 (-0.2)
	Industry	162,720 (4.8)	77,390 (-2.7)	81,941 (-1.5)	159,331 (-2.1)	77,118 (-0.4)	80,730 (-1.5)	157,848 (-0.9)	159,058 (0.8)
	Residential/commercial	97,044 (4.5)	39,923 (-7.1)	53,570 (-0.9)	93,493 (-3.7)	39,509 (-1.0)	52,555 (-1.9)	92,064 (-1.5)	91,416 (-0.7)
	Transport	83,553 (1.1)	40,827 (-4.3)	41,031 (0.3)	81,858 (-2.0)	40,912 (0.2)	40,352 (-1.7)	81,264 (-0.7)	80,136 (-1.4)
	Electricity sales (TWh)	942.1 (5.9)	439.7 (-7.6)	455.1 (-2.4)	894.8 (-5.0)	438.7 (-0.2)	448.8 (-1.4)	887.5 (-0.8)	892.0 (0.5)
	City gas sales (Million m3/10,000 kcal)	35,283 (4.3)	16,380 (-1.2)	19,532 (4.4)	35,912 (1.8)	16,619 (1.5)	19,805 (1.4)	36,425 (1.4)	37,207 (2.1)
	Fuel oil sales (ML)	196,021 (0.5)	88,968 (-3.3)	107,087 (3.0)	196,055 (0.0)	92,165 (3.6)	105,492 (-1.5)	197,657 (0.8)	193,101 (-2.3)
	CO2 emissions (energy-related) (Million tCO2) (FY1990=100)	1,123 (4.5)			1,173 (4.4)			1,217 (3.8)	1,199 (-1.4)
		106.1			110.7			114.9	113.2
	Key economic indicators	Real GDP (JPY 2005 billion, chained)	512,316 (3.4)	251,063 (-1.0)	262,679 (1.6)	513,742 (0.3)	256,425 (2.1)	262,073 (-0.2)	518,499 (0.9)
Private demand		377,039 [2.5]	187,550	194,969	382,519 [1.1]	192,293	194,662	386,955 [0.8]	393,640 [1.3]
Public demand		118,526 [0.1]	57,395	62,240	119,635 [0.2]	59,839	64,468	124,307 [1.0]	124,929 [0.1]
External demand		16,855 [0.8]	6,312	5,654	11,966 [-1.0]	4,665	3,607	8,271 [-0.8]	8,552 [-0.0]
Index of industrial production (CY2005=100)		94.1 (9.4)	91.5 (-3.3)	95.0 (1.4)	93.2 (-1.0)	91.6 (0.1)	90.0 (-5.3)	90.8 (-2.6)	92.9 (2.3)
Exchange rate (Yen/US\$)		85.7 (-7.7)	79.8 (-10.3)	78.3 (-5.0)	79.1 (-7.7)	79.4 (-0.5)	82.0 (4.7)	80.7 (2.1)	82.0 (1.6)
Crude oil import price, CIF (US\$/bbl)		84.0 (21.9)	112.6 (43.5)	114.7 (28.1)	113.7 (35.3)	114.1 (1.3)	105.0 (-8.4)	109.5 (-3.6)	105.0 (-4.1)
LNG import price, CIF (US\$/ton)		587.6 (28.0)	779.3 (35.6)	856.5 (42.6)	817.9 (39.2)	900.1 (15.5)	843.3 (-1.5)	871.7 (6.6)	843.3 (-3.3)
Steam coal import price, CIF (US\$/ton)		114.7 (15.7)	140.7 (28.0)	145.1 (21.4)	142.9 (24.6)	133.8 (-4.9)	117.7 (-18.9)	125.7 (-12.0)	121.2 (-3.6)
Heating degree days (°C-days)		1,077 (13.1)	54 (-30.5)	1,046 (4.6)	1,100 (2.1)	53 (-2.2)	998 (-4.6)	1,051 (-4.5)	998 (-5.1)
Cooling degree days (°C-days)		560 (70.5)	471 (-15.9)	2 (1600.0)	473 (-15.6)	460 (-2.4)	1 (-15.3)	461 (-2.4)	428 (-7.3)

Sources: Historical data from various publications; forecasts by IEEJ

Notes:

1. Figures in parentheses indicate year-to-year percentage changes. Figures in brackets are contributions to GDP growth.
2. Contributions to GDP growth may not add up to the total due to minor data deviations.
3. Industry includes non-energy use.
4. FY2012: April 2012 - March 2013

Table 2 Macroeconomic Indicators

	FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
		1st half	2nd half	Total	1st half	2nd half	Total	
Real GDP (JPY 2005 billion, chained)	512,316 (3.4)	251,063 (-1.0)	262,679 (1.6)	513,742 (0.3)	256,425 (2.1)	262,073 (-0.2)	518,499 (0.9)	525,871 (1.4)
Private demand	377,039 (3.4)	187,550 (-0.2)	194,969 (3.1)	382,519 (1.5)	192,293 (2.5)	194,662 (-0.2)	386,955 (1.2)	393,640 (1.7)
Private consumption	300,042 (1.7)	149,984 (0.5)	154,762 (2.6)	304,745 (1.6)	153,387 (2.3)	155,329 (0.4)	308,716 (1.3)	312,137 (1.1)
Private residential investment	12,534 (2.2)	6,432 (5.9)	6,566 (1.6)	12,997 (3.7)	6,617 (2.9)	6,803 (3.6)	13,420 (3.3)	14,302 (6.6)
Private non-residential investment	64,790 (3.6)	31,163 (-0.3)	36,286 (8.2)	67,449 (4.1)	32,474 (4.2)	34,670 (-4.5)	67,144 (-0.5)	68,329 (1.8)
Public demand	118,526 (0.4)	57,395 (0.7)	62,240 (1.2)	119,635 (0.9)	59,839 (4.3)	64,468 (3.6)	124,307 (3.9)	124,929 (0.5)
Government consumption	97,902 (2.0)	48,879 (1.2)	50,471 (1.7)	99,350 (1.5)	50,214 (2.7)	51,346 (1.7)	101,559 (2.2)	102,423 (0.8)
Public investment	20,716 (-6.4)	8,504 (-3.6)	11,746 (-1.3)	20,250 (-2.3)	9,628 (13.2)	13,031 (10.9)	22,660 (11.9)	22,348 (-1.4)
Net exports of goods & services	16,855 (43.9)	6,312 (-27.6)	5,654 (-30.5)	11,966 (-29.0)	4,665 (-26.1)	3,607 (-36.2)	8,271 (-30.9)	8,552 (3.4)
Exports of goods & services	83,664 (17.3)	40,530 (-2.3)	41,750 (-1.0)	82,280 (-1.7)	41,230 (1.7)	40,343 (-3.4)	81,573 (-0.9)	83,207 (2.0)
Imports of goods & services	66,809 (12.1)	34,219 (4.4)	36,096 (6.1)	70,315 (5.2)	36,565 (6.9)	36,736 (1.8)	73,301 (4.2)	74,655 (1.8)
Nominal GDP (Billion yen)	480,098 (1.3)	231,329 (-3.0)	241,954 (0.2)	473,283 (-1.4)	234,291 (1.3)	240,442 (-0.6)	474,733 (0.3)	479,609 (1.0)
Industrial production index (CY2005=100)	94.1 (9.4)	91.5 (-3.3)	95.0 (1.4)	93.2 (-1.0)	91.6 (0.1)	90.0 (-5.3)	90.8 (-2.6)	92.9 (2.3)
Tertiary industry activity index (CY2005=100)	97.8 (1.1)	97.4 (-0.1)	99.6 (1.5)	98.5 (0.7)	98.7 (1.4)	99.5 (-0.0)	99.1 (0.7)	100.0 (0.9)
Domestic corporate goods price index (CY2010=100)	100.2 (0.4)	102.0 (1.9)	101.1 (0.7)	101.6 (1.3)	100.6 (-1.4)	100.2 (-1.0)	100.4 (-1.2)	100.5 (0.1)
Consumer price index (CY2010=100)	99.9 (-0.6)	99.8 (-0.2)	99.8 (0.0)	99.8 (-0.1)	99.7 (-0.1)	99.2 (-0.6)	99.5 (-0.3)	99.4 (-0.1)
Exchange rate (Yen/US\$)	85.7 (-7.7)	79.8 (-10.3)	78.3 (-5.0)	79.1 (-7.7)	79.4 (-0.5)	82.0 (4.7)	80.7 (2.1)	82.0 (1.6)
Crude oil import price, CIF (US\$/bb)	84.0 (21.9)	112.6 (43.5)	114.7 (28.1)	113.7 (35.3)	114.1 (1.3)	105.0 (-8.4)	109.5 (-3.6)	105.0 (-4.1)

Sources: Historical data from various publications, forecasts by IEEJ

Notes:

1. Figures in parentheses indicate year-to-year percentage changes.
2. GDP components may not add up to the total GDP due to minor data deviations.

Table 3 Industrial Activities

		FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
			1st half	2nd half	Total	1st half	2nd half	Total	
Production (1,000 tons)	Crude steel	110,792 (14.9)	53,318 (-3.8)	53,145 (-4.0)	106,463 (-3.9)	54,758 (2.7)	51,958 (-2.2)	106,716 (0.2)	106,969 (0.2)
	Ethylene	6,999 (-3.0)	3,293 (-1.0)	3,181 (-13.4)	6,474 (-7.5)	2,995 (-9.1)	3,070 (-3.5)	6,065 (-6.3)	6,112 (0.8)
	Cement	56,051 (-4.0)	27,263 (0.3)	30,315 (5.1)	57,578 (2.7)	28,788 (5.6)	30,512 (0.7)	59,300 (3.0)	59,843 (0.9)
	Paper and paperboard	27,341 (1.7)	13,045 (-5.2)	13,487 (-0.7)	26,533 (-3.0)	12,905 (-1.1)	12,882 (-4.5)	25,787 (-2.8)	25,219 (-2.2)
	Automobiles (1,000 unit)	8,994 (1.5)	3,902 (-18.5)	5,365 (27.5)	9,267 (3.0)	4,907 (25.7)	4,627 (-13.7)	9,534 (2.9)	9,630 (1.0)
Industrial production index (CY2005=100)	Iron & steel	94.3 (16.4)	89.7 (-5.0)	92.0 (-2.2)	90.9 (-3.6)	91.9 (2.4)	89.6 (-2.6)	90.7 (-0.1)	91.1 (0.4)
	Chemicals (incl. chemical fibers)	101.2 (3.4)	103.7 (5.8)	104.0 (-0.3)	103.8 (2.6)	103.1 (-0.6)	99.5 (-4.3)	101.3 (-2.5)	101.8 (0.5)
	Ceramics, stone and clay products	85.5 (6.8)	82.5 (-2.1)	85.1 (-2.0)	83.8 (-2.1)	85.8 (4.0)	84.0 (-1.3)	84.9 (1.3)	85.9 (1.2)
	Paper and pulp	88.9 (1.4)	84.2 (-5.8)	87.8 (-0.8)	86.0 (-3.3)	83.6 (-0.8)	82.6 (-5.8)	83.1 (-3.4)	81.7 (-1.7)
	Nonferrous metals	89.3 (6.4)	84.6 (-6.0)	90.9 (2.5)	87.7 (-1.8)	88.7 (4.8)	86.9 (-4.5)	87.8 (0.0)	88.6 (0.9)
	Transportation machinery	90.0 (6.7)	80.3 (-14.6)	103.1 (19.8)	91.7 (1.9)	94.1 (17.3)	90.0 (-12.7)	92.0 (0.4)	94.8 (3.0)
	Electrical machinery and others	96.4 (16.8)	94.1 (-1.8)	92.9 (-4.1)	93.5 (-3.0)	87.8 (-6.7)	89.8 (-3.4)	88.8 (-5.1)	92.5 (4.2)
	Industrial production total	94.1 (9.4)	91.5 (-3.3)	95.0 (1.4)	93.2 (-1.0)	91.6 (0.1)	90.0 (-5.3)	90.8 (-2.6)	92.9 (2.3)

Sources: Historical data from various publications, forecasts by IEEJ

Notes:

1. Figures in parentheses indicate year-to-year percentage changes.
2. "General and electrical machinery" includes general machinery, electrical machinery, information and telecommunications equipment, electronic parts and devices, precision machinery and metal products.

Table 4 Electricity Sales

		FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
			1st half	2nd half	Total	1st half	2nd half	Total	
Electricity sales (TWh)	Lighting contract	304.2 (6.8)	134.3 (-8.1)	154.7 (-2.2)	288.9 (-5.0)	132.2 (-1.6)	152.8 (-1.2)	284.9 (-1.4)	284.3 (-0.2)
	Power contract (incl. Eligible customer use)	637.9 (5.5)	305.5 (-7.4)	300.4 (-2.5)	605.9 (-5.0)	306.6 (0.4)	296.1 (-1.4)	602.6 (-0.5)	607.7 (0.8)
	Total (incl. Eligible customer use)	942.1 (5.9)	439.7 (-7.6)	455.1 (-2.4)	894.8 (-5.0)	438.7 (-0.2)	448.8 (-1.4)	887.5 (-0.8)	892.0 (0.5)
	of which:	300.2	146.9	143.9	290.8	146.4	140.8	287.2	289.8
	Large-scale industrial users	(6.9)	(-4.5)	(-1.7)	(-3.1)	(-0.3)	(-2.1)	(-1.2)	(0.9)
	Chemicals	28.1 (5.2)	13.8 (-3.0)	13.4 (-3.6)	27.2 (-3.3)	13.5 (-2.1)	13.1 (-2.5)	26.6 (-2.3)	26.6 (0.0)
	Iron & steel	53.3 (15.2)	26.4 (-0.5)	26.8 (0.1)	53.2 (-0.2)	26.9 (1.9)	26.4 (-1.7)	53.3 (0.1)	53.6 (0.7)
	Machinery	74.6 (7.3)	36.2 (-6.6)	35.5 (-1.0)	71.6 (-3.9)	36.0 (-0.5)	34.4 (-2.9)	70.4 (-1.7)	72.1 (2.4)
	Total	251.3 (8.3)	123.6 (-3.8)	121.0 (-1.5)	244.6 (-2.7)	122.9 (-0.5)	117.9 (-2.6)	240.9 (-1.5)	243.0 (0.9)

Sources: Historical data from METI "Monthly Electricity Survey and Statistics," forecasts by IEEJ

Notes:

1. Figures in parentheses indicate year-to-year percentage changes.
2. Demand in and after FY2010 is estimated in accordance with the categorization before an institutional change to secure the continuity of the statistics.

Table 5 City Gas Sales

		FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
			1st half	2nd half	Total	1st half	2nd half	Total	
City gas sales (Million m ³)	Household	9,791 (1.7)	3,727 (-2.1)	6,065 (1.3)	9,791 (0.0)	3,719 (-0.2)	5,964 (-1.7)	9,683 (-1.1)	9,645 (-0.4)
	Commercial	4,739 (2.7)	2,226 (-10.3)	2,254 (-0.2)	4,480 (-5.5)	2,232 (0.3)	2,247 (-0.3)	4,479 (-0.0)	4,490 (0.2)
	Industrial	17,628 (5.5)	9,036 (3.5)	9,635 (8.3)	18,671 (5.9)	9,266 (2.6)	10,019 (4.0)	19,285 (3.3)	20,092 (4.2)
	Others	3,125 (8.3)	1,392 (-10.5)	1,578 (0.5)	2,970 (-5.0)	1,401 (0.7)	1,576 (-0.2)	2,977 (0.2)	2,979 (0.1)
	Total	35,283 (4.3)	16,380 (-1.2)	19,532 (4.4)	35,912 (1.8)	16,619 (1.5)	19,805 (1.4)	36,425 (1.4)	37,207 (2.1)

Sources: Historical data from METI "Monthly Gas Industry Statistics," forecast by IEEJ

Notes:

1. Figures in parentheses indicate year-to-year percentage changes.
2. Converted at 1 m³=41.8605 MJ (10,000 kcal)

Table 6 Fuel Oil Sales

		FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
			1st half	2nd half	Total	1st half	2nd half	Total	
Fuel oil sales (ML)	Gasoline	58,159 (1.0)	28,690 (-3.9)	28,524 (0.7)	57,214 (-1.6)	28,662 (-0.1)	27,969 (-1.9)	56,630 (-1.0)	55,775 (-1.5)
	Naphtha	46,699 (-1.3)	21,672 (-2.1)	22,056 (-10.2)	43,728 (-6.4)	20,793 (-4.1)	21,187 (-3.9)	41,979 (-4.0)	42,287 (0.7)
	Jet fuel	5,153 (-2.5)	2,198 (-20.8)	2,006 (-15.6)	4,204 (-18.4)	2,036 (-7.4)	2,045 (1.9)	4,081 (-2.9)	4,171 (2.2)
	Kerosene	20,350 (1.5)	4,575 (-16.7)	15,044 (1.3)	19,619 (-3.6)	4,460 (-2.5)	14,416 (-4.2)	18,876 (-3.8)	18,194 (-3.6)
	Diesel oil	32,893 (1.6)	15,962 (-1.8)	16,905 (1.6)	32,866 (-0.1)	16,353 (2.5)	16,588 (-1.9)	32,941 (0.2)	32,470 (-1.4)
	Heavy fuel oil A	15,424 (-3.9)	6,069 (-9.6)	8,611 (-1.2)	14,680 (-4.8)	5,898 (-2.8)	8,360 (-2.9)	14,258 (-2.9)	13,946 (-2.2)
	Heavy fuel oil B/C	17,343 (5.5)	9,803 (11.2)	13,941 (63.5)	23,743 (36.9)	13,964 (42.5)	14,927 (7.1)	28,890 (21.7)	26,260 (-9.1)
	For power generation	7,681 (4.1)	5,461 (38.5)	9,432 (152.4)	14,893 (93.9)	9,469 (73.4)	10,540 (11.7)	20,009 (34.3)	17,480 (-12.6)
	For other uses	9,662 (6.7)	4,342 (-10.9)	4,509 (-5.9)	8,850 (-8.4)	4,495 (3.5)	4,387 (-2.7)	8,882 (0.4)	8,780 (-1.1)
	Total	196,021 (0.5)	88,968 (-3.3)	107,087 (3.0)	196,055 (0.0)	92,165 (3.6)	105,492 (-1.5)	197,657 (0.8)	193,101 (-2.3)
LPG sales (1,000 tons)	16,482 (0.4)	7,338 (-3.6)	9,402 (6.0)	16,740 (1.6)	7,864 (7.2)	9,135 (-2.8)	16,999 (1.5)	16,804 (-1.1)	

Sources: Historical data from METI, "Monthly Resources and Energy Statistics" Petroleum Association of Japan, "Monthly Oil Statistics," and Japan LP Gas Association, "LP Gas Receipt and Delivery Monthly Report" forecast by IEEJ

Note: Figures in parentheses indicate year-to-year percentage changes.

Table 7 Primary Energy Supply

		FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
			1st half	2nd half	Total	1st half	2nd half	Total	
Primary energy supply (10 ¹⁰ kcal)	Coal	119,140 (10.7)	54,428 (-9.1)	57,925 (-2.3)	112,353 (-5.7)	55,564 (2.1)	58,730 (1.4)	114,294 (1.7)	116,563 (2.0)
	Oil	211,921 (1.0)	98,243 (-1.5)	119,382 (6.4)	217,625 (2.7)	108,158 (10.1)	116,216 (-2.7)	224,374 (3.1)	215,269 (-4.1)
	Natural gas	95,506 (5.8)	52,299 (14.0)	59,672 (20.3)	111,971 (17.2)	56,055 (7.2)	61,739 (3.5)	117,794 (5.2)	119,231 (1.2)
	Hydro	18,170 (10.8)	11,235 (-1.8)	7,180 (6.8)	18,415 (1.3)	10,031 (-10.7)	6,579 (-8.4)	16,609 (-9.8)	17,222 (3.7)
	Nuclear	60,660 (3.0)	15,793 (-47.8)	5,623 (-81.5)	21,416 (-64.7)	1,110 (-93.0)	2,214 (-60.6)	3,324 (-84.5)	7,492 (125.4)
	Others	7,891 (6.2)	3,598 (-6.1)	3,957 (-2.5)	7,555 (-4.3)	3,803 (5.7)	4,039 (2.1)	7,842 (3.8)	8,141 (3.8)
	Total	513,288 (4.7)	235,596 (-6.1)	253,739 (-3.3)	489,335 (-4.7)	234,722 (-0.4)	249,516 (-1.7)	484,238 (-1.0)	483,919 (-0.1)
Real GDP (JPY 2005 billion, chained)		512,316 (3.4)	251,063 (-1.0)	262,679 (1.6)	513,742 (0.3)	256,425 (2.1)	262,073 (-0.2)	518,499 (0.9)	525,871 (1.4)
Energy intensity (primary energy supply/GDP) (FY2005=100)		94.0 (1.2)			89.4 (-4.9)			87.6 (-1.9)	86.3 (-1.5)
CO ₂ emissions (energy-related) (Million tCO ₂) (FY1990=100)		1,123 (4.5)			1,173 (4.4)			1,217 (3.8)	1,199 (-1.4)
		106.1			110.7			114.9	113.2

Sources: Historical data from IEEJ and Department of the Environment databases, and Cabinet Office's "Preliminary National Income Statistics;" Forecasts by IEEJ

Note:

1. Figures in parentheses indicate year-to-year percentage changes.
2. "Others" include geothermal energy, new energies, etc.

Table 8 Final Energy Consumption

		FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
			1st half	2nd half	Total	1st half	2nd half	Total	
By sector (10 ¹⁰ kcal)	Industry	162,720 (4.8)	77,390 (-2.7)	81,941 (-1.5)	159,331 (-2.1)	77,118 (-0.4)	80,730 (-1.5)	157,848 (-0.9)	159,058 (0.8)
	Residential/commercial	97,044 (4.5)	39,923 (-7.1)	53,570 (-0.9)	93,493 (-3.7)	39,509 (-1.0)	52,555 (-1.9)	92,064 (-1.5)	91,416 (-0.7)
	Residential	54,452 (5.6)	20,457 (-6.5)	32,173 (-1.2)	52,630 (-3.3)	19,997 (-2.2)	31,374 (-2.5)	51,371 (-2.4)	50,811 (-1.1)
	Commercial	42,592 (3.0)	19,466 (-7.8)	21,397 (-0.4)	40,863 (-4.1)	19,512 (0.2)	21,181 (-1.0)	40,693 (-0.4)	40,605 (-0.2)
	Transport	83,553 (1.1)	40,827 (-4.3)	41,031 (0.3)	81,858 (-2.0)	40,912 (0.2)	40,352 (-1.7)	81,264 (-0.7)	80,136 (-1.4)
By energy source (10 ¹⁰ kcal)	Coal and coal products	37,921 (10.4)	19,117 (-0.1)	18,571 (-1.2)	37,688 (-0.6)	19,348 (1.2)	18,350 (-1.2)	37,698 (0.0)	37,679 (-0.1)
	Oil	178,158 (0.7)	79,137 (-4.9)	93,554 (-1.4)	172,691 (-3.1)	78,676 (-0.6)	91,285 (-2.4)	169,961 (-1.6)	167,799 (-1.3)
	City gas	34,921 (7.6)	16,459 (1.1)	19,823 (6.3)	36,282 (3.9)	16,198 (-1.6)	20,001 (0.9)	36,199 (-0.2)	37,427 (3.4)
	Electricity	88,651 (6.1)	41,766 (-6.6)	42,891 (-2.3)	84,657 (-4.5)	41,670 (-0.2)	42,317 (-1.3)	83,987 (-0.8)	84,401 (0.5)
	Others	3,666 (7.5)	1,661 (-7.8)	1,703 (-8.6)	3,364 (-8.2)	1,646 (-0.9)	1,684 (-1.1)	3,330 (-1.0)	3,304 (-0.8)
	Total	343,317 (3.8)	158,140 (-4.3)	176,542 (-0.9)	334,682 (-2.5)	157,539 (-0.4)	173,637 (-1.6)	331,175 (-1.0)	330,610 (-0.2)
Real GDP (JPY 2005 billion, chained)		512,316 (3.4)	251,063 (-1.0)	262,679 (1.6)	513,742 (0.3)	256,425 (2.1)	262,073 (-0.2)	518,499 (0.9)	525,871 (1.4)
Industrial production index (CY2005=100)		94.1 (9.4)	91.5 (-3.3)	95.0 (1.4)	93.2 (-1.0)	91.6 (0.1)	90.0 (-5.3)	90.8 (-2.6)	92.9 (2.3)
Heating degree days (°C-days)		1,077 (13.1)	54 (-30.5)	1,046 (4.6)	1,100 (2.1)	53 (-2.2)	998 (-4.6)	1,051 (-4.5)	998 (-5.1)
Cooling degree days (°C-days)		560 (70.5)	471 (-15.9)	2 (1600.0)	473 (-15.6)	460 (-2.4)	1 (-15.3)	461 (-2.4)	428 (-7.3)

Sources: Historical data from IEEJ database and others; forecasts by IEEJ.

Note:

1. Figures in parentheses indicate year-to-year percentage changes.
2. Industry includes non-energy use.

Table 9 Electricity Generation Mix (for utilities)

		FY2010	FY2011			FY2012 (Forecast)			FY2013 (Forecast)
			1st half	2nd half	Total	1st half	2nd half	Total	
Input (10 ¹⁰ kcal)	Fossil fuel thermal	124,730 (5.6)	66,496 (7.5)	83,729 (33.1)	150,225 (20.4)	81,411 (22.4)	86,312 (3.1)	167,723 (11.6)	163,199 (-2.7)
	Coal	49,859 (3.7)	22,114 (-10.4)	25,452 (1.1)	47,566 (-4.6)	22,795 (3.1)	26,786 (5.2)	49,581 (4.2)	51,788 (4.5)
	Oil, etc.	17,397 (17.2)	10,514 (17.1)	19,827 (135.4)	30,341 (74.4)	20,912 (98.9)	19,237 (-3.0)	40,149 (32.3)	33,362 (-16.9)
	Crude oil	4,490 (29.7)	3,292 (35.1)	7,599 (270.0)	10,891 (142.6)	6,223 (89.0)	5,959 (-21.6)	12,182 (11.9)	10,298 (-15.5)
	Heavy fuel oil C	7,794 (8.3)	4,823 (21.5)	9,407 (146.0)	14,230 (82.6)	11,644 (141.4)	10,458 (11.2)	22,101 (55.3)	17,198 (-22.2)
	Natural gas	57,474 (4.2)	33,868 (20.1)	38,450 (31.3)	72,318 (25.8)	37,704 (11.3)	40,289 (4.8)	77,993 (7.8)	78,049 (0.1)
	Hydro	16,729 (9.9)	10,334 (-1.8)	6,572 (6.0)	16,906 (1.1)	9,225 (-10.7)	6,024 (-8.3)	15,249 (-9.8)	15,809 (3.7)
	Nuclear	60,660 (3.0)	15,793 (-47.8)	5,623 (-81.5)	21,416 (-64.7)	1,110 (-93.0)	2,214 (-60.6)	3,324 (-84.5)	7,492 (125.4)
	Others	1,135 (-0.7)	544 (-4.4)	571 (0.9)	1,115 (-1.8)	577 (6.1)	610 (6.8)	1,187 (6.5)	1,265 (6.6)
	Total	203,254 (5.1)	93,167 (-9.7)	96,495 (-3.6)	189,662 (-6.7)	92,323 (-0.9)	95,160 (-1.4)	187,483 (-1.1)	187,765 (0.2)
Electricity generated (10 ¹⁰ kcal)	83,806 (6.1)	38,200 (-9.5)	39,924 (-4.0)	78,124 (-6.8)	37,931 (-0.7)	39,449 (-1.2)	77,381 (-1.0)	77,653 (0.4)	

Source: Both historical data and forecasts are from IEEJ.

Note: Figures in parentheses indicate year-to-year percentage changes.

Table 10 Balance of International Trade

(Trillion yen)	Actual		Forecast	
	FY2010	FY2011	FY2012	FY2013
Export	67.8	65.3	63.4	63.6
Import	62.4	69.7	70.5	69.9
Fossil fuels	18.1	23.1	24.2	23.4
Balance of Trade	5.4	-4.4	-7.1	-6.3

Source: Historical data from Ministry of Finance. Forecasts are from IEEJ.

Table 11 Changes of fuel import for power generation and CO₂ emissions by restart of nuclear power plants (compared with standard scenario)

	FY2013			(Reference)
	Zero Scenario	Standard Scenario (9 units)	Restart Scenario (26 units)	26 units Full operation
Capacity factor	2.3%	8.8%	34.0%	51.8%
Coal	+0.3 Million ton (+0.2%)	—	-4.69 Million ton (- 2.6%)	-8.27 Million ton (- 4.7%)
Oil	+4.15 GL (+1.8%)	—	-12.2 GL (-5.2%)	-17.4 GL (- 7.4%)
Natural Gas	+1.26 Million ton (+1.4%)	—	-5.81 Million ton (- 6.4%)	-12.2 Million ton (- 13.3%)
CO ₂	+15 Million ton (+1.3%)	—	-59 Million ton (- 4.9%)	-98 Million ton (- 8.2%)

Table 12 Changes of fossil fuel import and impact on macro economy by restart of nuclear power plants (compared with standard scenario)

	FY2013			(Reference)
	Zero Scenario	Standard Scenario (9 units)	Restart Scenario (26 units)	26 units Full operation
Capacity factor	2.3%	8.8%	34.0%	51.8%
Changes in GDP	-0.03%	—	+0.12%	+0.22%
Fossil fuel import for power suppliers	+0.3 trillion yen	—	-1.1 trillion yen	-1.8 trillion yen
Increase of power rate	+0.3 yen/kWh	—	-1.2 yen/kWh	-2.0 yen/kWh

Note: Power tariff for large customers was about 11 yen/kWh and power tariff for households was about 21 yen/kWh in FY2010. Source: Handbook of Energy & Economic Statistics in Japan

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