

The World Bank “East Asia and Pacific Economic Update” (March 2011)

If history is any guide, **real GDP growth will be negatively affected** through mid-2011. **Growth should though pick up in subsequent quarters** as reconstruction efforts, which could last five years, accelerate.

While it is too early to estimate accurately, the cost of the damage is likely to be greater than the damage caused by the 6.9 magnitude Kobe earthquake in 1995.

*The damage caused by Kobe earthquake was about 10 trillion yen (US\$100 billion)

The World Bank “Global Economic Prospects” (June 2011)

The global financial crisis is no longer the major force dictating the pace of economic activity in developing countries.

The earthquake and tsunami in **Japan** and the political turmoil in the **Middle-East and North Africa** have contributed to a **modest slowing in global industrial production and trade**.

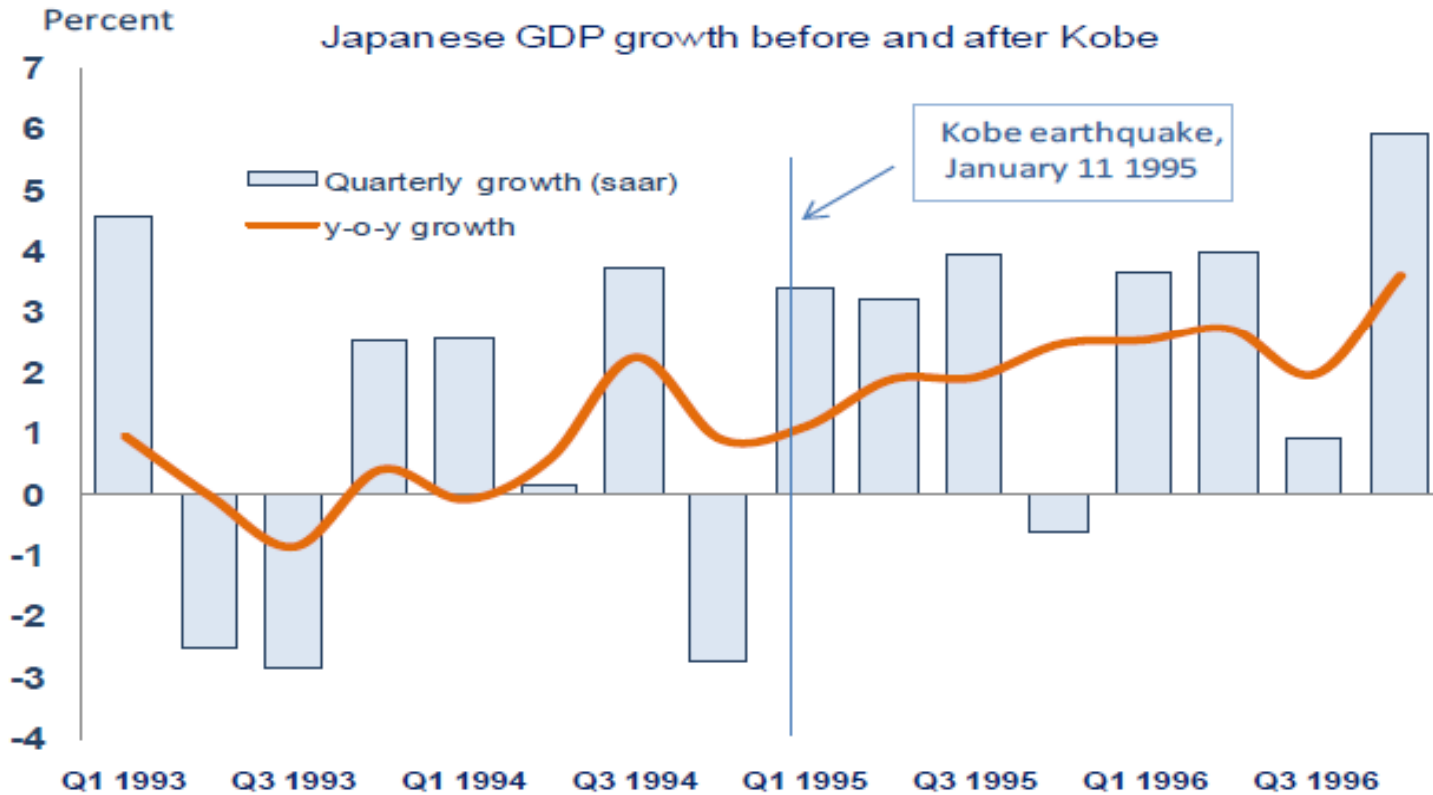
Global growth is projected to remain strong from 2011 through 2013.

“Global Economic Prospects” (cont’d)

<i>Real GDP growth</i> ⁵	2009	2010e	2011f	2012f	2013f
World	-2.2	3.8	3.2	3.6	3.6
Memo item: World (PPP weights)	-0.8	4.8	4.3	4.4	4.5
High income	-3.4	2.7	2.2	2.7	2.6
OECD Countries	-3.5	2.6	2.1	2.6	2.5
Euro Area	-4.1	1.7	1.7	1.8	1.9
Japan	-6.3	4.0	<u>0.1</u>	2.6	2.0
United States	-2.6	2.8	2.6	2.9	2.7
Non-OECD countries	-1.9	4.2	4.3	4.8	4.9
Developing countries	1.9	7.3	6.3	6.2	6.3
East Asia and Pacific	7.4	9.6	8.5	8.1	8.2
China	<u>9.1</u>	<u>10.3</u>	<u>9.3</u>	<u>8.7</u>	<u>8.8</u>
Indonesia	4.6	6.1	6.3	6.5	6.5
Thailand	-2.3	7.8	3.7	4.2	4.3

WB “Global Economic Prospects” (June 2011)

Kobe had no noticeable impact on growth



Source: Japanese statistical bureau.

Estimate on the Economic Damage of the Great Earthquake

	Eastern Japan Great Earthquake (March 2011)	Kobe Great Earthquake (January 1995)
Buildings (housing, land, shop, office, factory, machinery)	JPY11 to 20 trillion (US\$138 to 250 billion)	JPY6.3 trillion (US\$78.8 billion)
Life-lines (water, gas, electricity, terecom, broadcast)	JPY1 trillion (US\$12.5 billion)	JPY0.6 trillion (US\$7.5 billion)
Social infrastructure (river, road, port, airport)	JPY2 trillion (US\$25 billion)	JPY2.2 trillion (US\$27.5 billion)
Agriculture (farmland/facility, forestry, fishery), others	JPY2 trillion (US\$25 billion)	JPY0.5 trillion (US\$6.3 billion)
Total	JPY16 to 25 trillion (US\$200 to 313 billion)	JPY9.6 trillion (US\$120 billion)

Source: Cabinet Office, Government of Japan

Dollar-denominated figures are calculated by the Bank staff, assuming 80 yen / US\$.

Impact on GDP via Constraint on Electric Power Supply

< Situation so far >

Demand and supply of electricity after the earthquake (at peak: MW)

	3/14	3/15	3/16	3/17	3/18
Estimated demand	41,000	37,000	38,000	38,000	40,000
Supply capacity	31,000	33,000	33,000	33,500	34,000

(*) Estimated demand is the prediction by the Tokyo Electric Company on the previous day.
Actual demand was less than the supply capacity due to planned power cuts and savings of electricity.



Decline in GDP by planned power cut, etc.

	FY2011		FY2012	FY2013
	First half	Second half		
	$-\alpha_1$	$-\alpha_2$	$-\beta$	$-\gamma$

It is difficult to estimate the impact in exact numbers because it is subject to significant uncertainty surrounding the reactions of the economic agents.

< Reactions >

Enterprises: adjusting operation, private generation, utilizing plants in other areas, saving electricity at offices, and working at home

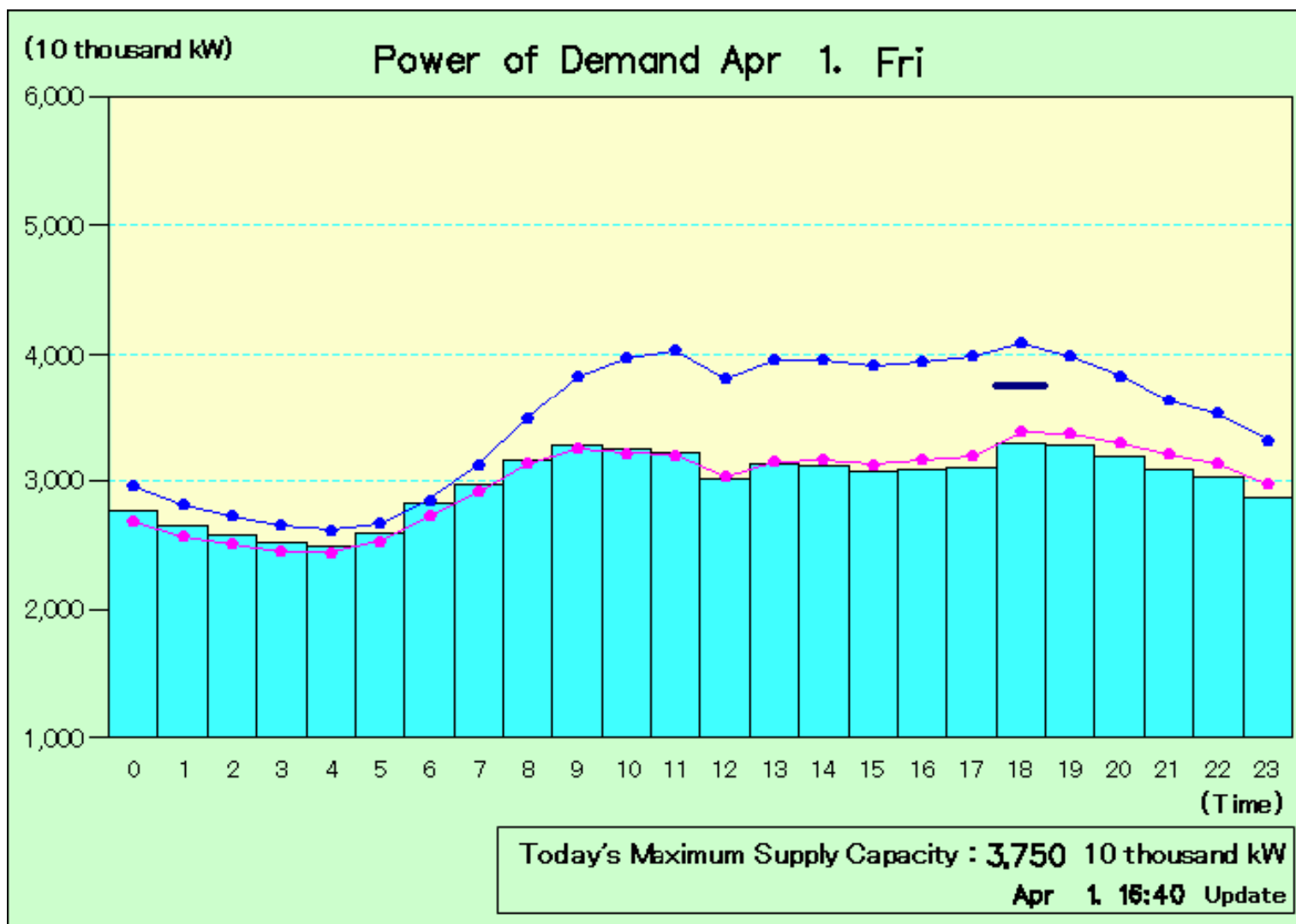
Company	Reactions
Steel A	adjusting operation, considering production in alternative plants in non-disaster areas
Chemical B	supplying power to plants by private power generation
Restaurant C	saving electricity in shops, suspend late-night operations, endorsing head office staff to work at home
Transportation D	operate under special timetable, saving electricity at stations, suspending some of automatic ticket gates

Household: Saving electricity at homes

Electric Power Company:

Doing its utmost to secure the stable power supply as early as possible

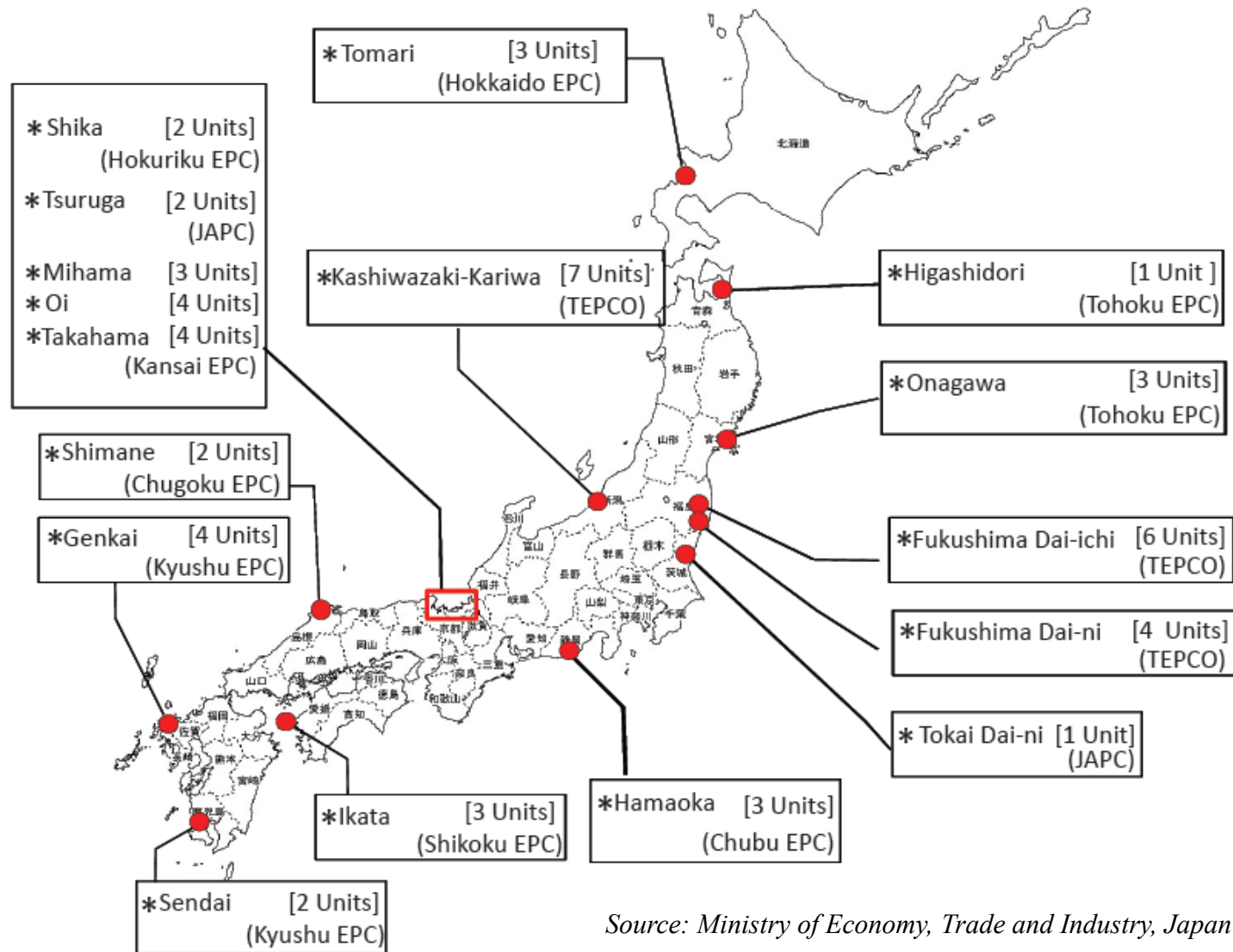
- Today's actual demand (No rolling blackout)
- Today's actual demand (Rolling blackout)
- Same day, last year's demand
- Yesterday's actual demand
- Today's Maximum Capacity



Source: Tokyo Electric Power Company (TEPCO)

Location of Nuclear Power Stations in Japan

54 units (30 units of BWR and 24 units of PWR, total 49GW) in 17 sites



A Research:

If electricity fee increases by 10 percent in Japan...

- 1) Electricity demand will be contracted by -2.5 percent.
- 2) Industrial production will be contracted by -2.4 percent.
- 3) GDP growth will be contracted by -0.7 percent.

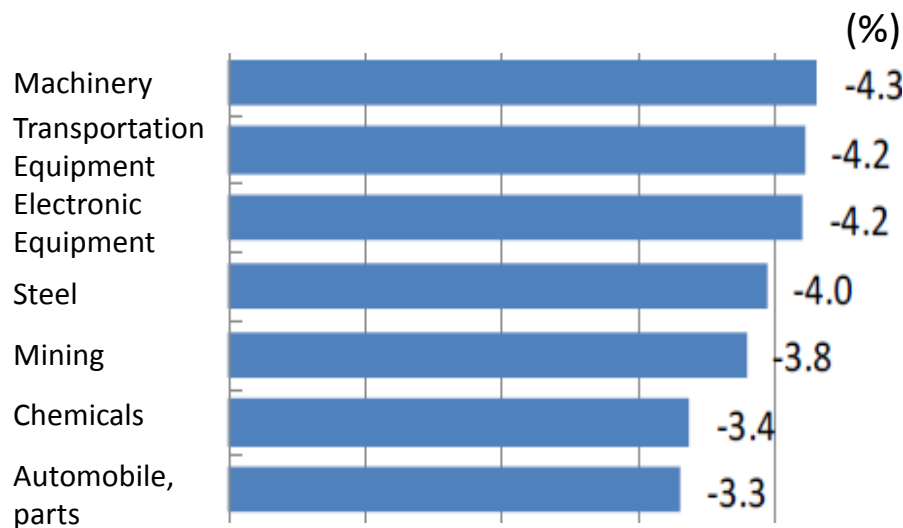
Source: Daiwa Research Institute

A Research:

If all the nuclear power plants to be suspended in Japan...

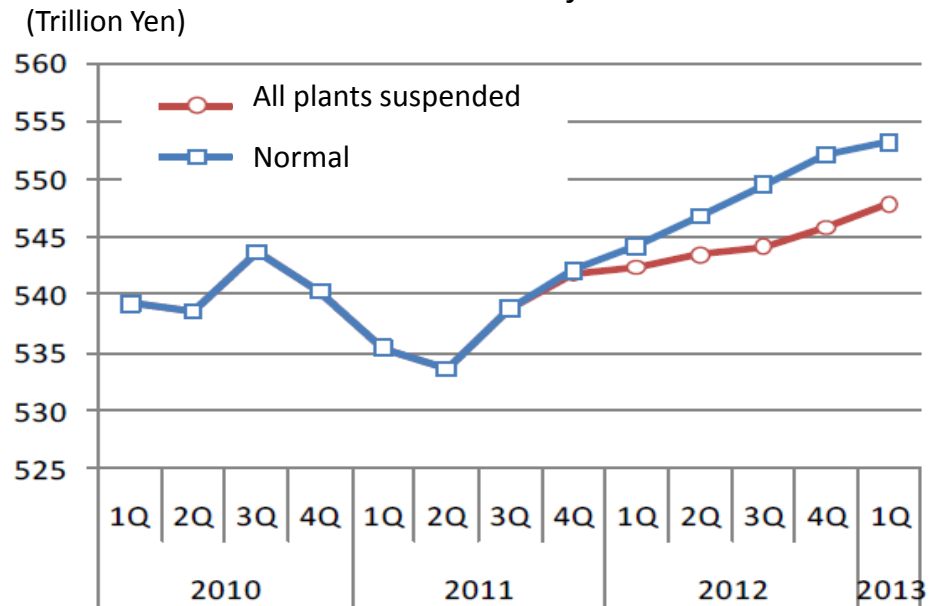
- 1) Electricity demand will be contracted by -5.7 percent in 2011 and -7.7 percent in 2012.
- 2) Industrial production will be contracted by -1.8 percent.
- 3) GDP growth will be contracted by -0.1 percent in 2011 and -0.8 percent in 2012.

Impact of suspension on production by industries

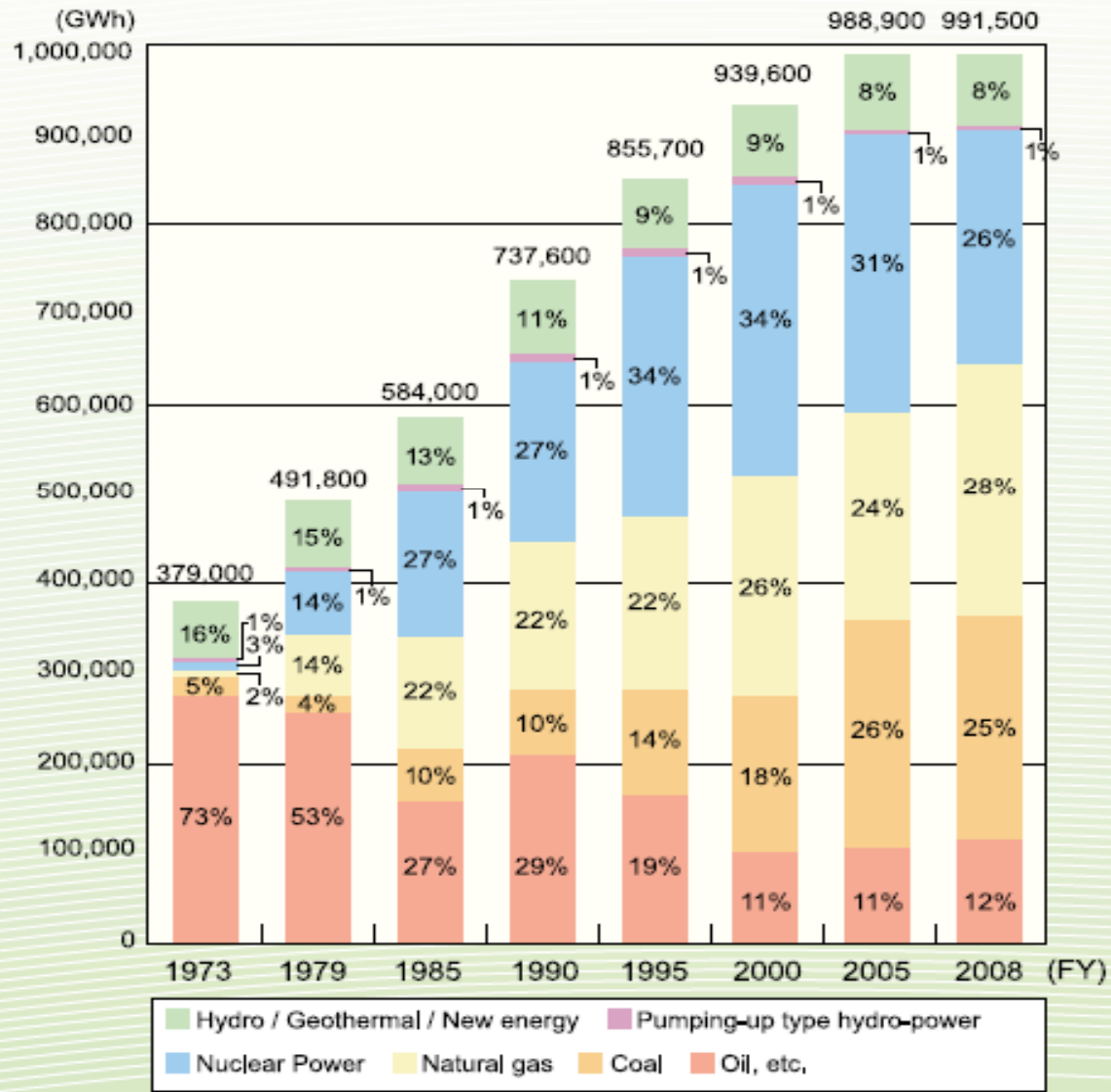


Source: Mitsubishi Research Institute

GDP Growth Projections



**■ Trends in electric power amount generated
(for general electricity business) (Figure 12)**



Source: Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry, Japan