

Japan's National Energy Policy and the Hatoyama Cabinet



Constraints, Challenges and Opportunities

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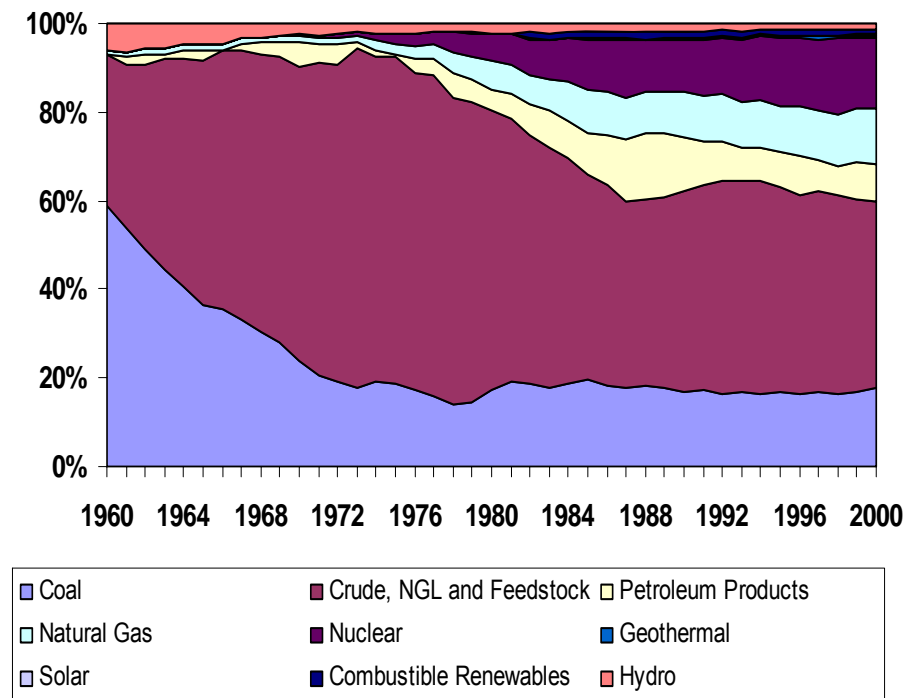
Energy Resources

- 0.28% of the world's landmass
- 2.10% of the world's population
- 15.3% of the world's GDP
- Lack of natural resources and fossil fuels
- Imports nearly 84% of primary energy supply
- Imports 98% of its oil (87% from Middle East)

Energy Supply: History

- Postwar Reconstruction (1945-1955)
- High-growth Period (1955-1973)
- Stable Growth Period (1973-1985)
- “Bubble” Years (1985-1991)
- Restructuring Period (1991-Present)

Trends in Primary Energy Supply

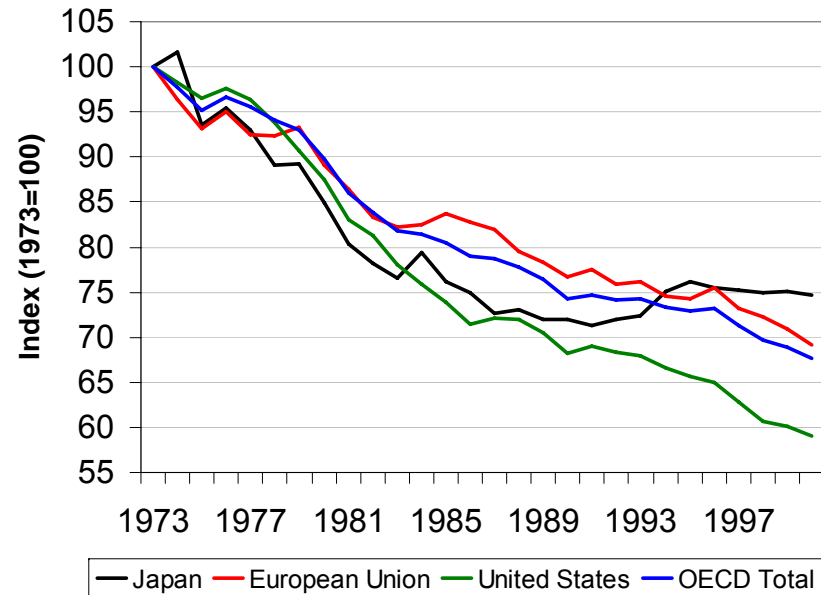


Source: Scalise, *Encyclopedia of Energy*

Energy Demand

- Improved energy efficiency in Japan
- Shift from energy-intensive industries to high-technology industries
- Change in Japanese consumption patterns in 1990s (e.g., TVs, VCRs, electronics, household appliances)

Index of TPES per unit of GDP



Source: International Energy Agency

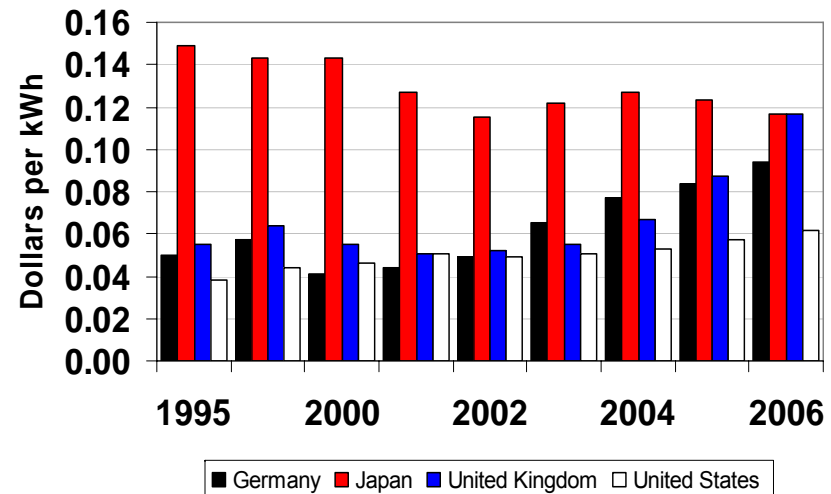
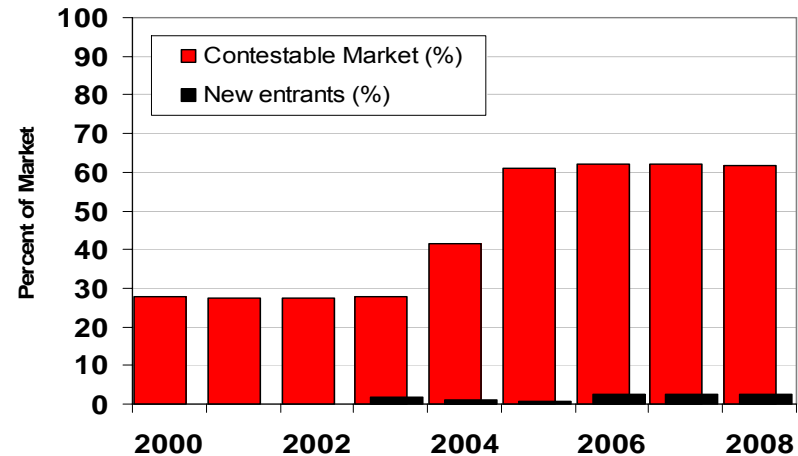
Electricity Industry in Japan

- Vertically integrated: generation, transmission and distribution
- 9 privately-owned regional monopolies since 1951 (Okinawa added 1978)
- 1964 Electric Power Utility Law
- Regulator: MITI (METI)
- Employing 140,000 (0.2% of labor force)
- ¥15tr (\$146bn) in revenues; ¥39tr (\$390bn) in assets
- Companies “officially” avoid making political cash contributions since 1977
- No electricity *zoku*

Electricity Deregulation

- 15 years of restructuring (1995~)
- Consumption: Neutral
- Competition: 👎
- Market share: 👎
- Consumer welfare: 👎
- Balance sheet restructuring: 👍
- Revenue diversification: 👍
- Profitability: 👎 👎
- Stock revaluation: 👎 👎

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March 15, 2010

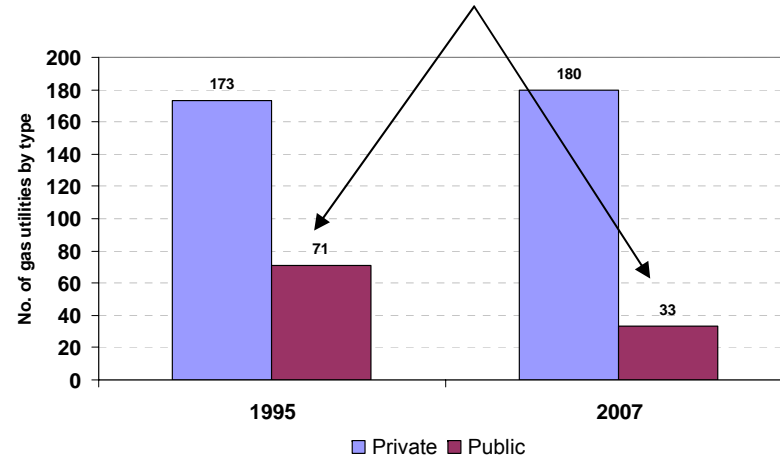
Gas Distribution Industry in Japan

- Downstream business of refining and gas distribution
- Highly fragmented market with hundreds of companies
- Tokyo Gas, Osaka Gas, Toho Gas, and Seibu Gas the leading companies in their regions
- 1964 Gas Utility Law
- Regulator: MITI (METI)
- Employing 33,000 (0.04% of total labor force)
- ¥1.7tr (\$17.8bn) in total revenues; ¥3.6tr (\$36bn) in assets
- Gas companies always make cash contributions to political parties
- No gas *zoku*

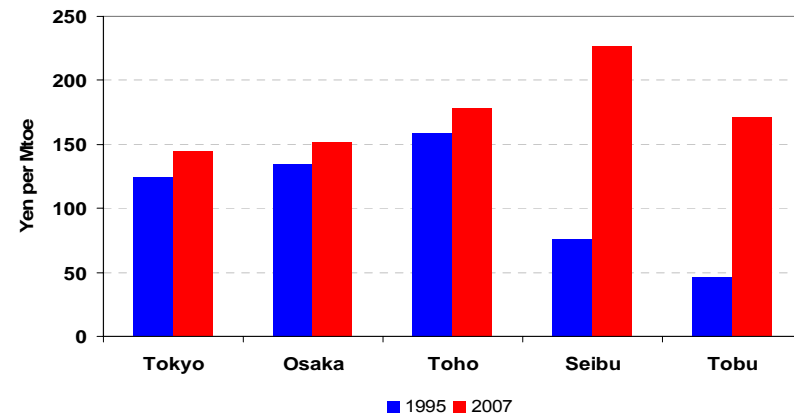
Gas Deregulation

- 15 years of restructuring (1995~)
- Consumption: Neutral
- Competition: 🙄
- Market share: 👍
- Consumer welfare: 🙄
- Balance sheet restructuring: 👍
- Profitability: 👍 👍
- Revenue diversification: 👍
- Stock revaluation: 👍 👍

De-nationalization mostly



Higher gas prices

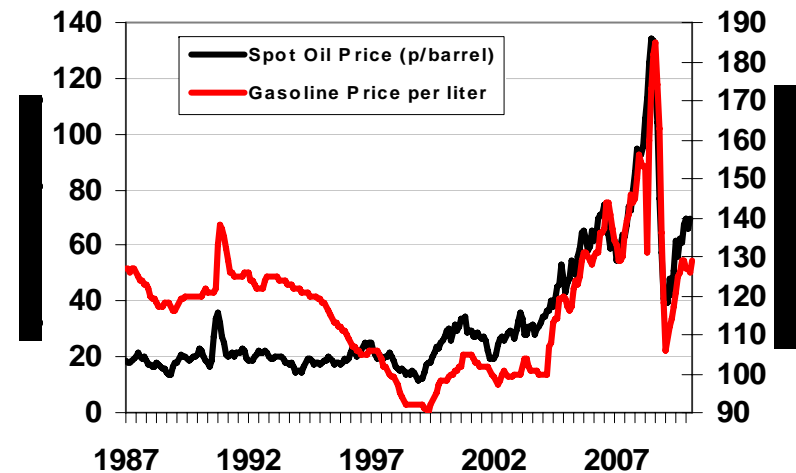
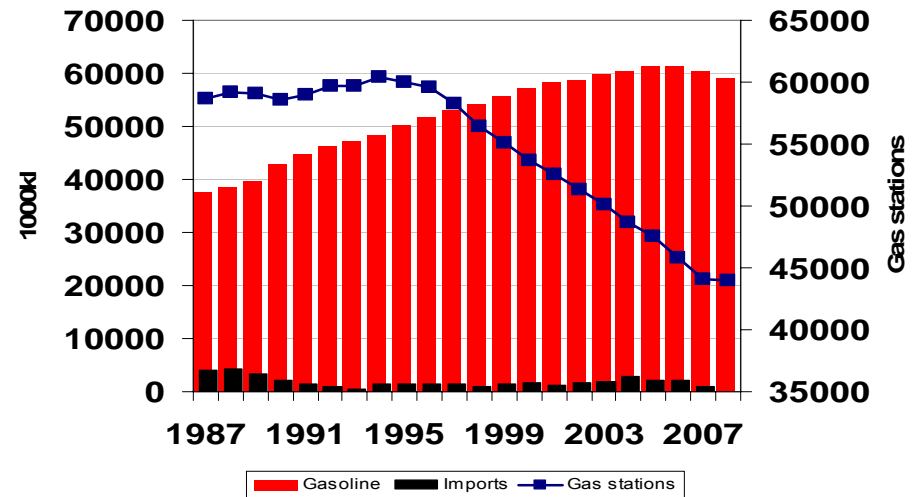


Petroleum Industry in Japan

- Downstream market for refining and distribution of gasoline
- Highly fragmented market with *thousands* of companies
- 1962 Petroleum Industry Law
- Regulator: MITI (METI)
- Employing 43,000 in gasoline stations (0.05% of labor force)
- Petroleum companies contribute to political parties
- Energy *zoku*

Petroleum Deregulation

- 24 years of restructuring (1986~)
- Consumption: 👎
- Competition: 👍
- Market share: 👍
- Consumer welfare: 👎👎
- Balance sheet restructuring: 👎
- Profitability: 👎👎
- Revenue diversification: 👎
- Stock revaluation: 👎👎



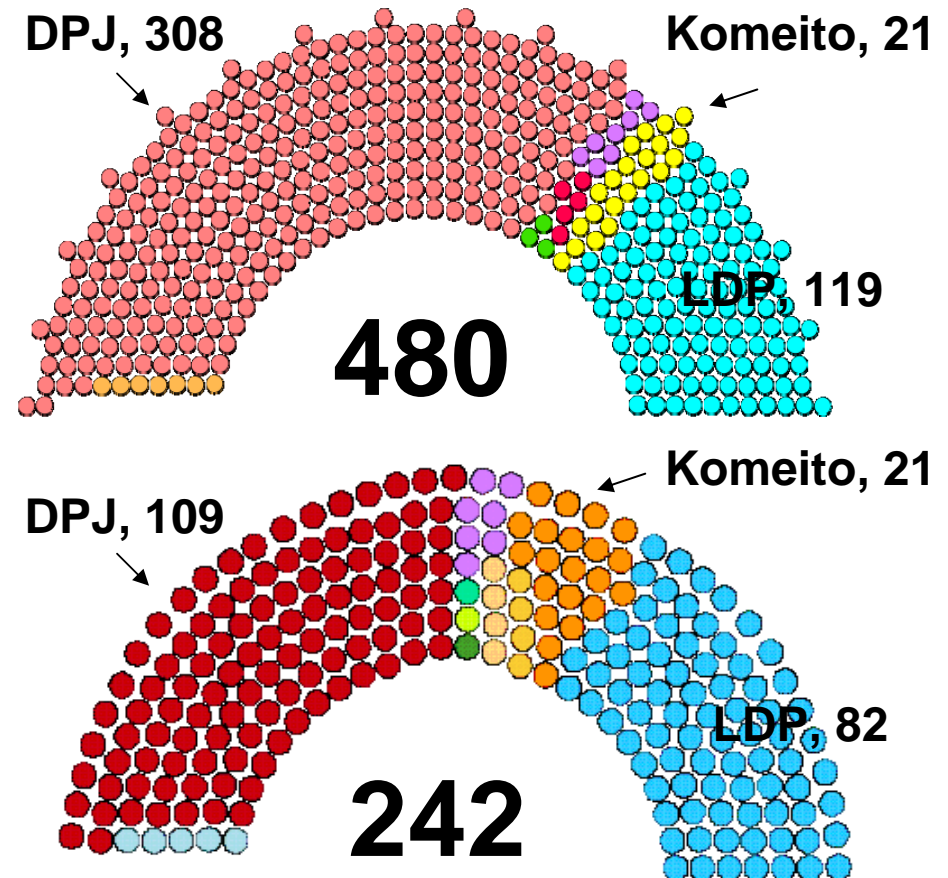
Social and Environmental Impact

- Kyoto Protocol (1997)
 - Greenhouse Gas Emissions (GHG)
 - Japan's 2012 target: 6%
 - The rise of renewable energy
- Nuclear Power
 - Reprocessing and Waste Disposal
 - The Economics of Nuclear Power
 - NIMBY Issues

Can the DPJ 'Radically' Alter Japan's National Energy Policy?

Post-2009 Hatoyama Government

- Strong LH Maj. (66%)
- Fragile UH Maj. (49%)
- Cabinet approval (43%↓)
- Cabinet disapproval (49%↑)
- DPJ approval (34%↓)
- LDP approval (17%↑)
- Cash contributions and influence?
- Political connections and business: *zoku*?






Top: Lower House, Bottom: Upper House

Then and Now: DPJ Energy Policy

2001

- “The DPJ will match the EU's target for the proportion of energy to be met from renewable energy sources, at 11.6% by 2010 (the government's target is 7.5%).”
- “The DPJ will aim to increase the output from wind power by 250 times and from solar power by 100 times the current levels.”
- “The DPJ is ready to put in place the legislation and the finance this will need. “

Today

-  Current portion of nationwide electricity generated from renewable sources: 0.25% at 2010.
-  Wind power grew from approx. 1,000 MWh nationwide in 2000 to 2,942,000 MWh. Solar power grew from approx. 1,000 MWh nationwide in 2000 to 11,000 MWh.
-  DPJ has pushed back their numerical targets to 10% by 2020 for renewable energy.

Contrasting DPJ Coalition Positions

2009 DPJ Manifesto

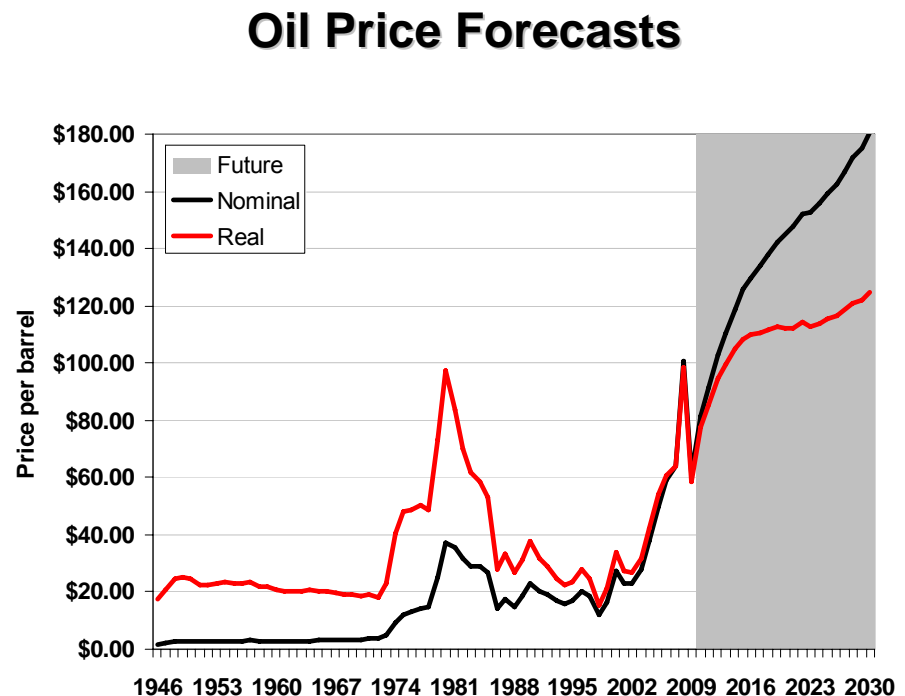
- 25% cut in GHG emissions from 1990 levels by 2020, 60% by 2050
- Take steady steps towards further nuclear build
- No mention of environment tax (against “special taxation measures”)
- Increasing the ratio of primary energy supply from renewables to 10% by 2020.
- Silent on unbundling vertically-integrated incumbent utilities
- Silent on nationalization of electric power distribution grid system.

2009 SDP Manifesto

- 30% cut in GHG emissions from 1990 levels by 2020, 80% by 2050
- Anti-nuclear build
- Advocates “environment tax”
- Increasing the ratio of primary energy supply from renewables to 20% by 2020, 50% by 2050.
- Unbundle vertically-integrated incumbent utilities
- Nationalize the electric power distribution grid.

Economic Opportunities

- Rising oil prices
- Peak oil?
- Technologies:
Biomass, Solar, Wind,
Tidal, Fuel cells,
Micro turbines
- Price competitiveness
of Renewables?
- Growth sector

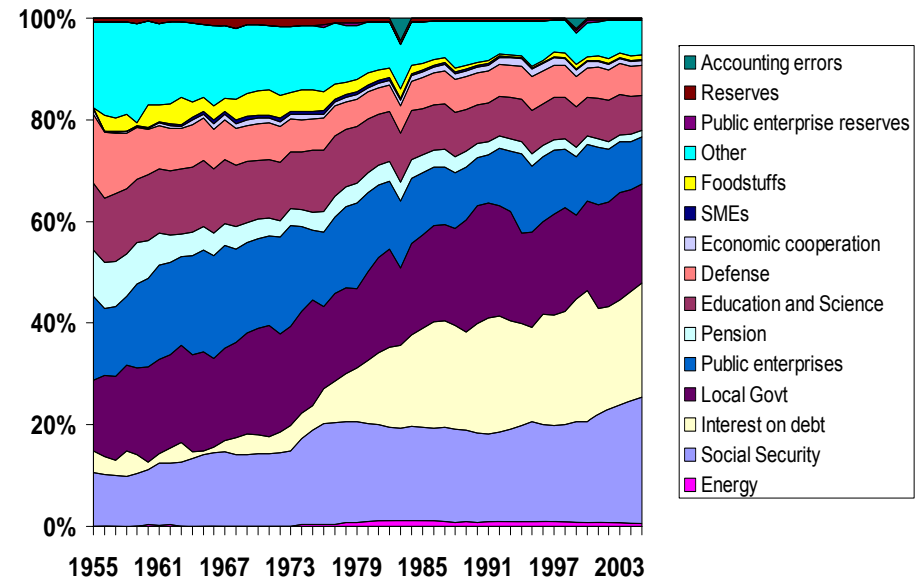


Source: Energy Information Administration

Fiscal Constraints

- Energy <1% Budget
- Indirect taxes (e.g., gasoline, LPG, petroleum and coal, power development)
- Fiscal balance for energy policy achieved
- Declining indirect taxes
- Declining expenditures for energy measures
- Increasing debt, fiscal imbalance, and debt servicing for Japan

Japan's National Budget Allocation

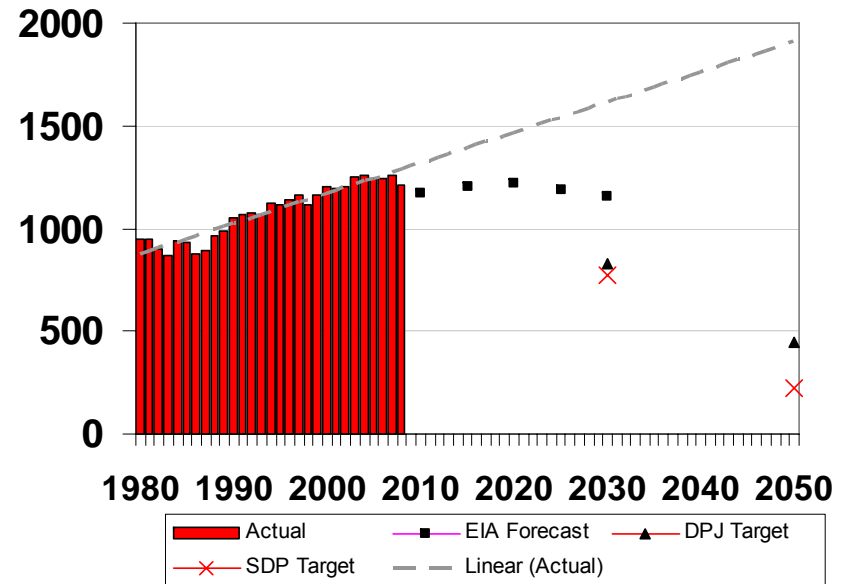


Source: *Zaisei tokei* (various years)

Political Challenges

- Shifting public opinion
- DPJ skepticism of energy deregulation
- The DPJ's "get-out-of-jail free" card on GHG emission targets
- GHG emissions ceiling based on units of production vs. overall caps. Industry vs. conservationists
- Cash contributions by alternative energy companies vs. total corporate donations ban
- Nuclear power: to build or not to build? DPJ vs. coalition partners
- The transitory nature of the Hatoyama Cabinet and DPJ-led government

Total Carbon Dioxide Emissions from the Consumption of Energy (Million Metric Tons)



Source: Energy Information Administration

Predictions & Projections

- Energy diversification will continue
- Demand management will continue
- Micro-turbine build in the short- to medium-term
- Energy competition will remain tepid
- Efficiency gains minimal
- Renewable energy targets unlikely to be met

	History			Projection	
	1990	2002	2003	2020	2030
Oil	5.2	5.5	5.6	5.4	5.4
Nuclear	192	280	237	318	371
Coal	126	172	176	176	169
Renewable	1.1	1.1	1.4	1.5	1.6

Notes: Oil consumption = million barrels per day; Nuclear energy consumption = billion kWh; Coal consumption = million short tons; Renewable energy consumption = Quadrillion BTU

Source: Energy Information Administration

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