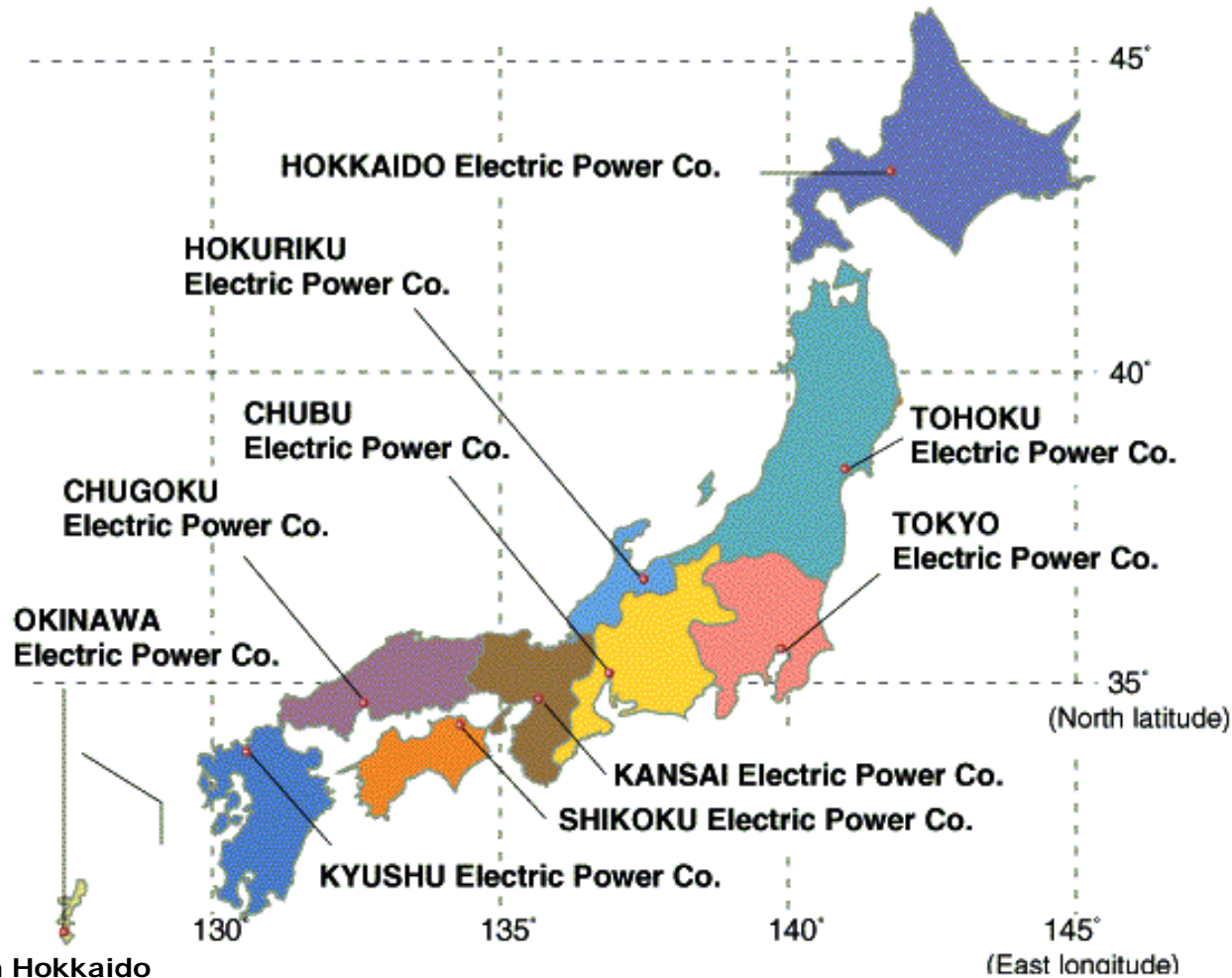


Electric Utilities Deregulation in Japan

July 2005

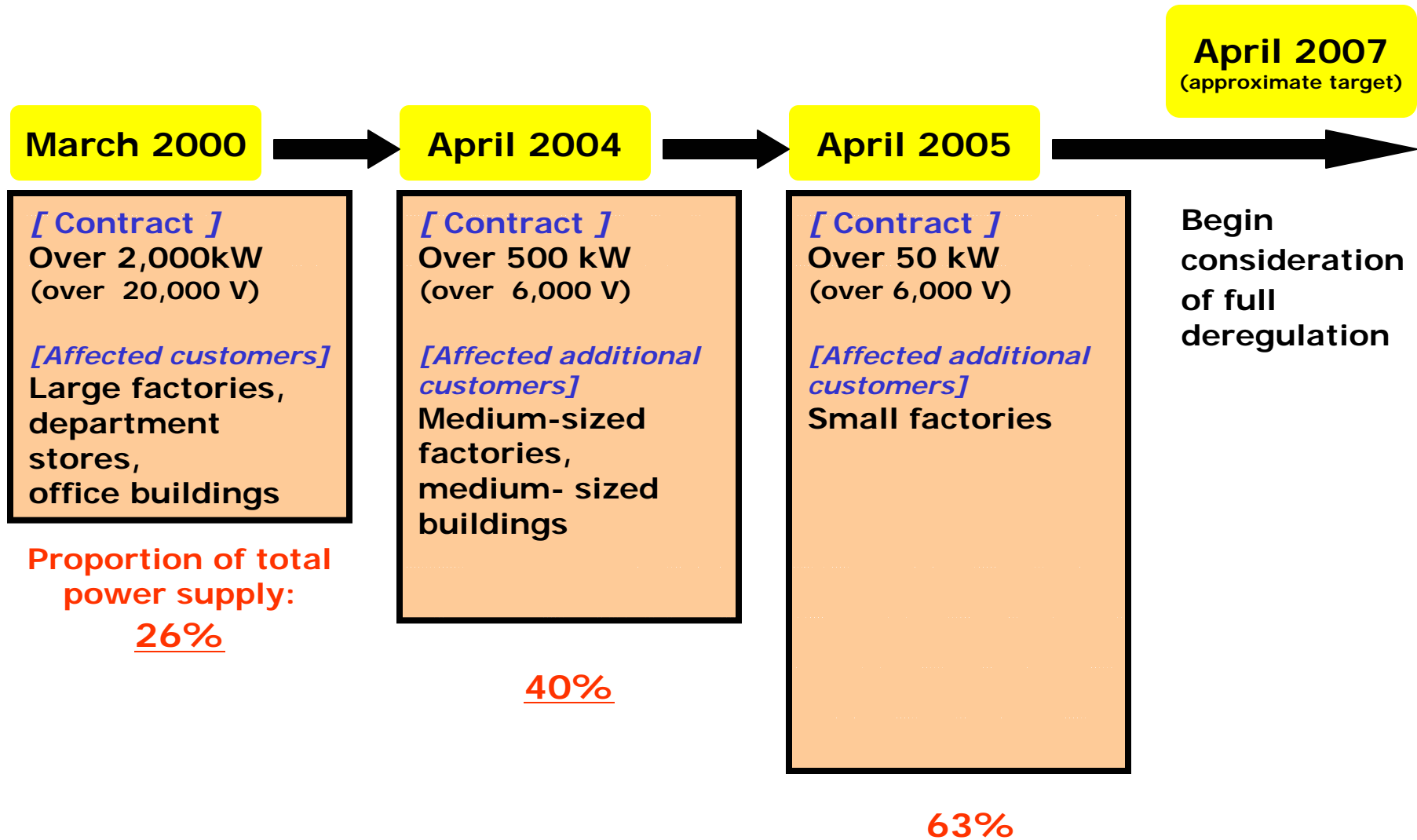
**Yoshihiko Sumi
The Japan Atomic Power Company**

Electric Power Companies by Service Areas



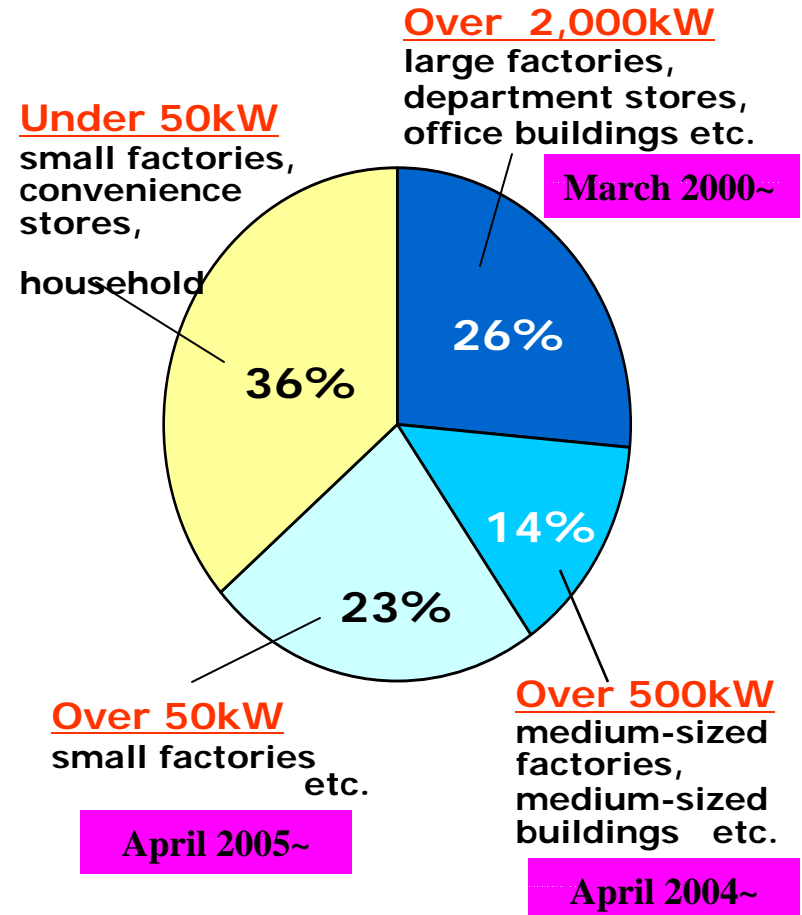
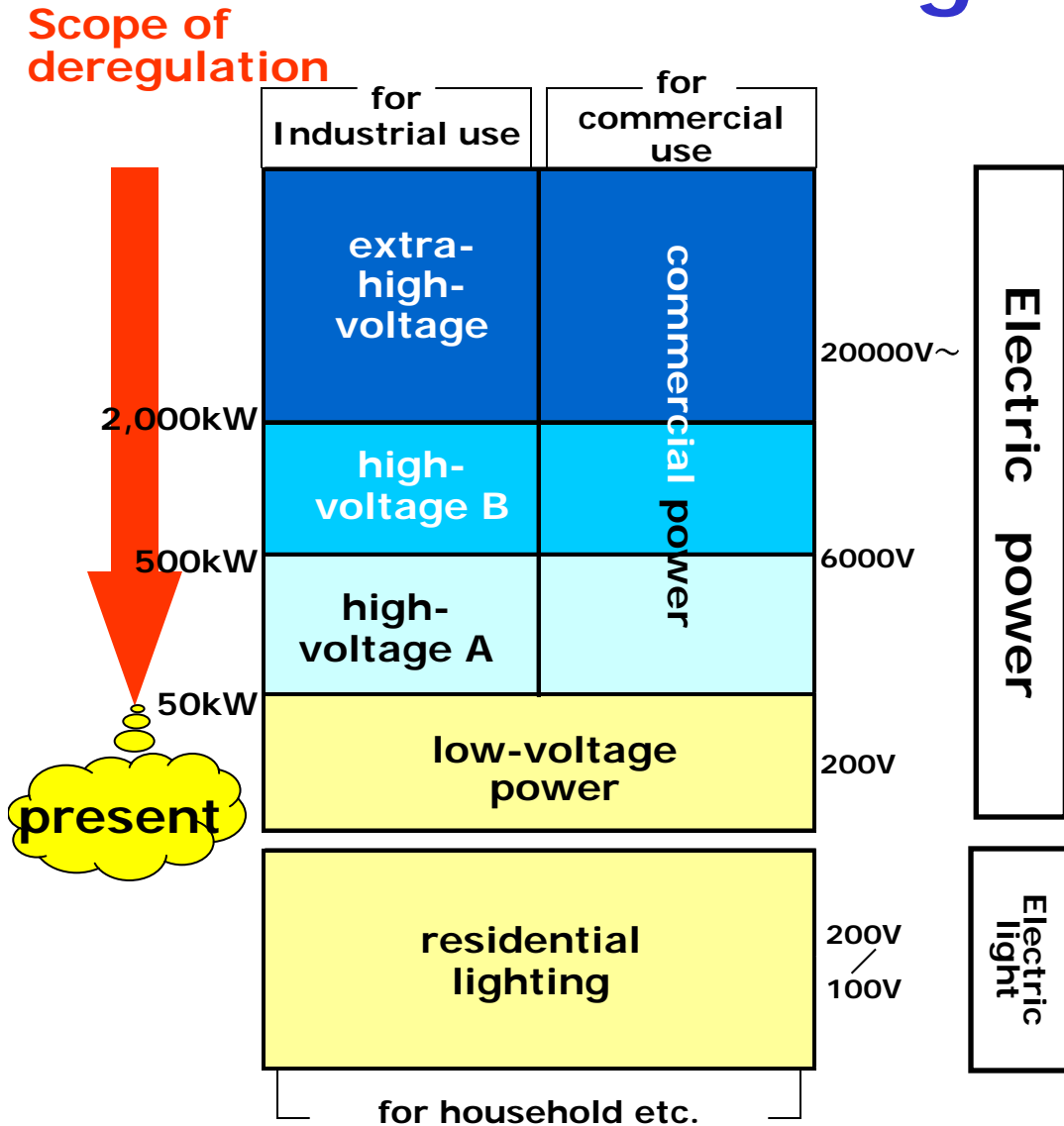
(Note)
The distance from Hokkaido
to Kyushu is about 2000km.

Deregulatory Timetable for Electric Power Retail Market



Scope of deregulation

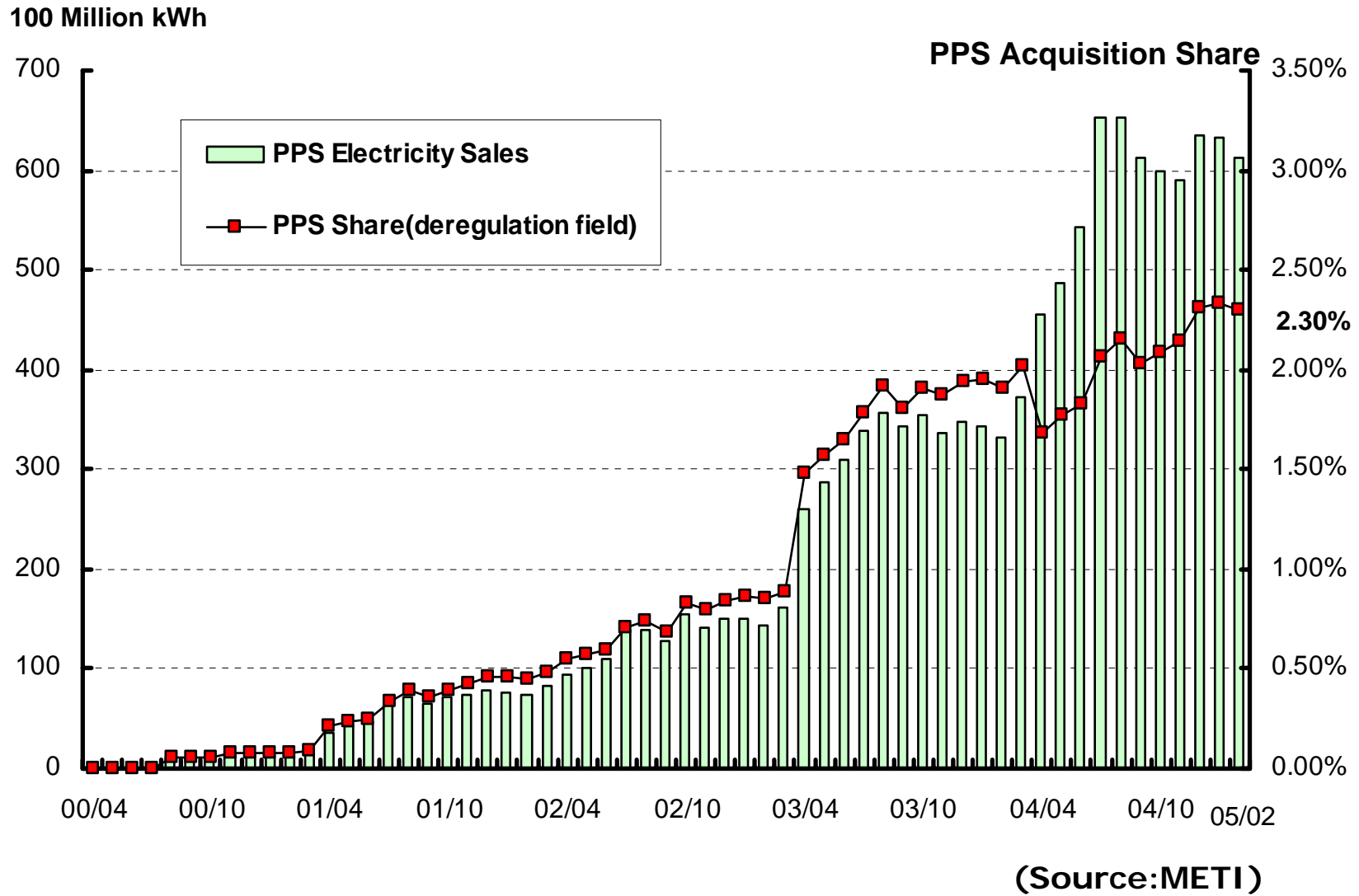
Expansion of the scope of Deregulation



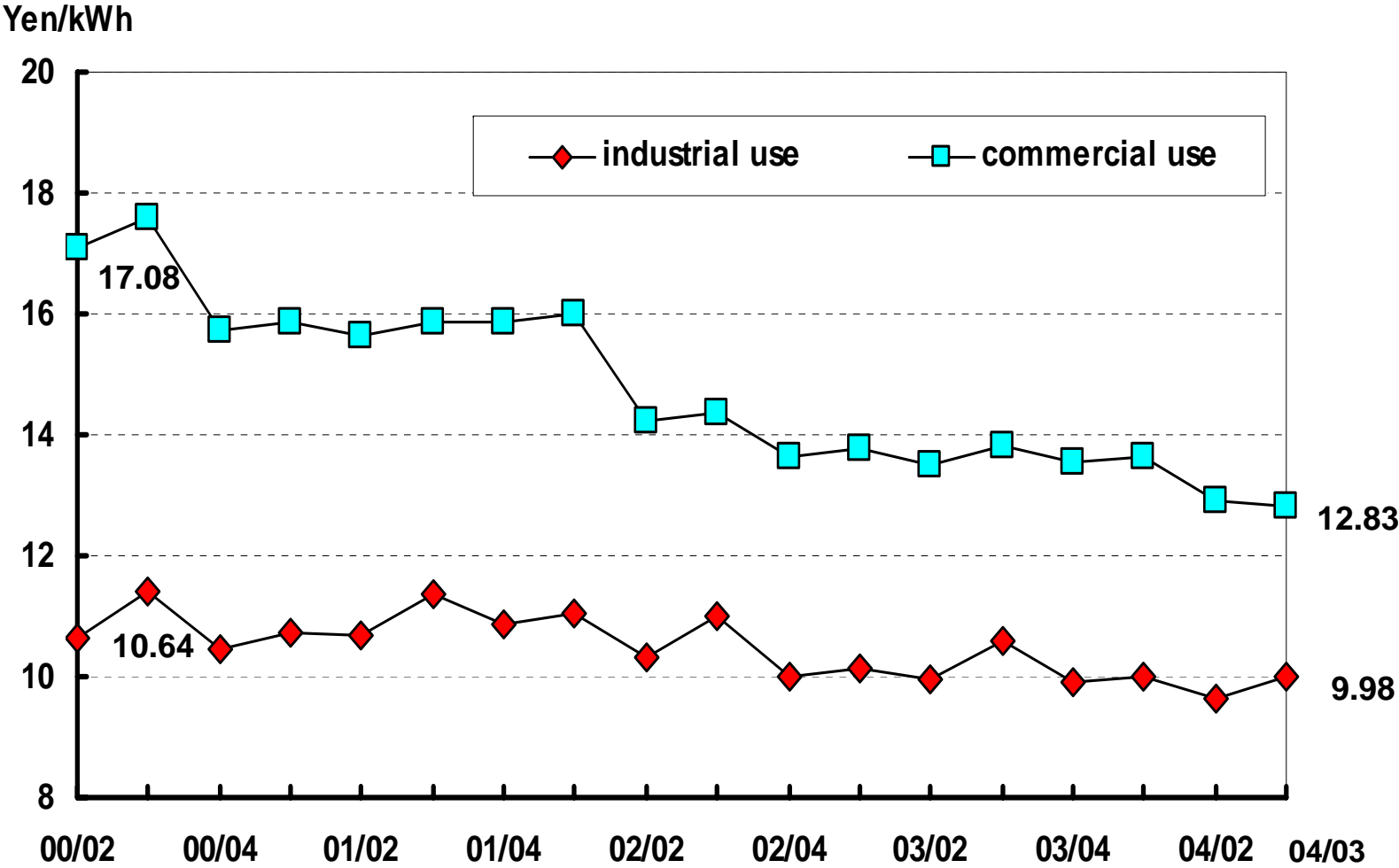
PPS Acquisition Share in Deregulation Field

- **PPS Acquisition Share** (as of Feb.2005)
 - Share in deregulation field: **2.3%**
- **PPS total electricity sales in FY 2004**
7.2 billion kWh (PPS; Power Producers and Suppliers)
- **Total electric energy demand in FY 2004**
1,019 billion kWh (including non-deregulation field)

Trend of PPS Acquisition Share



Trend of Electricity Rate (extra-high-voltage power)



(Source:METI)

Expansion of Deregulation since April 2005

- **Japan Electric Power Exchange**
 - **Operating the wholesale electric power market**
 - Injection from surplus electricity from EPCOs
 - a forward market & a day-ahead spot market
 - **Private, voluntary organization**
- **Electric Power System Council of Japan**
 - **Rule-maker and supervisor for Network**
 - **Neutral corporation**
 - Membership: EPCOs, wholesale electric utilities, PPS, academic experts etc.

Last Resort

When PPS can not supply contracted power to its customers due to demand fluctuation or accident,

- EPCo has to supply its shortfall alternatively.**
- PPS has to pay special rate to EPCo.**

Fluctuation band to contracted power

- within $\pm 7\%$: twice of EPCo's electricity rate
- over 7% : 9 times

Future Outlook on Deregulation

- **Study on full deregulation of electric utilities will start around April, 2007.**
- **Nuclear Power in the deregulation will be discussed.**

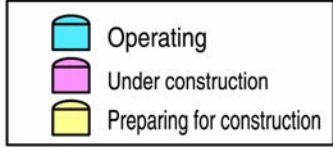
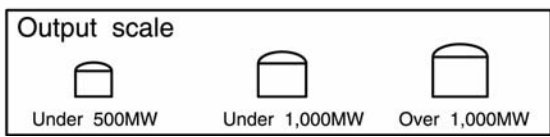
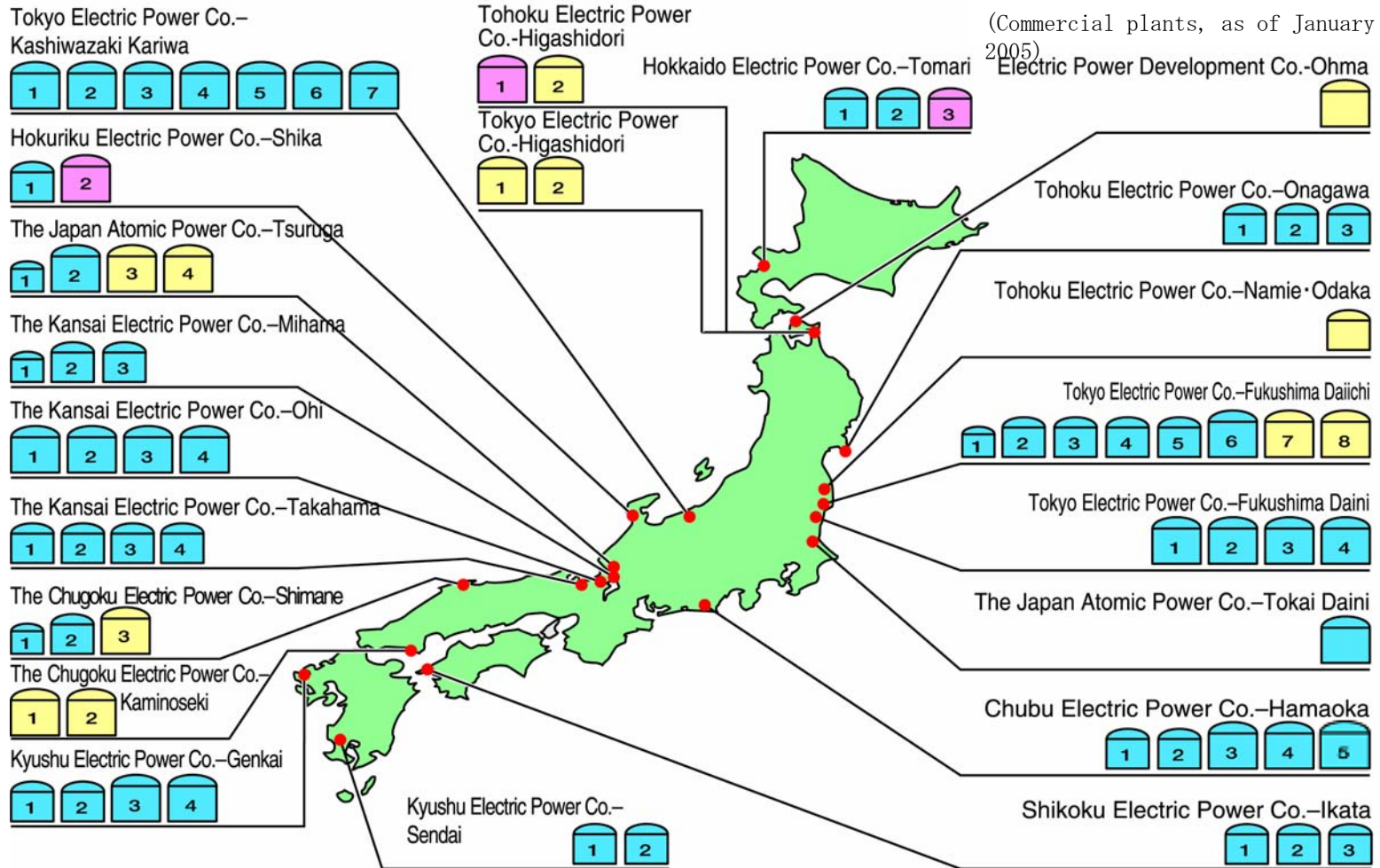
Nuclear Power Generation in Japan

July 2005

Yoshihiko Sumi

The Japan Atomic Power Company

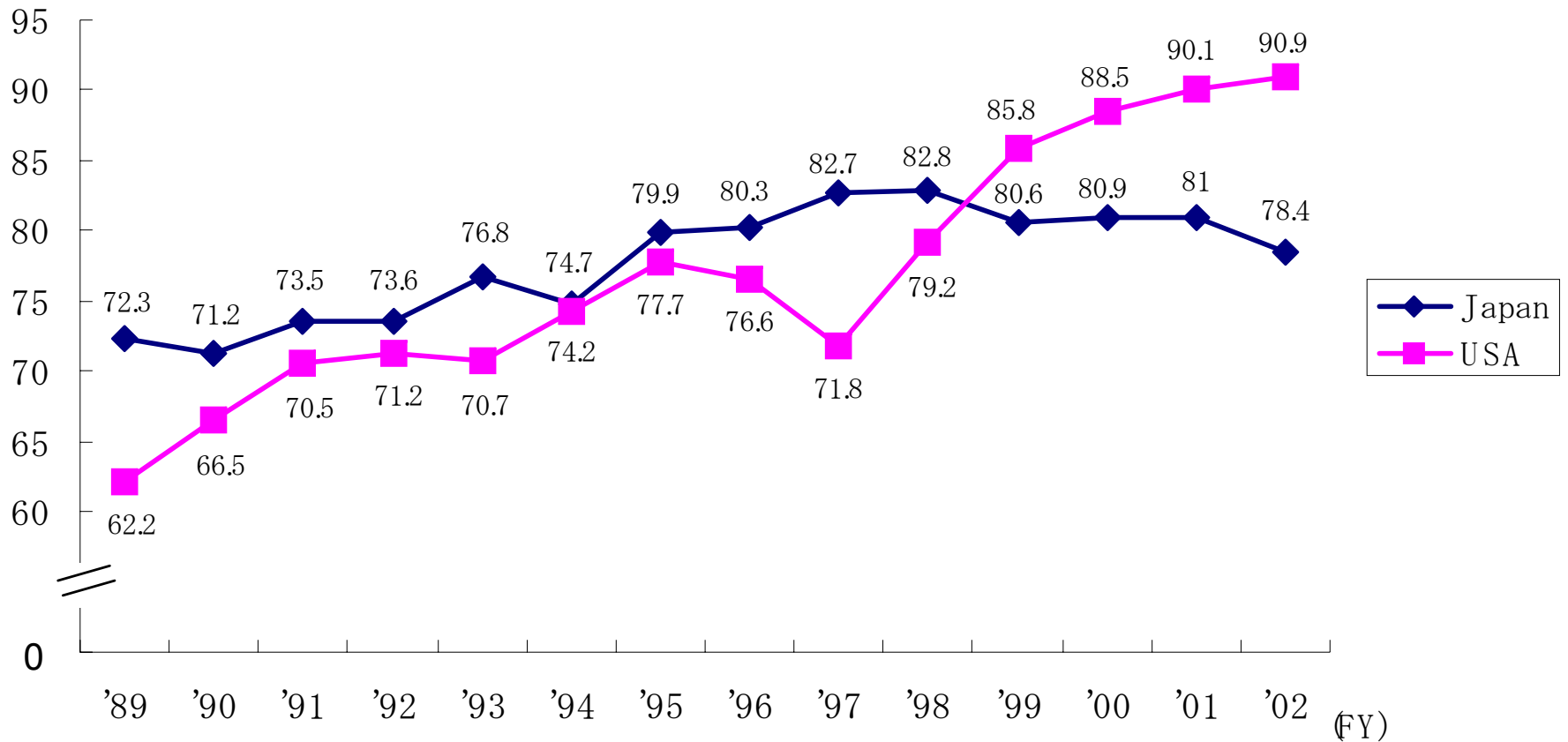
Nuclear Power Plants in Japan



	Number of Units	Total Output (MW)
Operational	53	47,122
Under construction	3	3,370
Preparing for construction	12	16,318
Total	68	66,810

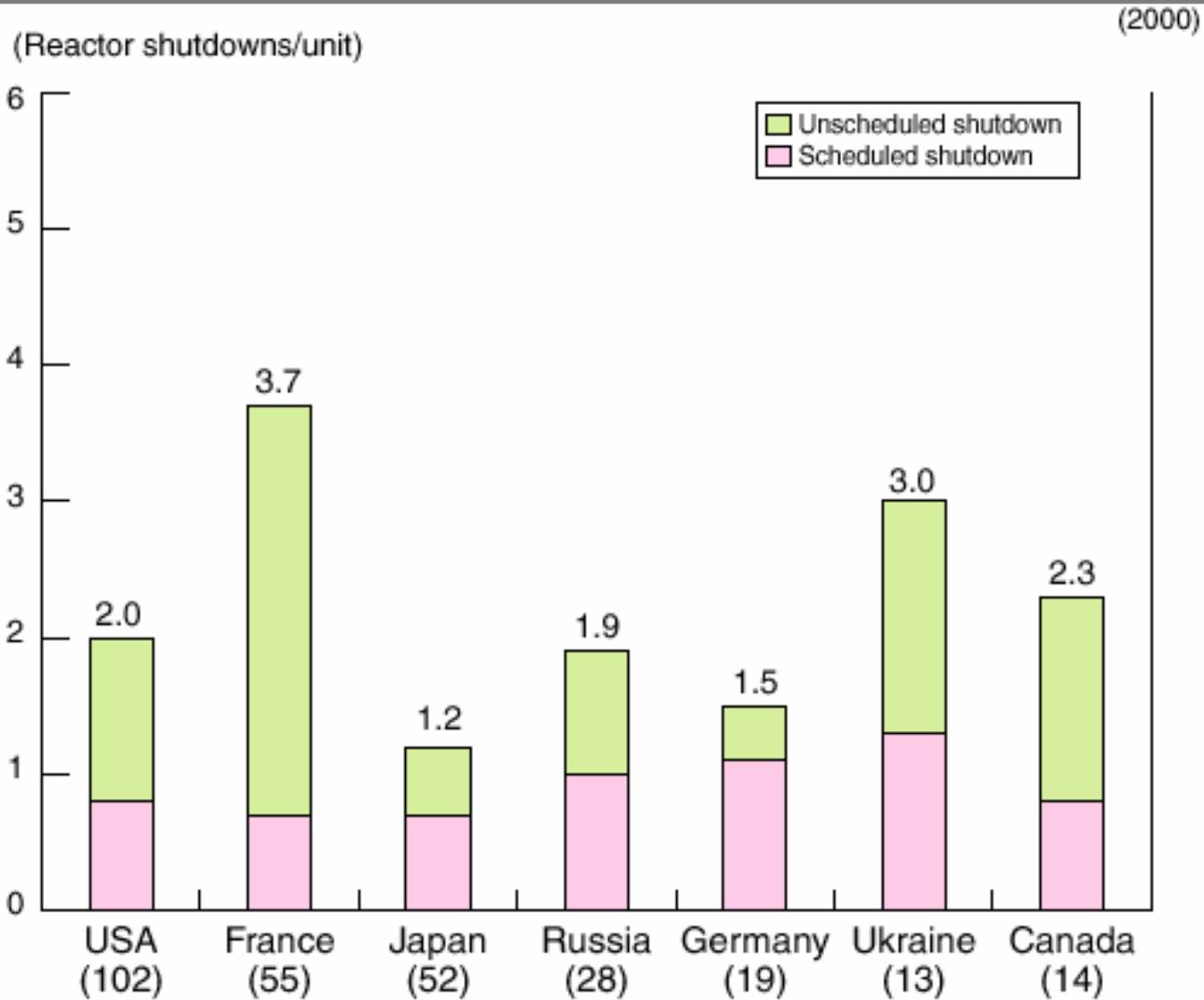
Load Factors of Nuclear Power Plants

Utilization Rate (%)



Source : JNES

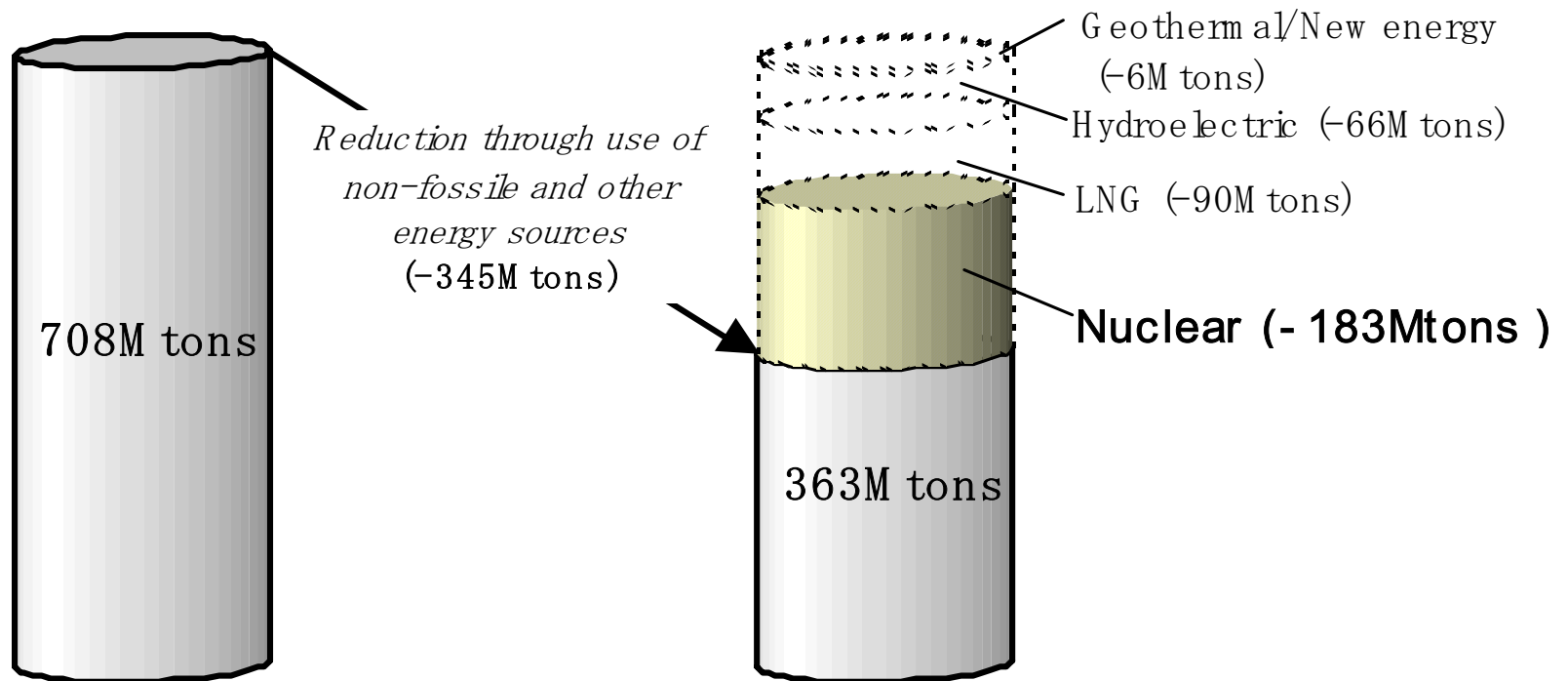
Reactor Shutdowns in Major Counties



(Note) Parentheses indicate number of units.
(Source) Agency of Natural Resources and Energy web site

CO2 Emissions and Reduction in Japan (FY 2003)

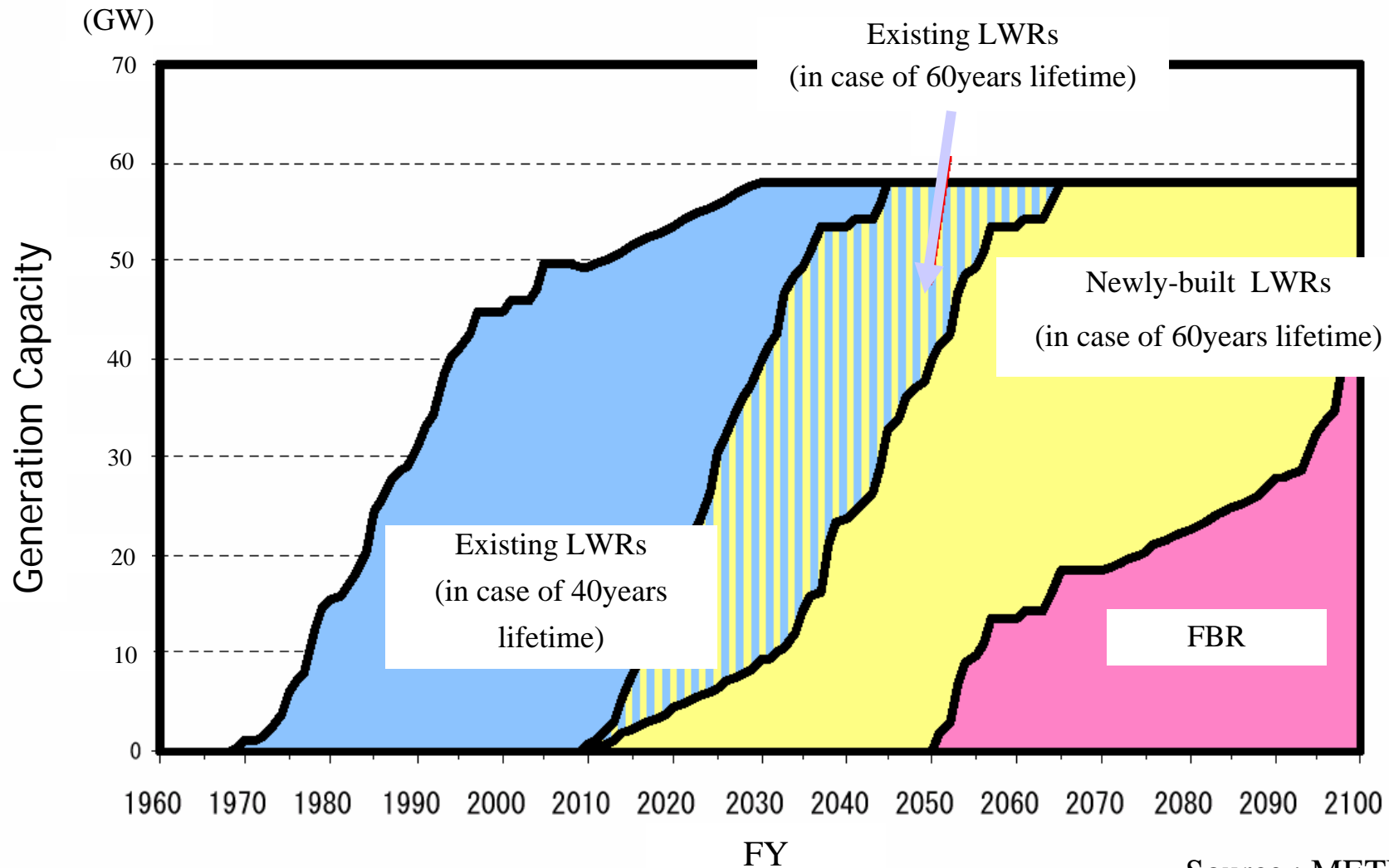
- The reduction in CO2 emissions is calculated at 345 million tons of CO2, which is close to the same level as the actual figures for FY 2003.
- The use of nuclear energy results in a net reduction 183 million tons of CO2.



CO2 emission assumed if all electricity is generated by petroleum in FY2003

Actual figures for CO2 emissions in FY2003

Long-term Outlook of Nuclear Power Generation In Japan



Source : METI

(*) Generation Capacity by nuclear in Japan is assumed to be constant at 58GW.

The Number of Nuclear Units under Construction in Japan

