Peaceful Use of Nuclear Energy in Japan

~ From the Viewpoint of Energy Supply ~

Takahiko ITO

Chubu Electric Power Co., Inc.

Note: OHP 2,3,4,5,6,7,8,10: "Graphical Flip-chart of Nuclear & Energy Related Topics 2007/2000" (The Federation of Electric Power Companies)

Energy and Human being

Gasoline engine / Nuclear Power

BAR GRAPH CHART

Energy Consump-tion per capita (Thousand kilo-calorie per day)

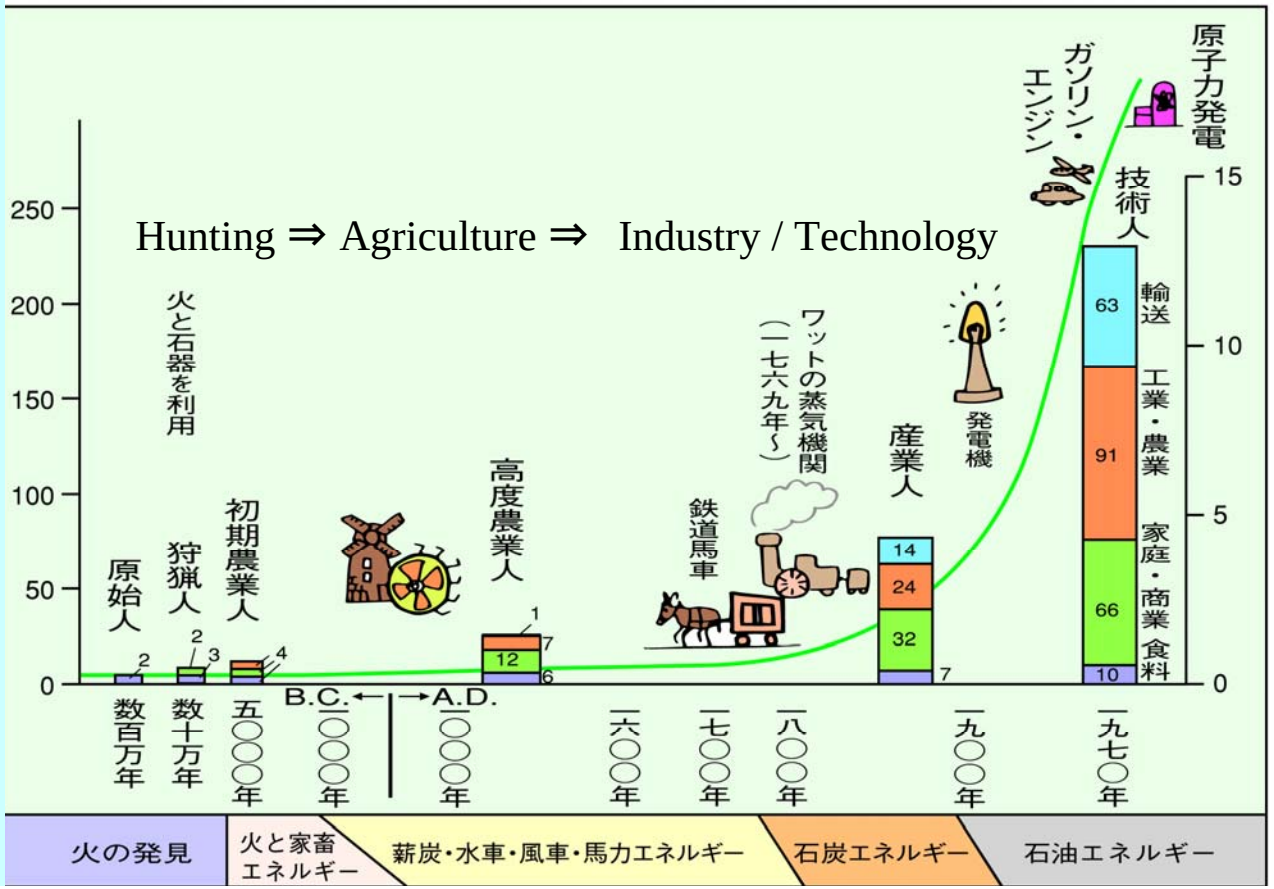
<Breakdown>

-Transport

-Industry & Agriculture

-Commerce & Household

-Food



Discovery of Fire — Firewood, Water Mill, — Coal — Oil

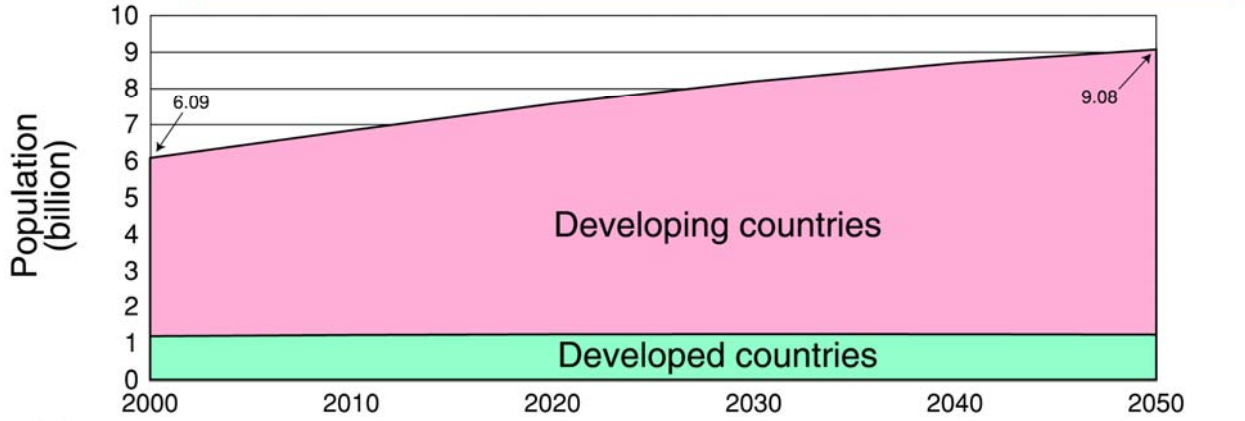
Fire & Domestic Animal — Windmill & Horse

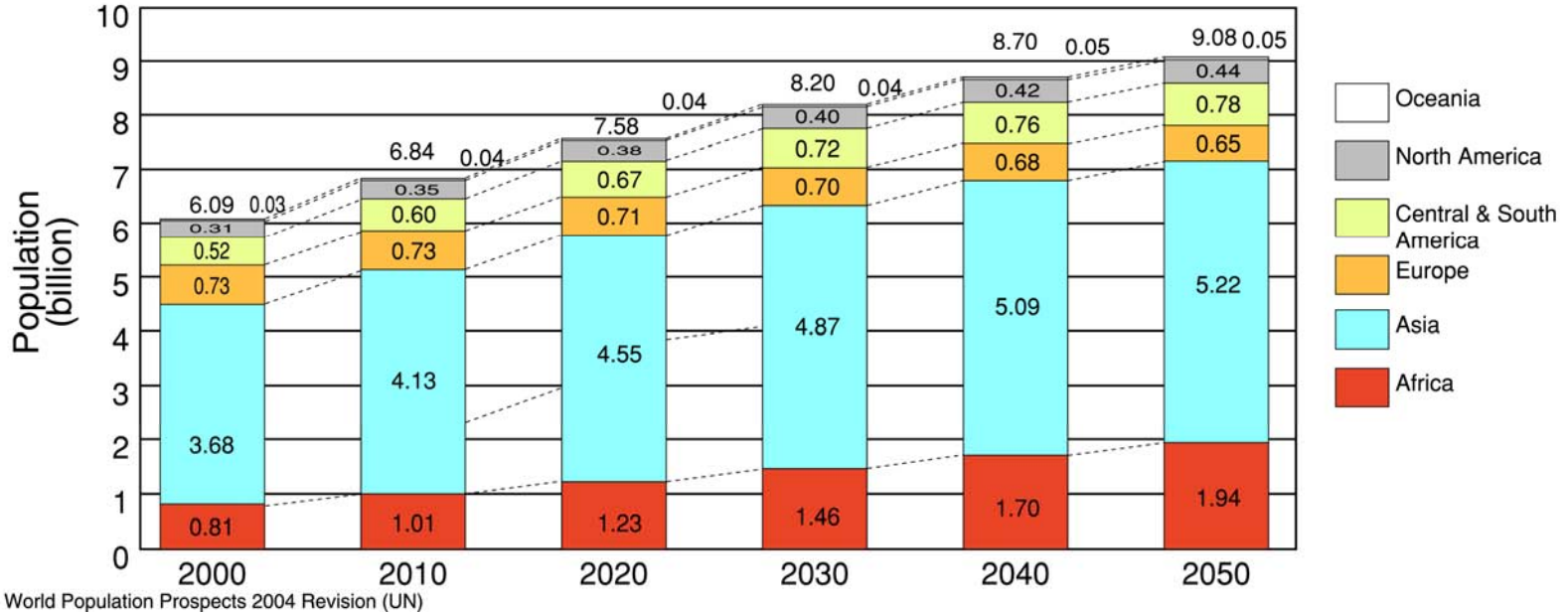
LINE GRAPH

Energy Consumption (Million kilo-liters of oil equivalent per day)

出典：総合研究開発機構「エネルギーを考える」

World Population Projections

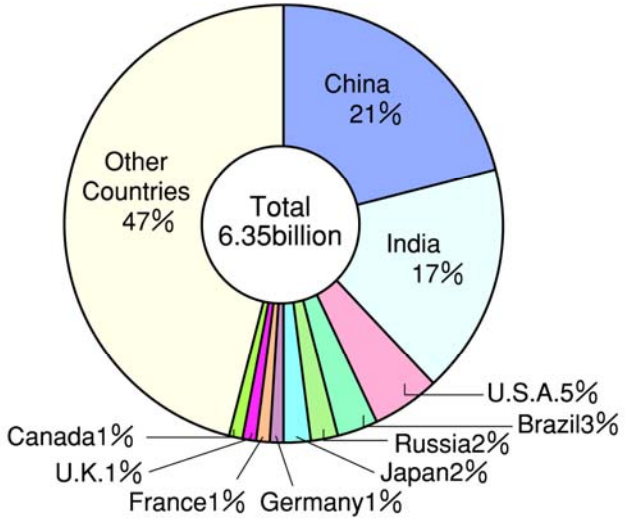




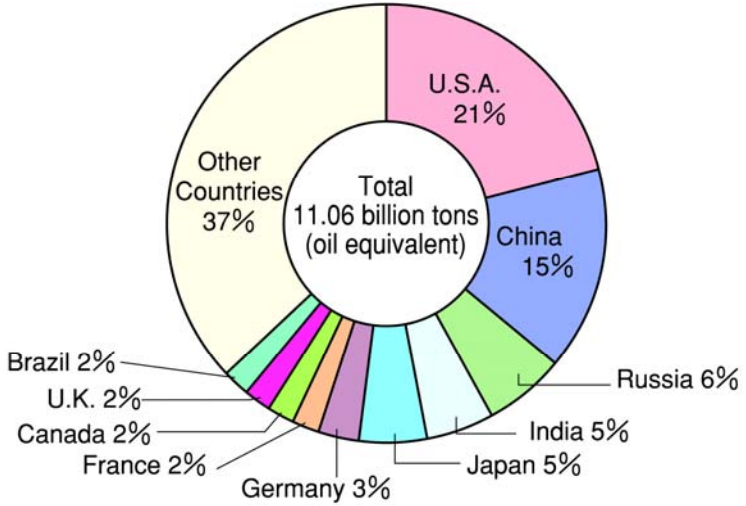
(Source) World Population Prospects 2004 Revision (UN)

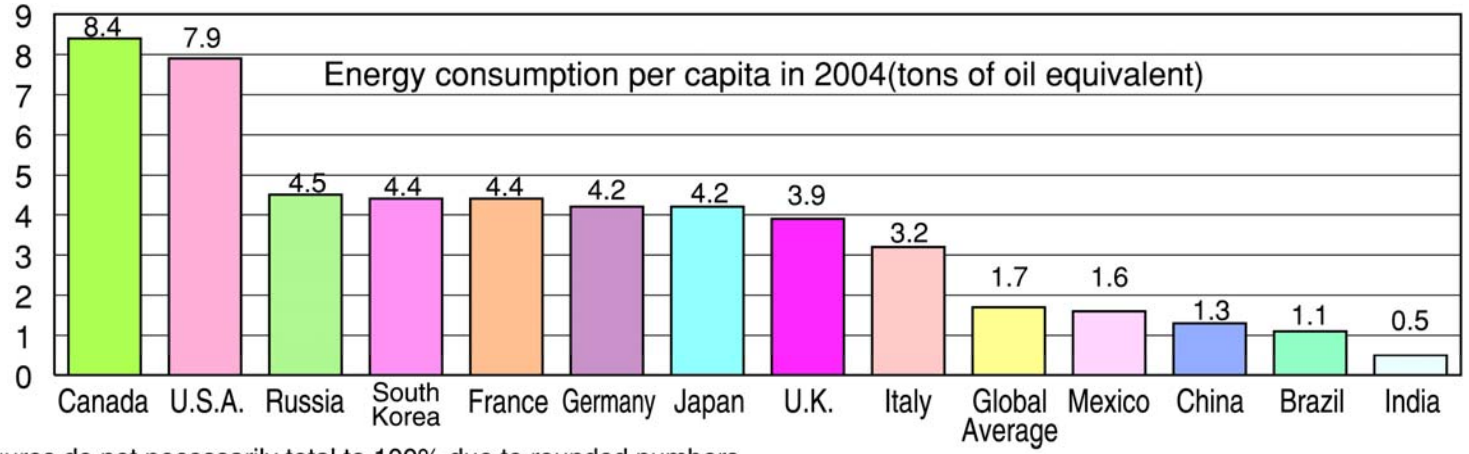
World Population and Energy Consumption

Distribution of population by country (2004)



Distribution of primary energy consumption by country (2004)

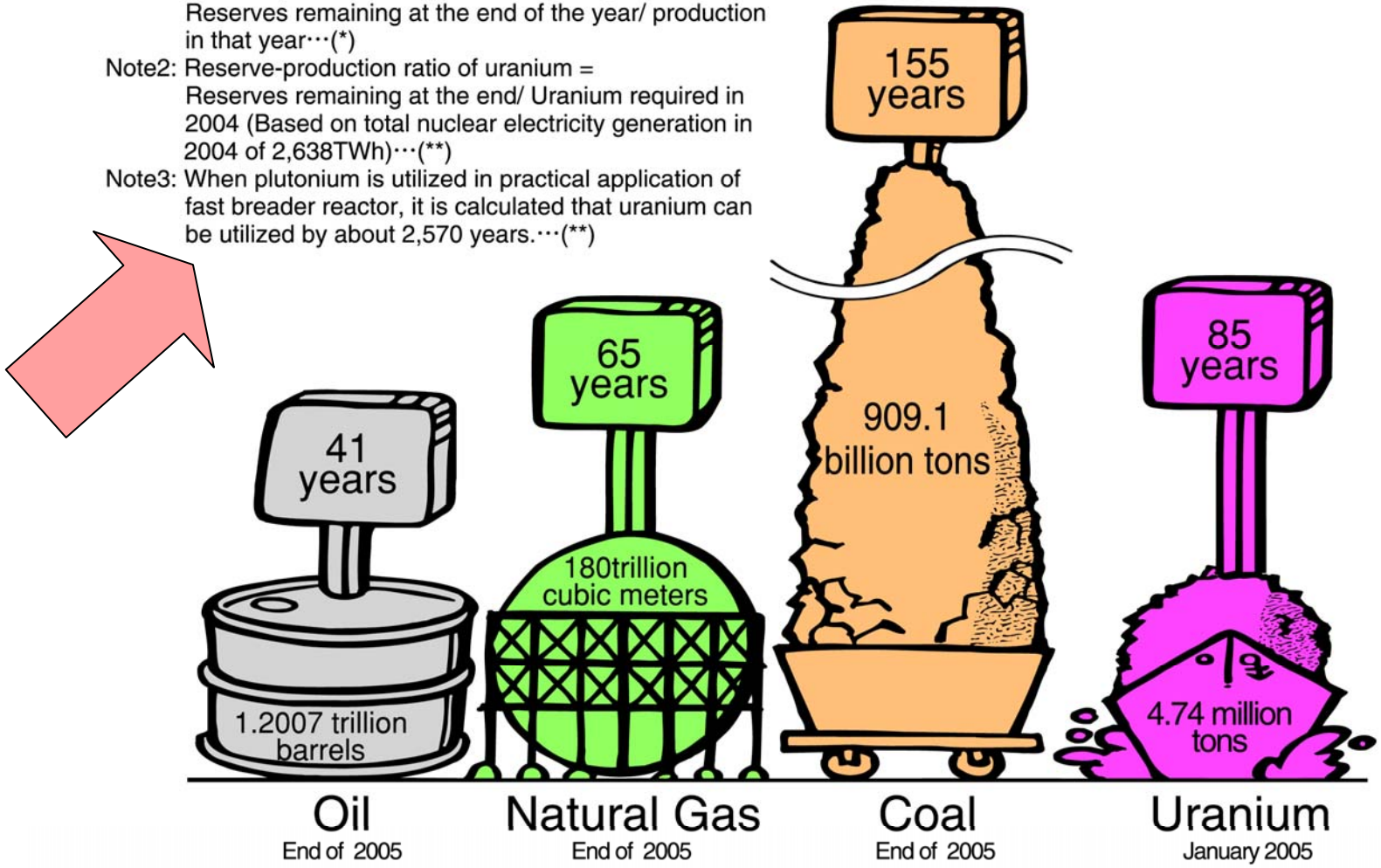




(Note) Figures do not necessarily total to 100% due to rounded numbers.
(Source) ENERGY BALANCES OF OECD COUNTRIES 2003-2004
ENERGY BALANCES OF NON-OECD COUNTRIES 2003-2004

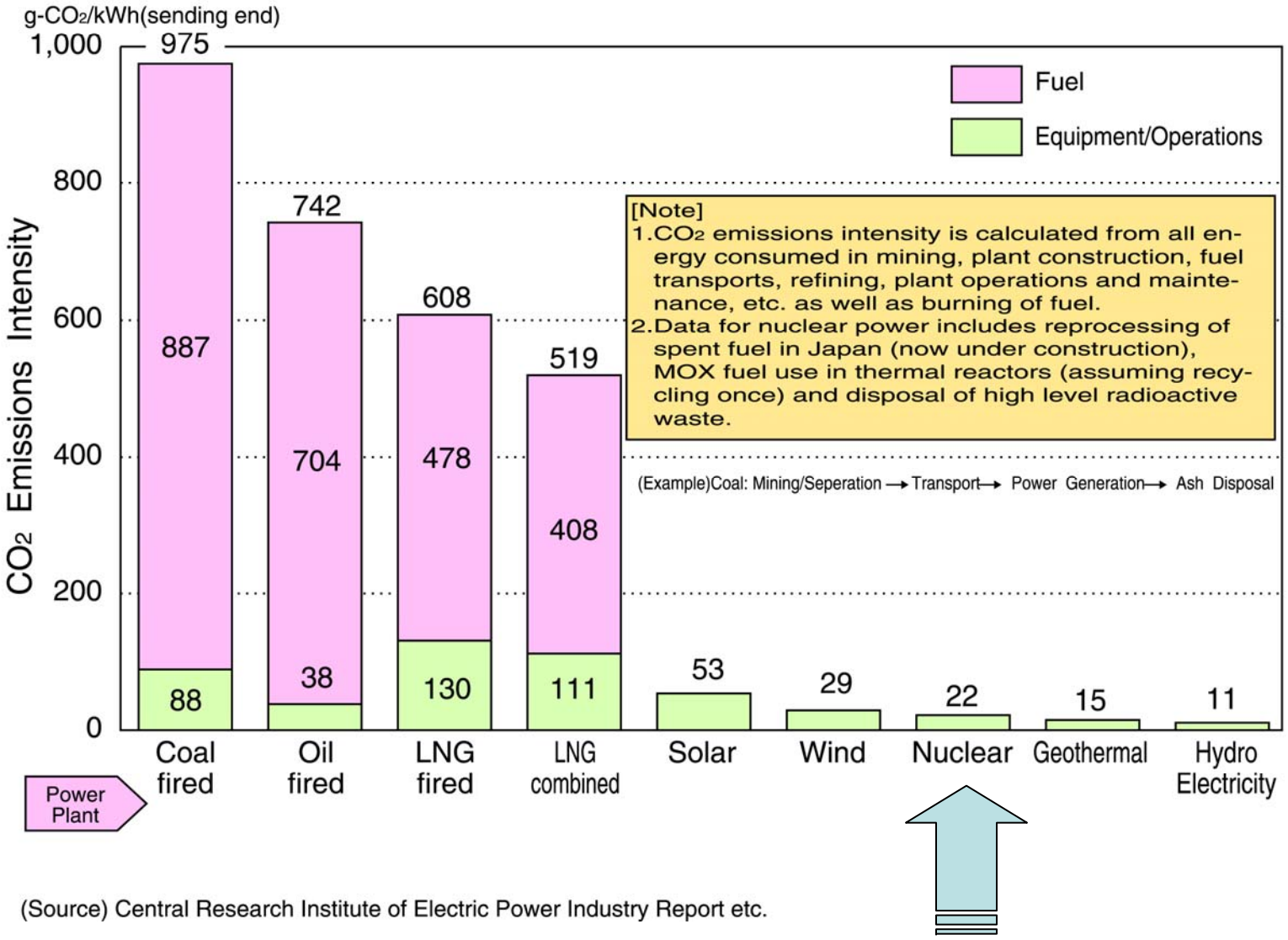
Proved Reserves by Energy Sources

Note1: Reserve-production ratio of oil, natural gas,coal = Reserves remaining at the end of the year/ production in that year…(*)
Note2: Reserve-production ratio of uranium = Reserves remaining at the end/ Uranium required in 2004 (Based on total nuclear electricity generation in 2004 of 2,638TWh)…(**)
Note3: When plutonium is utilized in practical application of fast breader reactor, it is calculated that uranium can be utilized by about 2,570 years.…(**)



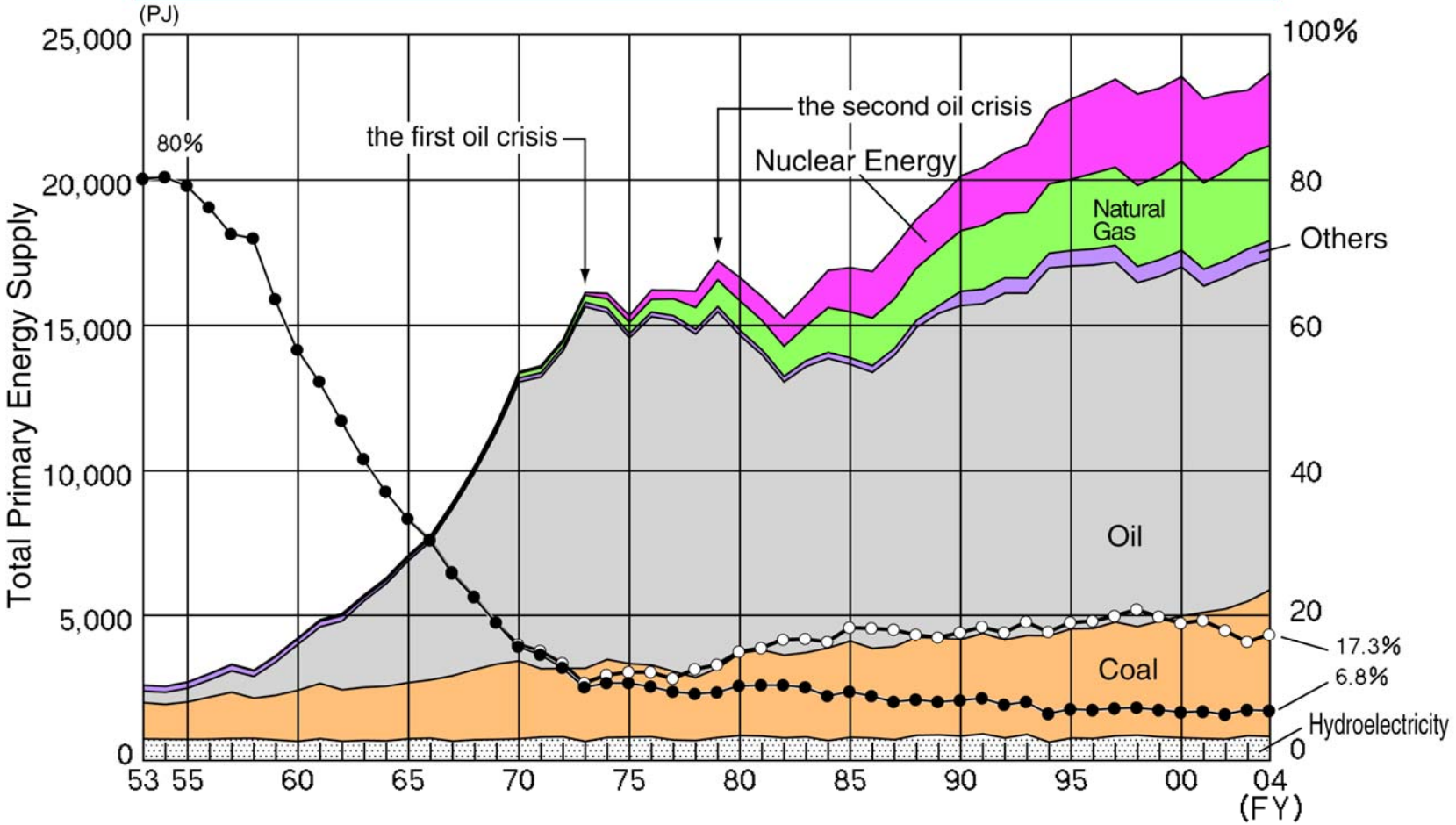
(Source) (*)BP Statistical Review of World Energy June 2006
(**) Uranium 2005

Japan's Lifecycle Assessment CO_2 Emissions Intensity by Source



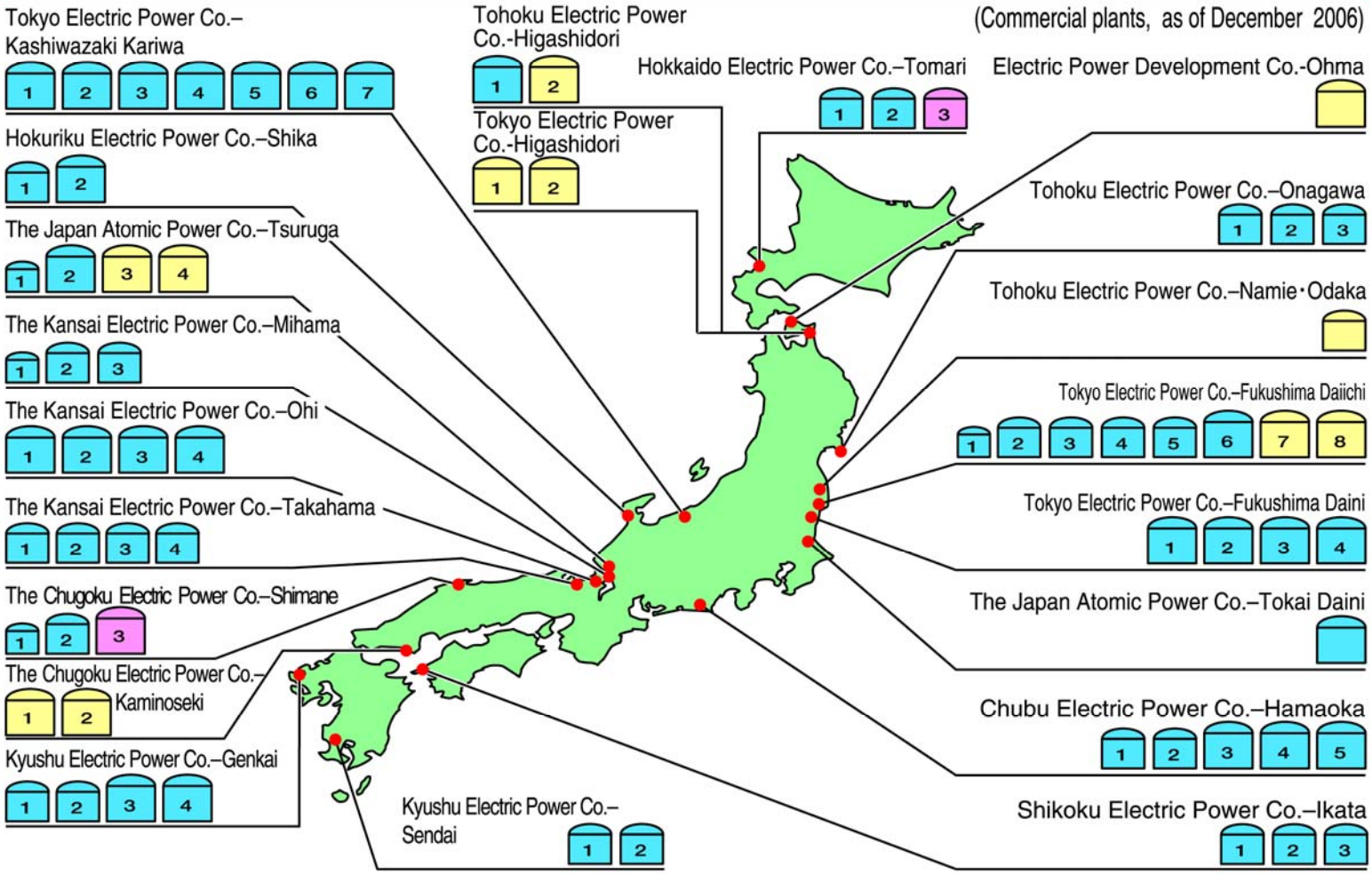
(Source) Central Research Institute of Electric Power Industry Report etc.

Historical Trend of Japan's Primary Energy Supply



(Note) 1PJ(=10^{15}J) is equivalent to approximately 25,800,000 liters of crude oil in calorie.
(Source) Agency of Natural Resources and Energy

Nuclear Power Plants in Japan



	Number of Units	Total Output (MW)
In operation	55	49,580
Under construction	2	2,285
Preparing for construction	11	14,945
Total	68	66,810

Framework for Nuclear Energy Policy

<Cabinet resolution adopted October 2005>

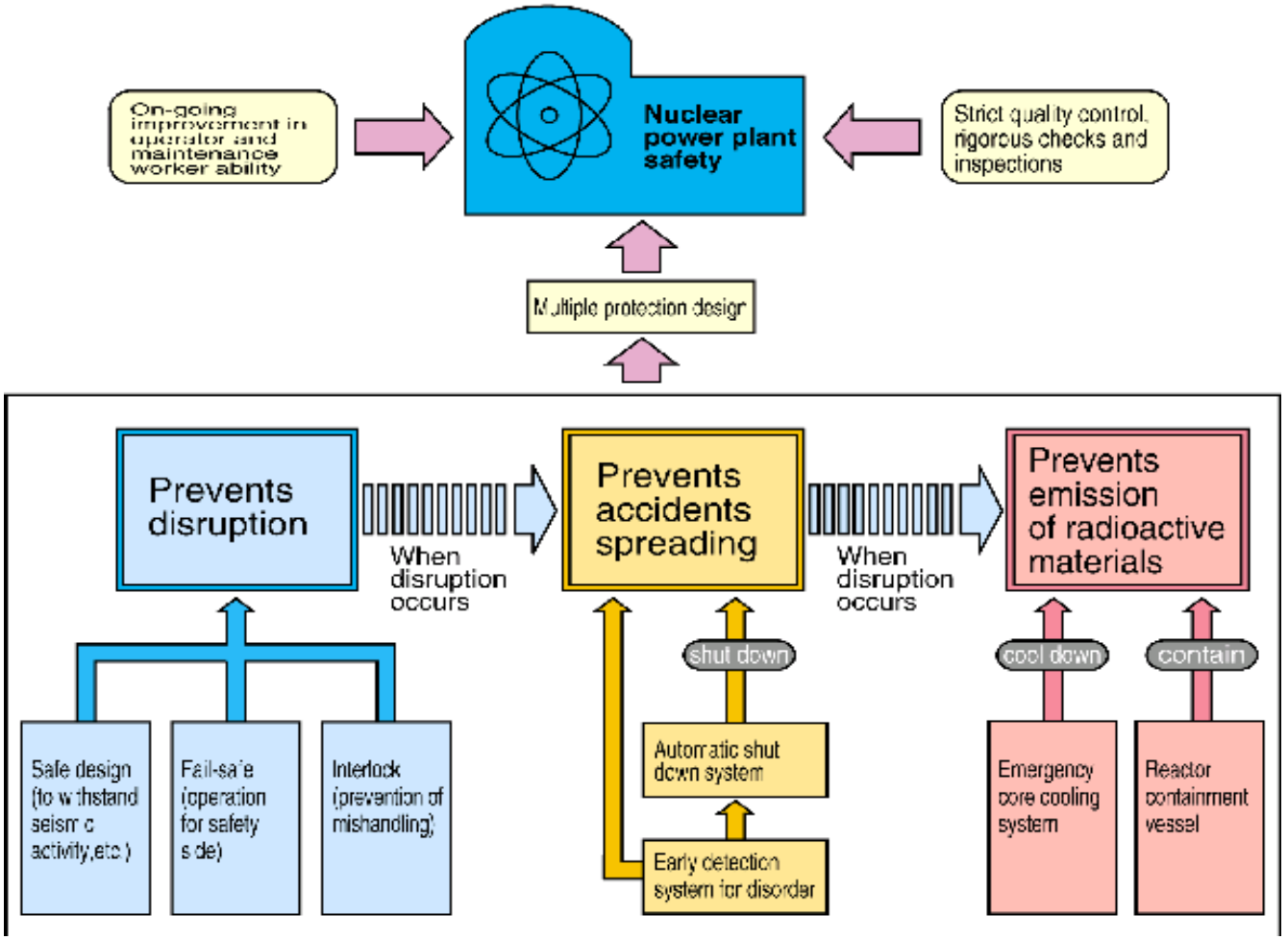
(1) Have nuclear power continue to account for at least approximately 30 to 40% of total electricity generation even after the year 2030

(2) Promote the nuclear fuel cycle

(3) Aim at the commercialization of fast-breeder reactors by the year 2050

(4) Steady promotion of measures for geological disposal of high-level radioactive waste

Safety Features of Nuclear Plant Design



Earthquake at Kashiwazaki-Kariwa Nuclear Power Station

- All units were cooled down in a safe manner and maintaining stable condition.
- The most significant safety measures functioned, as intended in the design, of protecting high radiations in the reactors in the multiple-defense and multi-layered manners.
- *It is our nation's responsibility as a most earthquake-ridden country to share internationally the lessons learned from the Earthquake.* (NSC of Japan)

Peaceful Use of Nuclear Energy
～ Some Personal View(1)～

- Nuclear Power – Indispensable but not a superman
- Make the greatest possible use of existing nuclear power plants with assuring safety as a key prerequisite
- Harmonization of framework, infrastructure , regulation ・・ is important.

Peaceful Use of Nuclear Energy
～ Some Personal View(2)～

- Transferring technologies to the next generation, while securing personnel for plant construction
- Recover & gain public trust : Baseline is “Transparency & Dialog”
- International standpoint is necessary in the area of personnel, public trust and harmonization of framework.