

*Nuclear Power Generation  
and  
Nuclear Fuel Procurement  
of TEPCO*

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Jan. 26th, 2009



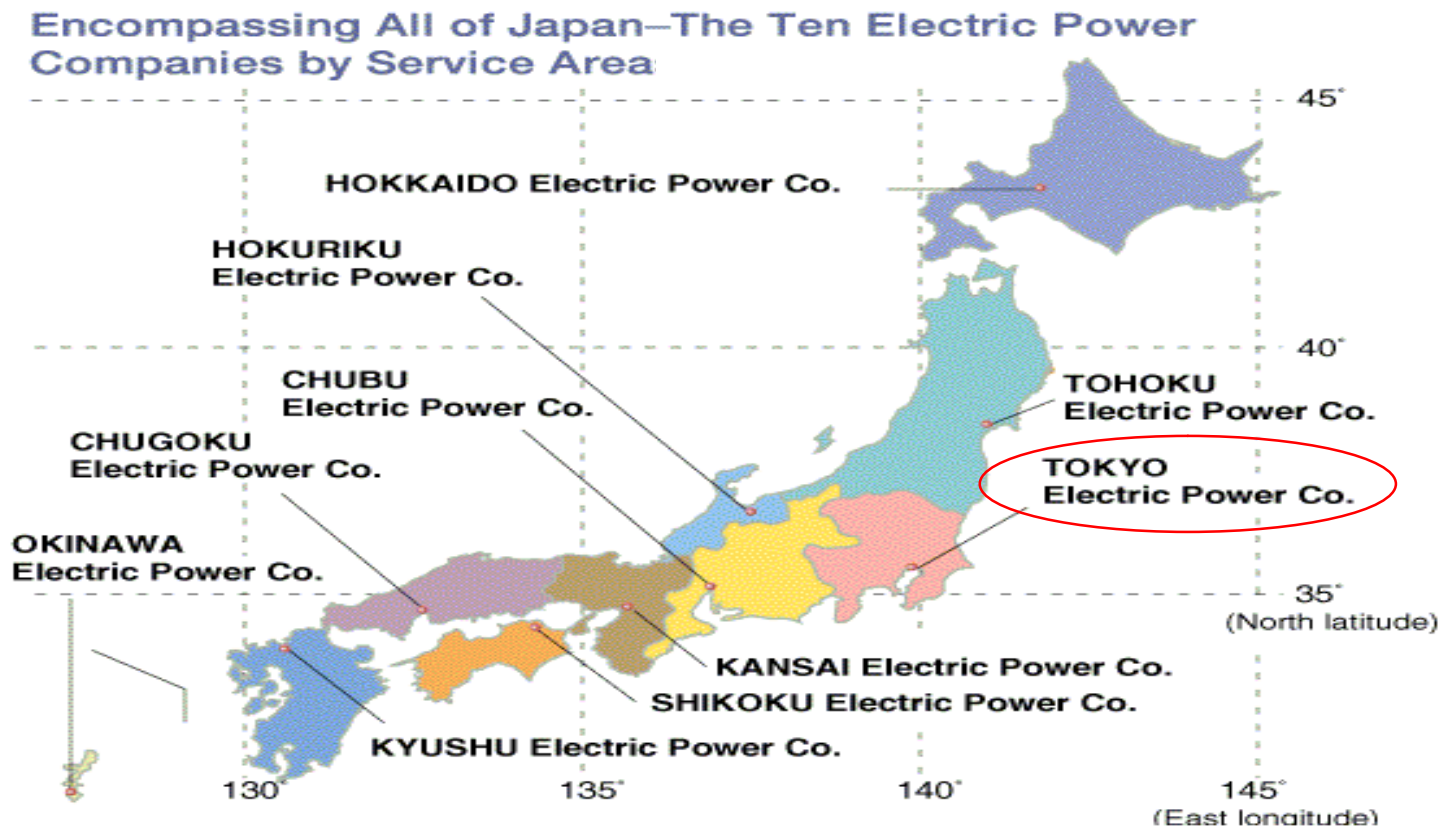
TOKYO ELECTRIC POWER COMPANY

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# TEPCO's Overview

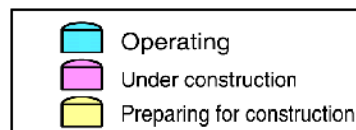
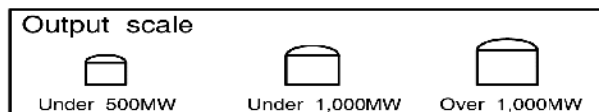
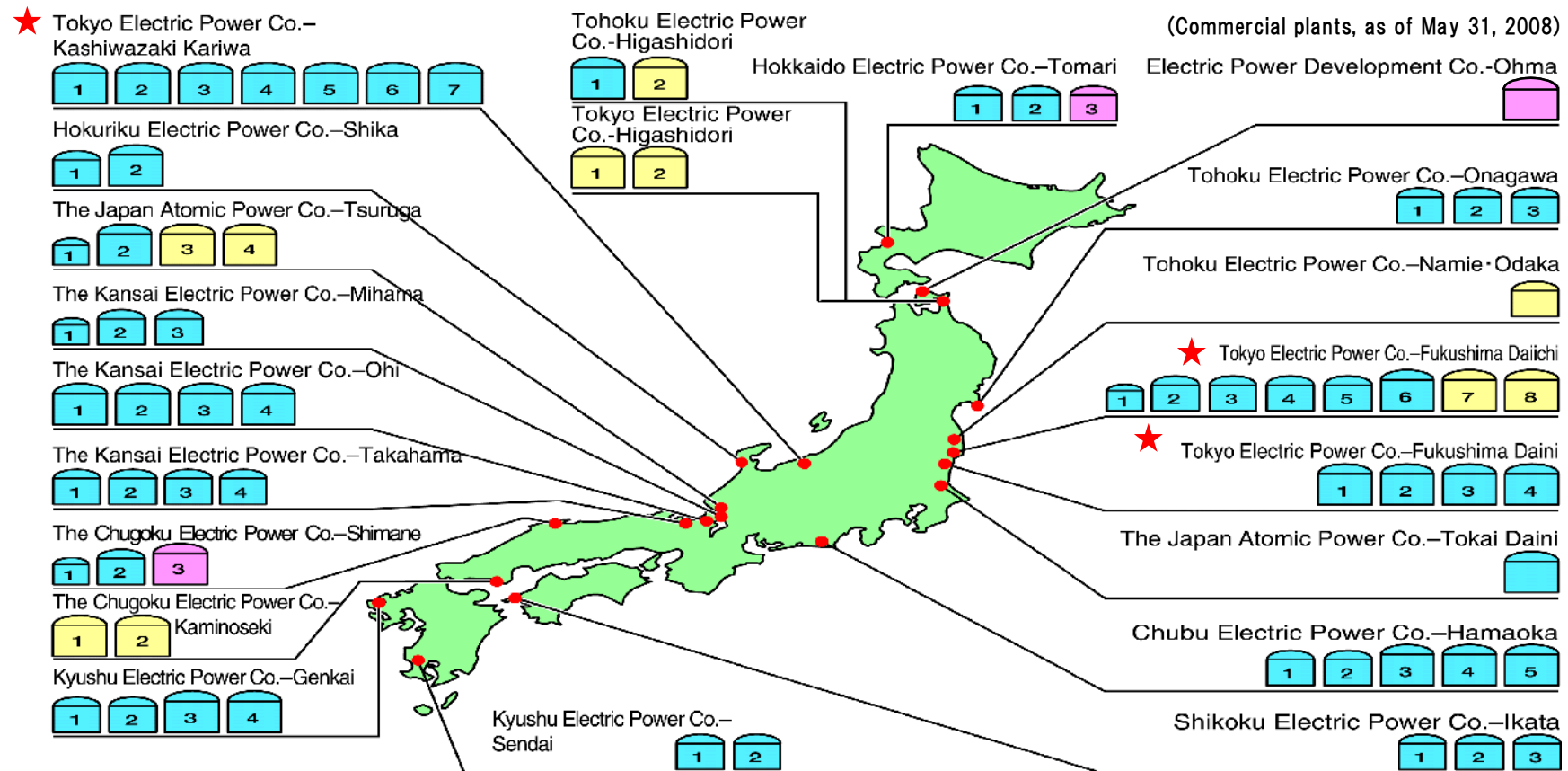
# (1) Electric Power Supply by TEPCO

- TEPCO provides electric power to the Tokyo Metropolitan Area which is the hub of Japan's economy.
- Electricity sales account for approximately 1/3 of Japan's consumption. (almost the same as that of Italy )



## (2) Nuclear Power Plants in Japan

- Presently, Japan has the third largest scale of nuclear generation capacity in the world. (55 units account for about 30% of total generation in Japan)



	Number of Units	Total Output (MW)
In operation	55	49,467
Under construction	3	3,668
Preparing for construction	10	13,562
<b>Total</b>	<b>68</b>	<b>66,697</b>

# (3) Advantage of Nuclear Power Generation (1/2)

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## ➤ Economic Competitiveness

- ✧ Cost-effective in comparison with generation costs by fossil fuels.
- ✧ Nuclear fuel costs account for less than 30% of total nuclear generation costs.
  - Contribute to stabilization of generating costs

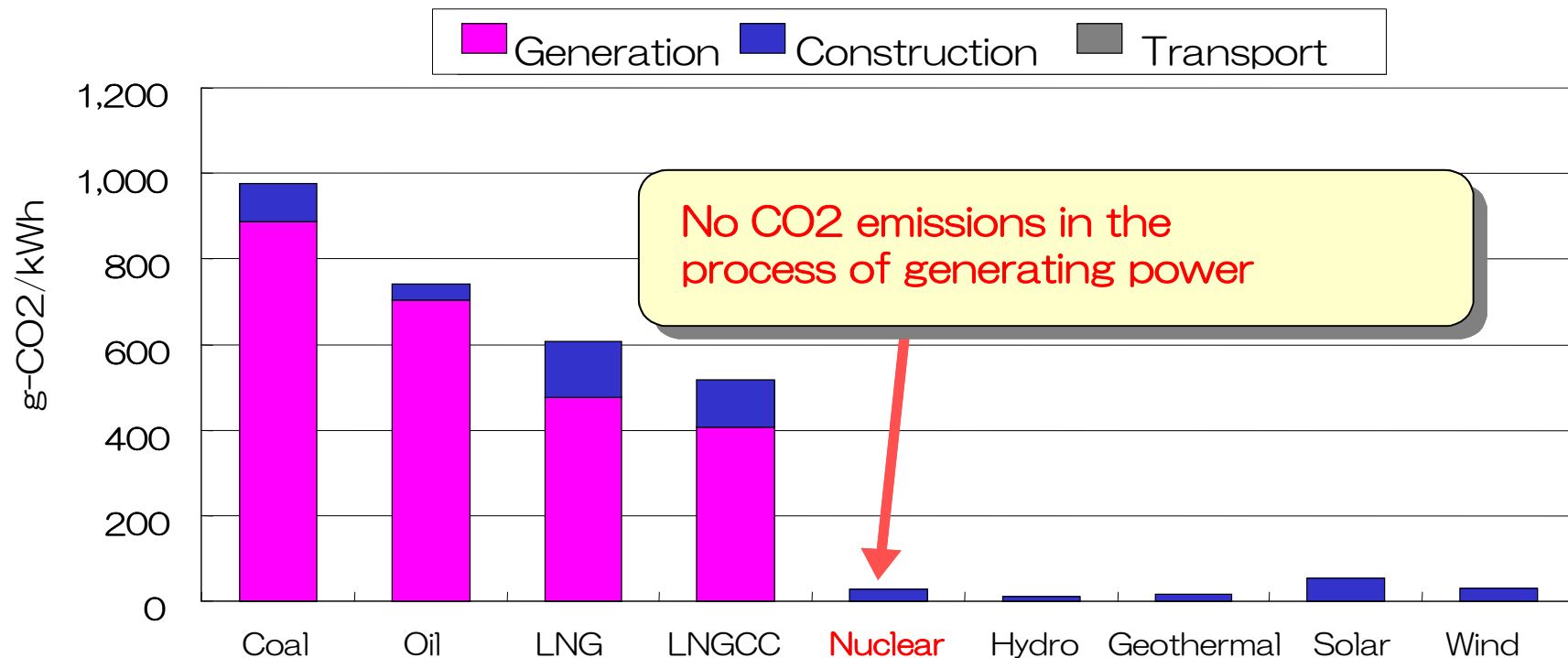
## ➤ Energy Security / Supply Stability

- ✧ Enough uranium to run light water reactors for 85 years globally.
- ✧ Geographic distribution of Uranium is not polarized, and a stable supply can be ensured.

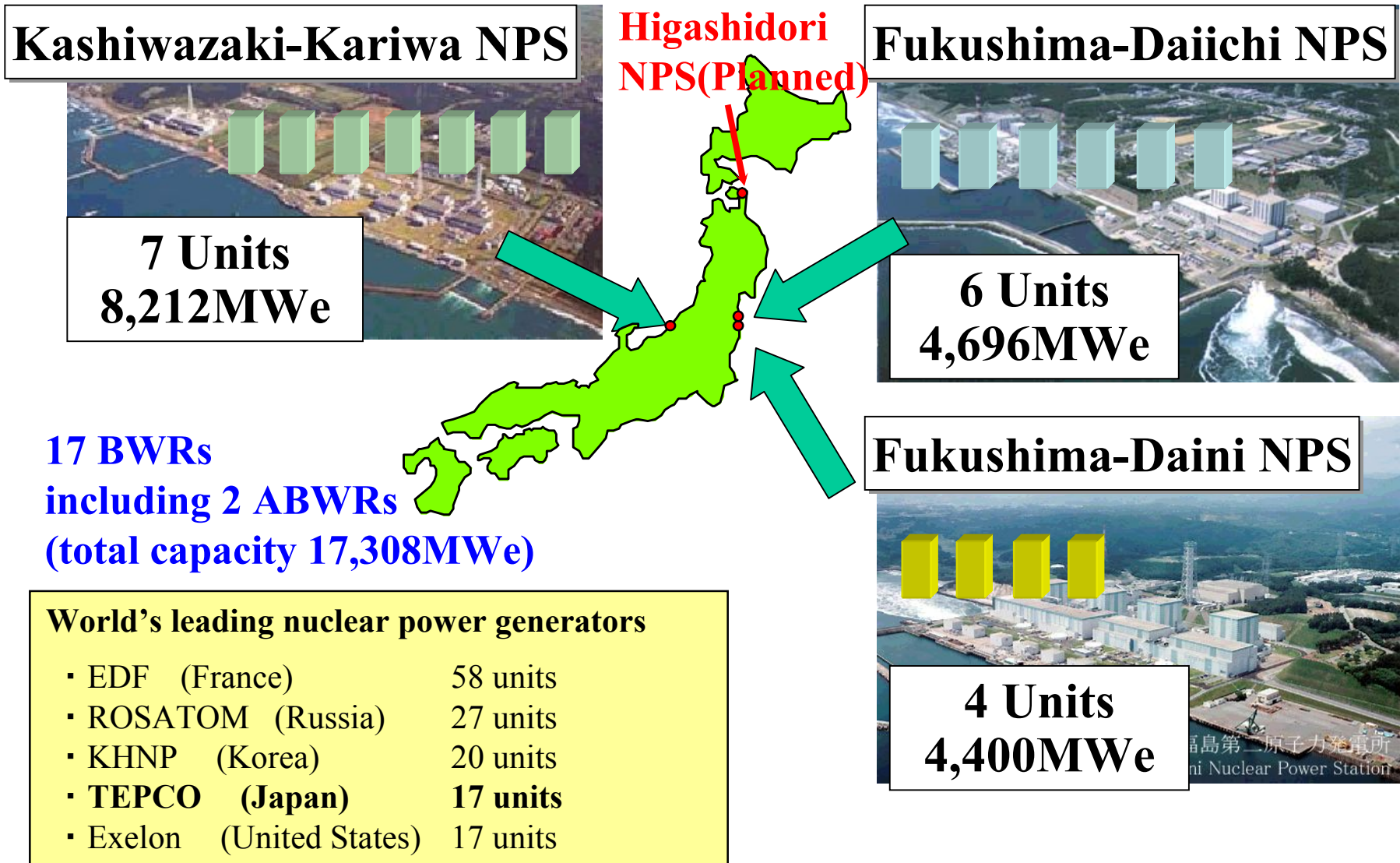
# (3) Advantage of Nuclear Power Generation (2/2)

## ➤ Environmental Compatibility

- ✧ Nuclear power generation does not produce carbon dioxide.
- ✧ CO2 emissions over the lifetime of the plant, including construction and the excavating and processing of nuclear fuel, is extremely small.

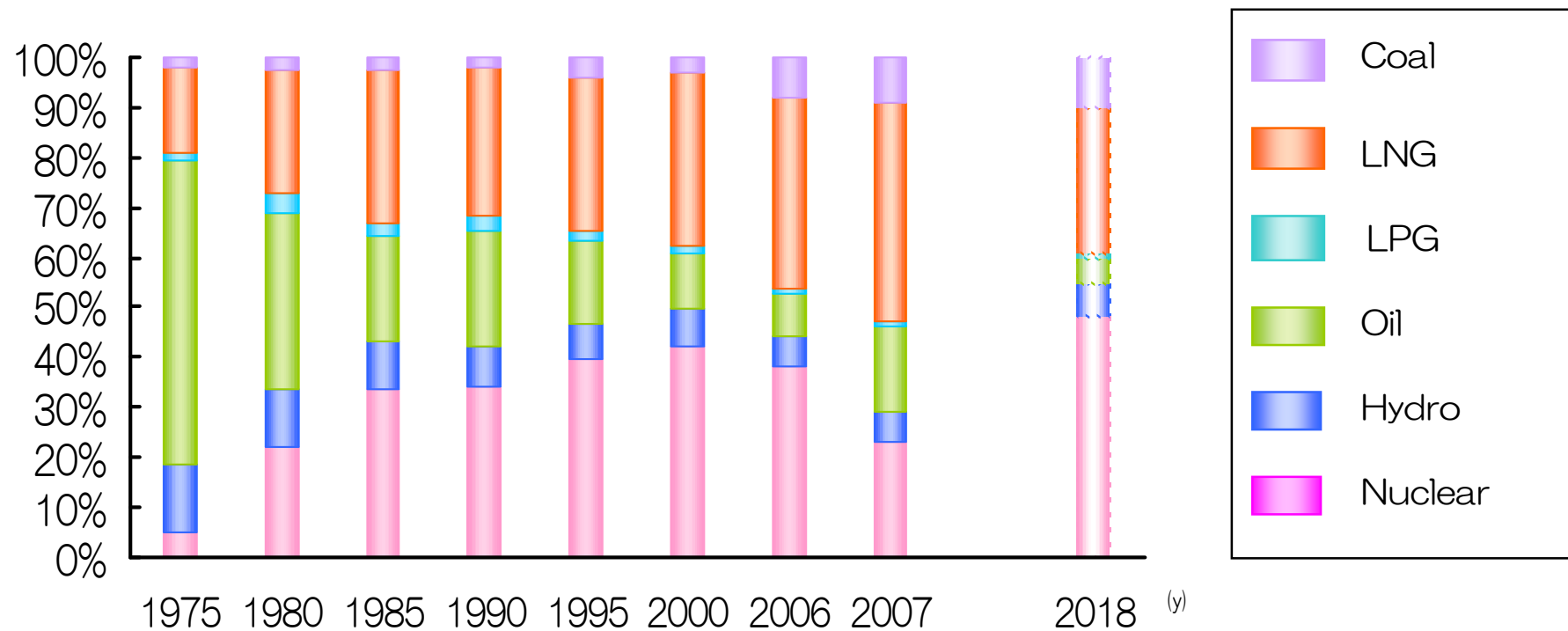


# (4) TEPCO's Nuclear Power Plants



## (5) TEPCO's Energy Source Portfolio

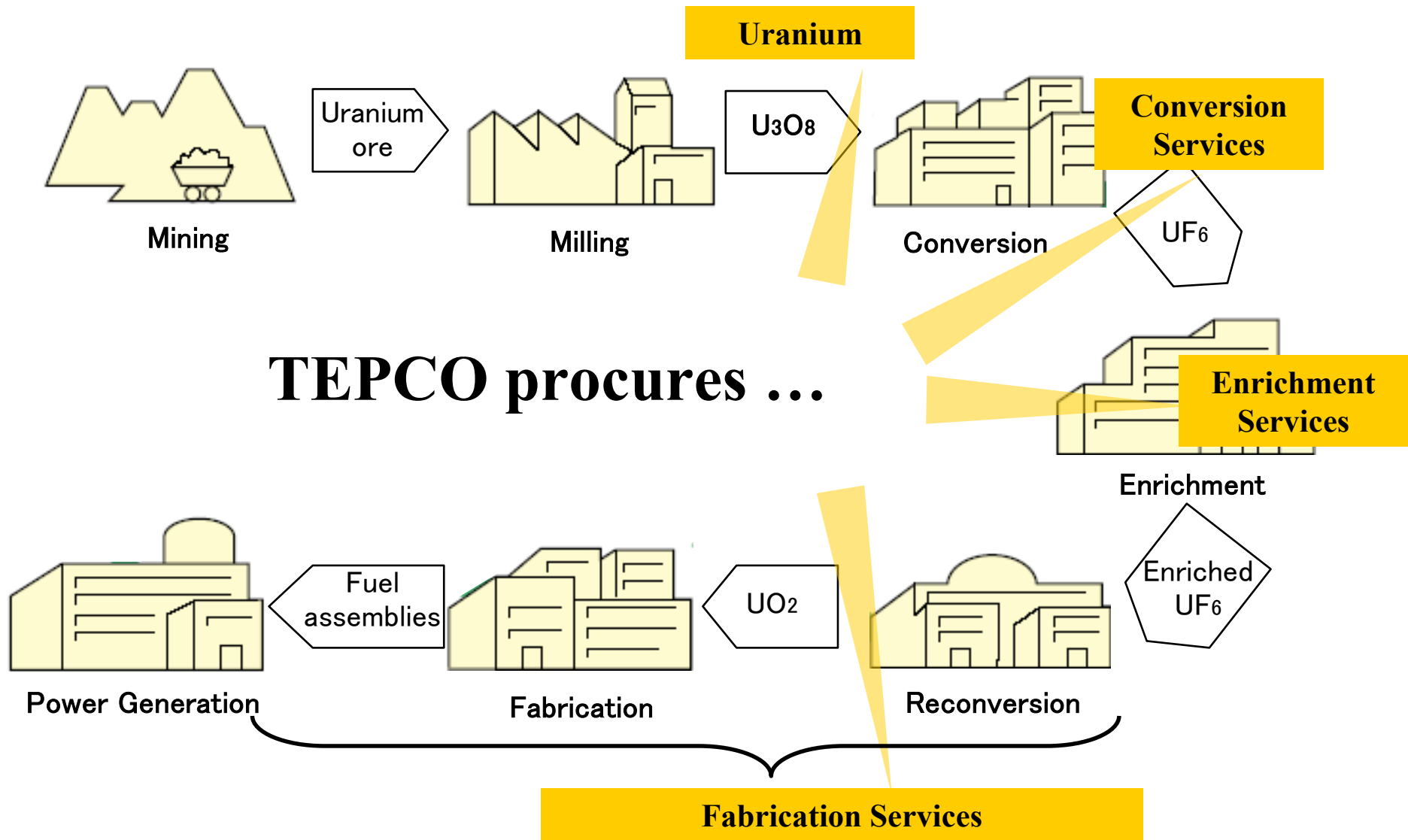
- After the oil crises, increase of gas (LNG) and nuclear as energy source has contributed to realization of "best mix" in the portfolio
- 17 nuclear units generate  $\sim 40\%$  in kWh at present
- Nuclear is, and will be playing an important role in our portfolio





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# Nuclear Fuel Procurement



# (1) Uranium Procurement (1/3)

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- Annual Demand : Approx. 4,000 stU<sub>3</sub>O<sub>8</sub>\*  
(5% of world total requirement)
- Policy: Long-term, economical and stable procurement

## **a. Procurement Method**

- ✧ Supply contracts with current major suppliers
- ✧ More weight on long term contract
- ✧ Diversification of suppliers and supply areas
- ✧ Participation in mining projects

## **b. Inventory policy**

- ✧ Sufficient level of inventory

## **c. Price stability**

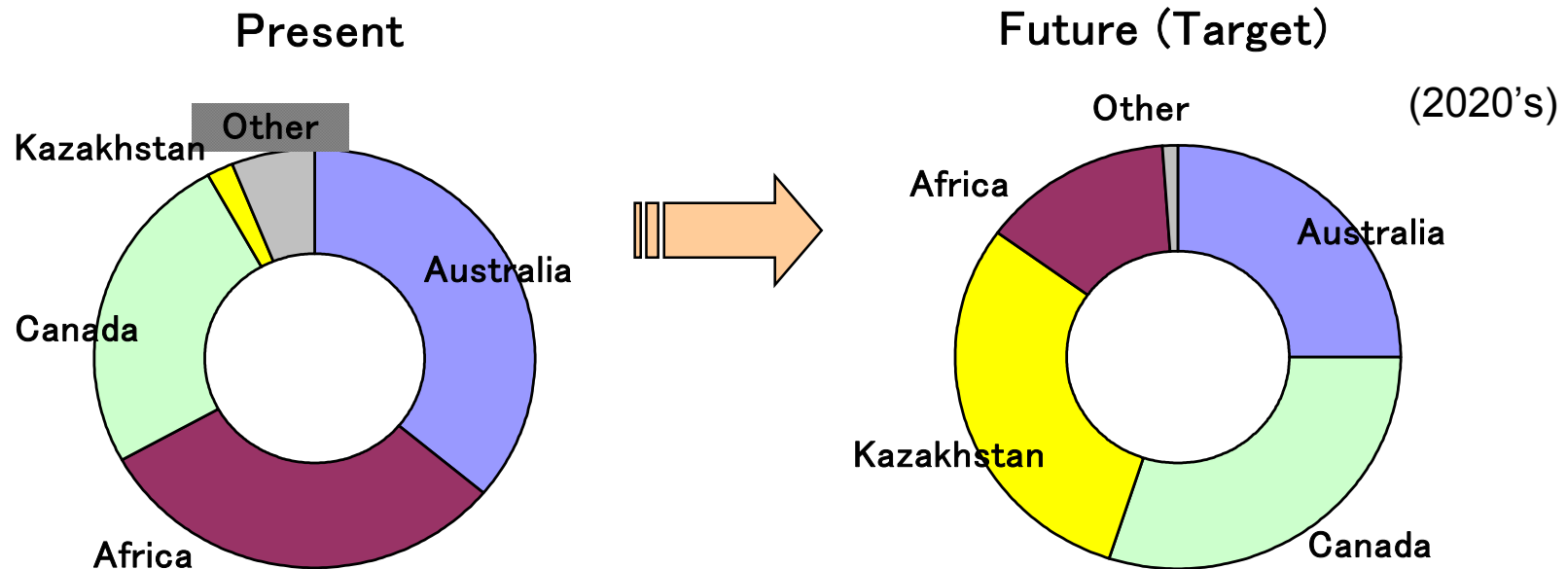
- ✧ Contracts using various pricing mechanisms

\* 1 stU<sub>3</sub>O<sub>8</sub> ... equal to some 0.91 metric tons of triuranium octoxide

# (1) Uranium Procurement (2/3)

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- The requirement for the next several years are already covered by existing contracts
- Continuing procurement from existing major suppliers, considering the Diversification of Suppliers and Supply Area



# (1) Uranium Procurement (3/3)

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➤ TEPCO plans to procure some portion of its uranium demand by participation in the following projects.

✧ Cigar Lake Project

- Located in Canada
- TEPCO to obtain 5% of uranium production
- Production to commence in 2011

✧ Kharassan Project

- Located in Kazakhstan
- 6 Japanese companies including TEPCO to obtain 40% of uranium production
- Production to commence in 2009

## (2) Conversion & Enrichment Services

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➤ Annual Demand:

Conversion Services: Approx. 3,000 tU as nUF<sub>6</sub>

Enrichment Services: Approx. 330 tU as eUF<sub>6</sub>

➤ Policy: Long-term, economical and stable procurement

→ The same as uranium procurement

➤ Points to consider

✧ Limited suppliers

→ Efforts to achieve both competition and diversification at the same time

✧ Transition period from old plants to new plants

→ Stable and long term procurement from reliable suppliers is of particular Importance

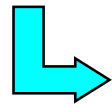
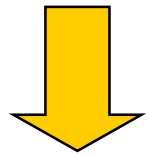
# (3) Fuel Fabrication Services

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- Annual Demand : Approx. 2,000 fuel assemblies (350tU)
- Domestic Fabricators occupying a high share in Japan
- Enhancement of Competitive Environment
  - ✧ Purchase of Fuel Fabrication Services together with Reactor Core Management from Nuclear Reactor Makers

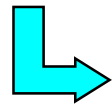


- ✧ Promotion of Reactor Core Management by TEPCO



Enabled us to procure Fabrication Services regardless of Reactor Makers

- ✧ Introduction of Overseas fuels



Price reduction by competition among fabricators

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***Thank You !***