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***Foreign Press Center Japan  
Press Briefing***

# **Energy in Japan**

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# What is the Full Retail Deregulation of City Gas?

□ Retail full liberalization: Expanding the range of retail deregulation

## \* Electricity

2000: Special high voltage (2000kW and over) 26%→

2004: High voltage (500kW and over) 40%→

2005: High voltage (50kW and over) 62%→

2016: Everything 100%

## \* City Gas

1995: 2,000,000m<sup>3</sup> annually 47%→

1999: 1,000,000m<sup>3</sup> annually 52%→

2004: 500,000m<sup>3</sup> annually 56%→

2007: 100,000m<sup>3</sup> annually 63%→

2017: Everything 100%

# Simultaneous Electricity and Gas System Reforms

## \* Electricity System Reforms → Gas System Reforms

2015: Established Organization for Cross-regional Coordination of Transmission Operators (OCCTO)

2016: Full deregulation of electricity retail

2017: Full deregulation of gas retail

2020: Separation transmission/distribution sector (legal separation)

2022: Separation of network sector for 3 largest gas companies (legal separation)

## \* Growth of Energy Market (domestic demand)

+ . . . Natural gas

0 . . . Electricity

— . . . Oil

# Important Points on the Electricity System Reforms

- \* Two reasons for full deregulation of retail
  - Freedom of choice for consumers
  - Improved governance through competitionOvercome the issue of  
“a mismatch between high practical skills and poor management skills”
- \* **Rates will not necessarily decrease**
  - Deregulation=market mechanisms=supply and demand balance
  - Possible lack of generation facilities: new energy mix
  - May decrease at first, then slowly increase
- \* **Cautious approach** necessary for designing system to separate transmission/distribution
  - Overseas examples are conflicting: difference in history  
→difference in success  
UK, 1926: Grid system / US Northeast, 1927: Power pools

# Future of Electricity/Gas Deregulation

## □ Minor macro disruption, major micro disruption

- Electricity: Switching rate and wholesale exchange share are both 3%
- City Gas: No wholesale exchange exists
- Chance of major disruption to micro business management

## ■ The world changed with deregulation

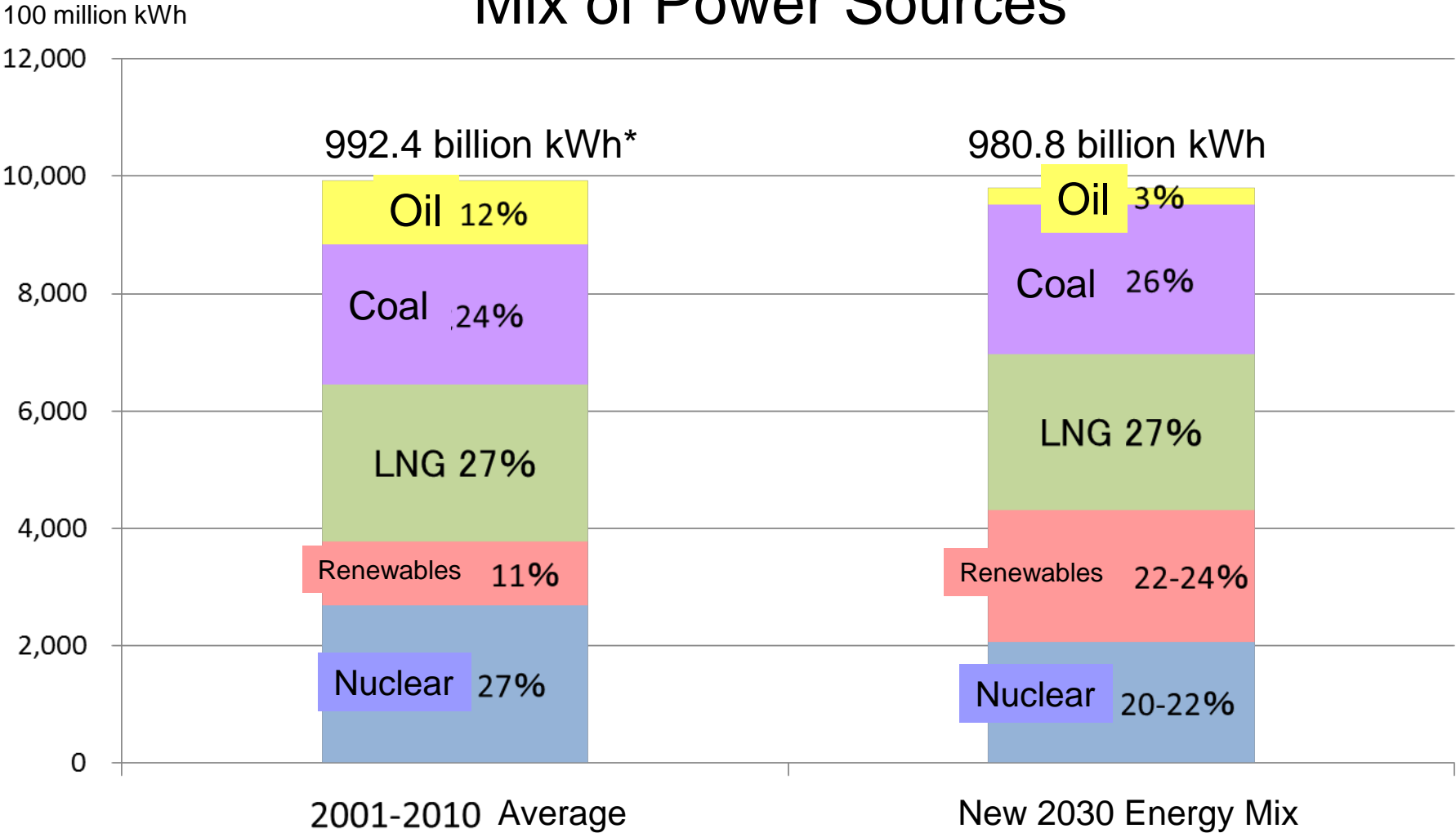
- Otsu District Court issues injunction to Kansai Electric Power Co. against restarting Takahama reactors No. 3 and 4
  - KEPCO withdraws its “lower price menu”
  - Chubu Electric Power Co. is relieved
- Ministry of Environment pushing for carbon pricing
  - Major blow to heavy coal users Chugoku Electric Power Co., Hokuriku Electric Power Co., and J-POWER
  - Beneficial to KEPCO once nuclear reactors restart

# Deregulation and Energy Supply (Changes to Competition)

- Newcomers (Communications, etc.) vs Electricity
- Newcomers (Oil, etc.) vs City Gas
- Electricity vs Electricity
- Electricity vs City Gas
- Electricity vs LP Gas
- City Gas vs City Gas
- City Gas vs LP Gas
- LP Gas vs LP Gas

# Energy Mix Established by Japanese Government

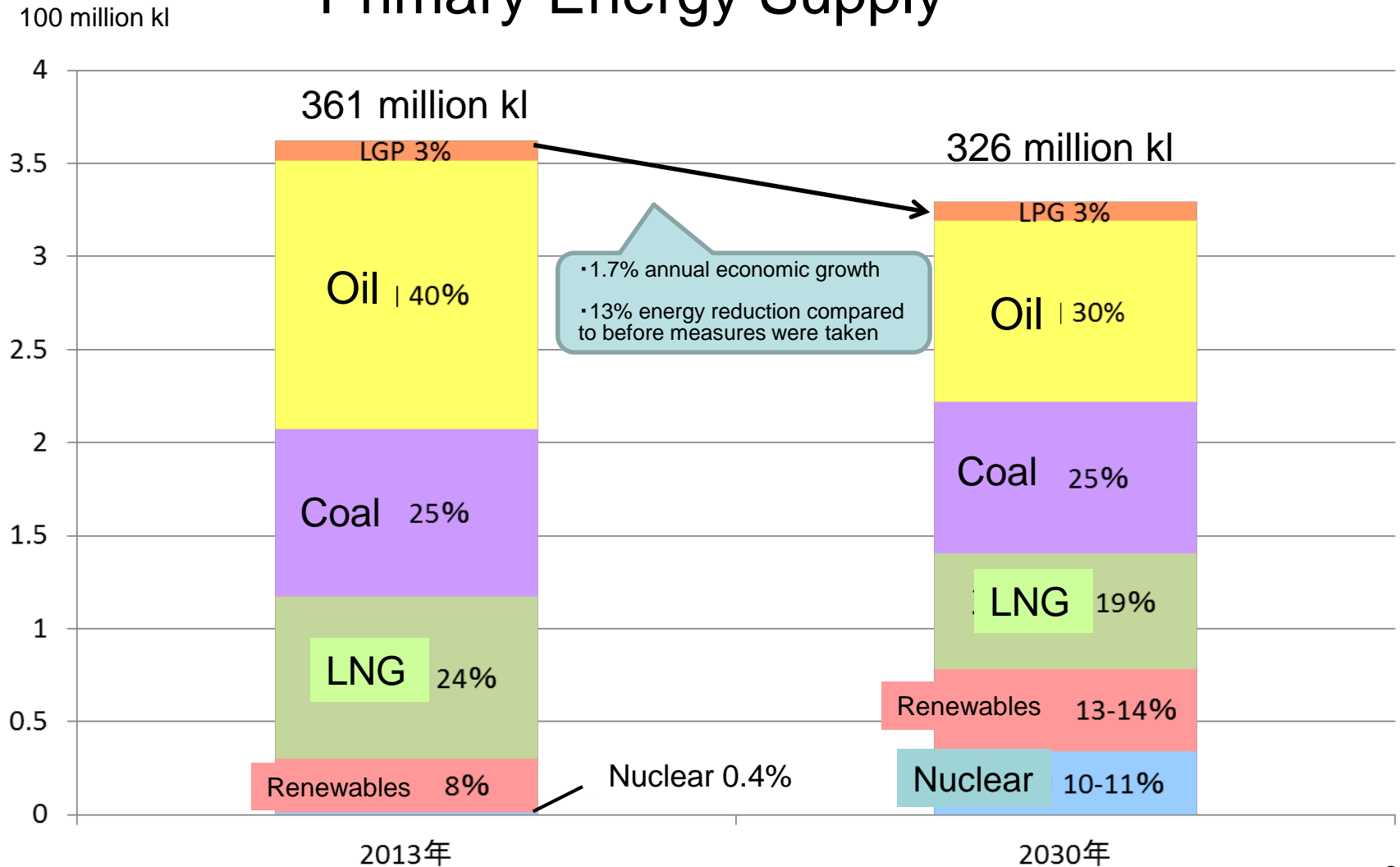
## Mix of Power Sources



Source: METI Agency for Natural Resources and Energy  
 Long-term Energy Supply and Demand Outlook, Energy White Paper  
 \*The average energy demand for 2001-2010 is based on energy demand and light and power use trends from the above sources, calculated by DGO.

# New Energy Mix Established by Japanese Government

## Primary Energy Supply



# Issues with the Japanese Government's Energy Mix

- Energy Mix Established by the Japanese Government for 2030

  - Nuclear: 20-22%

  - Renewables: 22-24%

    - (Hydro 9%, Geothermal 1%, Bio 4%, Solar 7%, Wind 2%)

  - Fossil Fuels: 56% (LNG 27%, Coal 26%, Oil 3%)

  - Cogeneration: 119. billion kWh (11-12%)

- **Breaks Public Pledges in Two Ways**

  - (1) Does not “decrease reliance on nuclear as much as possible”

    - Effectively switching from phasing out nuclear by 2040 to 2060

  - (2) Does not “adopt renewables as much as possible”

    - Reduced from the 2009 Aso cabinet target (20% renewables by 2020)

    - Significant difference with Ministry of Environment estimate

    - (moderate estimate of over 30% renewables)

- **Should be: Nuclear 15%, Renewables 30%, Fossil Fuels 40%, Cogeneration 15%**

# Long-term Issues for Energy and Environmental Policies

- Two contradictory Cabinet decisions
  - \*2030 energy mix: 56% fossil fuels ⇔  
Reduce greenhouse gases 80% by 2050  
to fight global warming
  - \*Ministry of Economy, Trade and Industry not  
discussing 2050 VS. Ministry of Environment not  
discussing 2030
- Backcasting from 2050
  - Necessity of seriously preparing CCS  
should move forward bilateral credits

# Turbulence Starting from the Kashiwazaki-Kariwa Nuclear Power Plant

## □ Impact of Election for New Niigata Governor

- Difference between July 2016 Kagoshima gubernatorial election and October 2016 Niigata election
- Difference between February 2014 Tokyo gubernatorial election and October 2016 Niigata election
- **Drop in crude oil prices** and system of building power plants to provide electricity for other areas

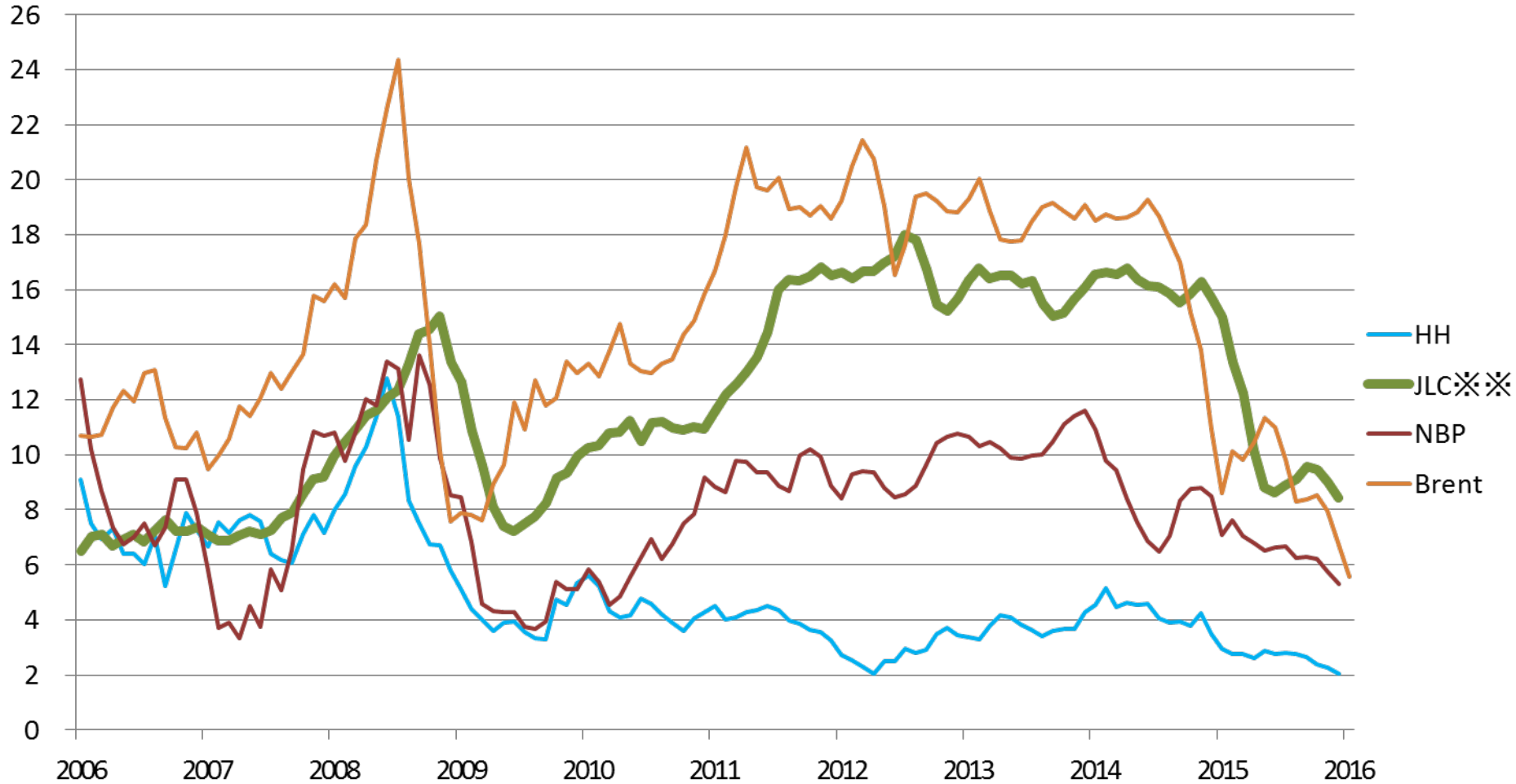
## ■ No Chance of TEPCO Restarting

### the Kashiwazaki-Kariwa Plant

- Complete restructuring of TEPCO is required for the public to finance decommissioning Fukushima Daiichi
- Restarting the Kashiwazaki-Kariwa plant is the lifeline of TEPCO's New Comprehensive Special Business Plan
- TEPCO won't restart it → Tohoku Electric Power and JAPC?
- TEPCO will sell fossil fuel plants
- TEPCO will be able to survive as a network/retail company
- Supplying nuclear power to wholesale electricity exchange

USD/MMBtu※

# Energy Price Trends



※ Calculated assuming MMBtu/barrel=5.800  
※※ JLC=Average CIF of LNG imported to Japan

Source: ICE, EIA, Ministry of Finance statistics