

TUESDAY 6 JUNE 2006

MAIN THEME OF THE DAY: GAS TO POWER: STILL THE DRIVER FOR MARKET GROWTH?

KEYNOTE ADDRESS

A Changing World of Energy

-- New Opportunities for Natural Gas Industry

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Chairman, The Japan Gas Association

6 June 2006



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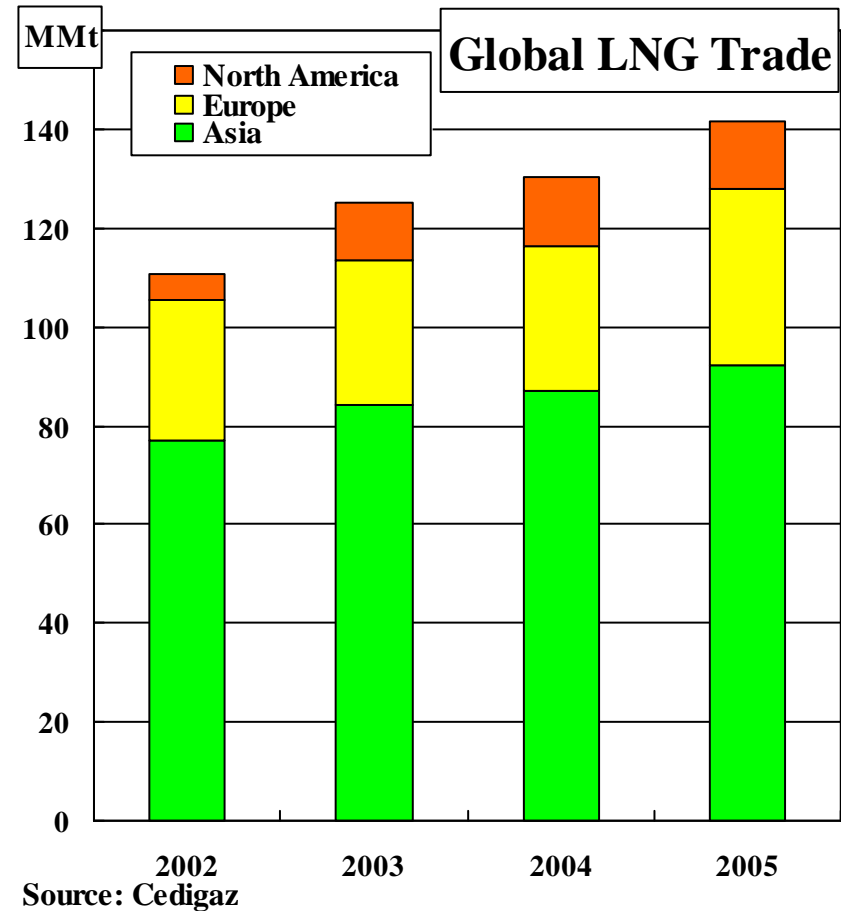
Introduction - Contents

- **Developments in natural gas and LNG industry**
 - Rapidly growing in the past few years
 - Focus on the Asia Pacific region
- **Challenges to overcome**
 - Prospects for sustainable expansion of natural gas business in the power generation and other sectors

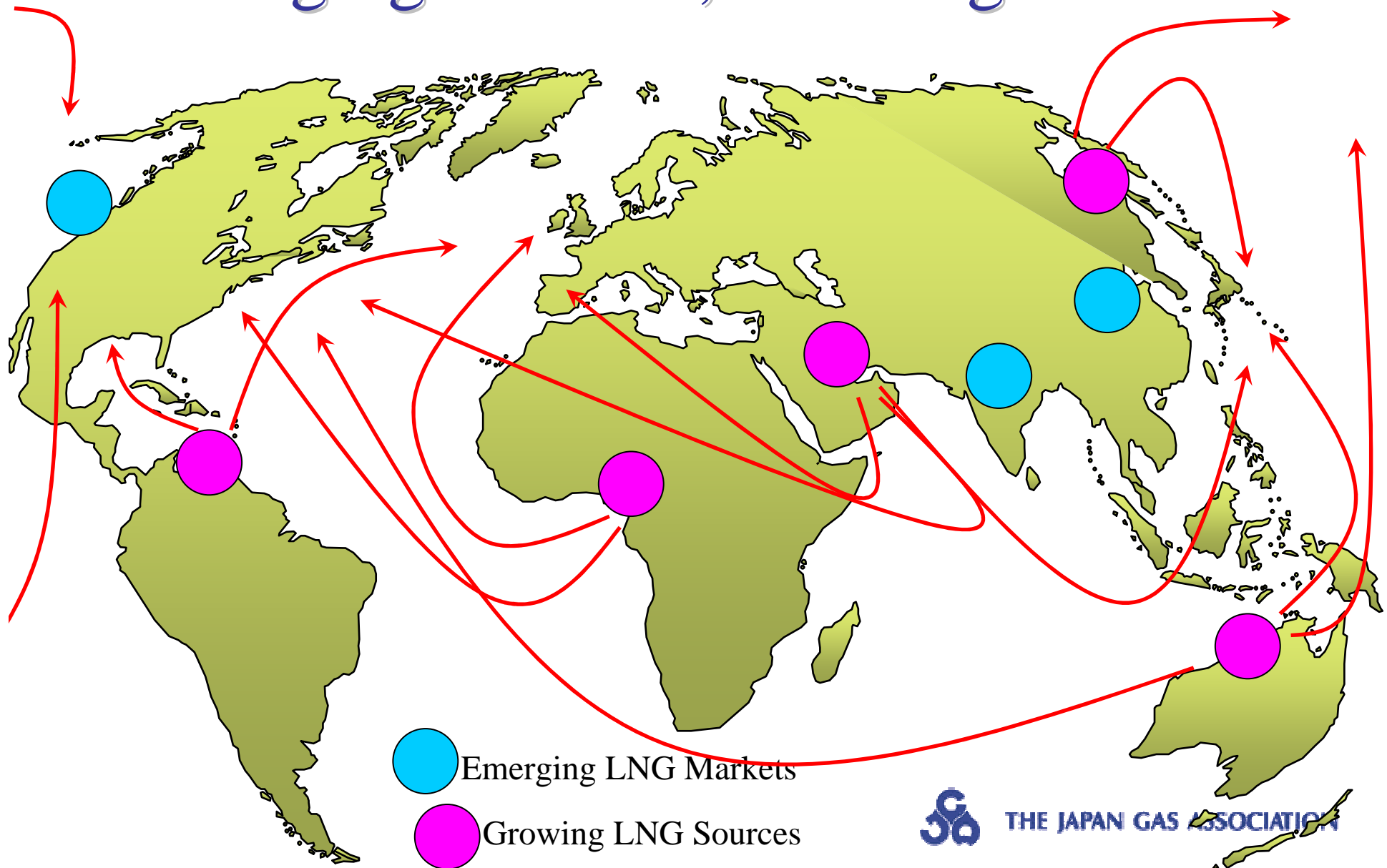


Changing Natural Gas/ LNG Markets

- Asia - driving force of “Century of natural gas”
 - China - East-West pipe
 - India - LNG since 2004
- LNG trade
 - +9%/year 2003 - 2005
 - Major contributors - Europe (Spain, France), Asian



Emerging Markets, Growing Sources



Notable Incidents and Trends

- Unforeseen events to affect supply/demand
 - Glitches at exporting plants
 - Nuclear power operations
- Skyrocketing oil prices
 - Resulting in higher term LNG prices
- Devastating hurricanes in North America
 - Causing short-term energy price rises
- Impacts on contract renewal talks



Future Demand/Supply Balance

- **Short-term (2006 - 2007): Maybe relaxed**
 - New trains online in Australia, Qatar, Oman, Nigeria, Trinidad
- **Medium-term (until 2010): Maybe tight**
 - Growing demand in existing and new markets
- **After 2010: Likely to be relaxed**
 - Newly coming liquefaction projects



Sellers/Buyers Should Note. . .

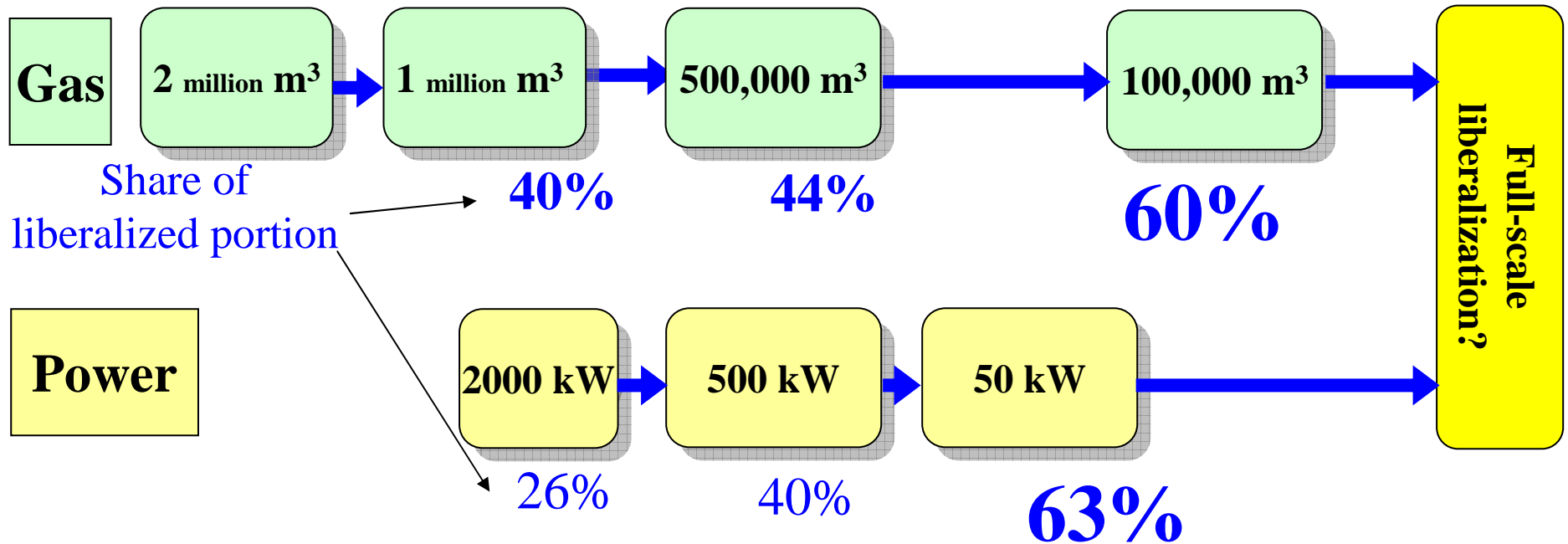
- High price environment
 - Security of Supply
 - Losing parts of gas markets could be disadvantageous
 - Providers' responsibility of stable supply
 - Cooperation between producers and consumers are important
-
-

Long-term perspective is essential
(As has been in the industry)



Energy Industry Deregulation in Japan

1995 99 2000 04 05 2007 When?



Large industrial and commercial customers

Mid-sized industrial and commercial customers

Small-sized industrial, commercial and air-conditioning customers

Residential and small commercial demand



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New Entrants to the City Gas Market

[New entrants to the gas market]

Power Utility Cos.	Tokyo, Kansai, Chubu
Domestic Natural Gas Producers	Teikoku Oil, Tohoku Natural Gas, Japex
Petroleum and LPG Companies	Nippon Oil, Iwatani Industries, San-ai Oil, Next Energy (JV between Nippon & Teikoku)
Others	Nippon Steel, Mitsubishi Corp, Mitsui & Co, Air Water Co, Energy Advance, Nijio

- 19 new entrants in 92 cases as of December 2005

- The share of new entrants in the liberalized supply: 8%



Toward Better Regulatory Framework

- Unreasonable price competition
---> Potentially unstable supply situation
- Potential customer segregation
- Potential underinvestment in socially useful initiatives

[Important]

**Step-by-step approach for liberalization
and regulatory reform**



Environmental Preservation

- Kyoto Protocol - Entry into force Feb. 2005
- The Japan Gas Association:
"Environmental Activity Guideline" (1994);
- Nippon Keidanren (Japan Business Federation):
"Voluntary Action Plan on the Environment" (1997)

Shift to natural gas is supposed to contribute significantly



Positive Roles of Natural Gas

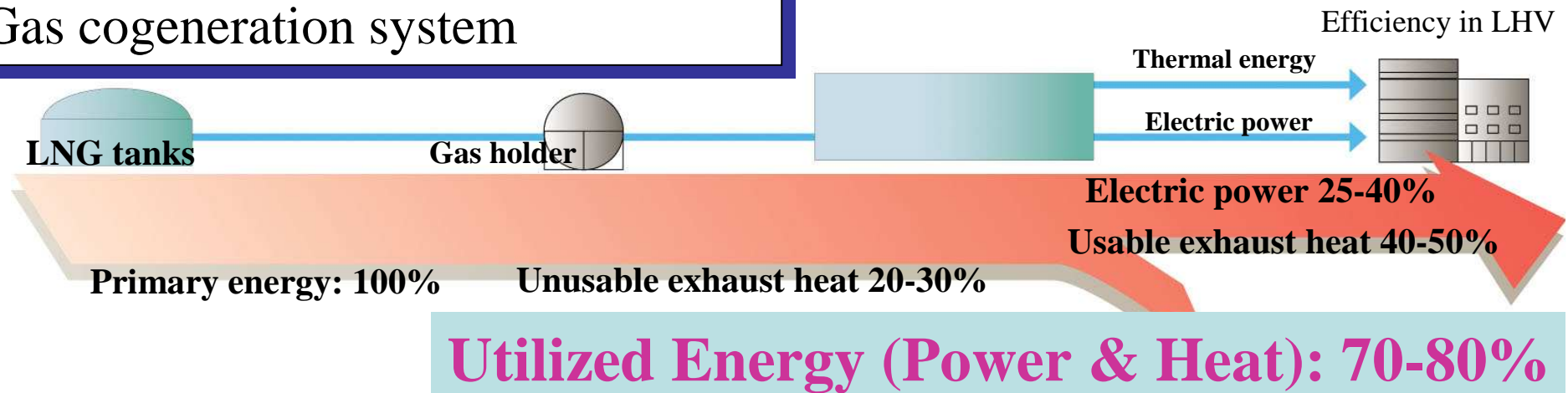
- Majority of new power capacity - gas (in industrialized nations)
 - less costly and more easily to install
 - more flexible in operation
 - more environmentally-friendly
- 70% of LNG in Japan used in power sector (though some signs of saturations)

Power generation remains as the growth driver

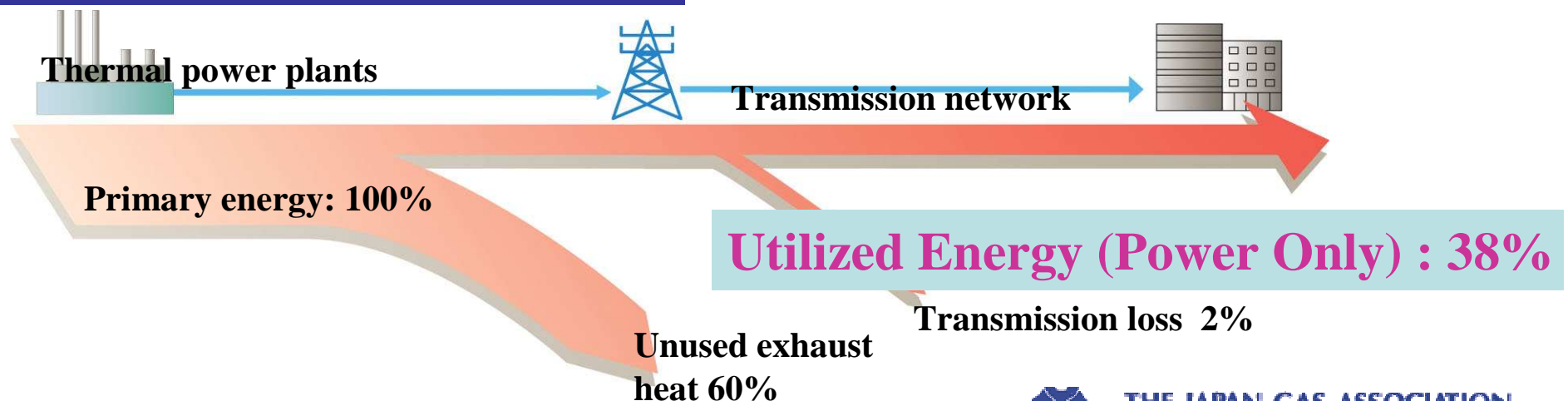


Cogeneration - Highly Efficient

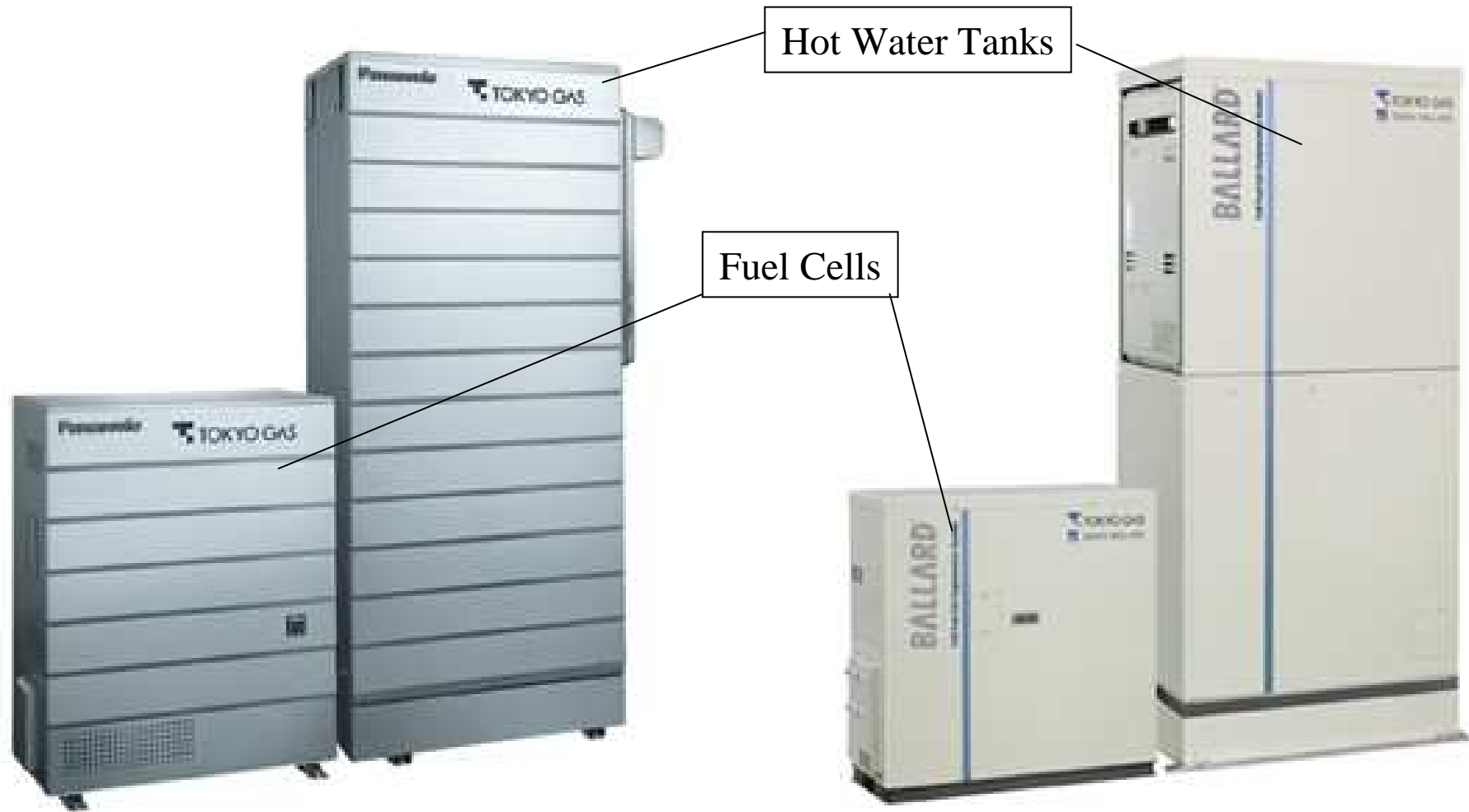
Gas cogeneration system



Conventional power generation



Residential PEFC Cogeneration

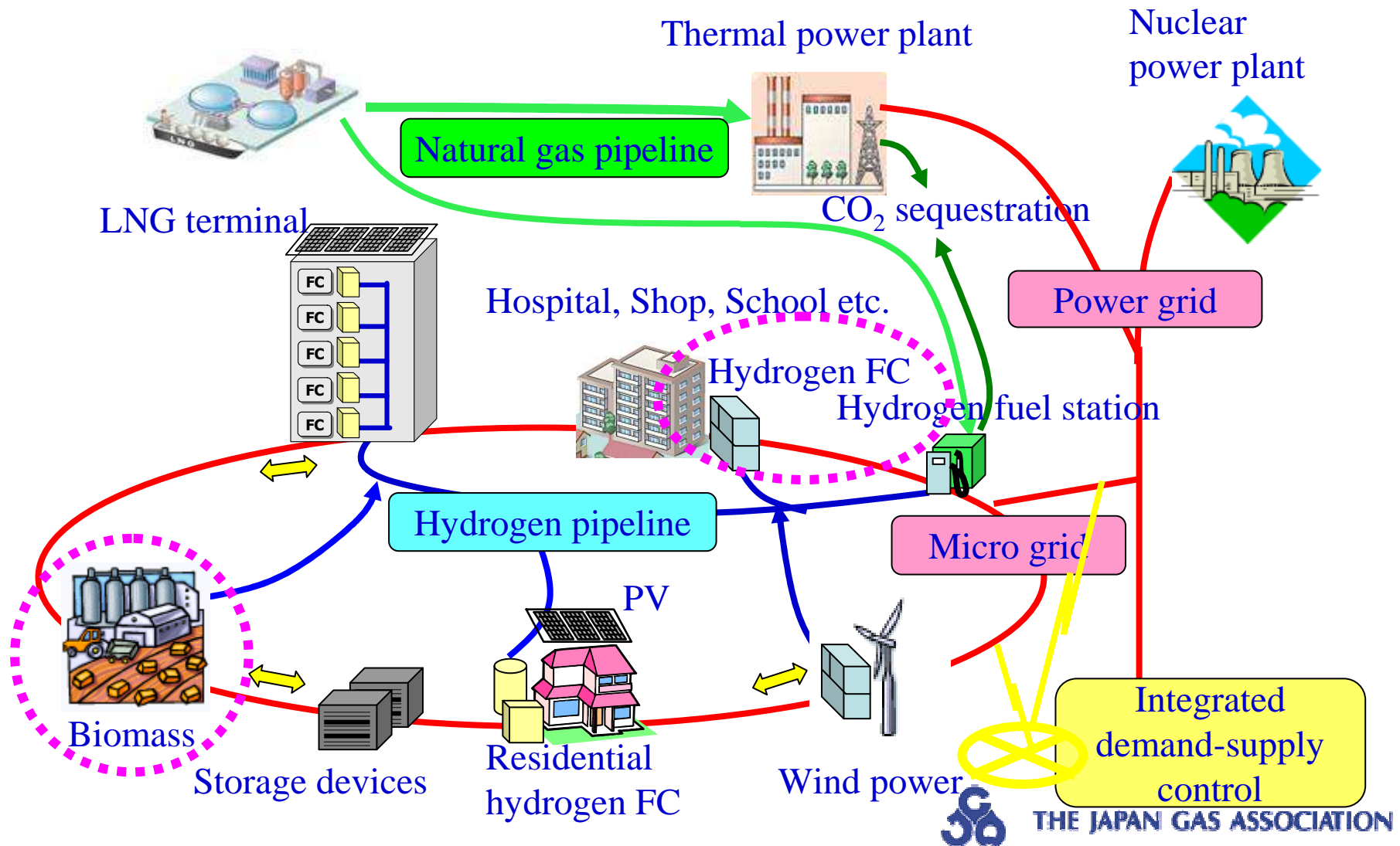


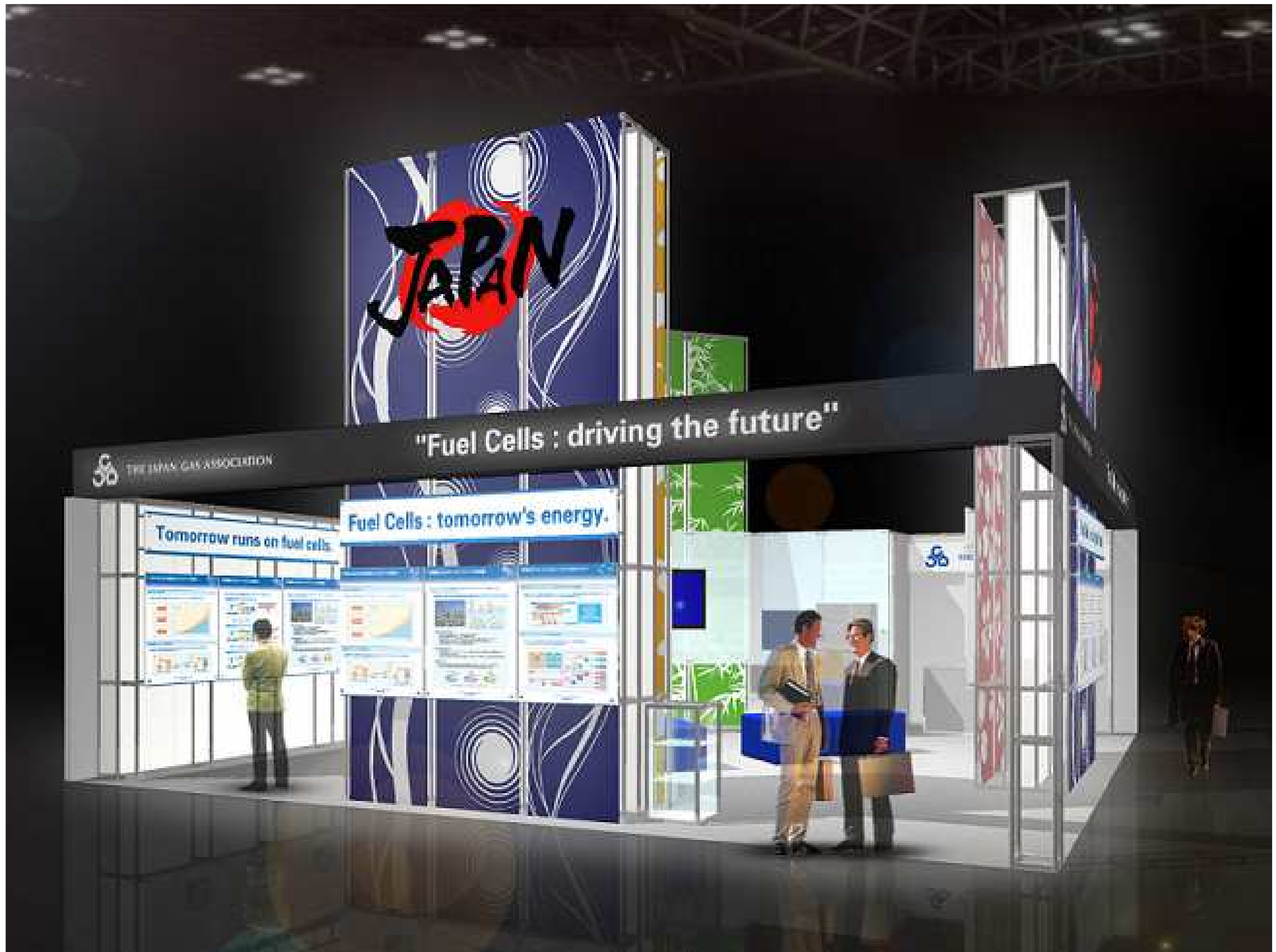
Matsushita Electric Model (1 kW)

Ebara Ballard Model (1 kW)



Holonic Energy System





JAPAN
JAPAN

"Fuel Cells : driving the future"

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Tomorrow runs on fuel cells

Fuel Cells : tomorrow's energy.



New Business Opportunities

Majors, upstream stake holders

---> activities in consuming countries such as LNG receiving terminals



Players in consuming countries

---> gas field development, liquefaction, LNG transportation

Involvement by Japanese Players

- Darwin LNG (Bayu-Undan)

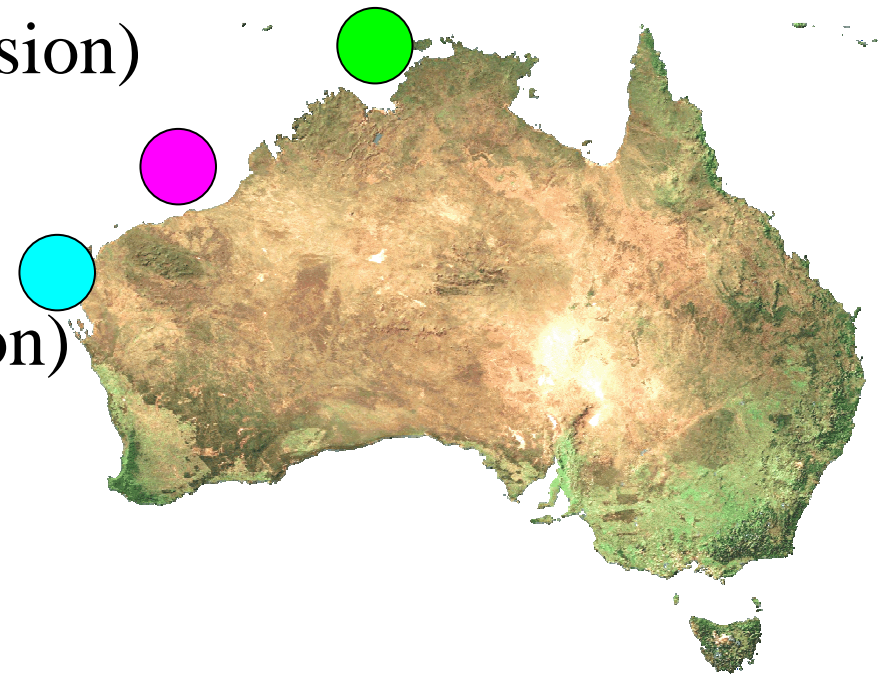
- 2006 - (17 years), FOB
- Operator: ConocoPhillips

- Gorgon LNG (Under discussion)

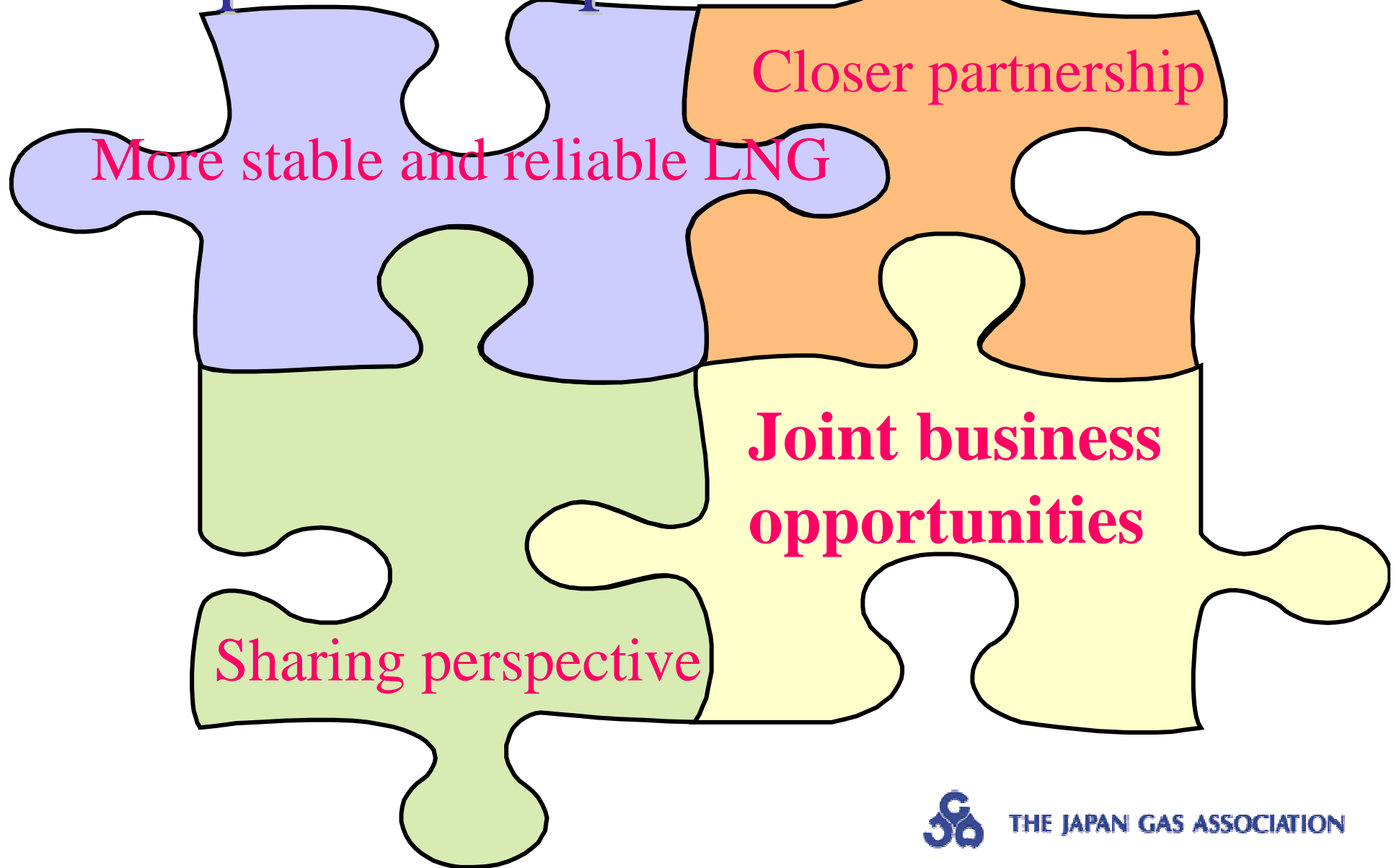
- 2010 -
- Operator: Chevron

- Pluto LNG (Under discussion)

- 2010 -
- Operator: Woodside Energy



Purposes of Upstream Involvement



More stable and reliable LNG

Closer partnership

Sharing perspective

Joint business opportunities



Importance of Long-Term Perspective

- Producers / consumers should review matters with long-term perspective of 20 - 30 years
 - Providing deep thought into discussions
- Balance competitive edges under deregulation / investment in R&D
 - Sophisticated and environmentally-friendly utilization
- Surviving tight market environment with cooperative measures would lead to long-term expansion of natural gas business



- WGC 2006 will provide stages for people to . . .
 - enlighten each other
 - explore new opportunities

Thank you very much for your attention.
Dank u zeer voor uw aandacht.



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