



24<sup>th</sup> World Gas Conference  
ARGENTINA | 2009  
5-9 October

The Global Energy Challenge:  
Reviewing the Strategies  
for Natural Gas

Strategic Panel 5:  
Finding the Links for Gas Market Integration



# Asian Perspective on Natural Gas Market Integration

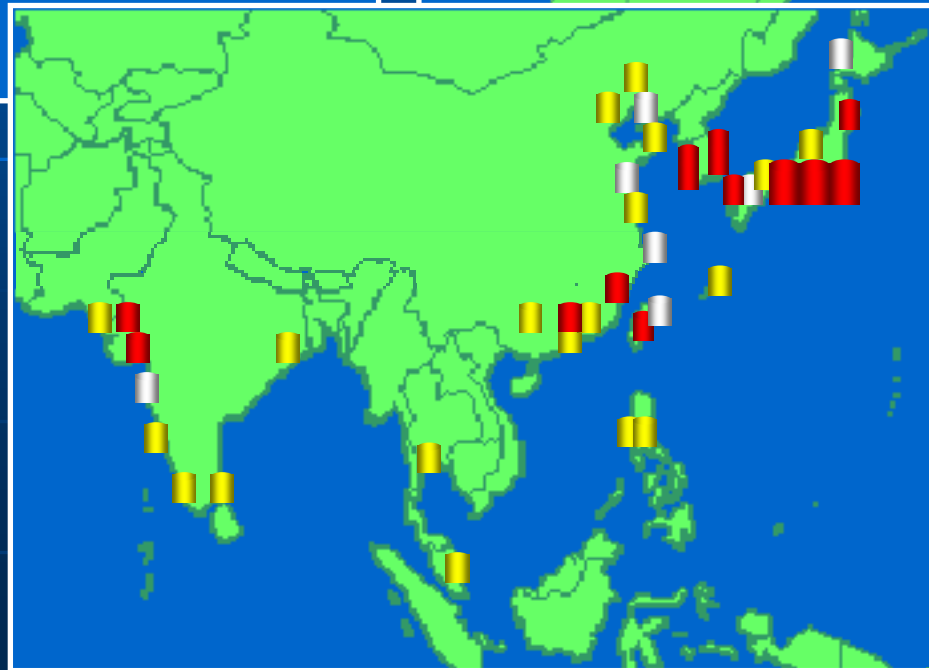
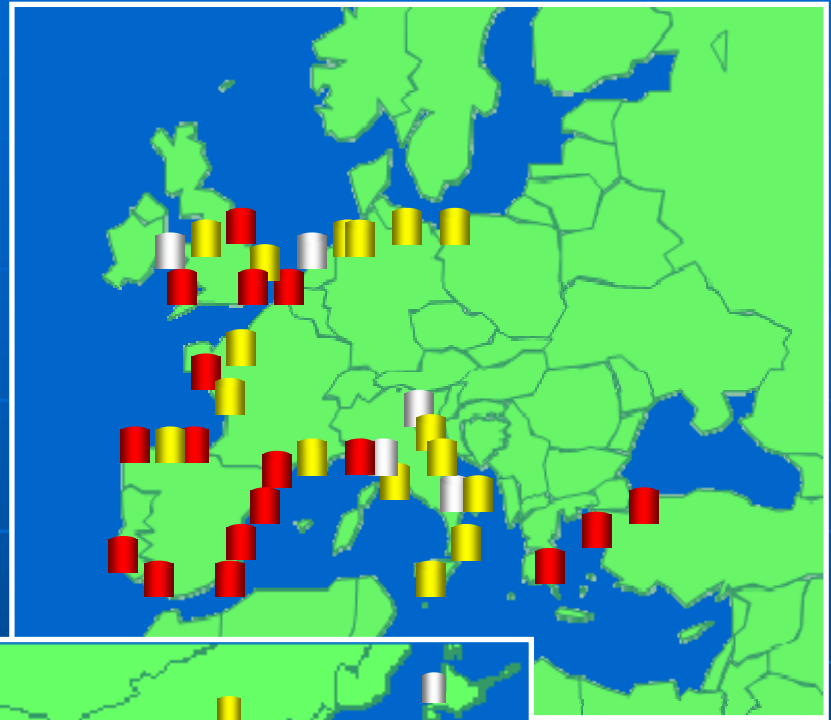
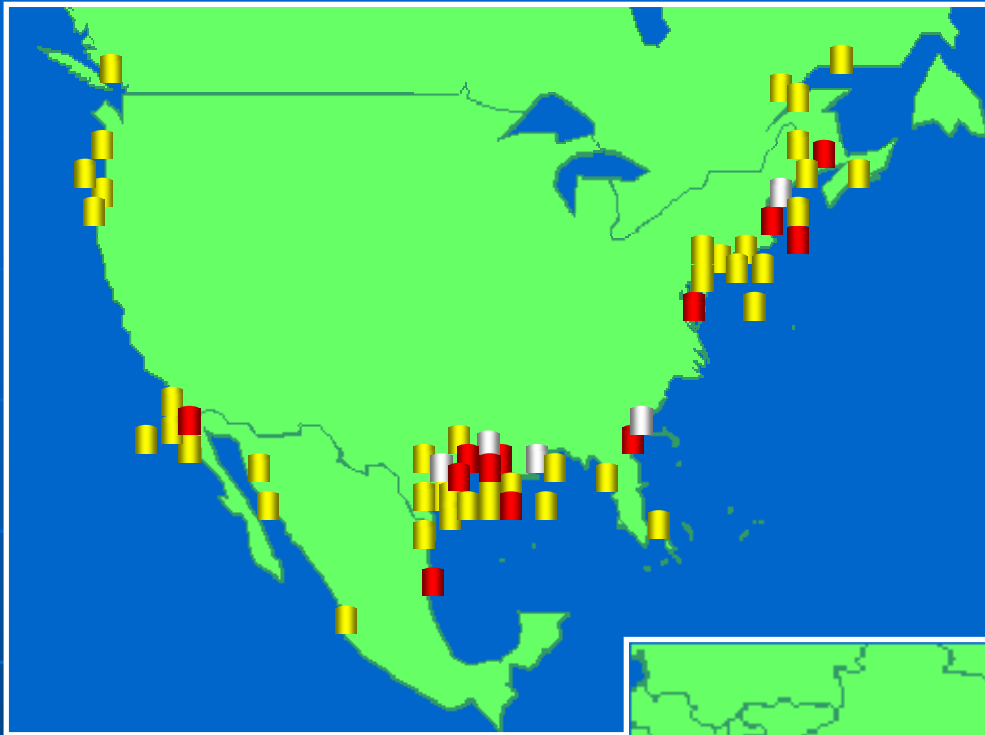
Senior Executive Officer, Member of the Board  
Head, Energy Resources and International Business Unit




**Kazuo Kakehashi**



**Global natural gas market  
from the perspective of LNG**

# LNG import terminals



-  Existing
-  Under construction
-  Planned

# Contentious issues:

**Commoditization of natural gas**

**Globalization of natural gas market, etc.**

**But natural gas is ...**

**Fundamentally a local based energy source.**

**Clear limits to commoditization and globalization.**



**Global natural gas market  
from the perspective of LNG**

# Changes in Western gas market

## 1. U.S. and U.K. market

- highly liberalized market

- Increase in “Flexible LNG”
- Market-based LNG pricing linked to HH or NBP

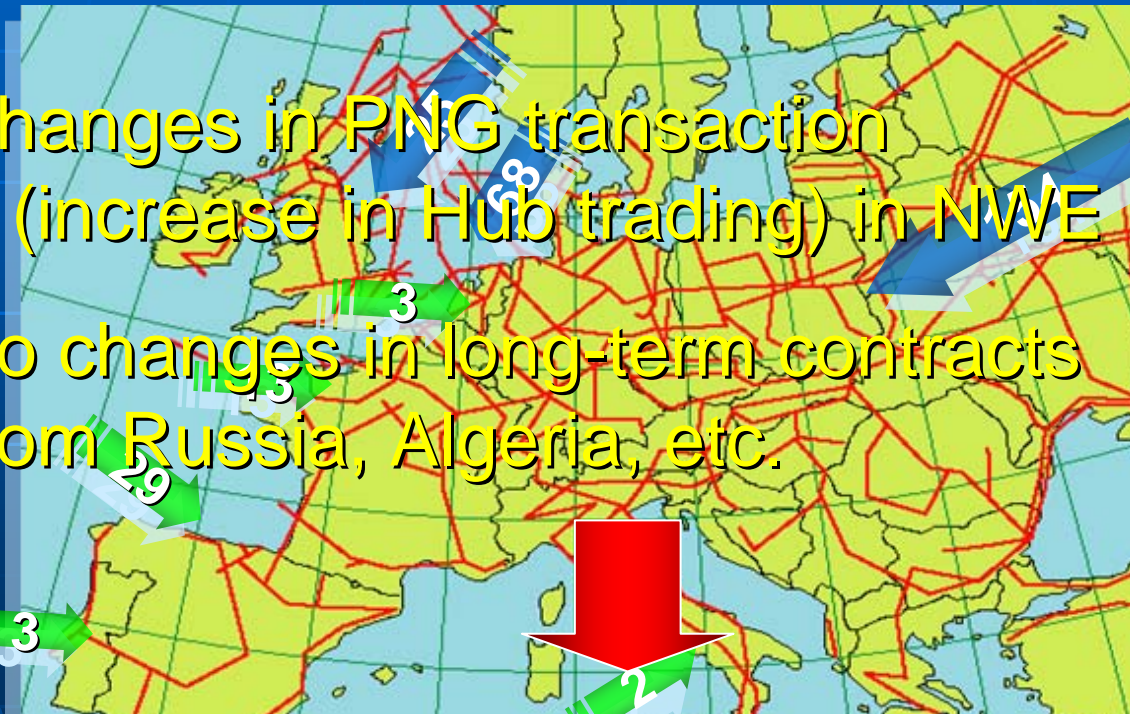
Great changes in LNG business

# Changes in Western gas market

## 2. Continental Europe

- towards liberalization but diversified market

- Changes in PNG transaction (increase in Hub trading) in NWE
- No changes in long-term contracts from Russia, Algeria, etc.



||| → LNG

||| → P/L

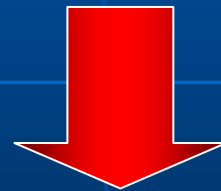
Gradual changes in LNG business

# Changes in Western gas market

## 3. Industry restructuring

- promoted by market liberalization

■ Restructuring with M&A and new entrants



Accelerating changes in LNG business



# Changes in Western gas market

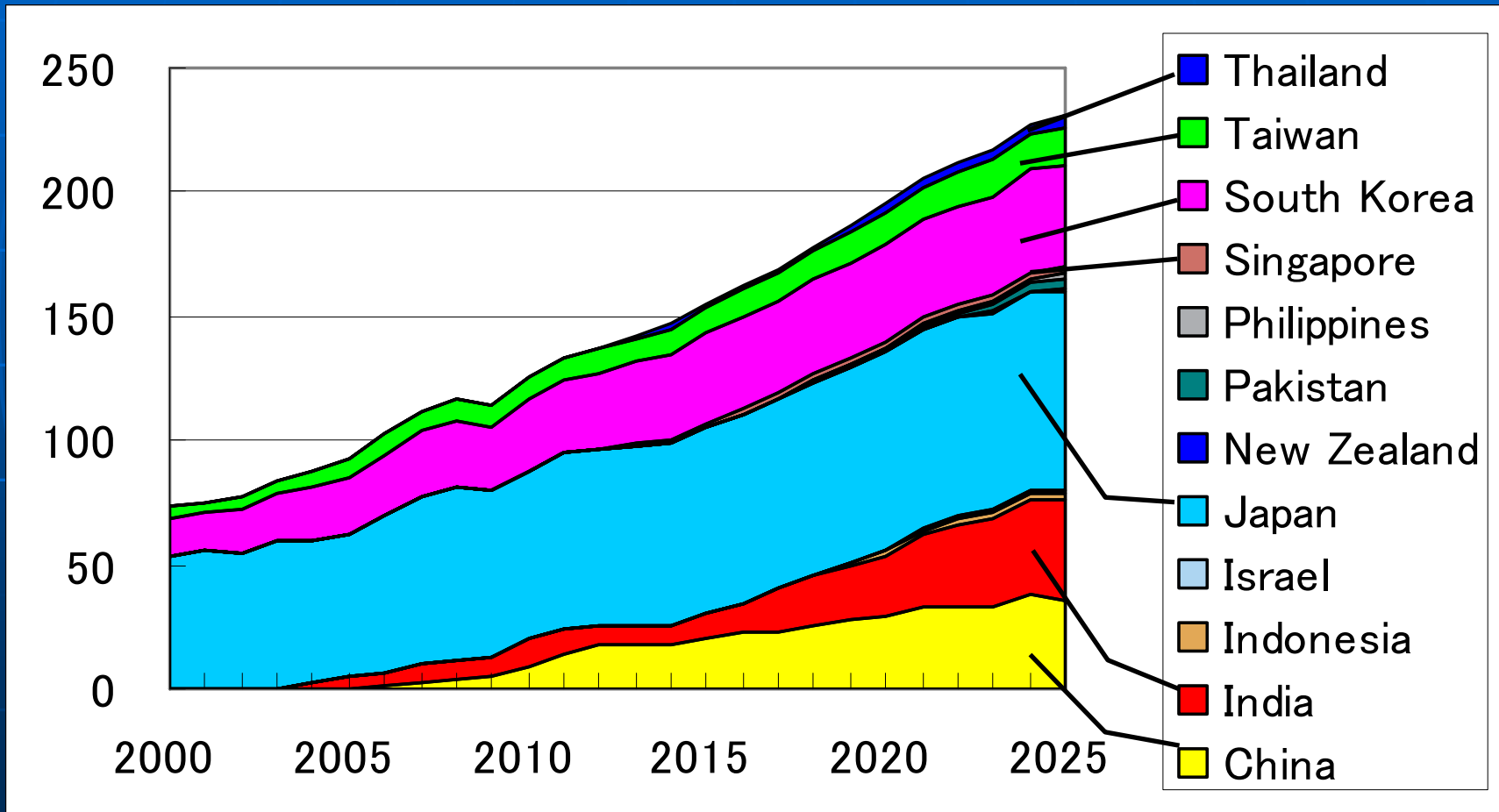
A map of North America and Europe with numerous colored markers (yellow, red, blue) placed across the landmasses, representing various gas markets or regions. The markers are scattered across the United States, Canada, and Europe, with a higher density in the eastern US and western Europe.

Liberalization of downstream markets;  
Major driver for transformation of LNG business

# Rigid & expanding Asian gas market

■ LNG import volume has been solidly expanding

Million tons



# Rigid & expanding Asian gas market

## ■ New infrastructure developments - China



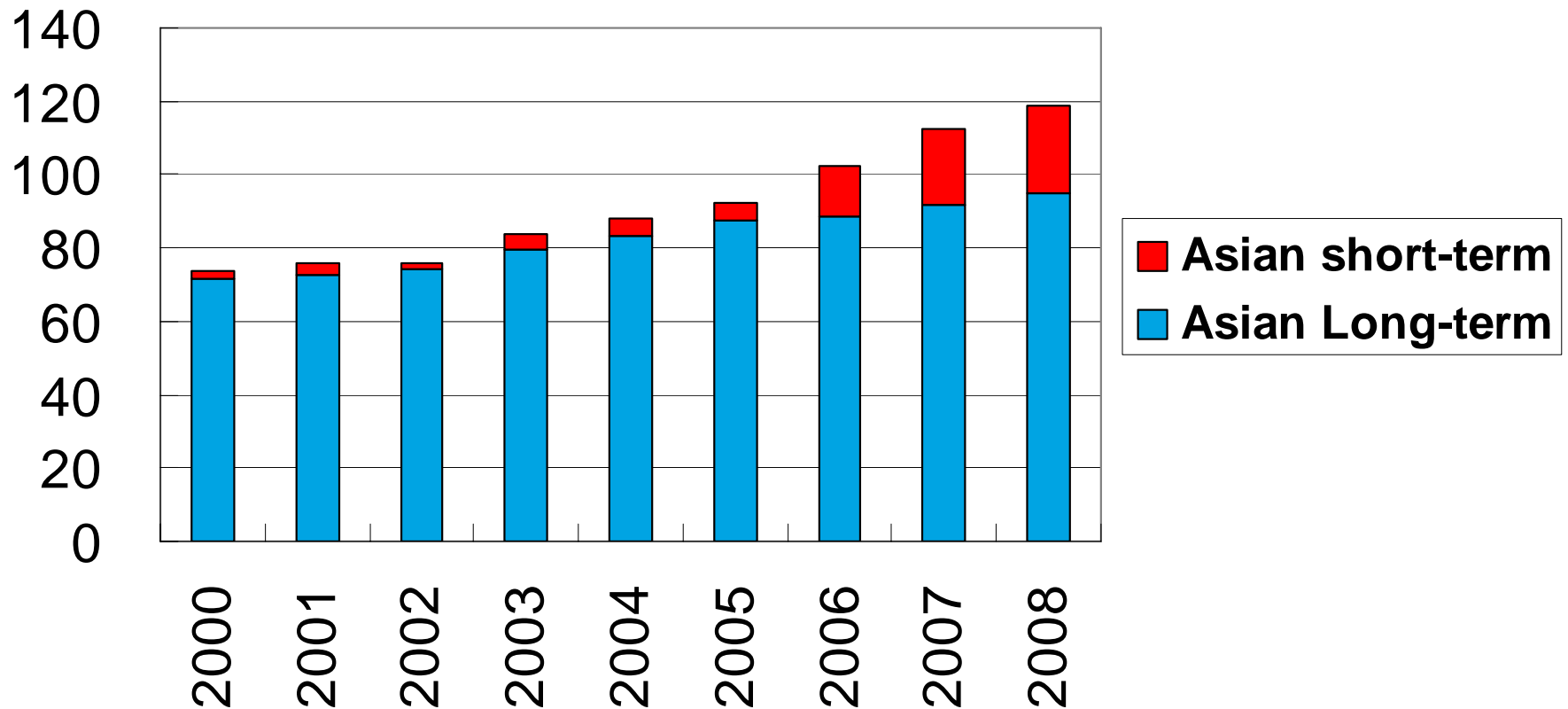
Increase in PNG supply unlikely to change structure of market significantly



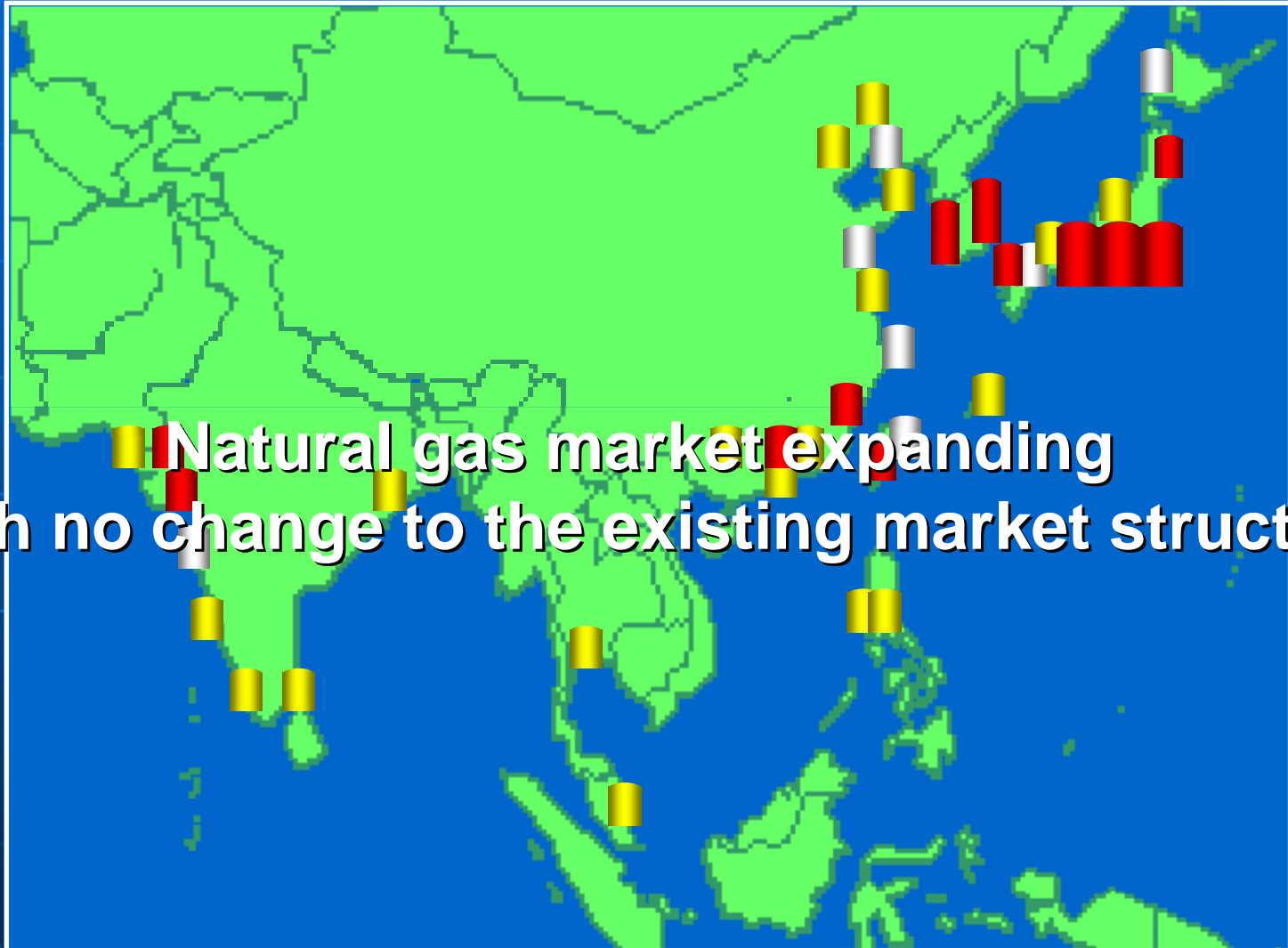
# Rigid & expanding Asian gas market

- Market liberalization has lost momentum.
- Short & spot transaction volume has increased.  
But LNG supply will be based on long-term contracts

Mt



# Rigid & expanding Asian gas market

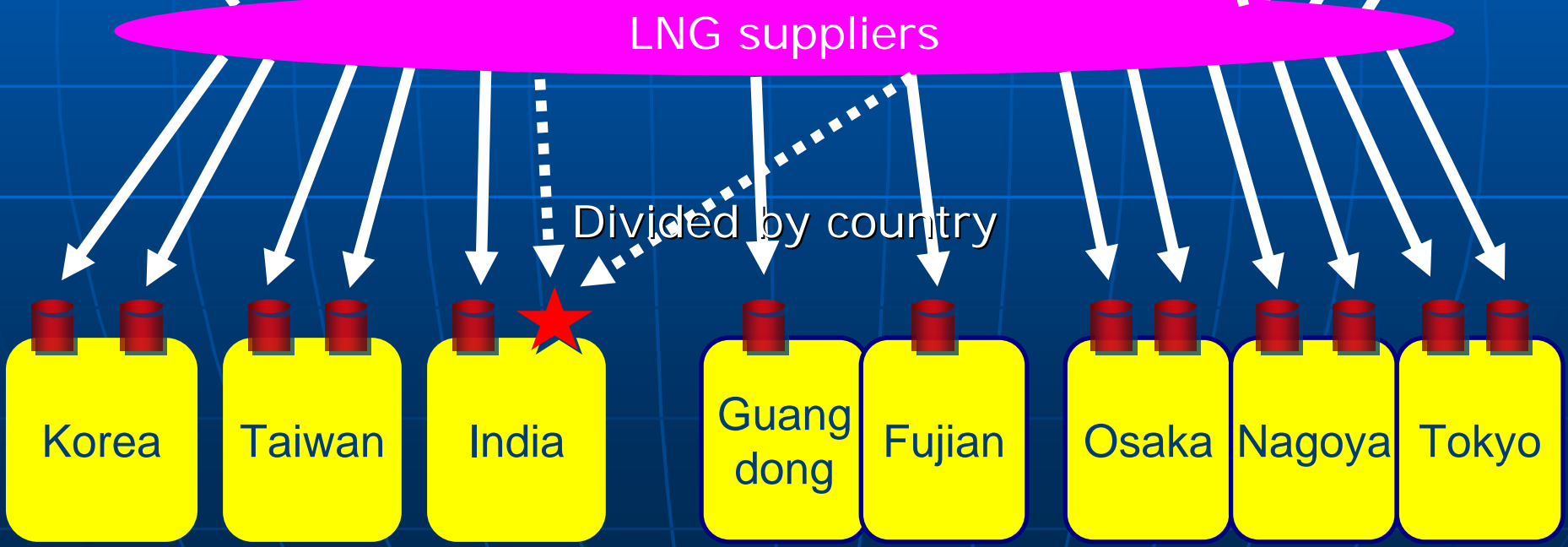


**Natural gas market expanding  
with no change to the existing market structure**



# LNG market polarization

# Atlantic market



# Asia-Pacific market

# LNG market polarization

## Atlantic market

### Moving to Liquid NG market

- Abundant internal resources
- PNG dominated
- Integrated NG market
- Well established infrastructure
- Flexible LNG
- High volatility in NG prices

Pursuing market liberalization

## Asia-Pacific market

### Staying in Rigid NG market

- Poor internal resources
- High dependence on imports
- LNG dominated
- Fragmented NG markets
- Poor supply infrastructure
- Conventional LNG contracts
- Relatively high NG prices

No incentive for market liberalization







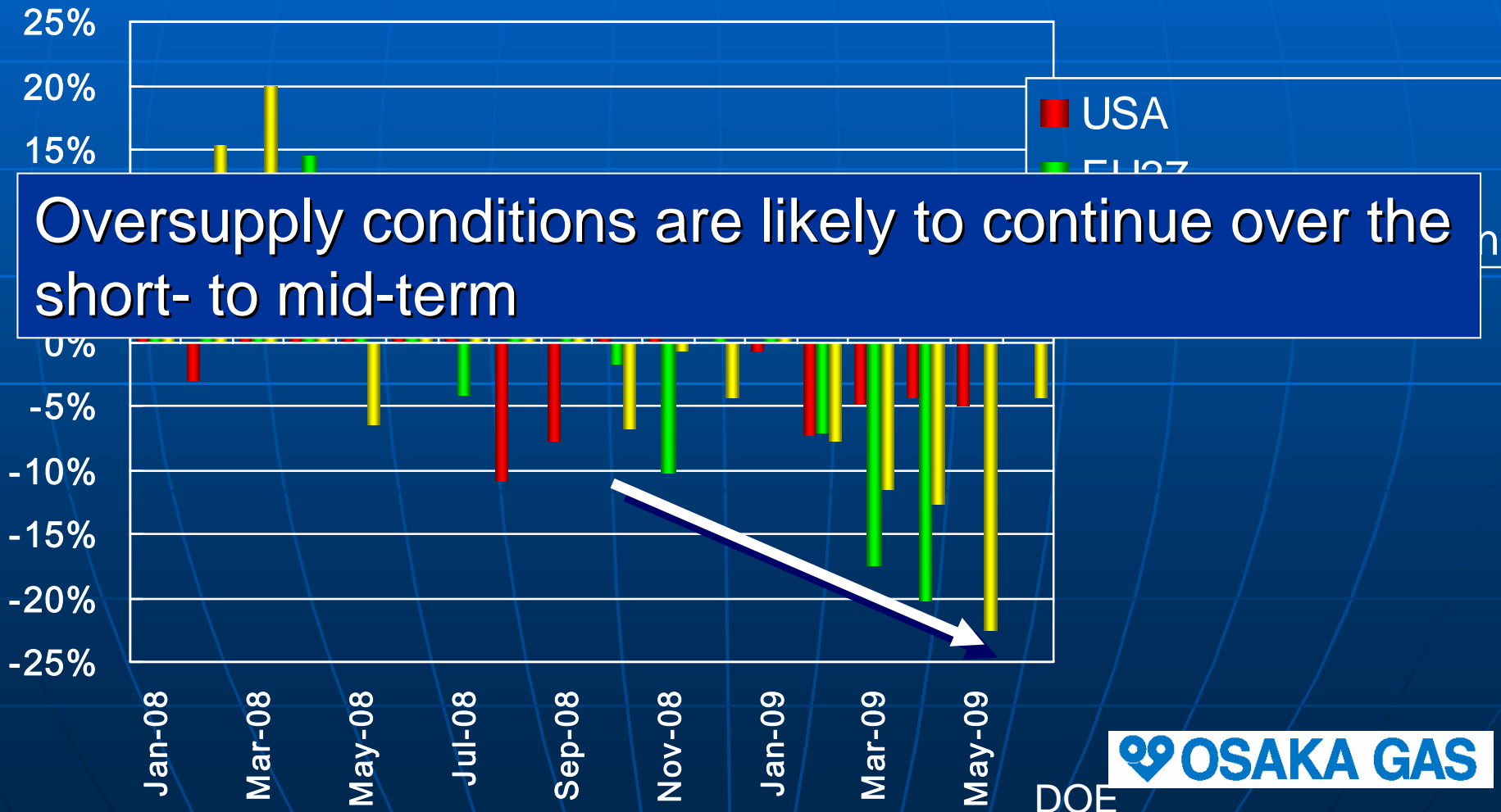
# Implications of LNG market polarization

# Implications of LNG market polarization

## 1. Short and mid-term perspective

### Natural gas consumption in each market

year-on-year change



Oversupply conditions are likely to continue over the short- to mid-term

# Implications of LNG market polarization

## 1. Short- and mid-term perspective-Western market

### ■ Price

Market based ST & Spot price < Oil linked LT price

### ■ Market development

Oversupply may enhance compatibility between PNG and LNG due to increase market liquidity

# Implications of LNG market polarization

## 1. Short- and mid-term perspective - Asia-Pacific market

### ■ Price

Market based spot price < Oil linked LT price

### ■ Market development

Decrease in spot purchase volume due to weak demand and contractual restrictions

# Implications of LNG market polarization

## 1. Short- and mid-term perspective

- term contract negotiations

■ Price disparity created by polarization will be adjusted

by reintroduction of S-curve formula

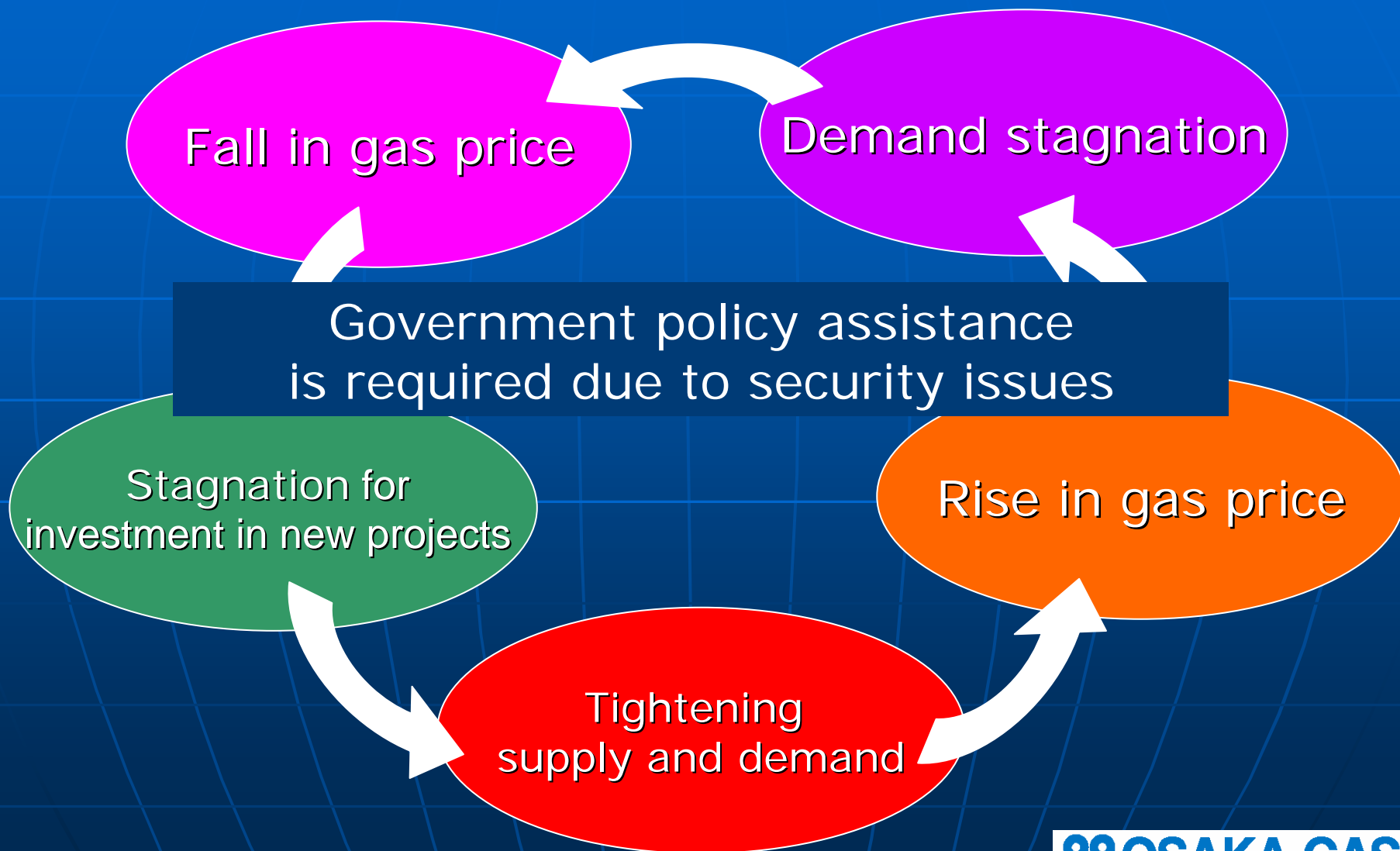
■ Decreasing term contract volumes is one option

Monitoring of Atlantic market by Pacific market players may be necessary

Linkage between Pacific and Atlantic markets via LNG grow stronger along with the slump in demand

# Implications of LNG market polarization

## 2. Long-term perspective



# Implications of LNG market polarization

## 2. Long-term perspective

Backup for  
renewable energy

Substitute when  
nuclear power operation  
suspended

Natural gas will be required to respond to  
greater demand fluctuations

By  
Pursuing Atlantic-type market  
or

Implementation of the policy as a measure for security



*What is the implication of polarization?*





**Thank you**