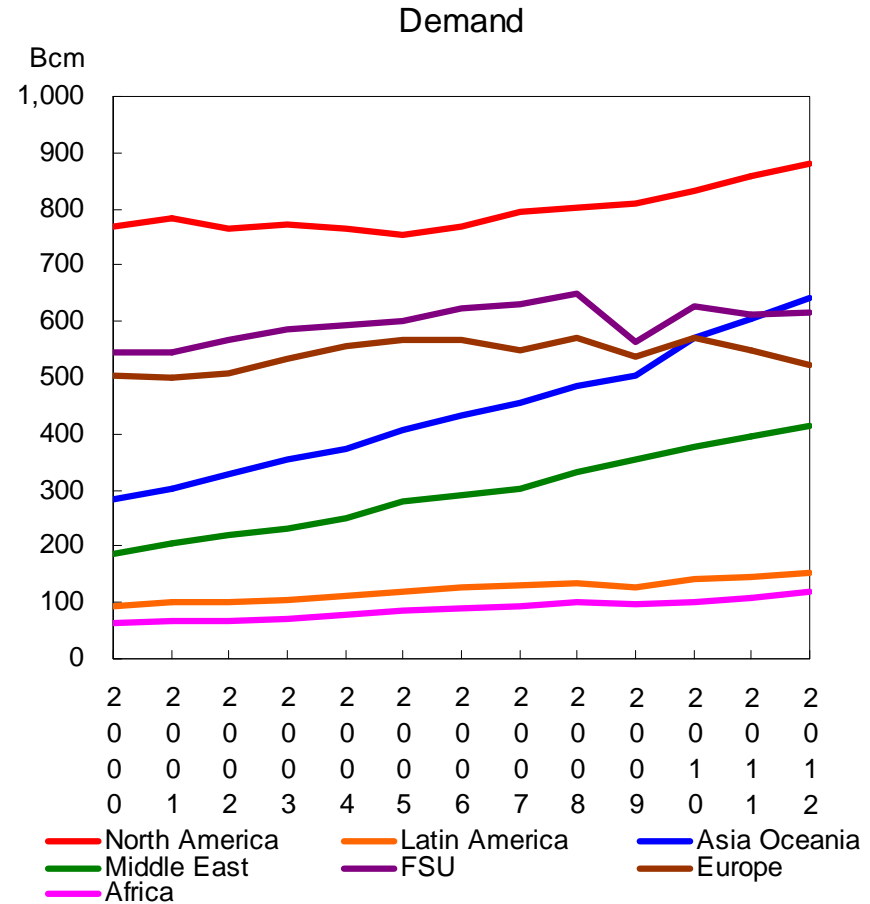
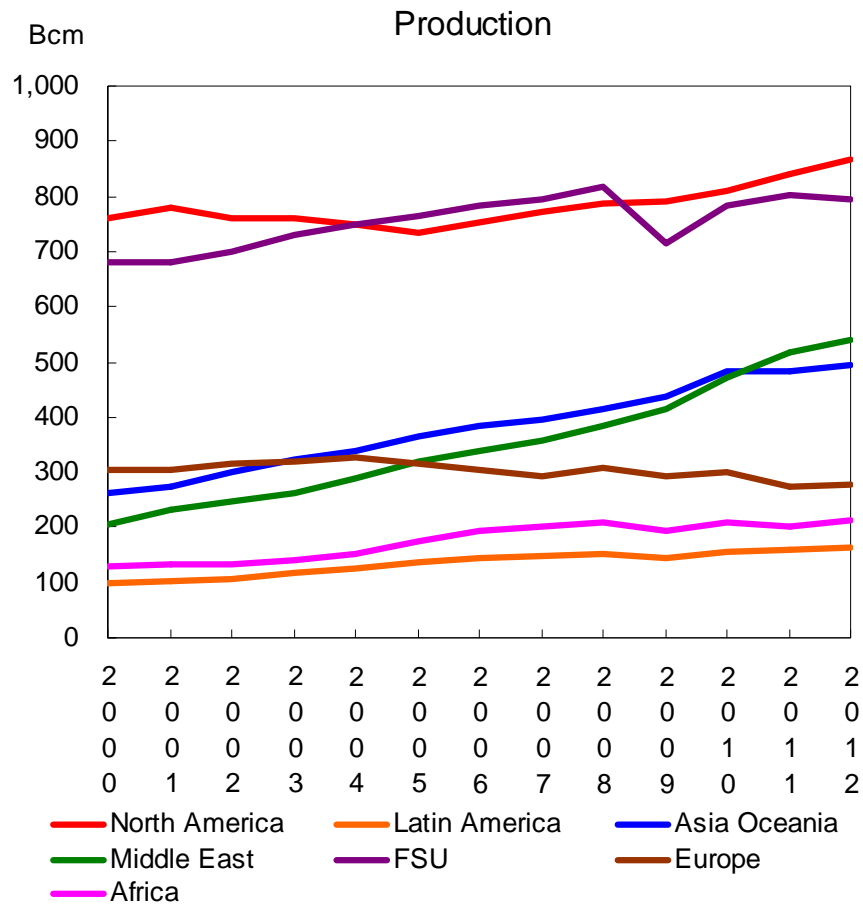


International Gas Markets

July 11, 2013

Tetsuo Morikawa
Gas Group, Oil and Gas Unit
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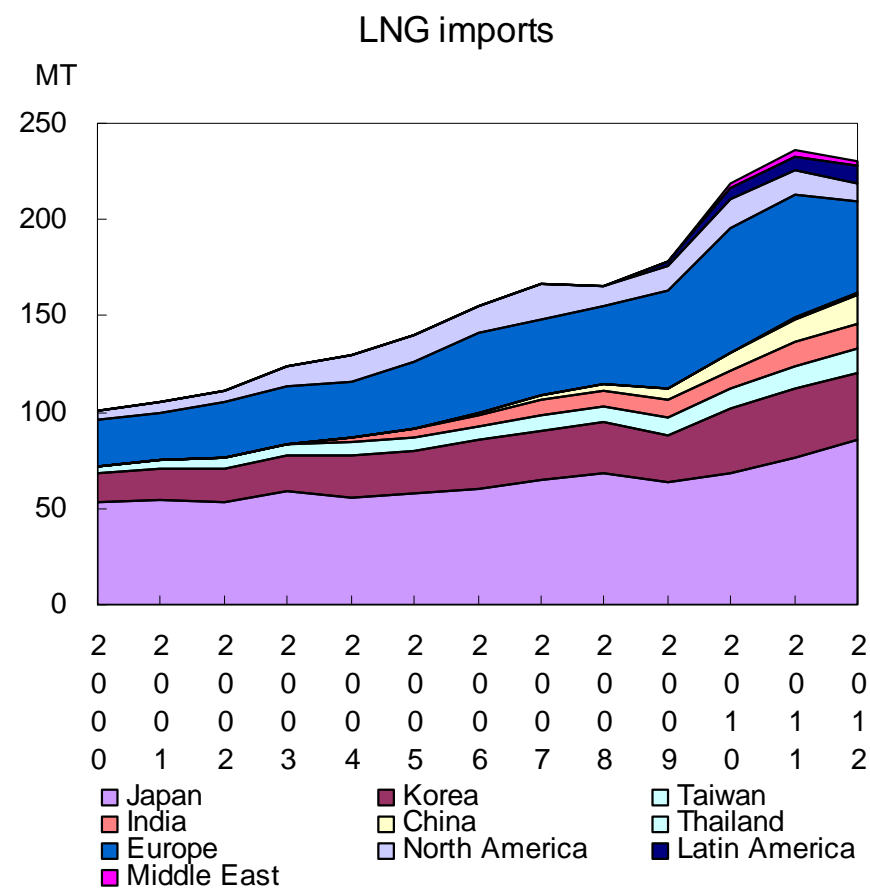
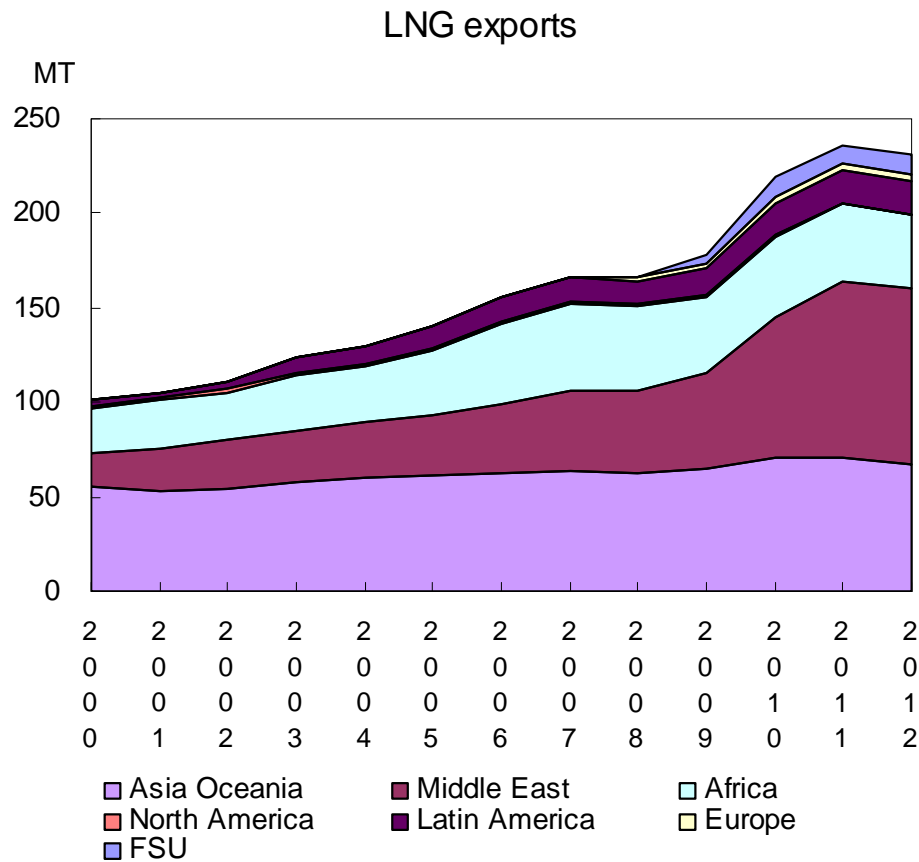
Gas Demand and Supply



Source: Cedigaz

- Growing production in North America and Middle East
- Increasing demand in North America, Asia Oceania, Middle East, decreasing in Europe

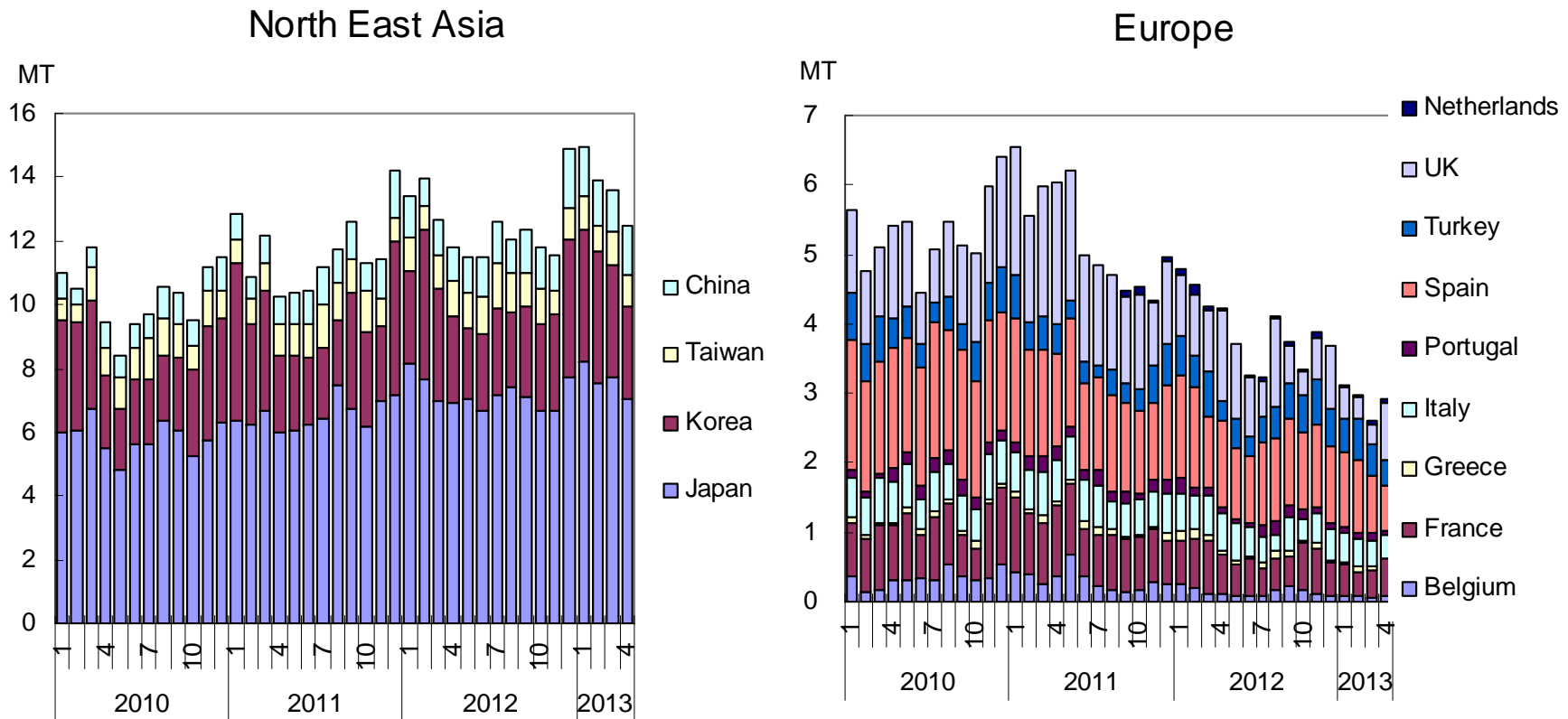
LNG trades



Source: Cedigaz

- LNG demand in 2012 declined mainly due to sluggish Atlantic markets, erratic supply especially from North Africa
- In 2013, Angola started export, Singapore and Malaysia started to import

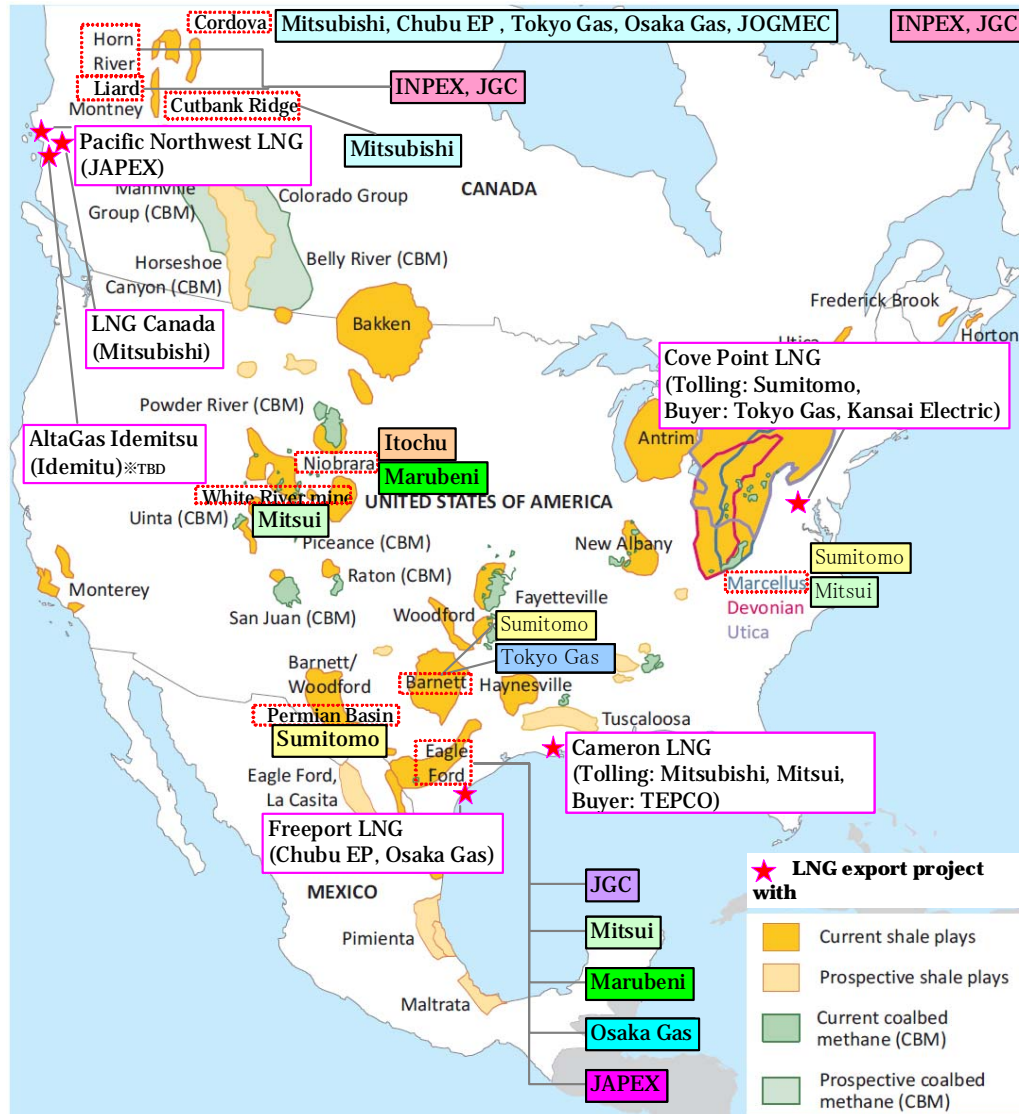
Monthly LNG imports in North East Asia and Europe



Source: Customs statistics, IEA

- Jan-Apr 2013: North East Asia 54.9MT (+3.1MT YoY), Europe 11.6MT (-6.2MT YoY)
- Recession and weak competitiveness of natural gas in power sector contributing lowering demand in Europe

LNG projects in North America



- Export potential more than 100MT
- Export authorisation for Non-FTA countries
 - Sabine Pass: May 2011
 - Freeport: May 2013
 - Cameron, Cove Point: 2013?
- Japanese entities participating in both US and Canadian projects
- Henry Hub price level, Panama canal charges as uncertainties

Sources: Added on IEA

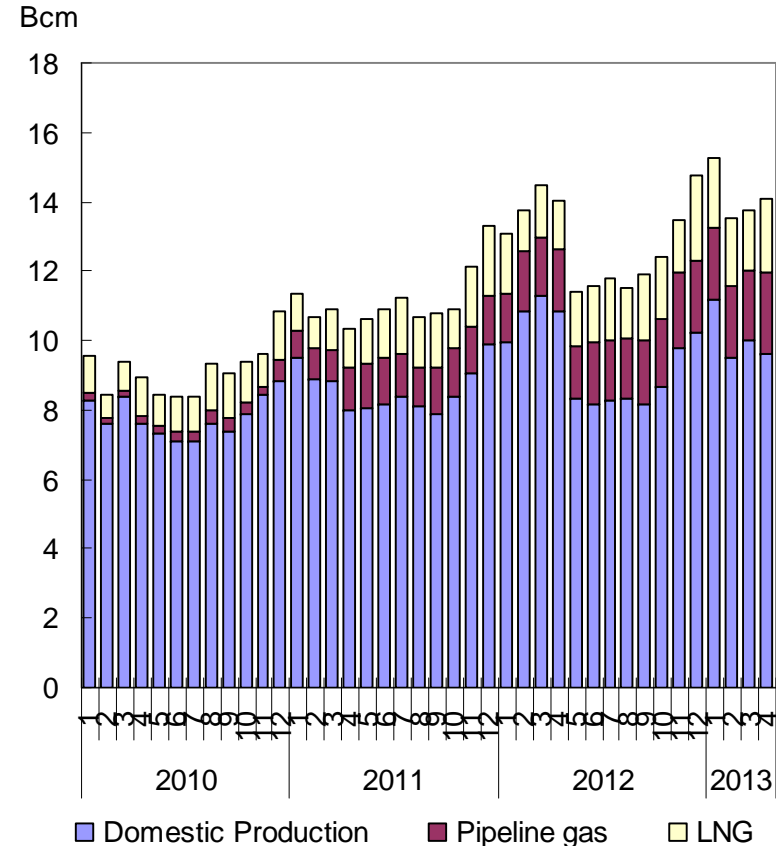
Gas in China

Gas infrastructure



Source: JOGMEC

Domestic production and imports

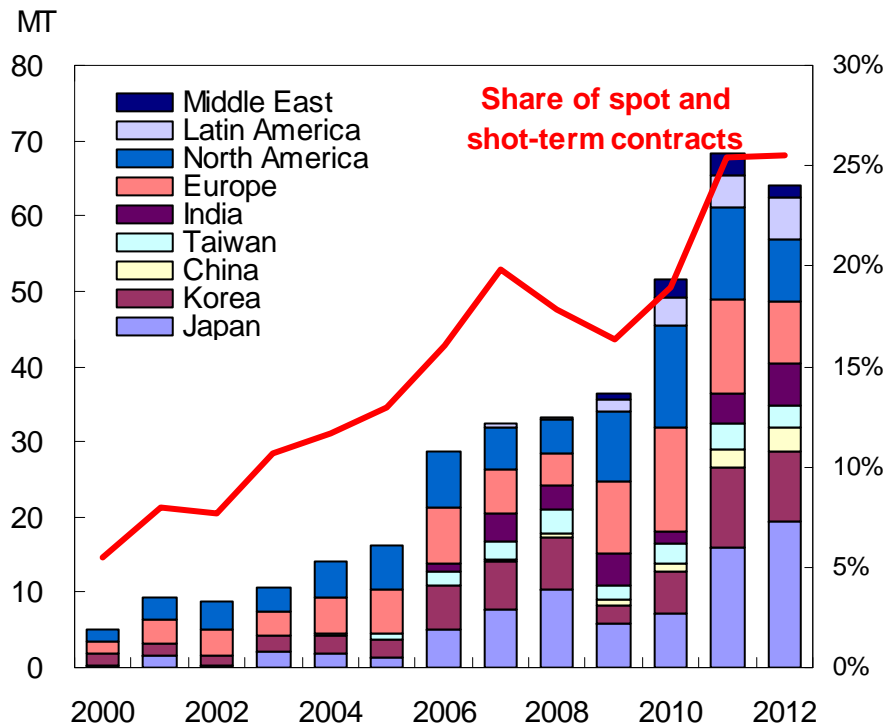


Source: China OGP

- Rapid and large scale infrastructure development underway
- The pace of domestic price reform crucial for both production and consumption

Spot and short-term LNG trades

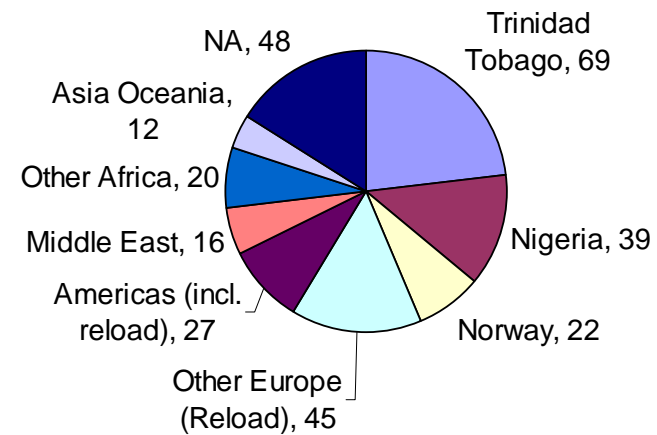
Spot and short-term contracts



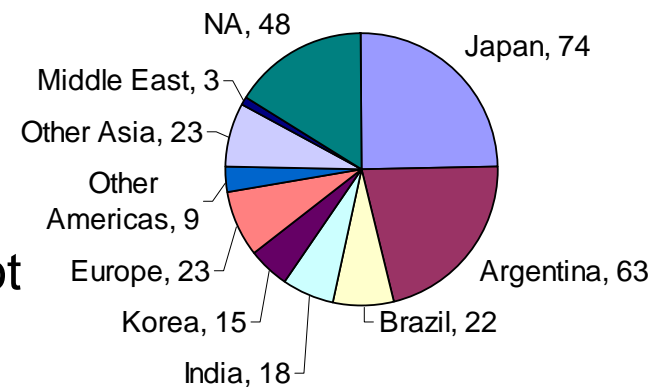
Source: GIIGNL

Sport trades in 2012

Exported cargoes



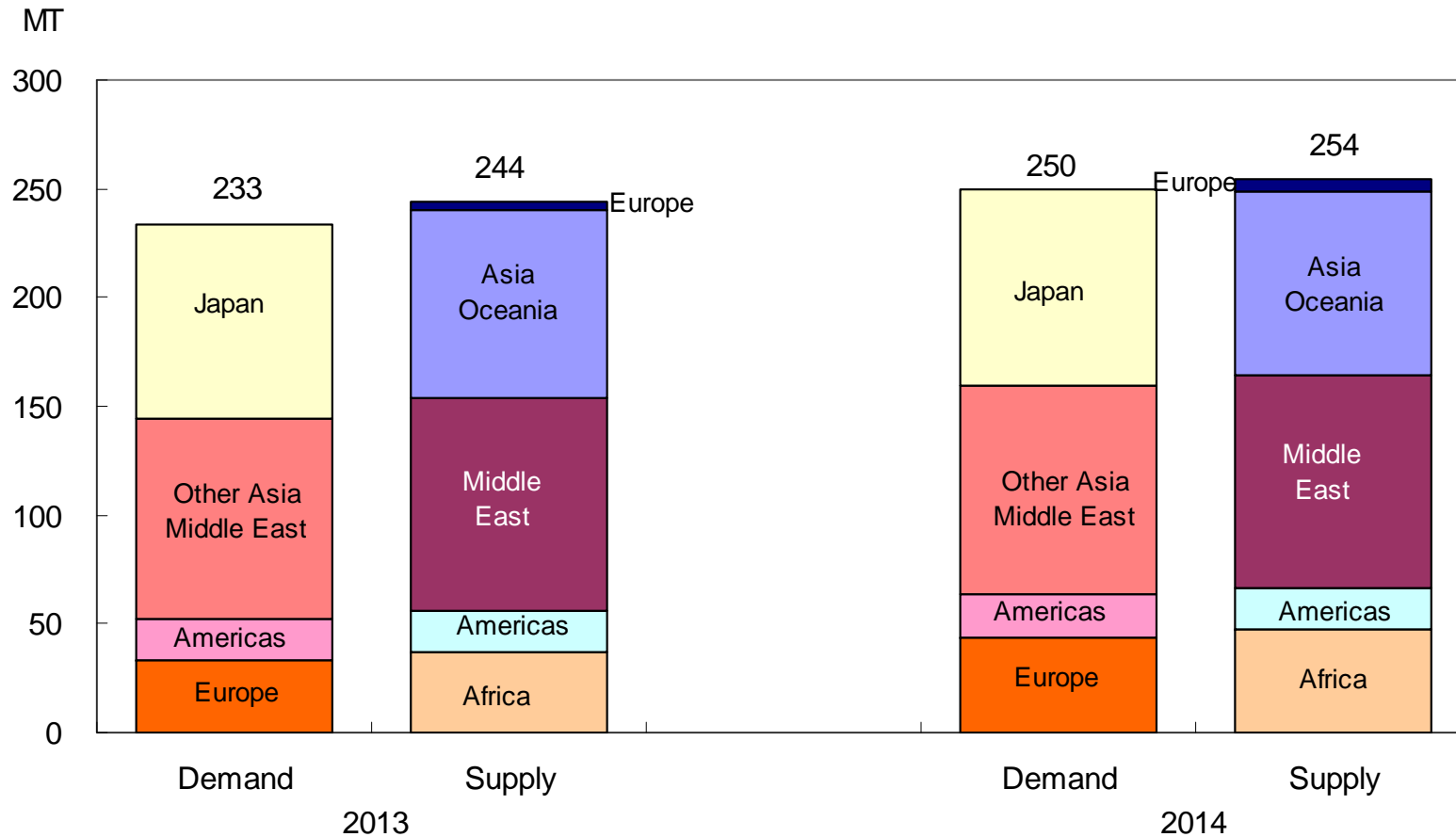
Imported cargoes



Source: ICIS Heren

- 60.4MT (19MT for Japan) traded via spot and short-term contracts in 2012
- Short/Medium term contract increasing for Japan

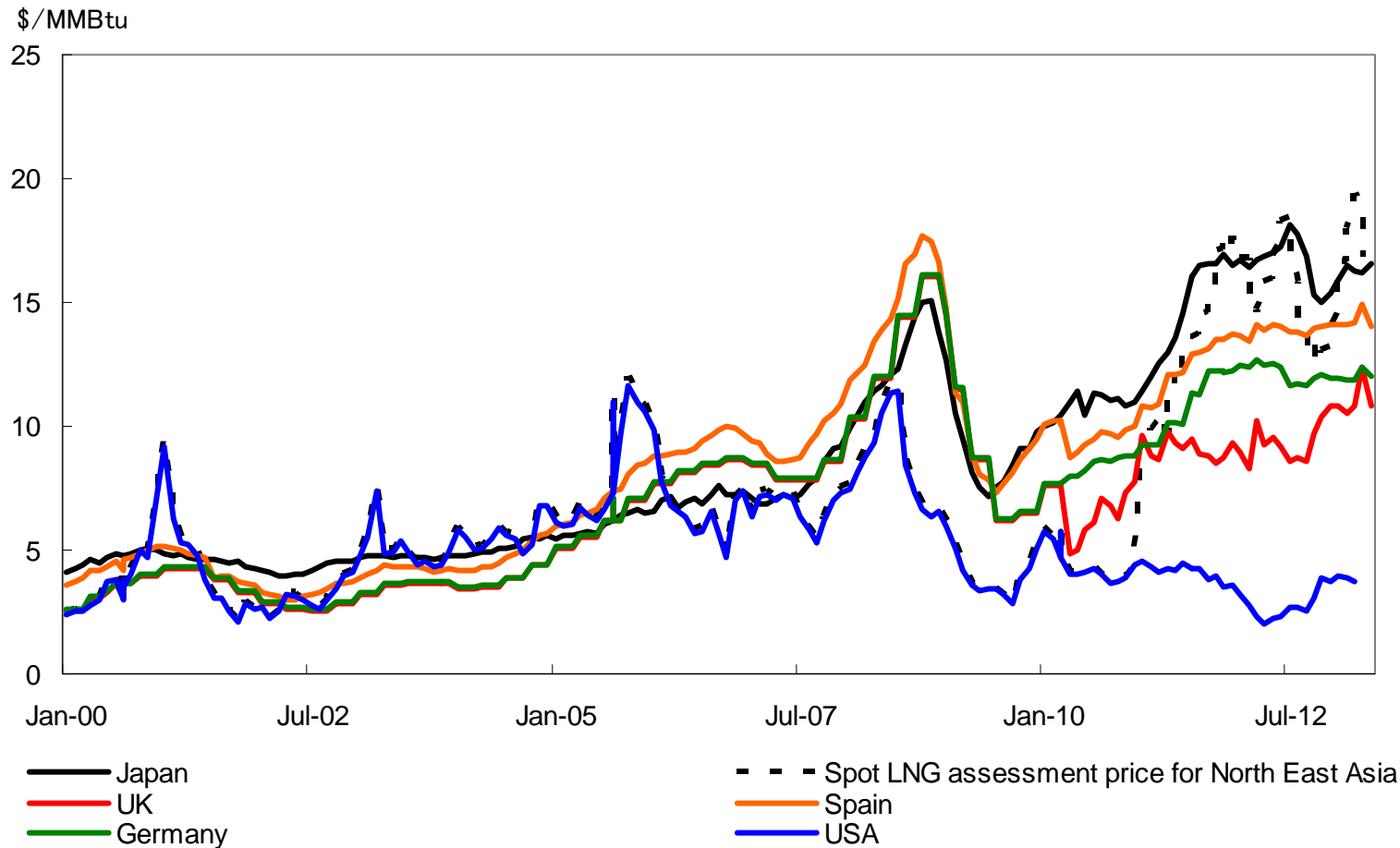
LNG demand supply in 2013 and 2014



Source: IEEJ

- LNG demand in 2013 expected lower than in 2012
- Adequate supply capability even for increased demand in 2014

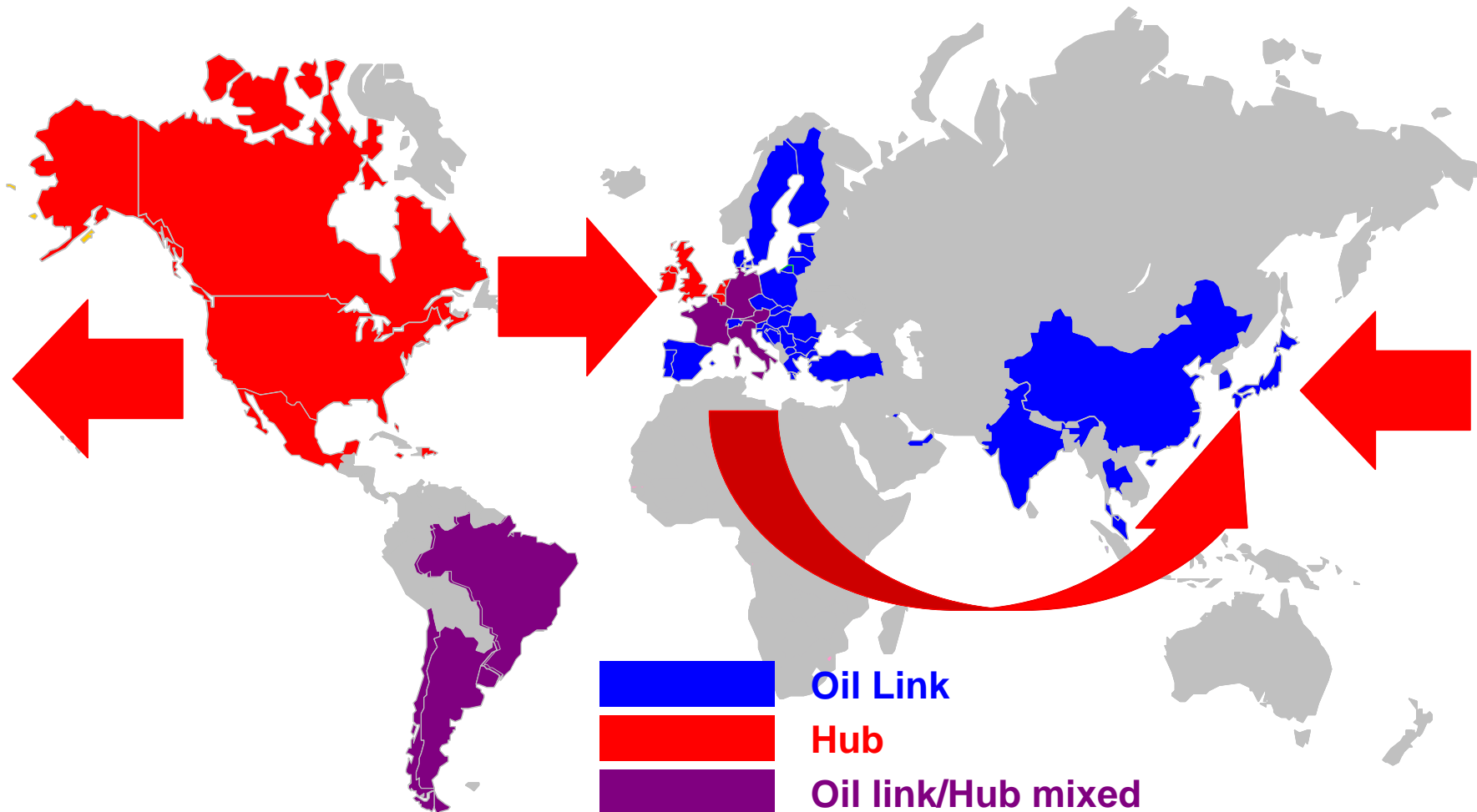
International gas prices



Source: Energy Intelligence, DOE/EIA

- Significant Asia premium still evident
- Weaker Yen pushed up LNG import value for Jan-May 2013 by ¥340 billion YoY, despite slight decline in imported quantity

International gas pricings



- Hub pricing penetrating in continental Europe
- Henry Hub priced US LNG will contribute to narrow the Asian premium?
- Pricing for Asia should reflect market fundamentals in a timely manner

Summary

1. Gas demand supply

- Growing production in North America and Middle East
- Demand slump continuing in Europe. Radical LNG demand reduction
- Domestic price reform crucial for Chinese production and consumption
- Adequate LNG supply capability for both 2013 and 2014

2. Gas price

- Asian premium of LNG still significant concern
- US LNG valued as alternative source of supply and pricing
- Relaxed supply/demand prerequisite to eliminate Asia premium. New pricing should reflect market fundamentals in a timely manner