

Block: Natural Gas Processing, Transportation and Marketing
Forum: F17 - Meeting the growing demand for gas from Asia –
implications for supply and transportation



Pricing Mechanisms Development in the East Asian Gas Market

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Abstract

The balance in international politics and economy is shifting to the East. Economic development requires energy resources; shifting balance requires new geopolitical approaches. One of the keys for that is gas market development – it can provide fuel for development and gives countries a geopolitical tool when responding to the challenges. The way these challenges are dealt with ultimately depends on the level of prices, which in its turn depends on the way the price is set.

One of the debated objectives in Asia Pacific is to develop a freer market for gas trade, and one of the ways is to set a gas-trading hub where gas prices would be determined on a competitive basis. The extent to which the Asia Pacific region will manage to switch to competitive pricing will determine the role of gas in the regional market.

The main focus of the paper is the possibility of a continued process of integration between the regional gas markets into a single world gas market, and the dynamics of gas pricing mechanisms development in different regions (and in Asia Pacific in particular) as an indicator of such integration. The presentation overviews pricing mechanisms worldwide; assesses the perspectives for pricing in the APR. It concludes that the process of the change in gas pricing paradigm is a complicated one while the prospects of a regional hub in APR are rather doubtful due to the supply outlook (largely secured via long-term contracts in medium term); and there is a resulting uncertainty relating to the possibility of price signals transmission between the regional gas markets even in case of the start of new supplies, i.e. from North America.

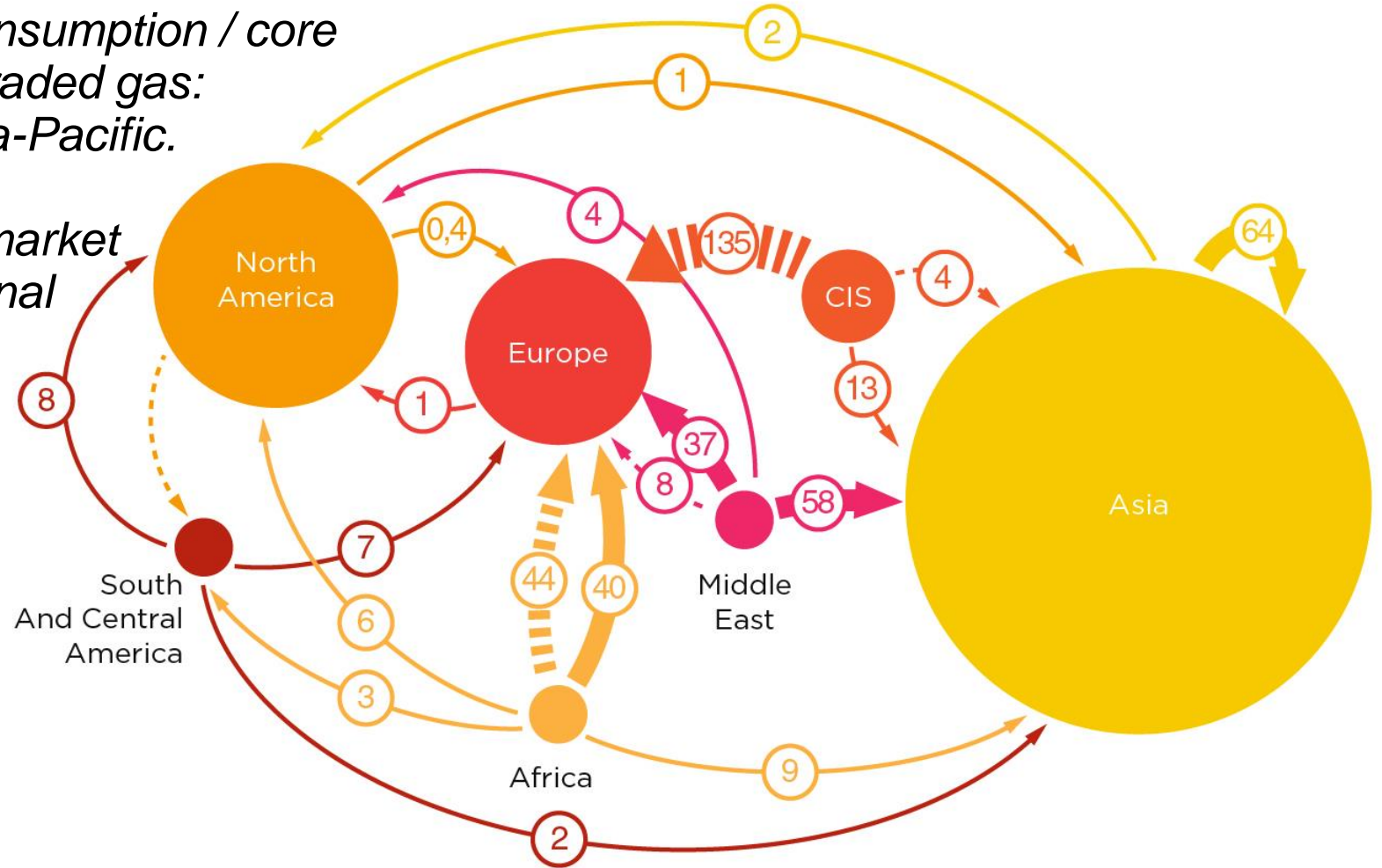
Thus, the global gas market is postponed, once again.

Overview of the gas trade dynamics (2010)

✓ Three main areas of gas consumption / core markets for internationally traded gas: North America, Europe, Asia-Pacific.

✓ No globally integrated gas market despite extensive interregional links.

✓ Developments in North American market affected other markets through interfuel competition.



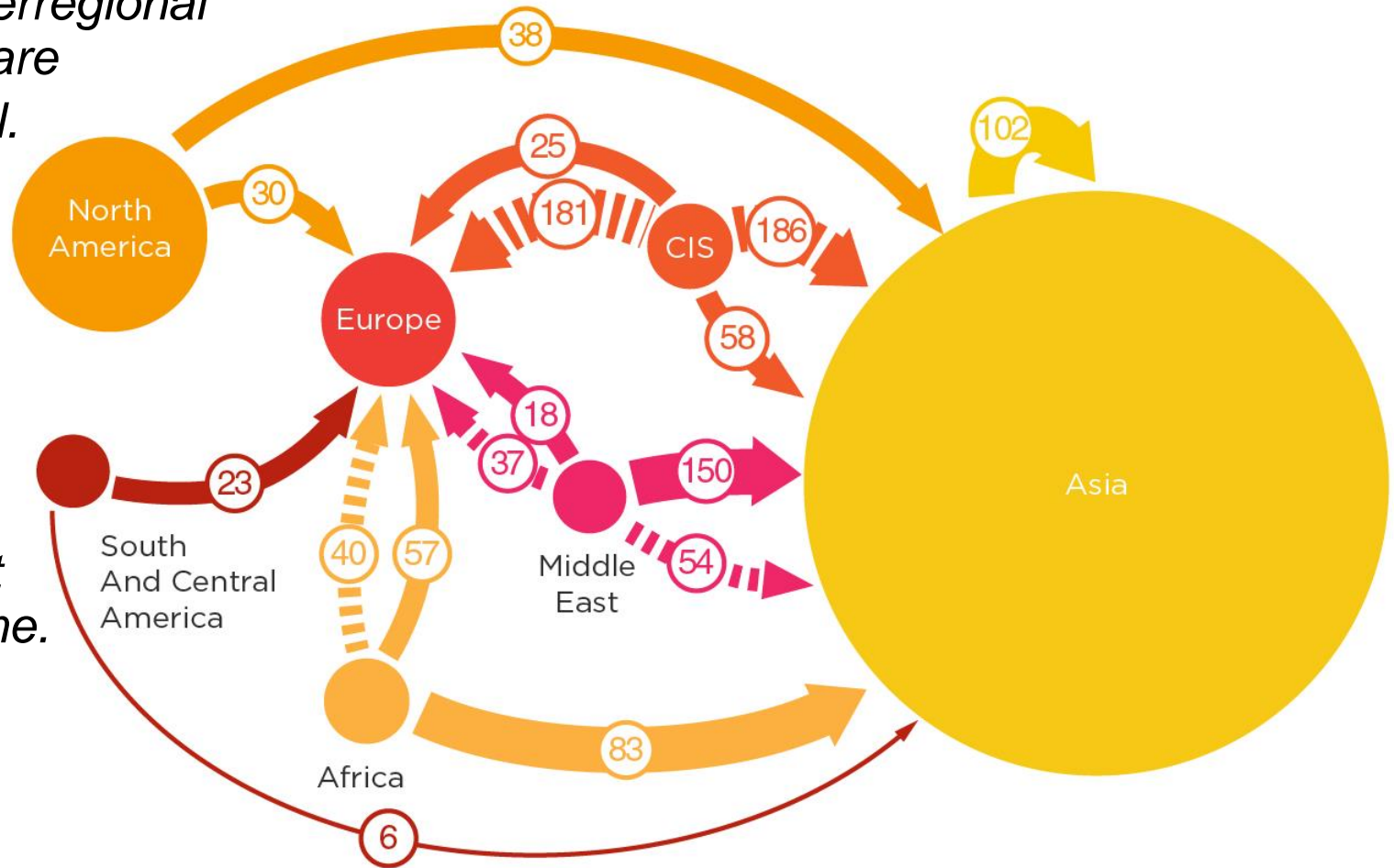
Source: ERIRAS 2014

Overview of the gas trade dynamics (2040)

✓ Considerable changes in the interregional dynamics: many more supplies are directed toward Asia Pacific (incl. developed and developing Asia) while the role of the European market decreases.

✓ North America transforms into major exporter.

✓ Growth in interregional trade not only due to LNG, but also pipeline.



Source: ERIRAS 2014

Overview of the gas trade dynamics

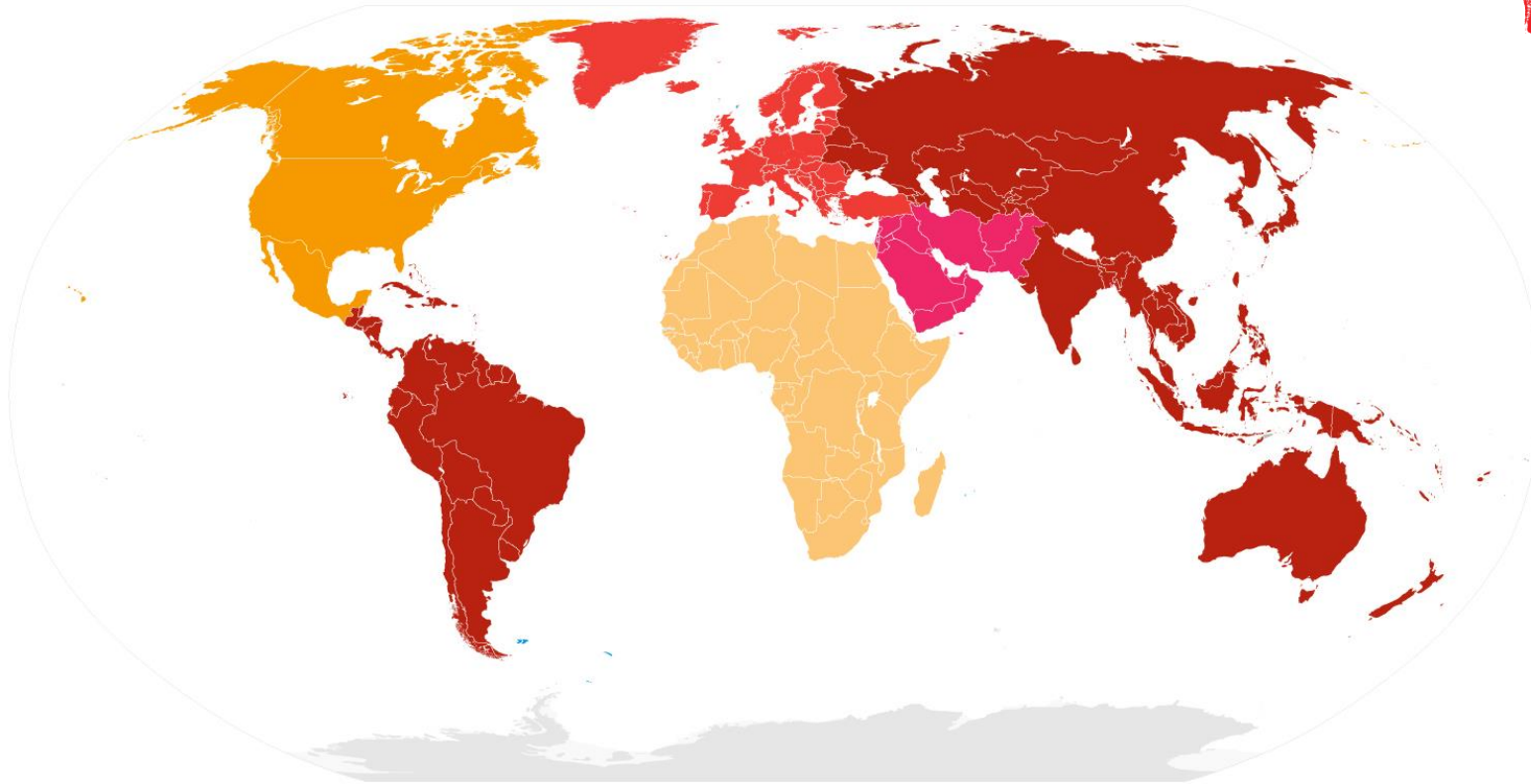
- Total primary energy consumption in developed and developing Asia is projected to increase from 5105 mtoe in 2010 to 8974 mtoe in 2040.
- Total world gas demand is projected to grow at 1,6% annually; this will allow it to remain the fastest growing out of all fossil fuels.

Overview of the pricing mechanisms worldwide



Pricing mechanism is a mechanism of interaction between producer and consumer; linking regional markets into one global market needs higher level of market integration with:

- *Competitive pricing*
- *Short-term (spot) trading*



SHARE OF GAS-ON-GAS COMPETITION



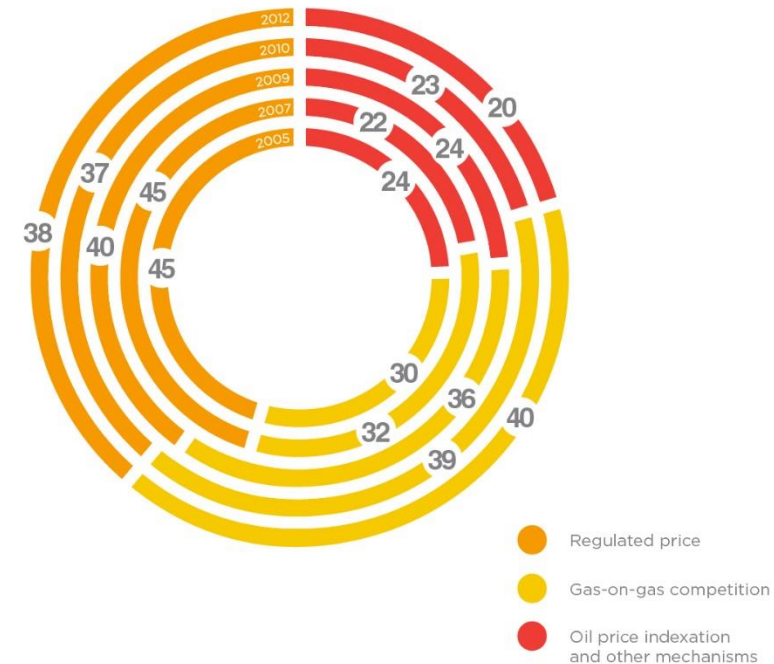
Source: IGU 2013, ERIRAS 2014

Overview of the pricing mechanisms worldwide: IGU report

✓ *Gas-on-gas competition has the largest share in the world gas market, but the increase in the share of competitive price formation mechanisms has slowed after 2010.*

Structure of consumption worldwide and the role of trade:

- **Domestically produced gas – 72% of total consumption**
 - General rise in gas-on-gas competition from 35% in 2005 to 43% in 2010, before a small decline in 2012 to 41,5%.
- **Pipeline imports – 19% of total consumption**
 - Continued rise in gas-on-gas competition from 23% in 2005 to 39% in 2012, which has been at the expense of the oil price indexation category (primarily in Europe).
 - The decline in oil price indexation has been partly offset by a switch from regulated pricing (FSU, Turkmenistan's supplies to China)
- **LNG imports – 9,5% of total consumption**
 - Gradual rise in competitive pricing from 13% in 2005 to 33% in 2012 (at the expense of the oil price indexation; growth in 2005-07 due to spot supplies to Asia)

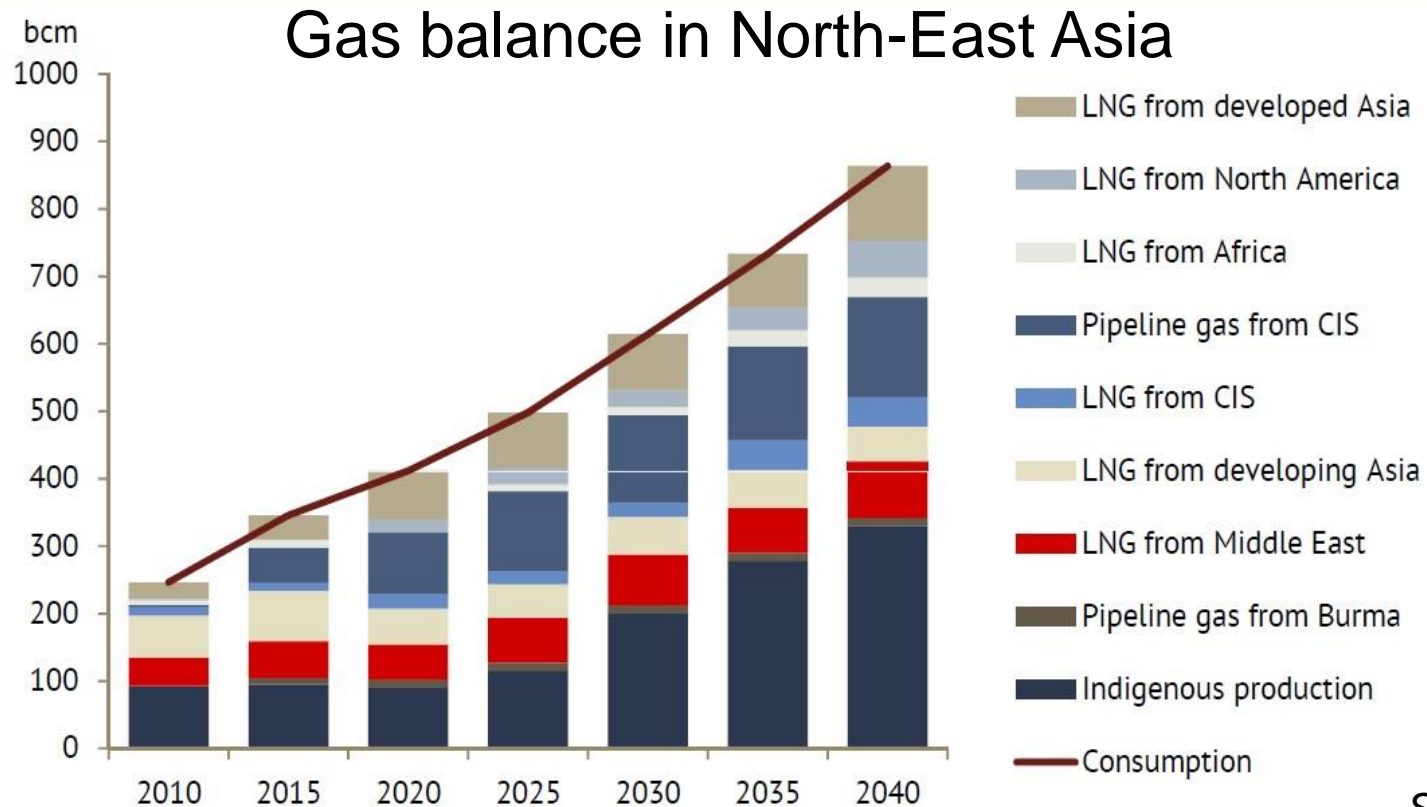


Source: IGU 2013

Perspectives for pricing in Asia: Supply and demand outlook



*Steep increase in Asian demand will be met by increased imports of LNG from various regions and pipeline gas primarily from the CIS; **indigenous production** to play the core role nevertheless.*



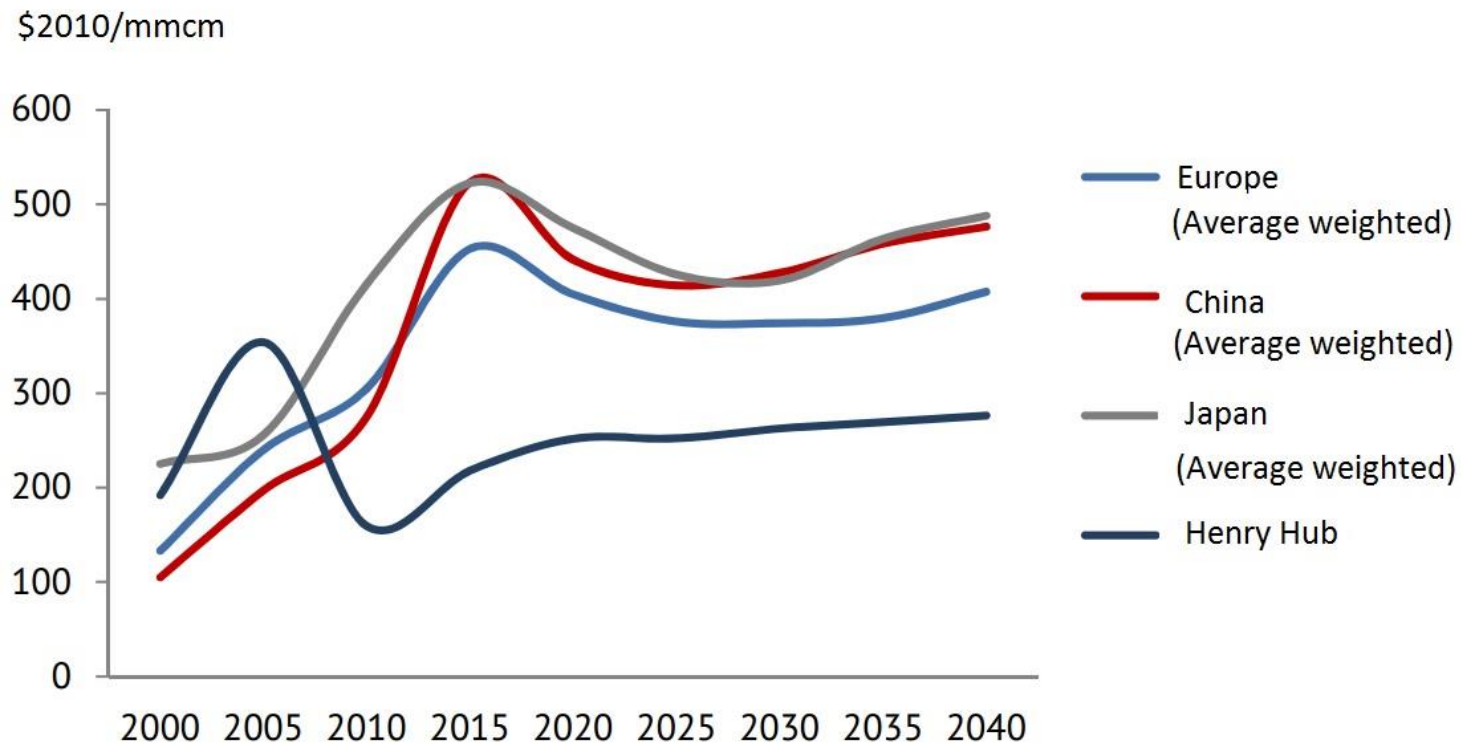
Source: ERIRAS 2013

Pricing in East Asia: Perspectives of price signals transmission?



According to the *Russian and Global Energy Outlook Up to 2040*, the divergence between the levels of prices in key regions will persist in the long-term.

Forecast weighted average price* of gas by regional market



* Weighted average price between the prices of long-term contracts linked to alternative fuels, and spot prices.

Source: ERIRAS 2014

Conclusion: Perspectives for pricing in the APR

Price arbitrage between the regions?

- High transportation costs prevent the consolidation of single world gas price formation system.
- The growth in Asian demand will be supported to a large extent by indigenous production.
- European demand will grow only marginally. With North America turning into a net exporter, the opportunity for linkage between the regions lessens compared to the 2000s.

Regional hub?

- Supply secured via long-term contracts prevents spot trade from gaining a major role in short-to-medium term.

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Author Biography

Irina Mironova is a researcher at the Energy Research Institute of the Russian Academy of Sciences (Moscow, Russia), and a correspondent at the European Energy Review (Amsterdam-based online energy analysis platform). Ms. Mironova has worked as Visiting Lecturer at the OSCE Academy (Bishkek, Kyrgyzstan; 2014), Research Fellow at the Energy Charter Secretariat (Brussels, Belgium; 2013); Deputy Editor-in Chief of 'Security Index', a peer-reviewed journal on international security published by the Russian Center for Policy Studies (Moscow, Russia; 2010-2012). Ms. Mironova's current research focuses on pricing mechanisms and contract structures in international gas markets.