



CEDIGAZ, the International Association for Natural Gas

Current trends & prospects for natural gas

Armelle Lecarpentier, Chief Economist

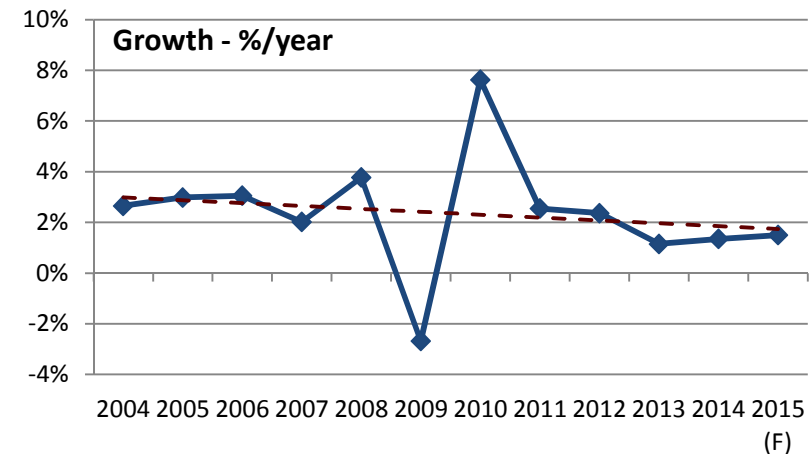
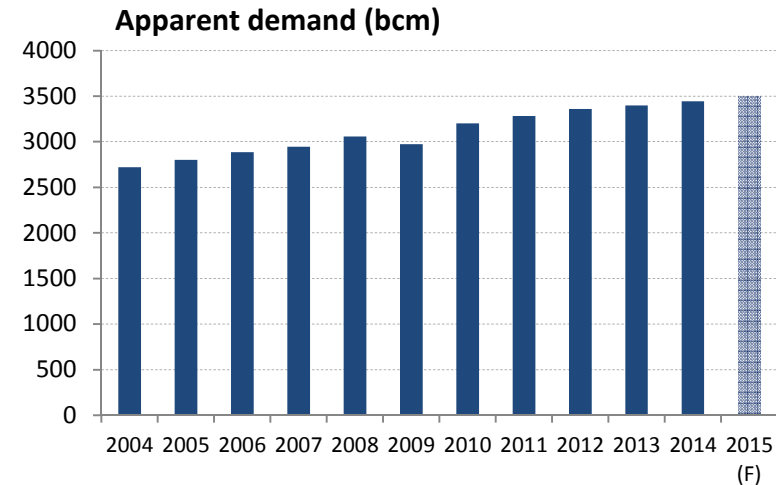
Rueil-Malmaison, 4 December 2015



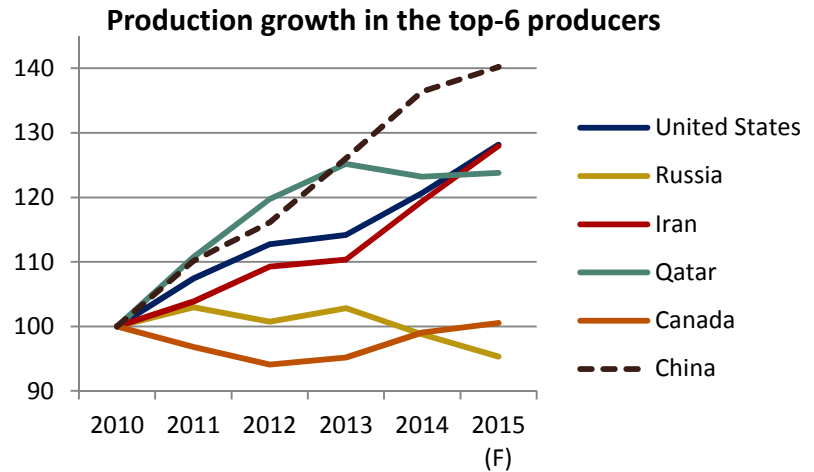
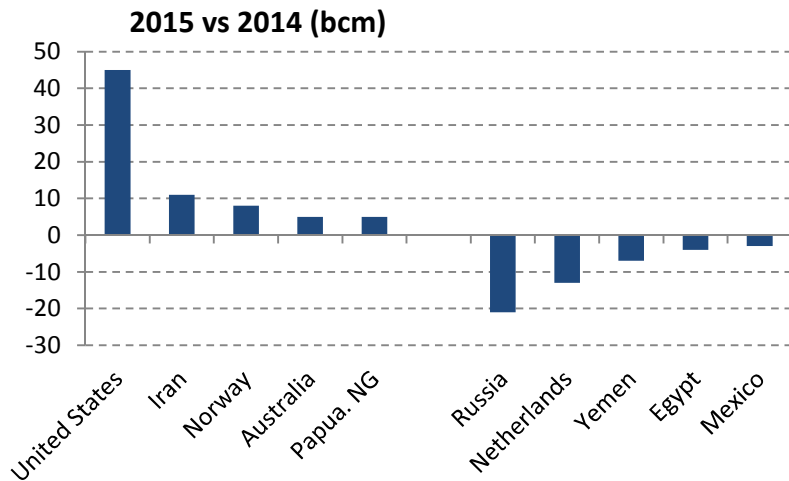
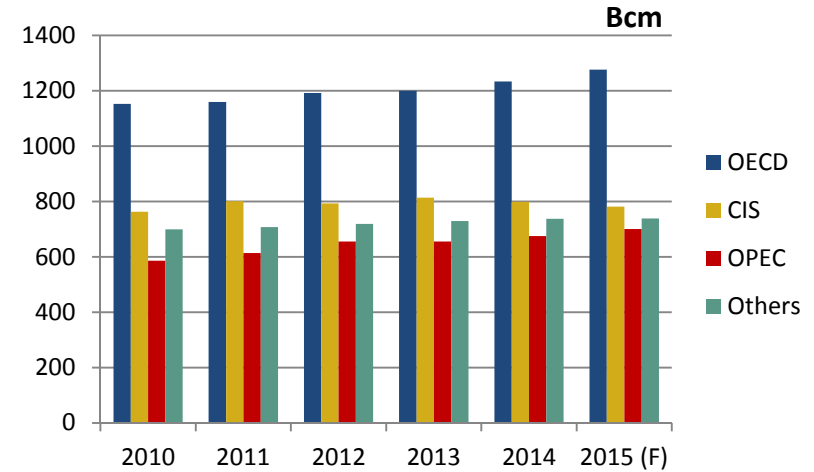
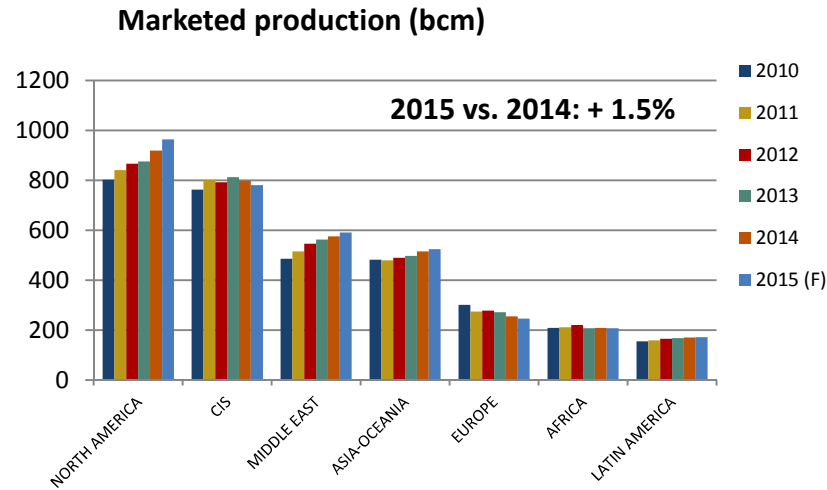
Moderate growth in world gas supply

Main 2015 facts

- Moderate growth in gas supply and demand (+ 1.5%), but still below the 10-year average
- The US remains the main driver behind growth
- Positive supply growth in Asia (PNG, Australia...)
- Recovery in global gas consumption (Europe)
- Muted gas demand growth in China
- Declining demand in Northeast Asia (Japan, South Korea) due to competition from other fuels (coal, nuclear)
- Return to growth in international gas trade (LNG, Russia's exports to Europe, China's pipeline imports)
- Cheap coal continued to weigh on demand (Europe, Asia)
- LNG oversupply re-oriented from Asia to Europe
- Depressed international gas prices
- Persistent gas shortages in some countries of Africa (Egypt), Asia (Southeast Asia, Pakistan), Latin America (Argentina, Trinidad & T) and the Middle East

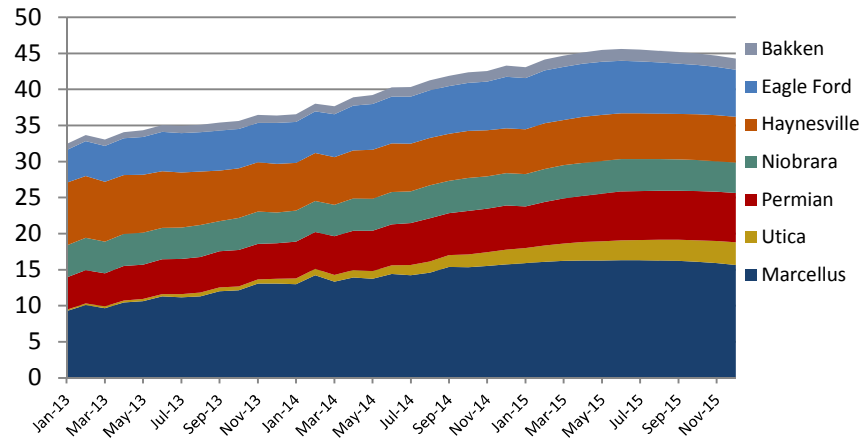


Evolution of marketed production



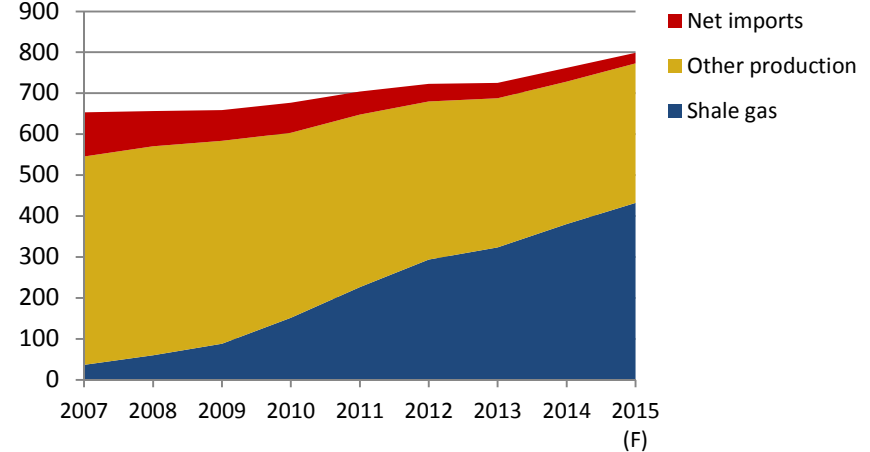
Global gas production is still driven by the US

Shale gas production - Bcf/d



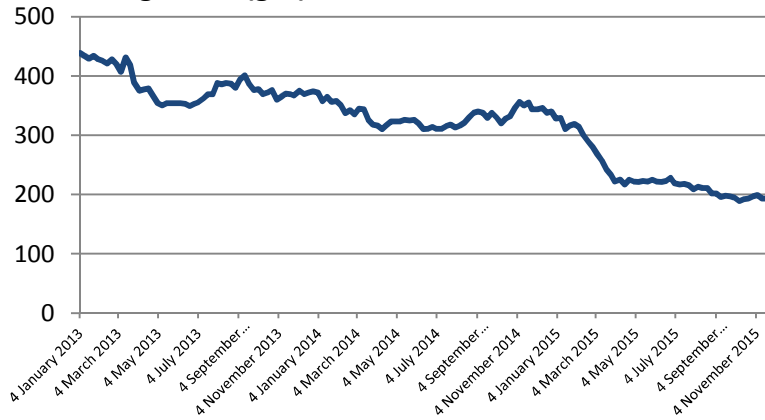
Source: EIA

US gas supply (bcm)



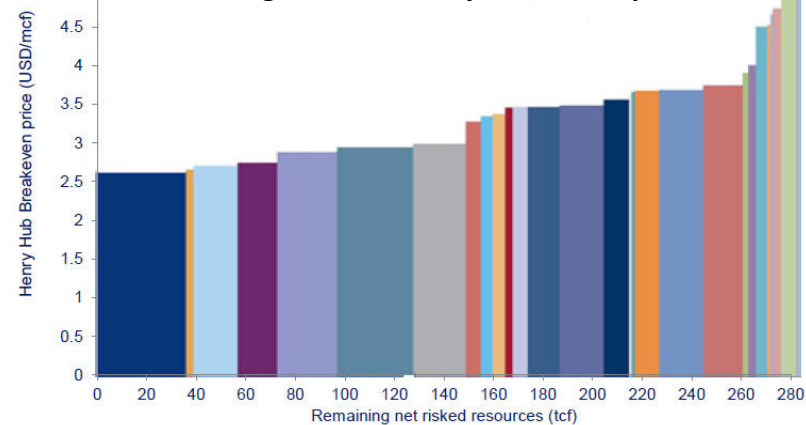
Source: CEDIGAZ Analysis

US rig count (gas)



Source: Baker Hugues

Marcellus gas resources by breakeven prices

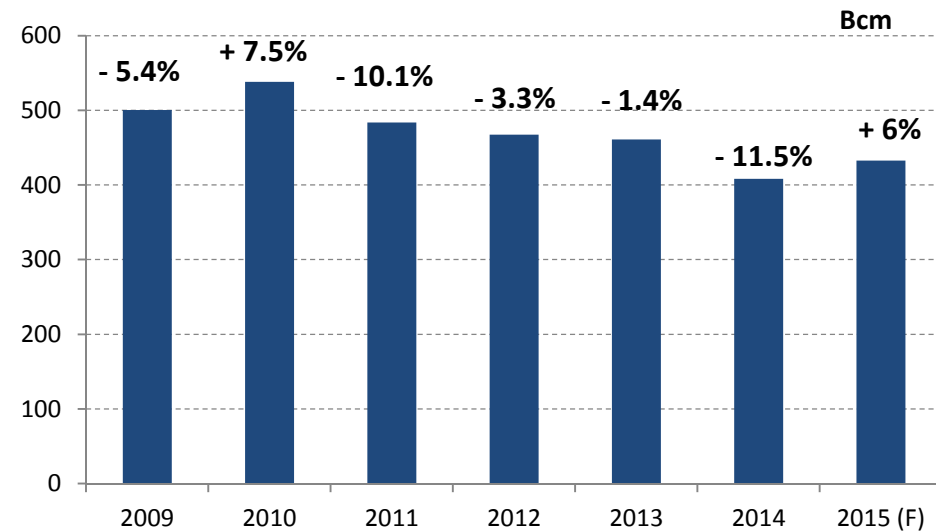


Source: Wood Mackenzie



Recovery in EU-28 consumption

- 1st half 2015: + 9% (Germany)
- 2015 Forecast: + 6% (warm winter and continued energy efficiency)
- Weather conditions are the main factor
- Industrial activity picked up
- Drop in hydropower (Germany, Italy, Spain...)
- Increased industrial demand (France)
- But low coal prices continue to weight on gas demand for power generation

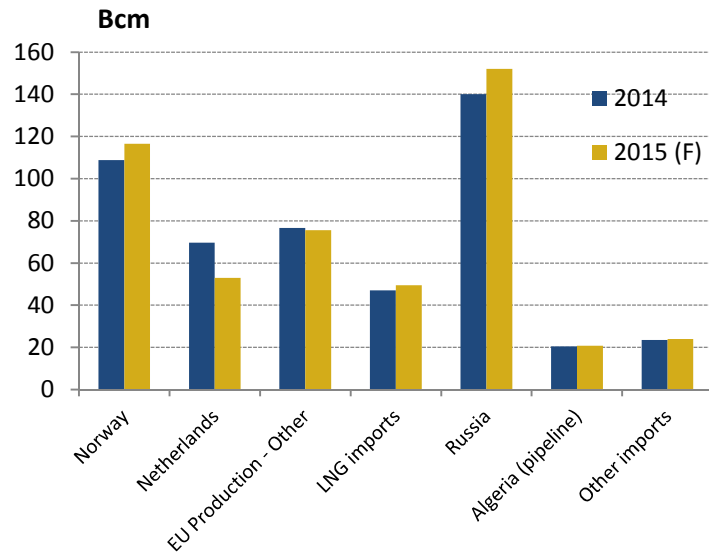


Source: CEDIGAZ Analysis

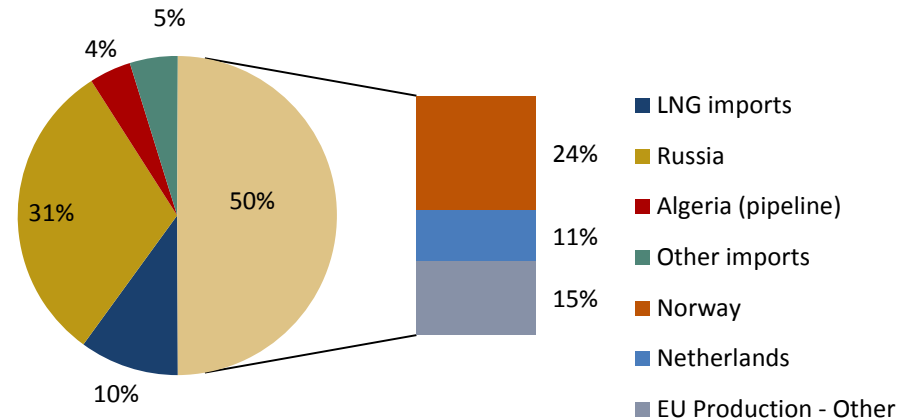
2016 Outlook

- Gas-fired power generation is increasingly making its way into the merit order (United Kingdom)
- Competitive gas price with coal (CO2 price included) of around \$4/MBtu outside the UK
- Little European gas demand growth
- Low gas prices (\$4/MBtu-\$6/MBtu) against the background of a mild weather and high inventories

European gas supply



European gas supply in 2015 (F)



- Regional production plus extra-European imports
- Europe includes EU28, Norway, Switz., Turkey and Central Europe

Source: CEDIGAZ

- Massive reduction in Groningen production
- Norway's gas production heading for a record
- Rising imports from Russia (2nd half 2015)
- Strong growth in LNG imports (Qatari flexible LNG)
- Net storage withdrawals to meet actual consumption

Muted growth in Chinese gas demand

2015 Outlook

Gas demand: + 2.5%; Imports: + 1.5%

Gas production: + 3%

Power consumption: + 1%

Lower investment growth rates

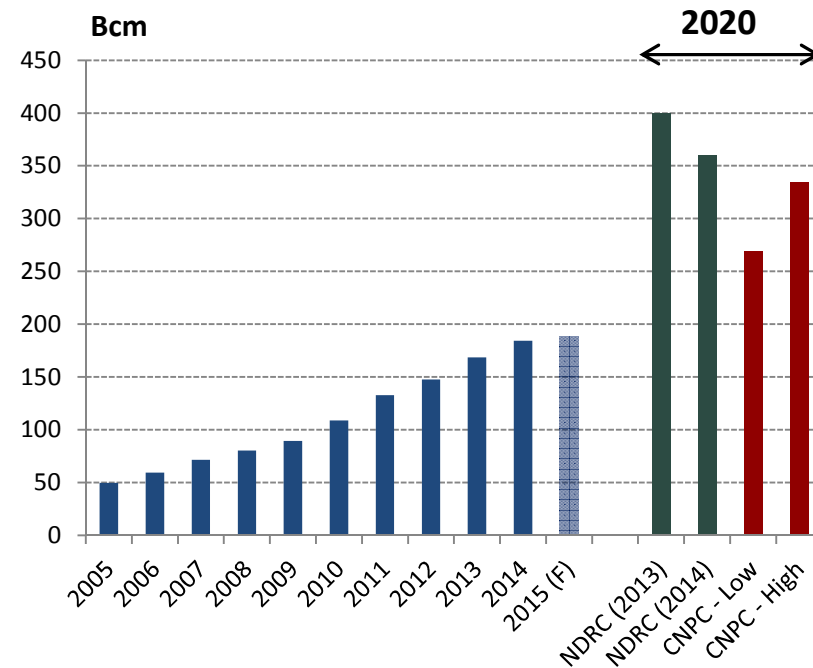
Lower industrial demand

GDP: + 6.8%

- Low rate of growth compared with GDP
- Cheap oil and economy restructuring
- Increased wind and nuclear capacity

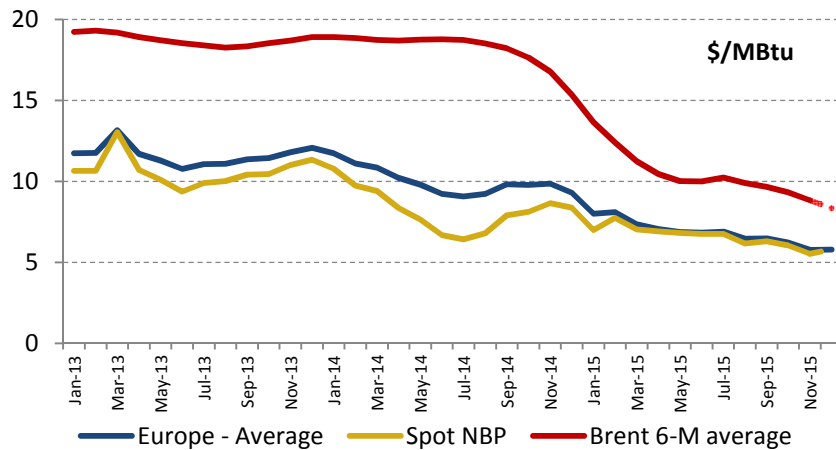
Short Term Outlook

- A cut in non-residential gas prices at the end of this year could revive flagging demand
- China faces challenging headwinds: environmental protection versus protectionist coal policy
- Projection of Chinese demand coloured by strong uncertainties (conflicting high and low cases)



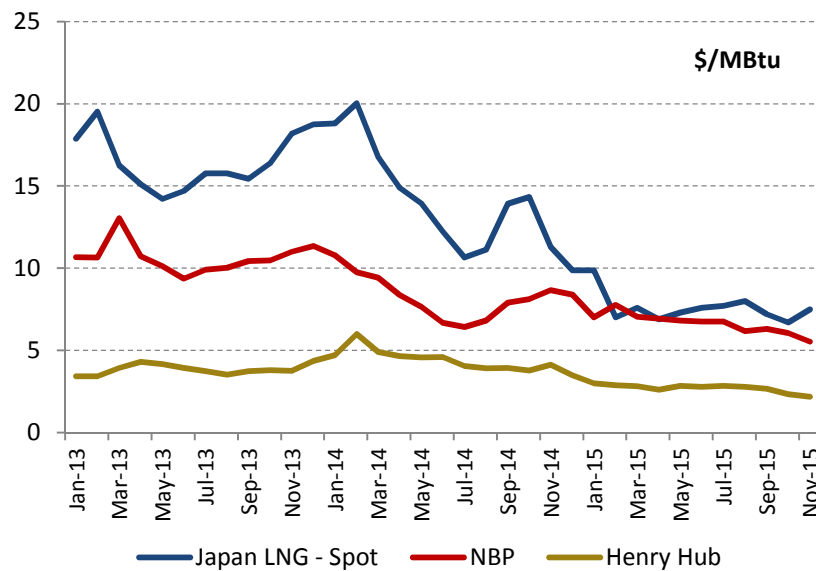
Source: CEDIGAZ

International natural gas prices



\$/MBtu	2013	2014	2015 (F)
EU - avg	11.8	10	6.8
NBP	10.6	8.2	6.6
Japan-Spot	16.5	14	7.6
HH	3.8	4.5	2.8

Source: CEDIGAZ Analysis, Reuters, EIA



- Downtrend in NBP prices since Feb. 2015
- Falling coal prices (\$50/t in November)
- Increased competitiveness of Russian gas in the last months of 2015
- Spot Asian prices capped by low oil prices, arbitrages between Europe and Asia, weak demand, high inventories and plentiful supply
- Exceptionally low levels of Henry Hub



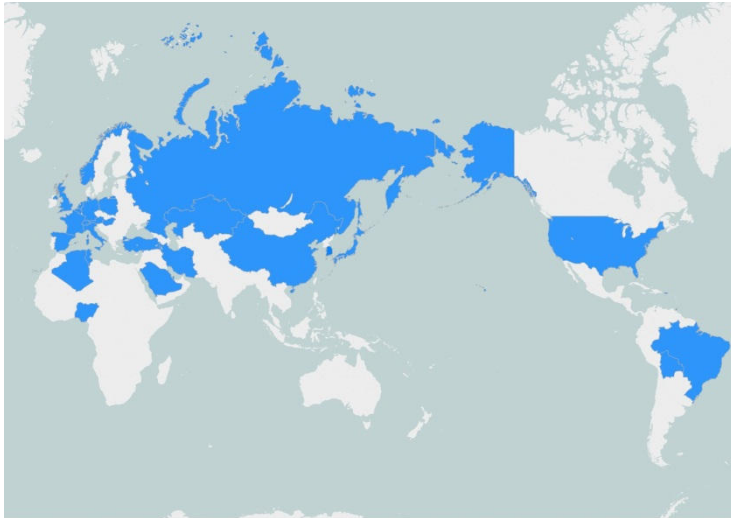
2016 Outlook: still bearish pressures...

- A more significant growth in global supply in 2016 (US, Australia...). The surge in LNG supply has been delayed into 2016 and a consistent upward trend remains to be seen.
- Improved energy efficiency, declining coal prices (China, Continental Europe) and expansion of renewables will continue to impact gas demand.
- Competition between US LNG and Russia (gas surplus). Russian exports still profitable at \$4/MBtu.
- It is likely that South Korea and Japan have reached a peak.
- China has started a structural slowdown of gas demand growth (lower rate of energy intensity).
- Despite spending cuts from E&P companies, high-grading, rig efficiency gains and reduced service costs should result in a relative stabilization of US shale gas production in 2016.
- US LNG exports and softening shale gas production might not be enough to push HH price above \$3.5/MBtu in 2016.
- World ample supply combined with global weak demand should maintain international prices at low levels in 2016.
- The global LNG glut is more likely to last until 2022...





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About CEDIGAZ

CEDIGAZ is an international association dedicated to natural gas information and has more than 90 members in 40 countries. CEDIGAZ data has been the industry's reference since its foundation in 1961.

