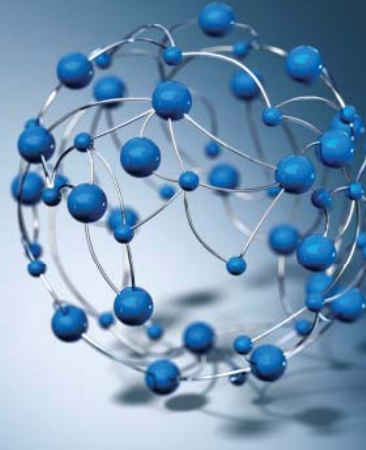




24th World Gas Conference
ARGENTINA | 2009
5-9 October

The Global Energy Challenge:
Reviewing the Strategies
for Natural Gas

Global Gas Dynamics – Whatever Next ?



Neil Thomas – Head of Gas Research, Wood Mackenzie
World Gas Conference – Buenos Aires - October 2009



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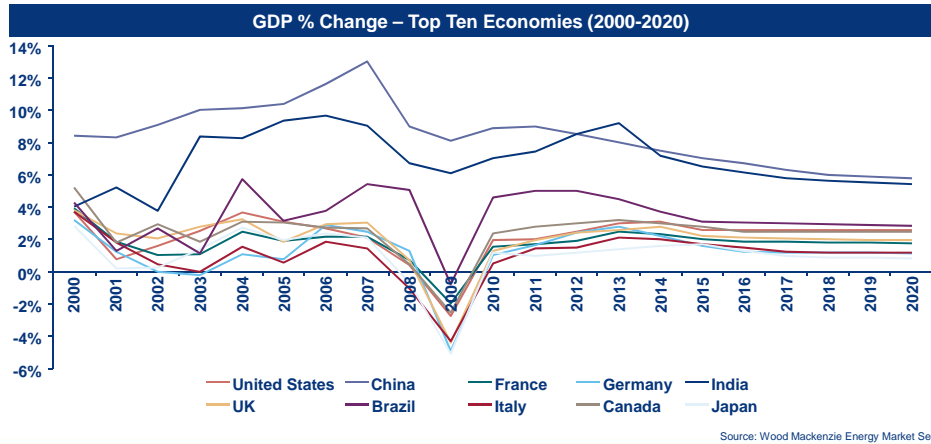
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Agenda

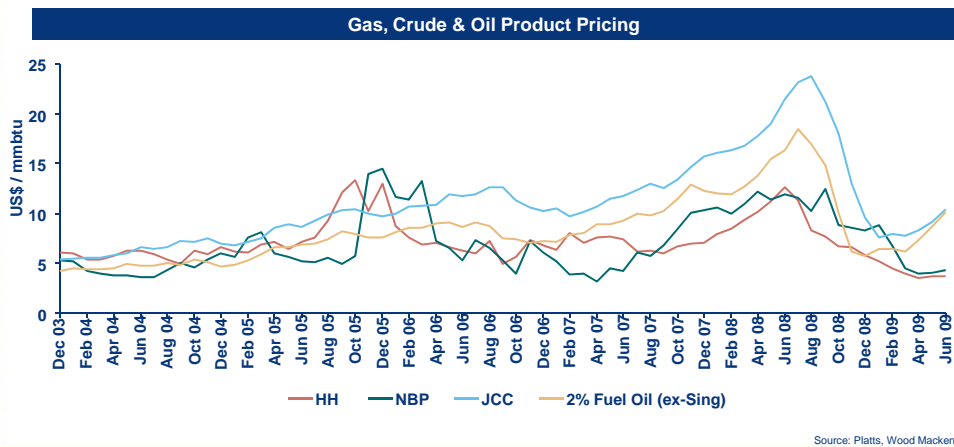
1	The Changing Environment
2	Demand
3	Supply
4	Global Outlook
5	Implications



Did you see this coming.....?



And therefore this ?





Short term 'blip' or long term changes ?

› The old view ?

- Major gas markets showing strong growth but indigenous supply suffering from terminal decline (NA, Europe)
 - Need for more imports (LNG and pipeline)
- Gas harder to find and more costly to develop – generally tight supply demand fundamentals
- Slow move to global gas market (and price ?)
 - Major producers dominate and control (oil indexed) pricing

› The new view ?

- Demand has been destroyed and future growth rates moderated
- Unconventional supply has changed the 'game' in NA
- A short term excess of supply has expanded to medium term ?
 - Pressure on contracts...especially in 'high' oil price world
- Moving to global gas (spot ?) market ?

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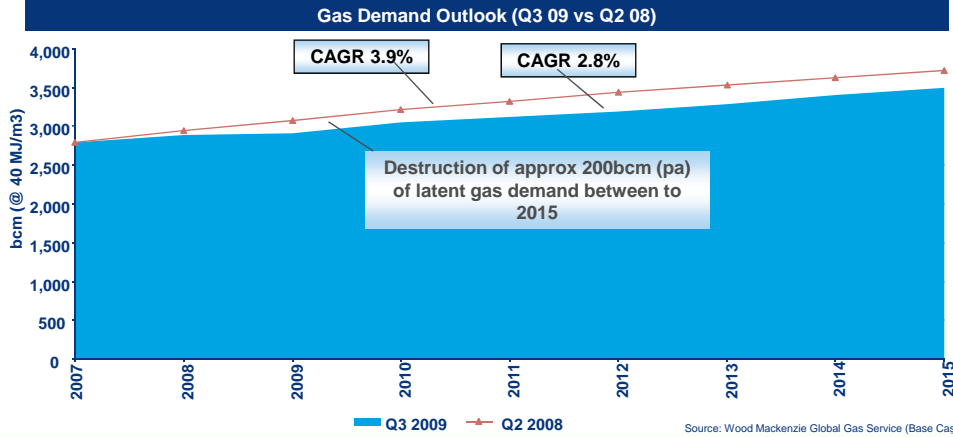
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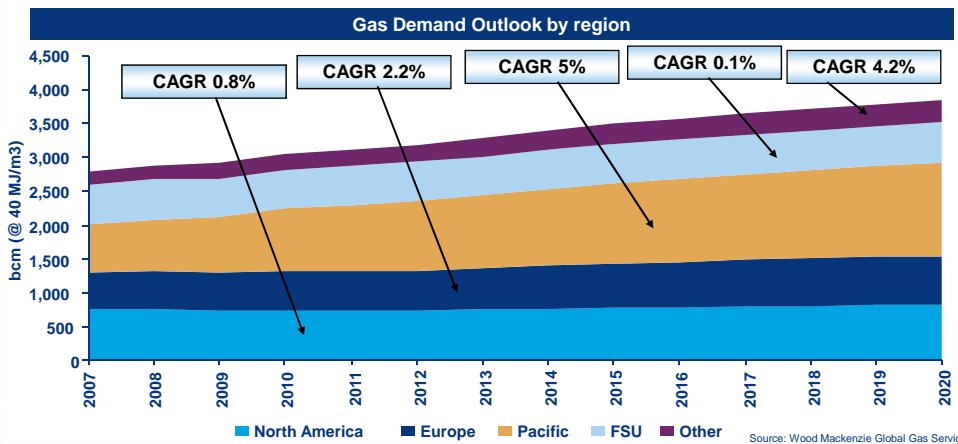
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Global gas demand growth has faltered and the outlook is significantly less favourable than pre-economic crisis

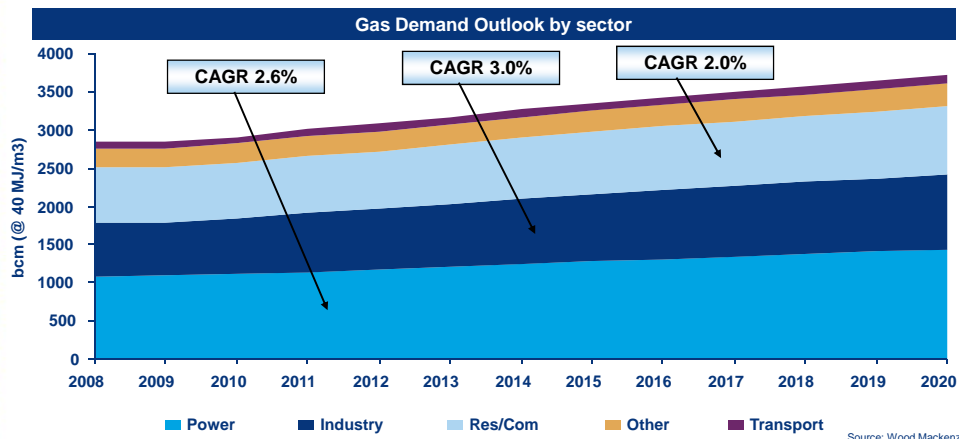


Asia Pacific demand is the strongest growth region...





With growth strongest in power and industrial sectors.....

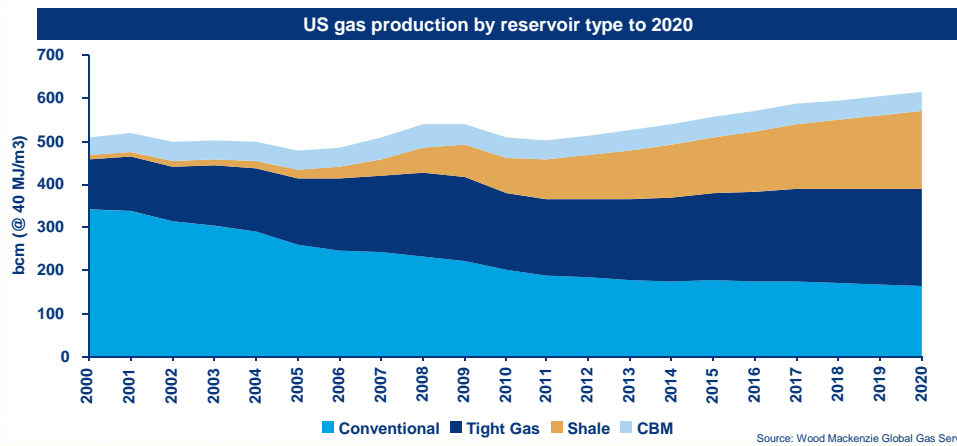


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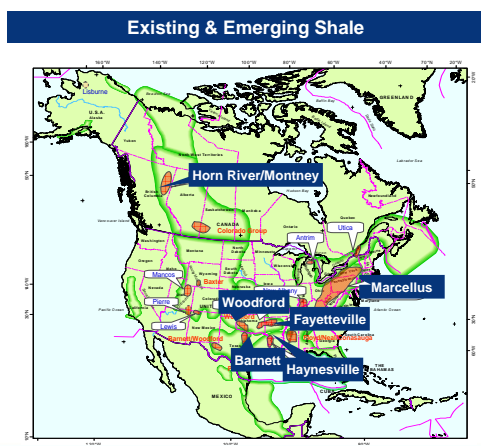
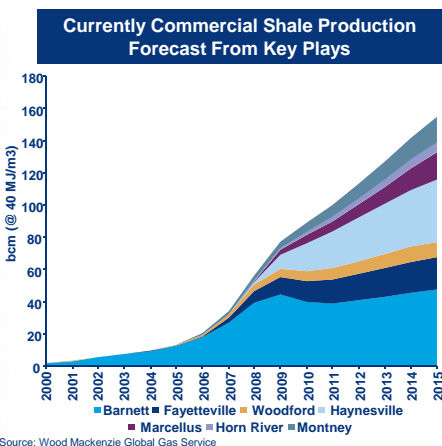
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US gas production's long term decline reversed...

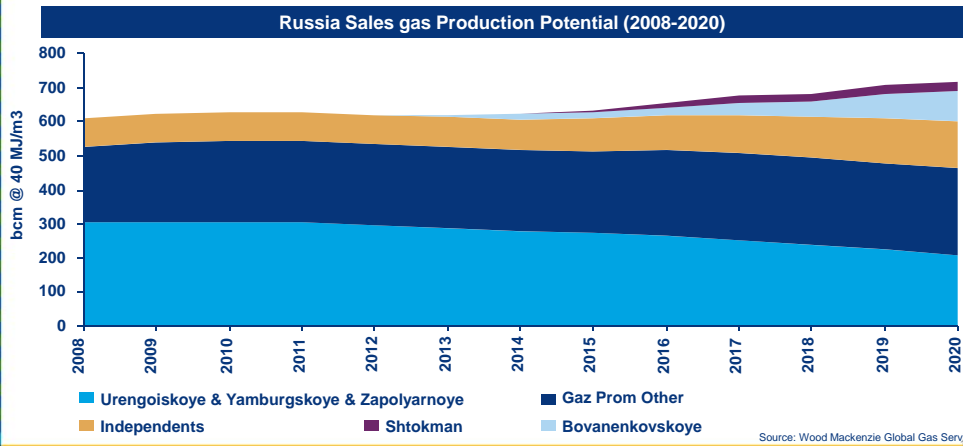


With growth in shale gas the major contributor

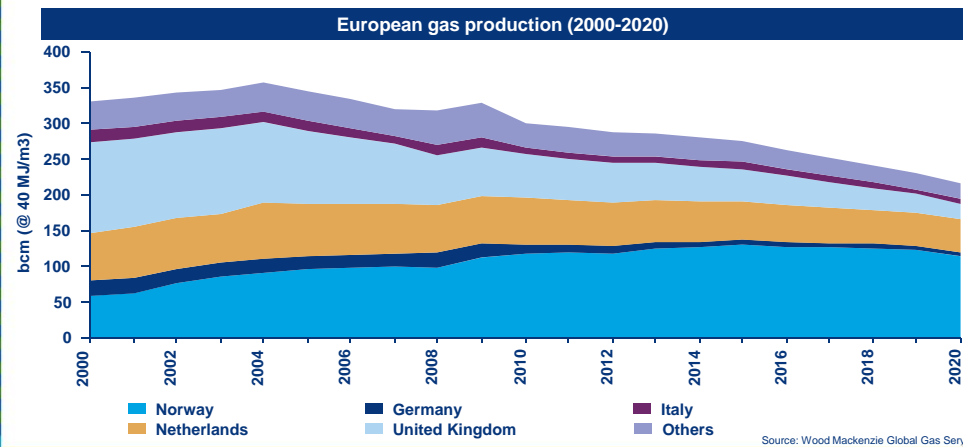




Russia's future supply output depends on markets and big new projects...

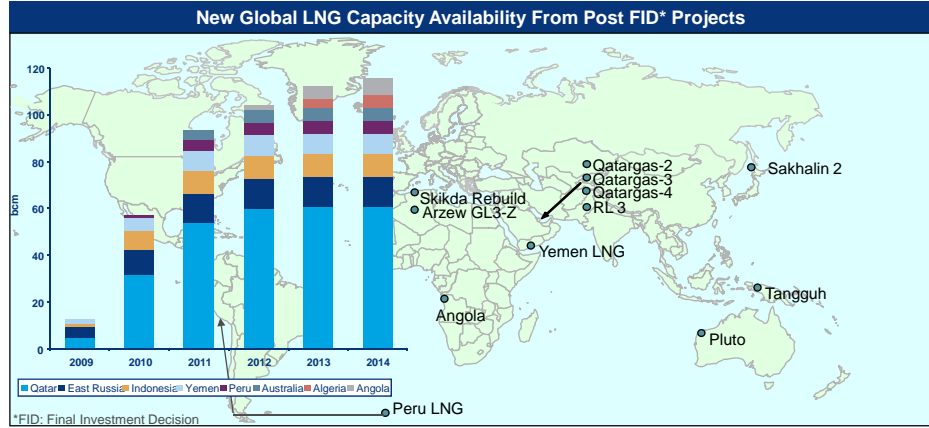


But Europe's decline continues.....

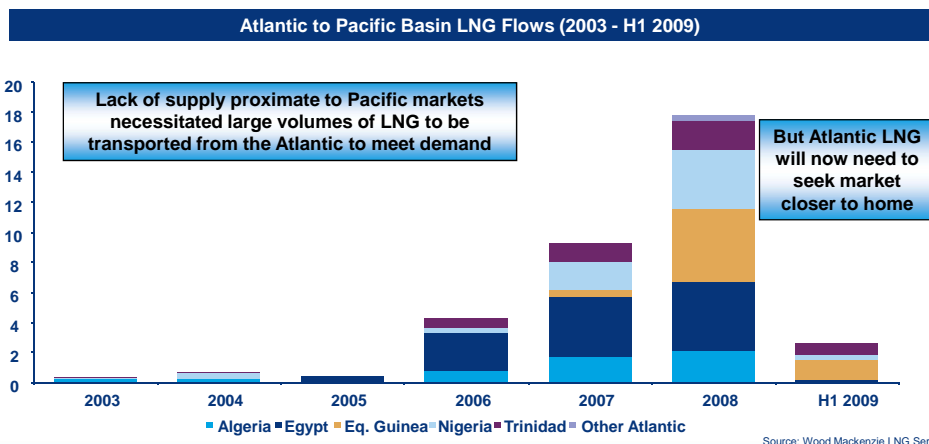




Large volumes of LNG from new projects are being introduced into the global gas market over the next few years



While Asia's draw on Atlantic Basin LNG has now diminished





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This all has significant implications for Atlantic Basin supply-demand dynamics in the medium term

Greater LNG availability to the Atlantic

- ⑦ Increased LNG supply, particularly from the Middle East
- ⑦ Declining demand for Atlantic LNG from the Pacific

Reduced LNG import need into North America

- ⑦ Increased availability of indigenous gas
- ⑦ Reduced gas demand
- ⑦ No need to "attract" LNG and pay higher netbacks than that available elsewhere

Potential for increased Atlantic and Middle East LNG to seek market in Europe instead of North America

Potential for over-supply in Europe

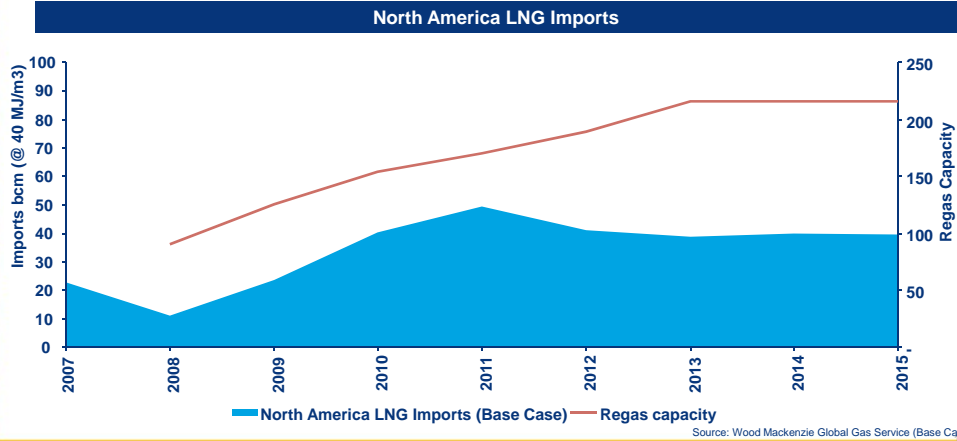
- ⑦ Reduced gas demand
- ⑦ Limited contestable market due to existing long term contracts in Europe
- ⑦ Accommodated LNG dependent, in part, upon behaviour of major pipe suppliers into Europe

Overspill of LNG into North America

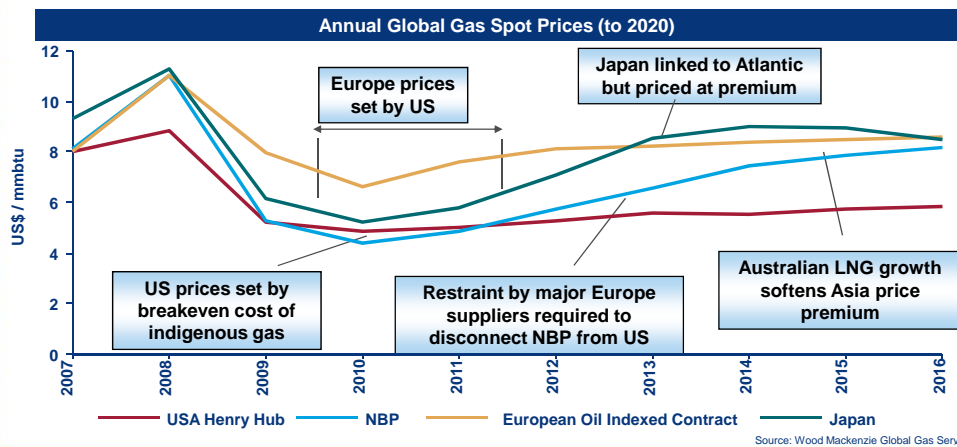
Source: Wood Mackenzie Global Gas Service



As a result of which LNG imports into North America will grow in the short-term, before declining



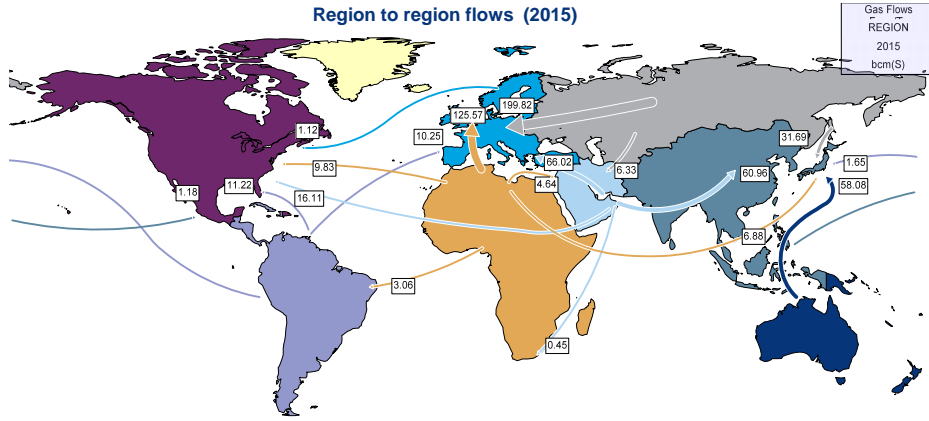
Impact on outlook for global gas price inter-connectivity in medium term





And inter-regional flows increase significantly....

Region to region flows (2015)



Source: Global Gas Tool

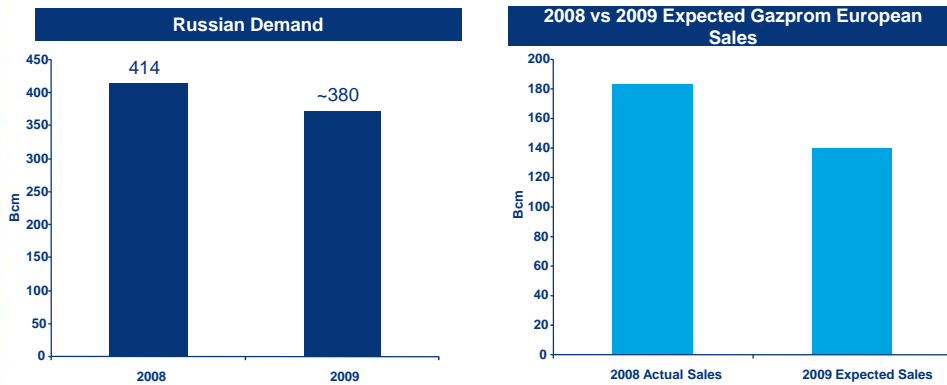


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Market diversification will become more pressing for Russia

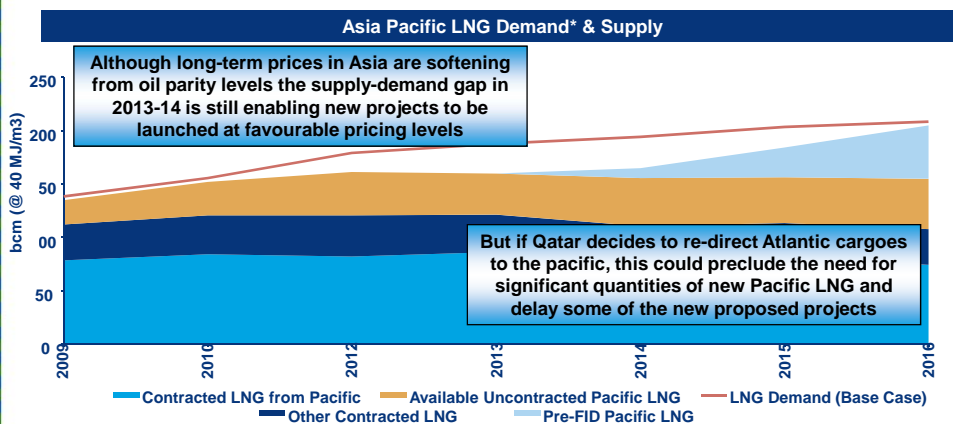


Pipe sales to NE Asian markets and LNG will become increasingly important to Gazprom growth

Source: Wood Mackenzie Global Gas Service



...and Qatar could spoil the Australian LNG party

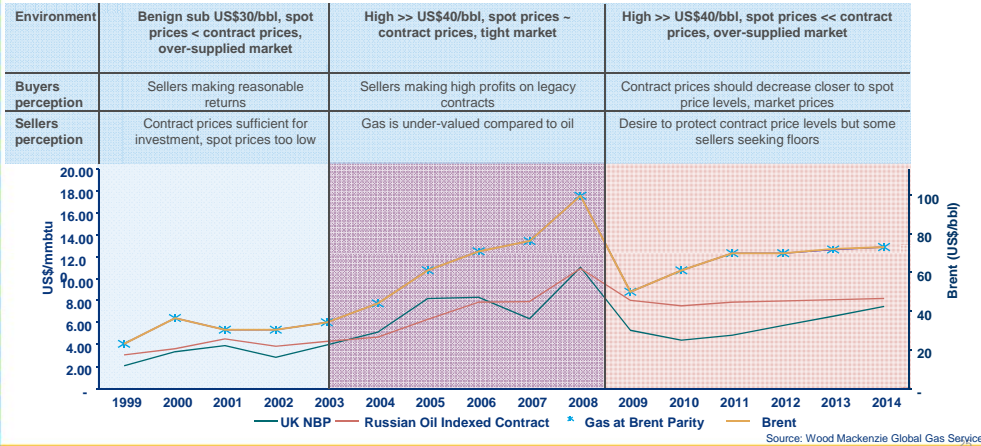


* Available Pacific supply & demand associated with Asian markets east of India incorporating Japan, Korea, Taiwan, China, Singapore, Thailand, Java.

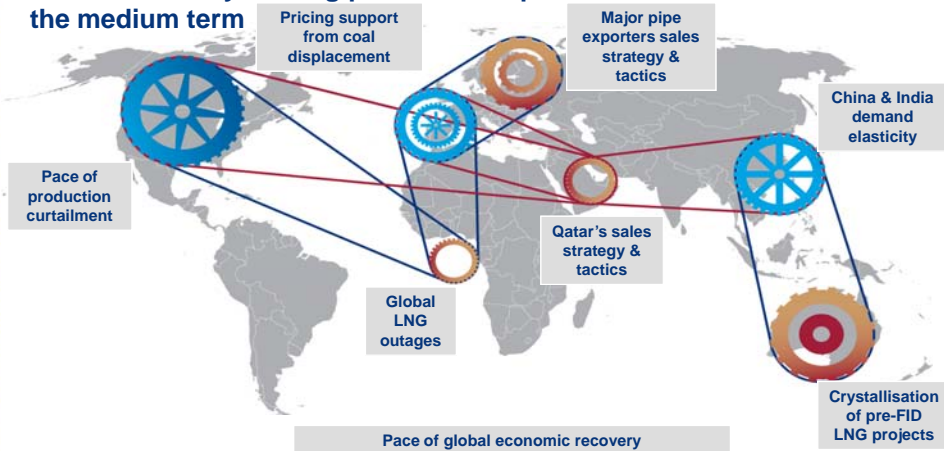
Source: Wood Mackenzie Global Gas Service



Plus a “high oil price - low spot gas price” environment will place considerable pressure on existing price levels in European long-term contracts



A number of key moving pieces will impact our base case outcome in the medium term





Summary

› The Macro Environment has changed significantly.....

- Demand has reduced and there is excess gas supply....
- Some supply 'conventions' have changed....i.e. NA onshore
- Prices are set to remain weak in the near term
- But our 'base case' assumes producer 'restraint' and recovery for European and Asian gas prices in the medium term

› Global Gas Market Implications include....

- Russia needs to diversify
- Qatar has a key role in the Pacific market
- Pressure is likely on long-term European contracts and will have implications for pricing of long-term Pacific contracts

› For further information visit www.woodmac.com/energy/globalgas

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- › Neil heads Wood Mackenzie's global research group with responsibility for its regional gas fundamental services (North America, Europe and South East Asia), the Global Gas and LNG teams. Neil also manages the regional operations in Asia, based in Singapore.
- › He joined Wood Mackenzie in 1990 and has since worked in a variety of roles within the company in both the research and consulting business. Neil has wide experience of the upstream and downstream gas sectors with specific focus on European issues and has consulted widely in these areas. Projects have included competitor analysis, strategy studies, screening analysis, valuation work and extensive gas market analysis including M&A related projects, purchasing strategies and pricing studies.
- › Neil graduated from Durham University with BSc Honours Degree in Geology followed by MSc in Petroleum Geology from Imperial College, London.

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