

Global Gas and LNG Balance

Michael Smith, Gas Trading Analytics
BIEE Gas Outlook Seminar, 8th October 2010

Presentation outline



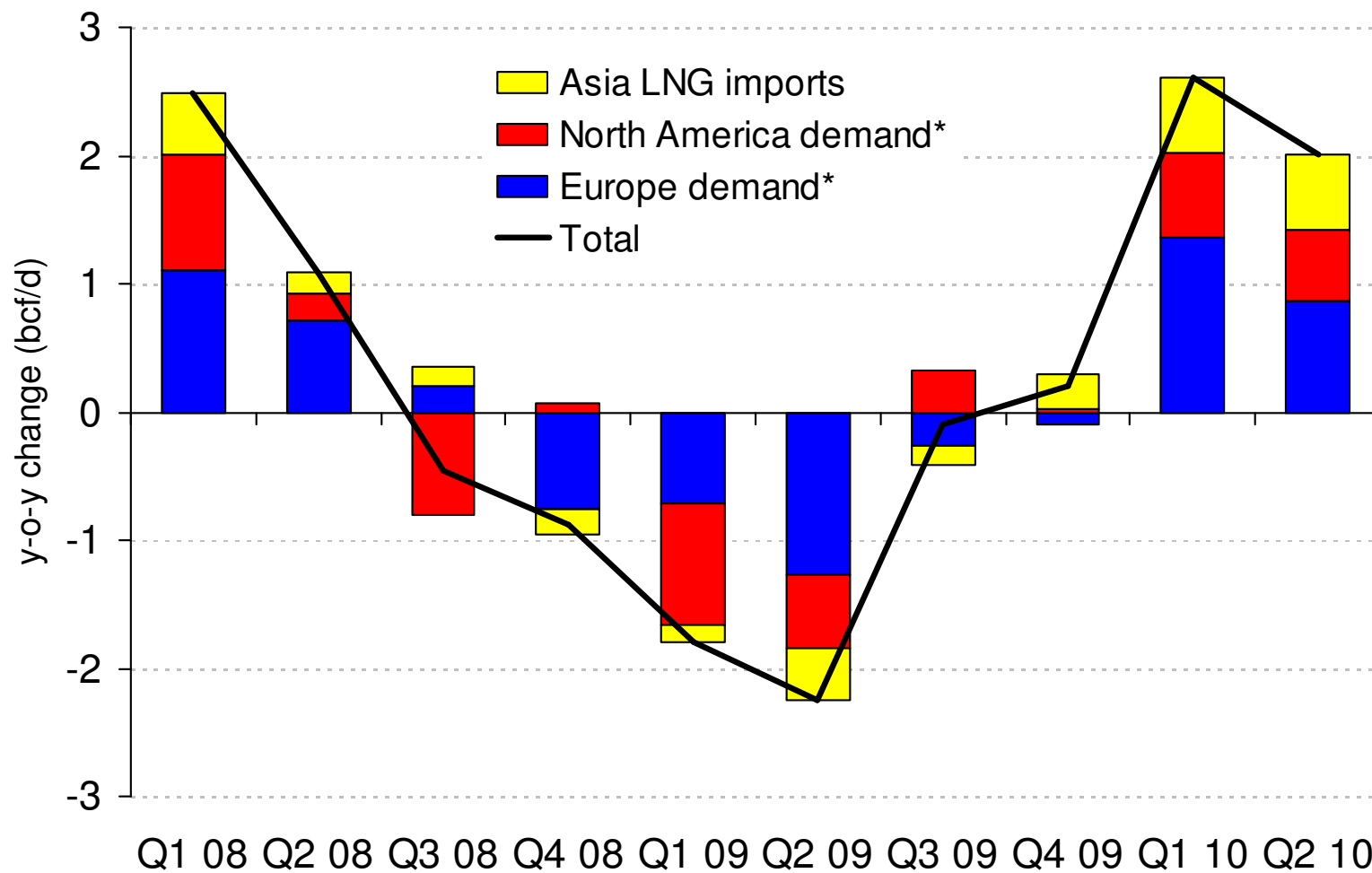
- Recent developments in key markets
 - regional supply/demand
 - LNG supply/demand
 - price signals
- Near term market outlook
- Medium term market outlook
- Conclusions

Cautionary Statement



- This presentation and its contents have been provided to you for informational purposes only. This information is not advice on or a recommendation of any of the matters described herein or any related commercial transactions, whether they consist of physical sale or purchase agreements, financing structures (including, but not limited to senior debt, subordinated debt and equity, production payments and producer loans), investments, financial instruments, hedging strategies or any combination of such matters and no information contained herein constitutes an offer or solicitation by or on behalf of BP p.l.c. or any of its subsidiaries (collectively "BP") to enter into any contractual arrangement relating to such matters. BP makes no representations or warranties, express or implied, regarding the accuracy, adequacy, reasonableness or completeness of the information, assumptions or analysis contained herein or in any supplemental materials, and BP accepts no liability in connection therewith. BP deals and trades in energy related products and may have positions consistent with or different from those implied or suggested by this presentation.
- This presentation also contains forward-looking statements. Any statements that are not historical facts, including statements about the BP's beliefs or expectations, are forward-looking statements. These statements are based on plans, estimates and projections and you should not place undue reliance on them. These statements are not guarantees of future performance and involve certain risks and uncertainties, which are difficult to predict. Therefore, actual future results and trends may differ materially from what is forecast, suggested or implied in any forward-looking statements in this presentation due to a variety of factors. Factors which could cause actual results to differ from these forward-looking statements may include, without limitation, general economic conditions; conditions in the markets in which BP is engaged; behavior of customers, suppliers, and competitors; technological developments; the implementation and execution of new processes; and changes to legal, tax, and regulatory rules. In addition, financial risks such as currency movements, interest rate fluctuations, liquidity, and credit risks could influence future results. The foregoing list of factors should not be construed as exhaustive. BP disclaims any intention or obligation to publicly or privately update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.

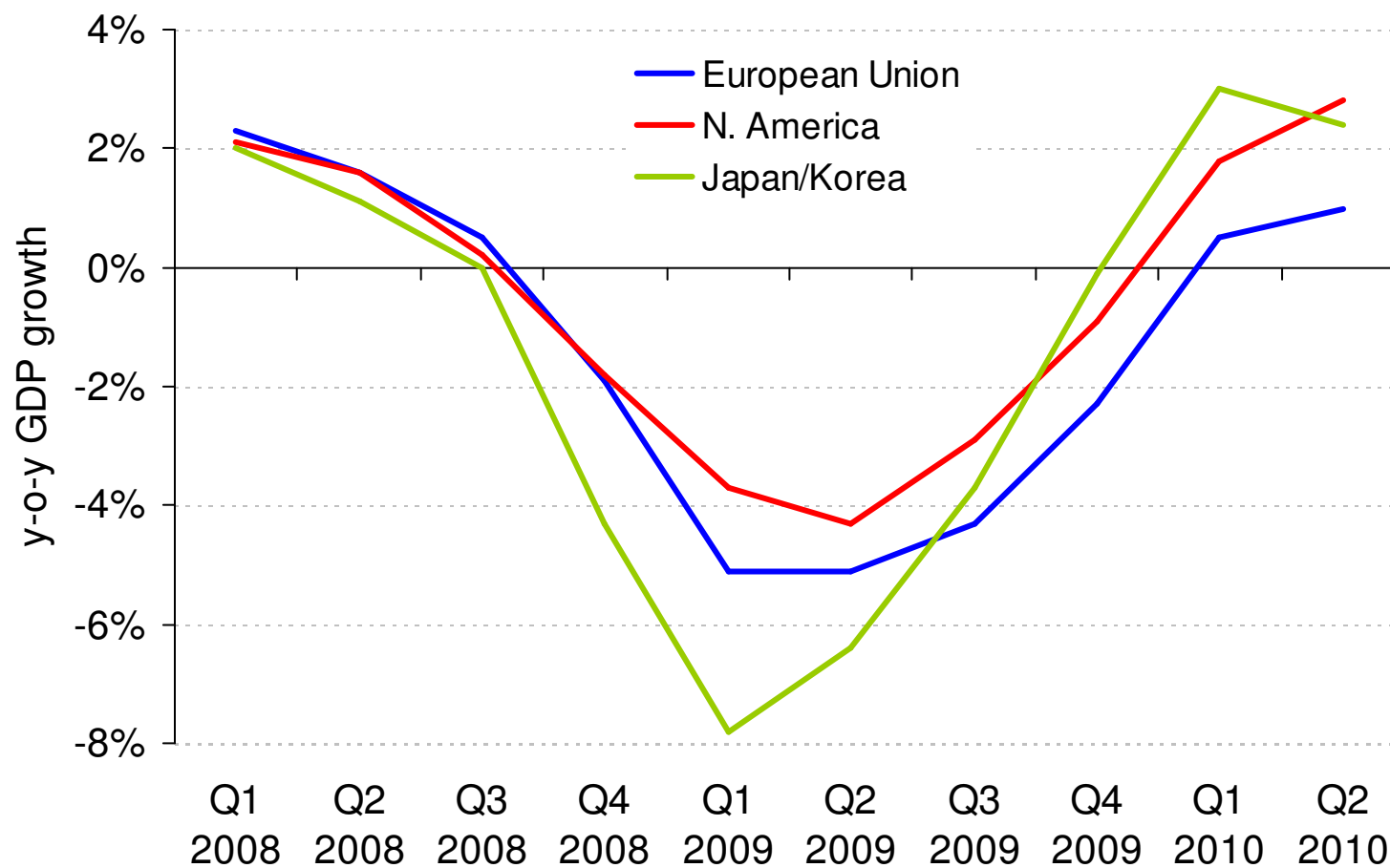
Major gas markets returned to demand growth in 4Q 2009 and grew strongly through 1H 2010



* Big 6 consumers (UK, Germany, Italy, France, Netherlands & Spain)

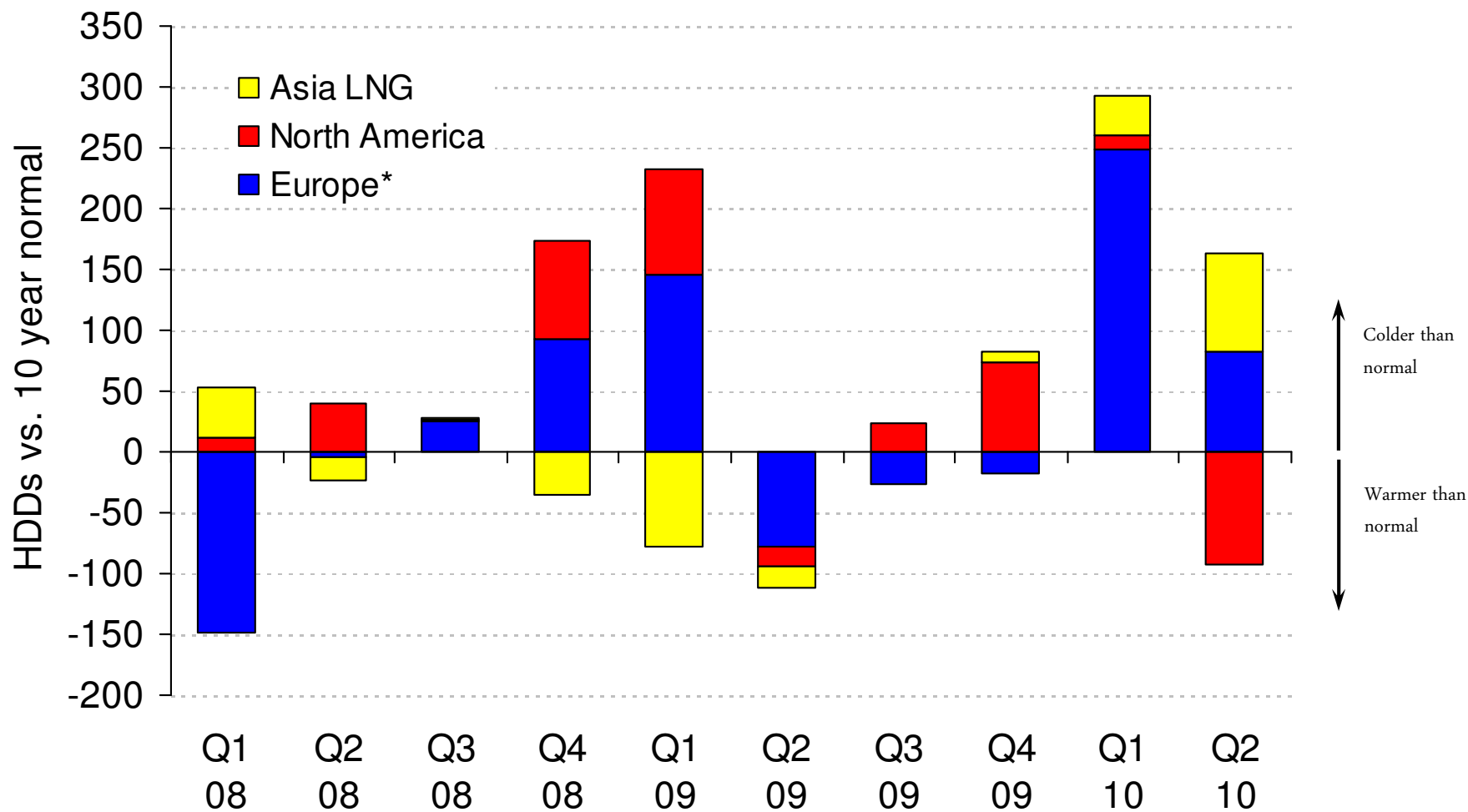
Source: EIA, FACTS, Various national sources

Gas demand growth has followed a similar path to changes in GDP



Source: IMF

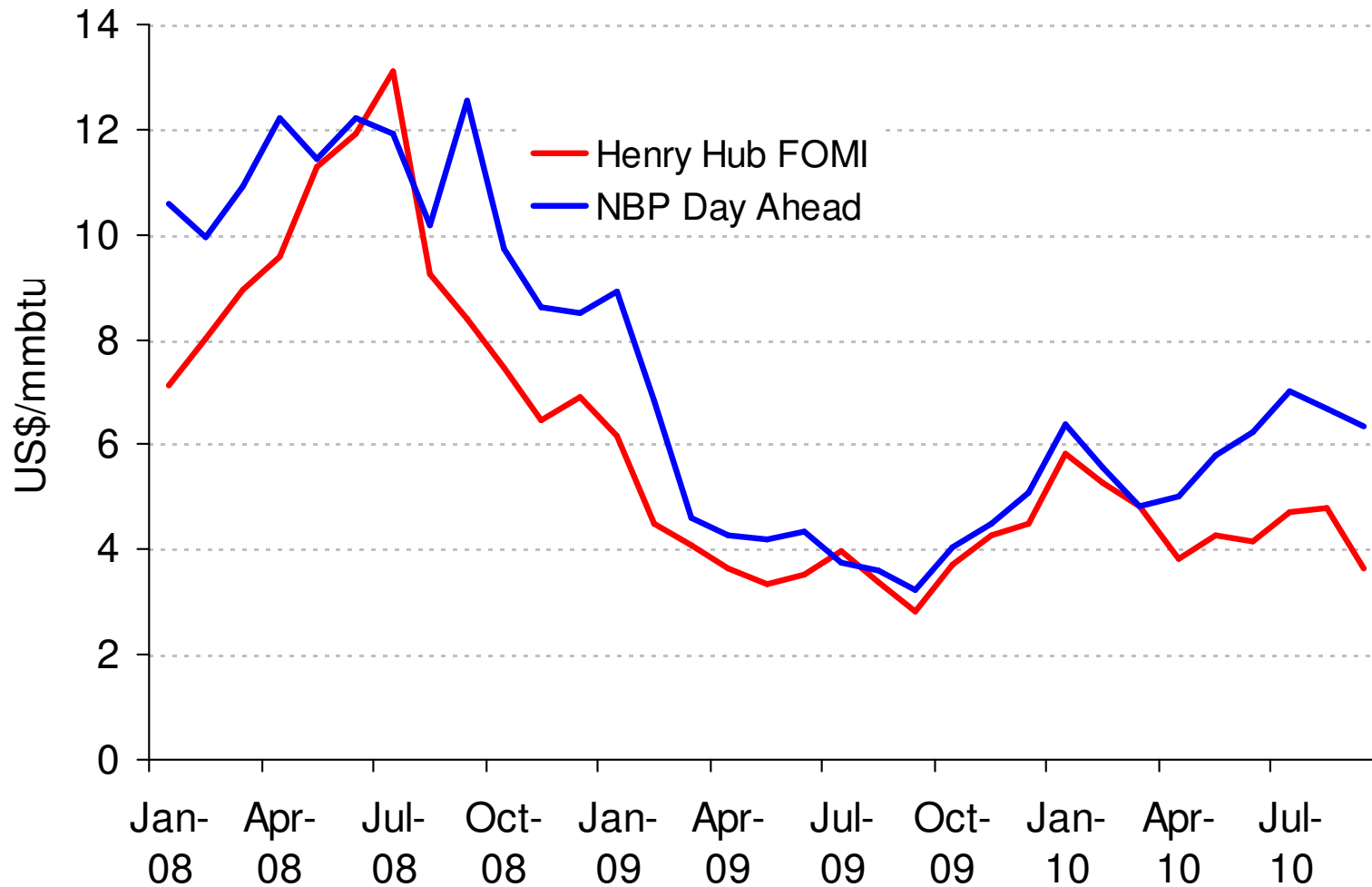
Cold weather has also been a factor in strong 1H 10 demand in Europe and Asia



* Big 6 consumers (UK, Germany, Italy, France, Netherlands & Spain)

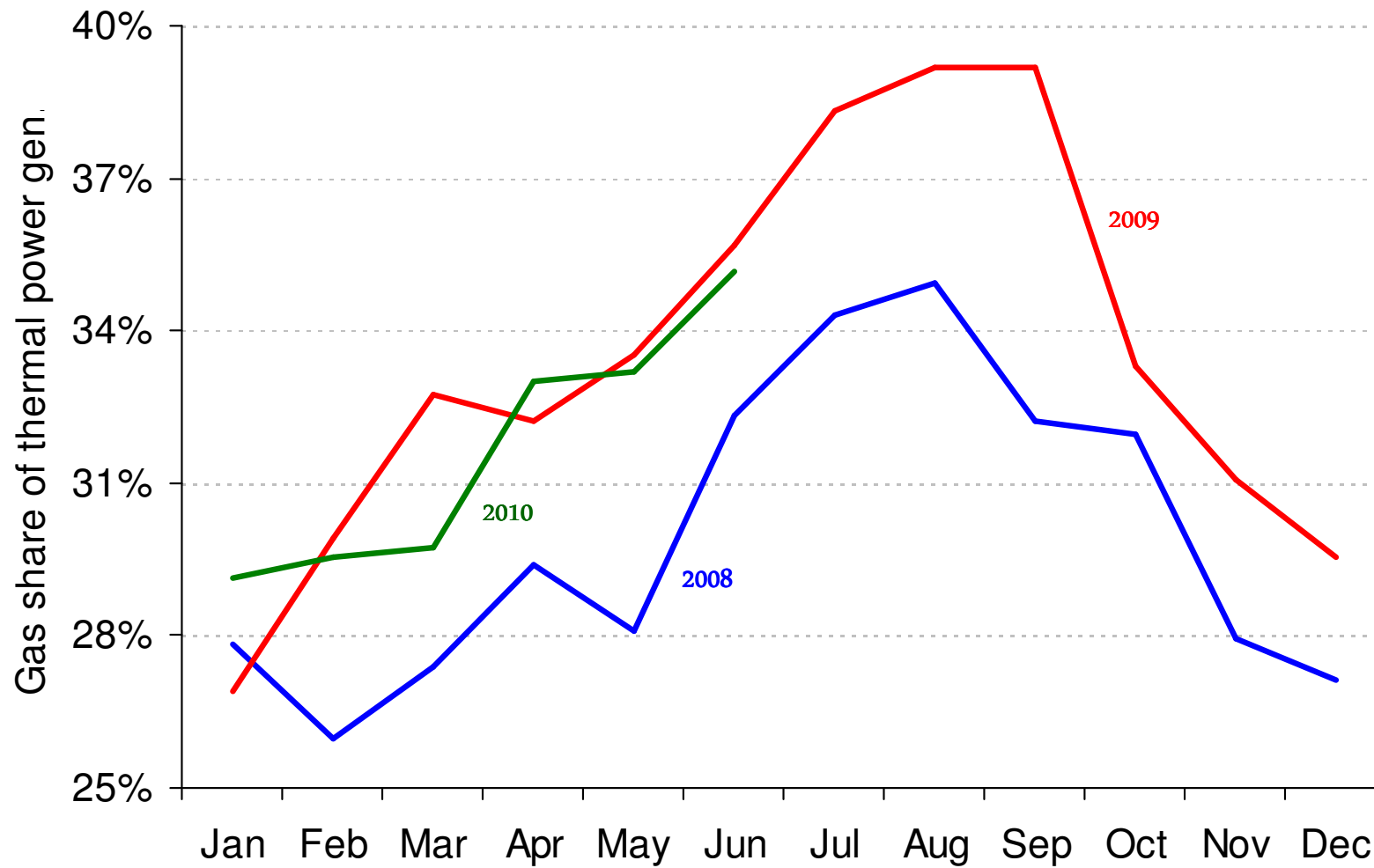
Source: PIRA

Price falls in liquid markets have also made gas more competitive



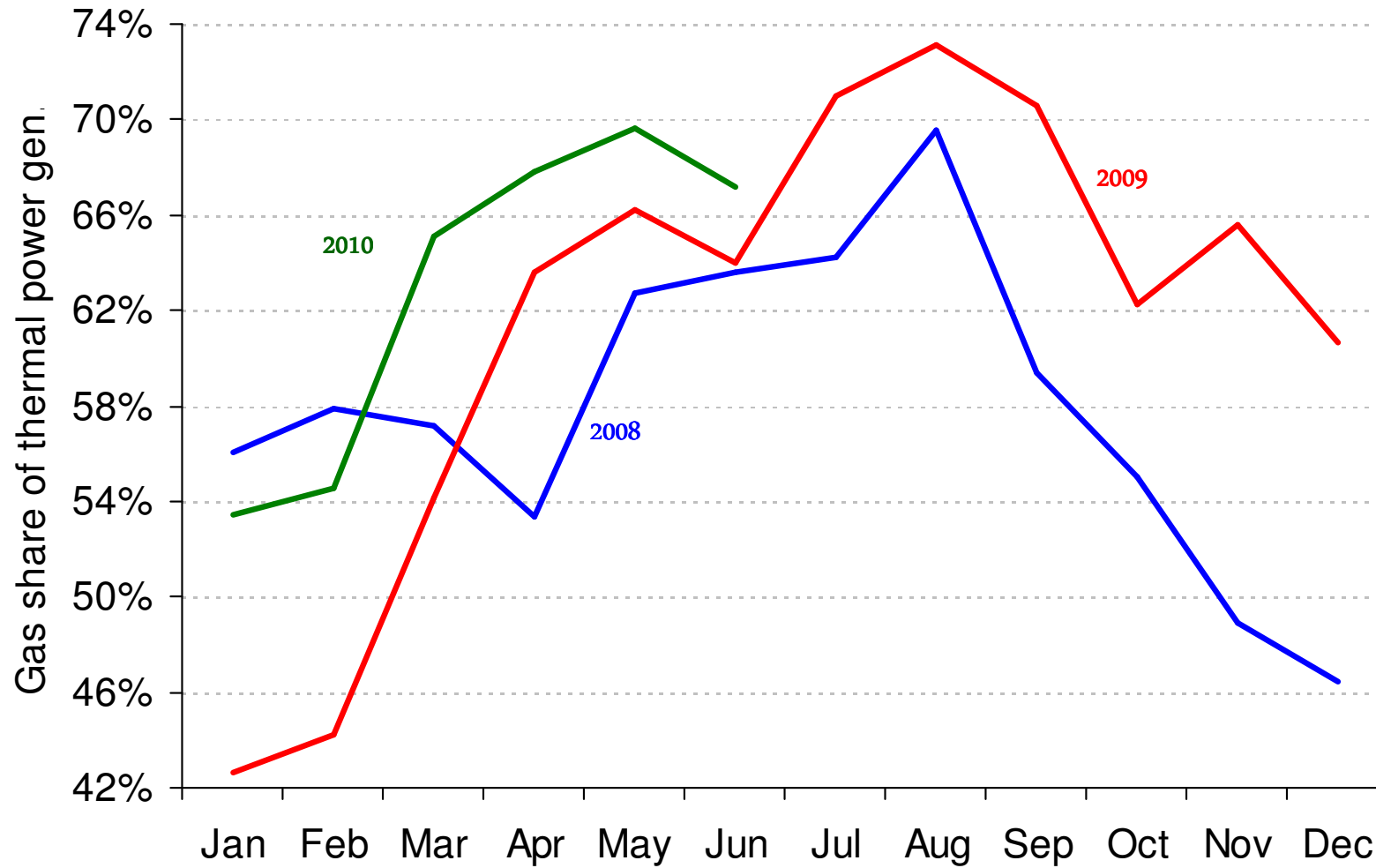
Source: Platts

Making gas more competitive in the US power market



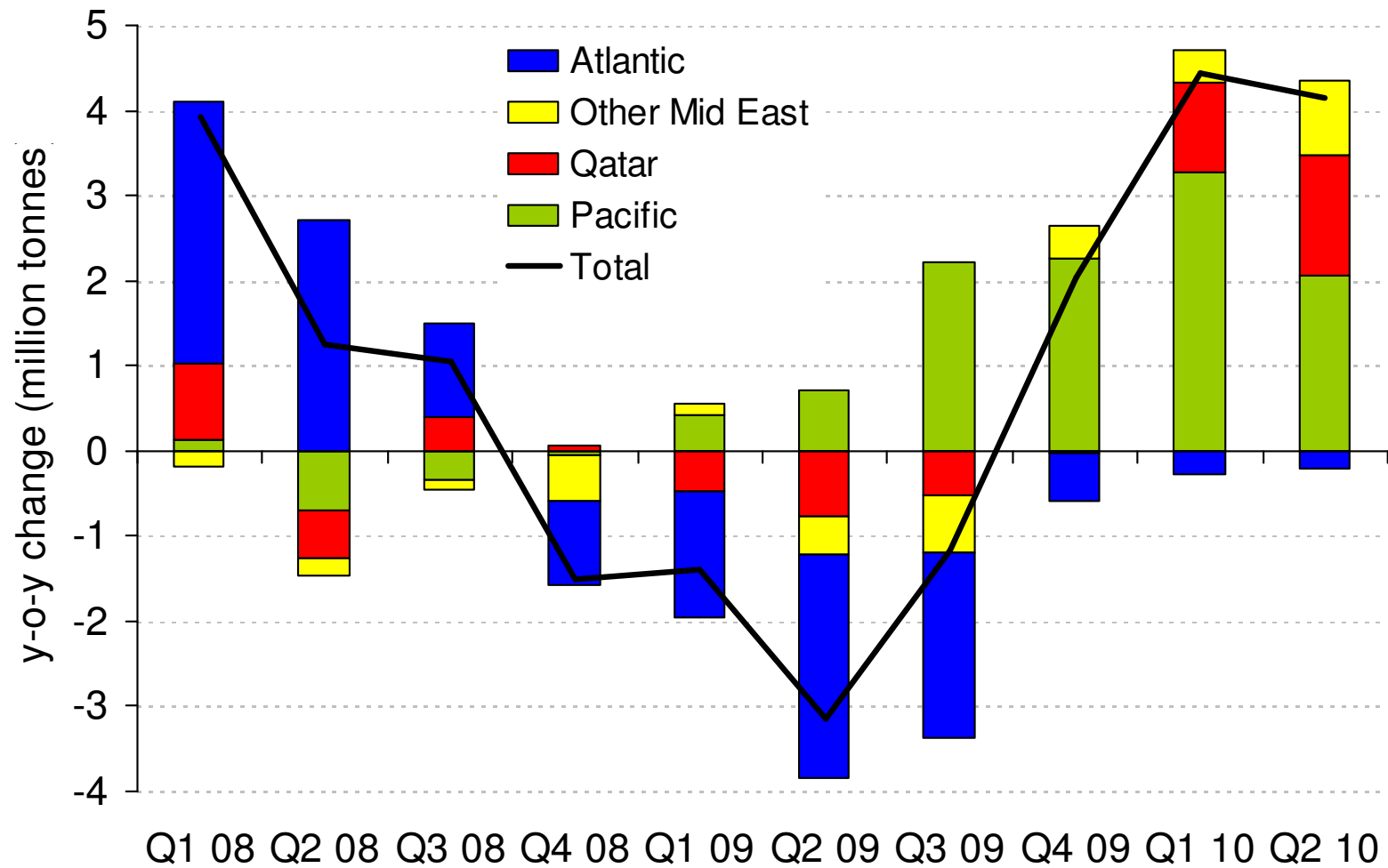
Source: EIA

The picture is similar for the UK power market



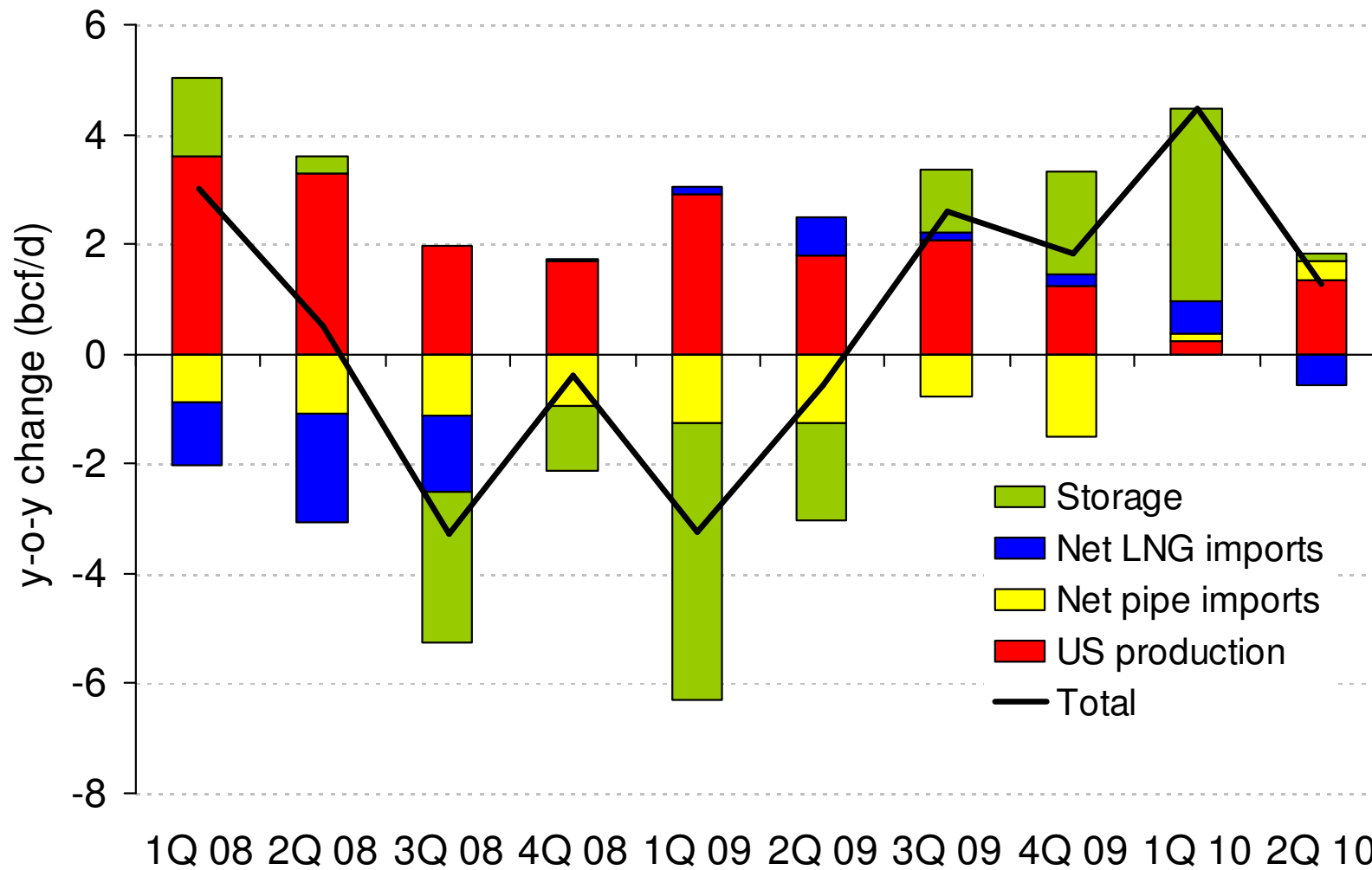
Source: DECC

Re-direction of Atlantic Basin LNG supplies has been the main mechanism for managing the cycle in Asian LNG importers



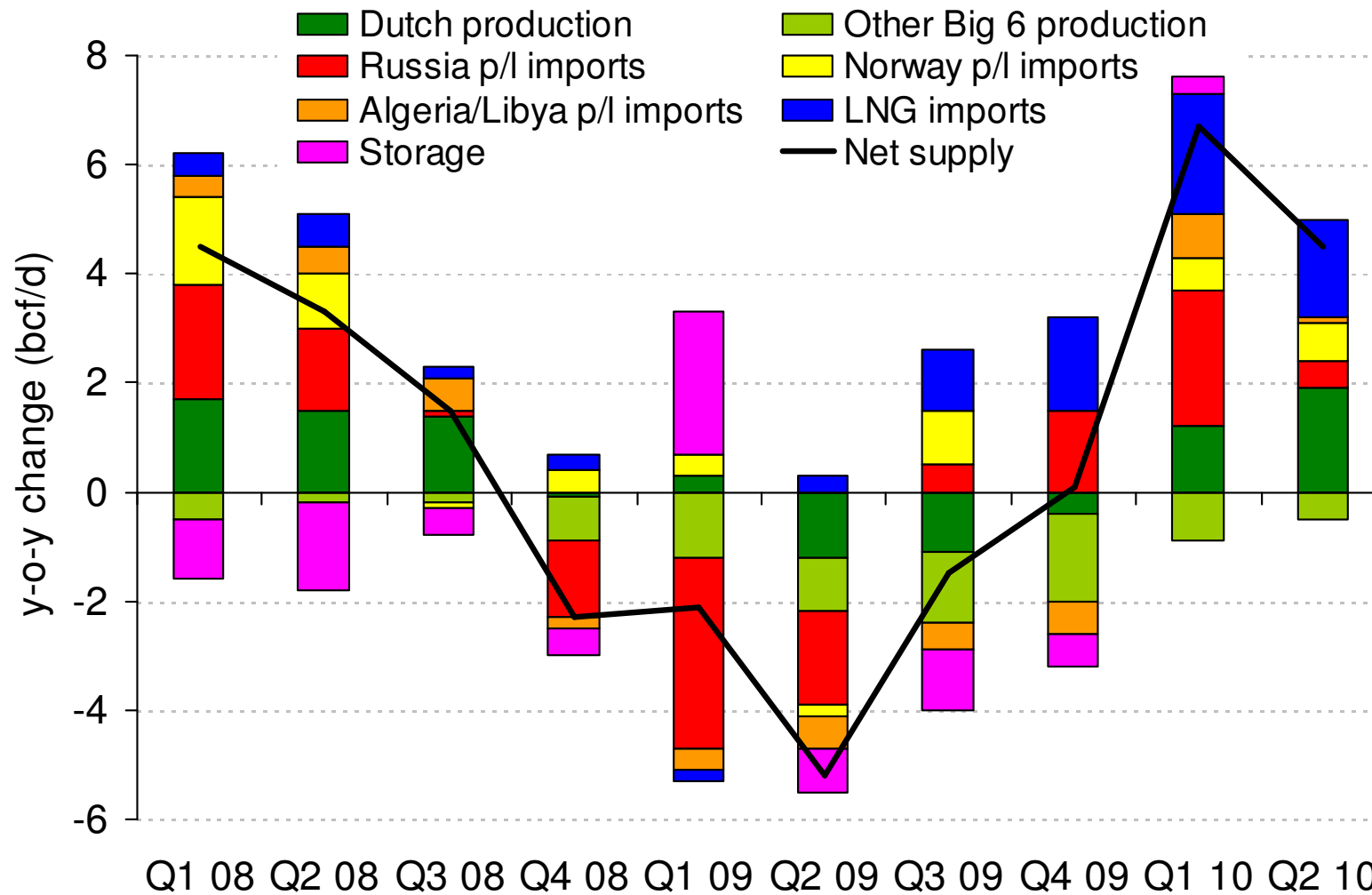
Source: FACTS

Storage has been the main mechanism for managing the cycle in the US. Production growth has been sustained through the downturn



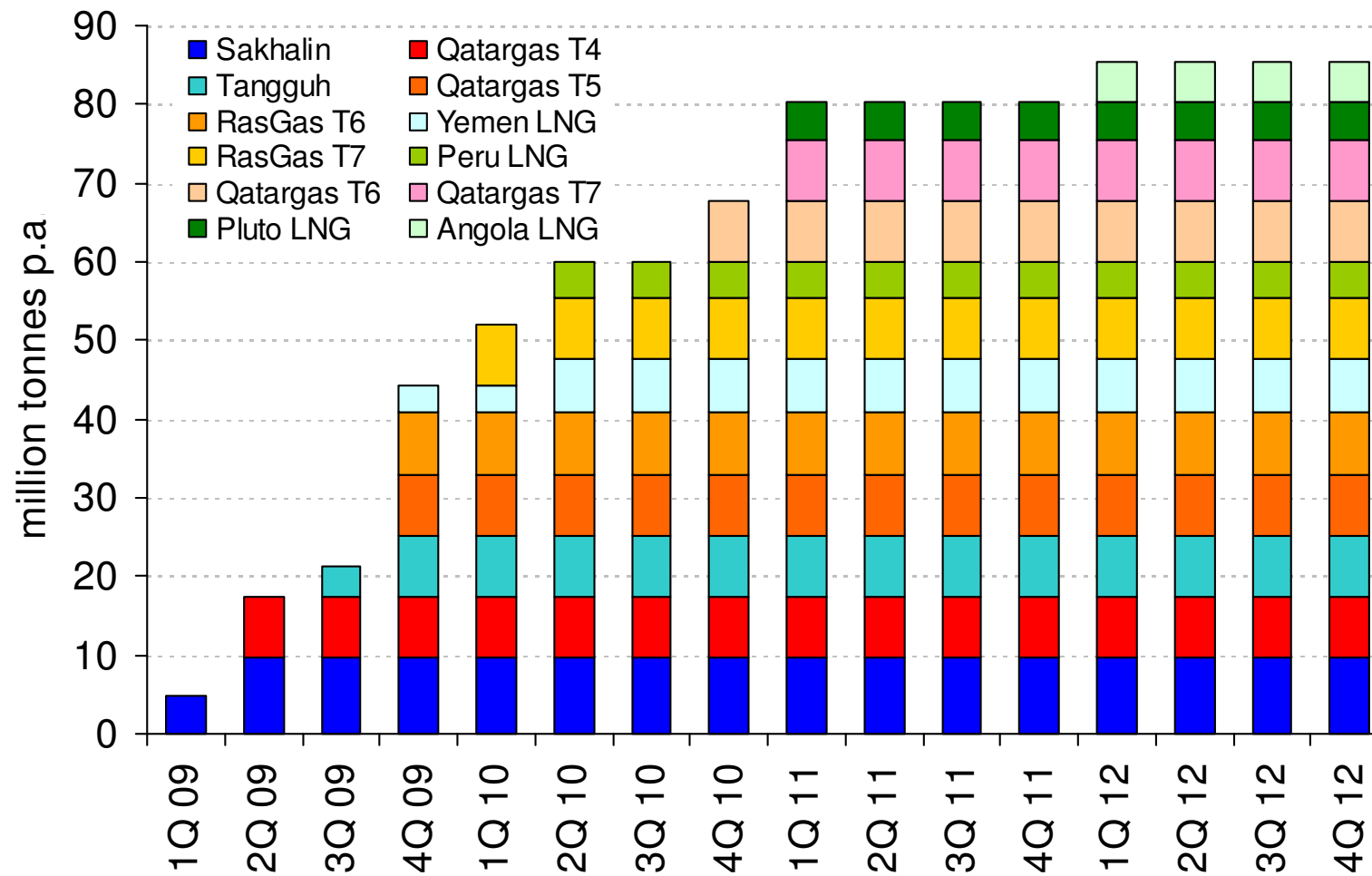
Source: EIA

Changes in contract take and price-sensitive production have been the main mechanisms for managing the cycle in the major European gas markets



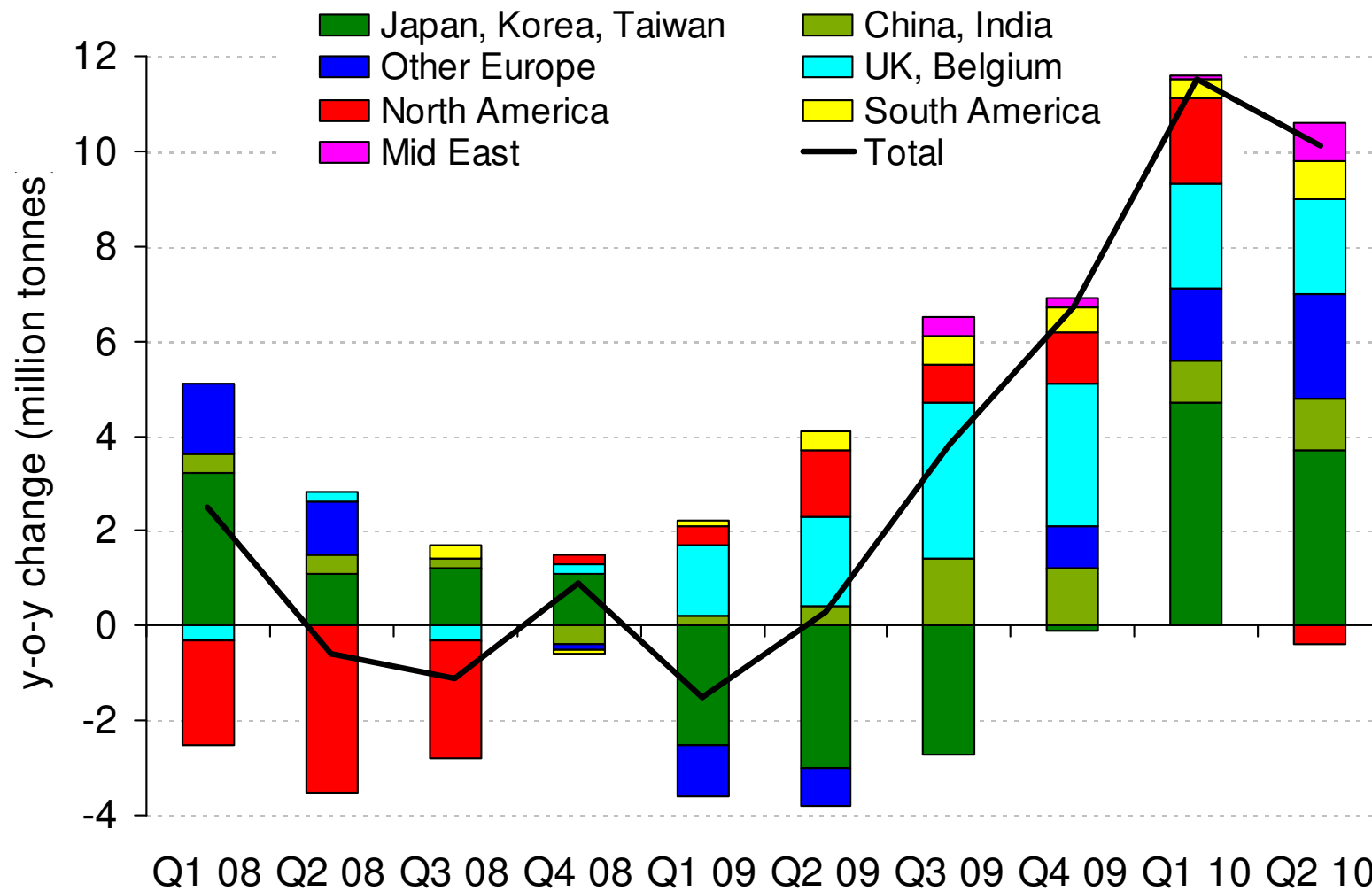
Source: Various national sources

Liquefaction capacity additions 1Q 09 – 4Q 12



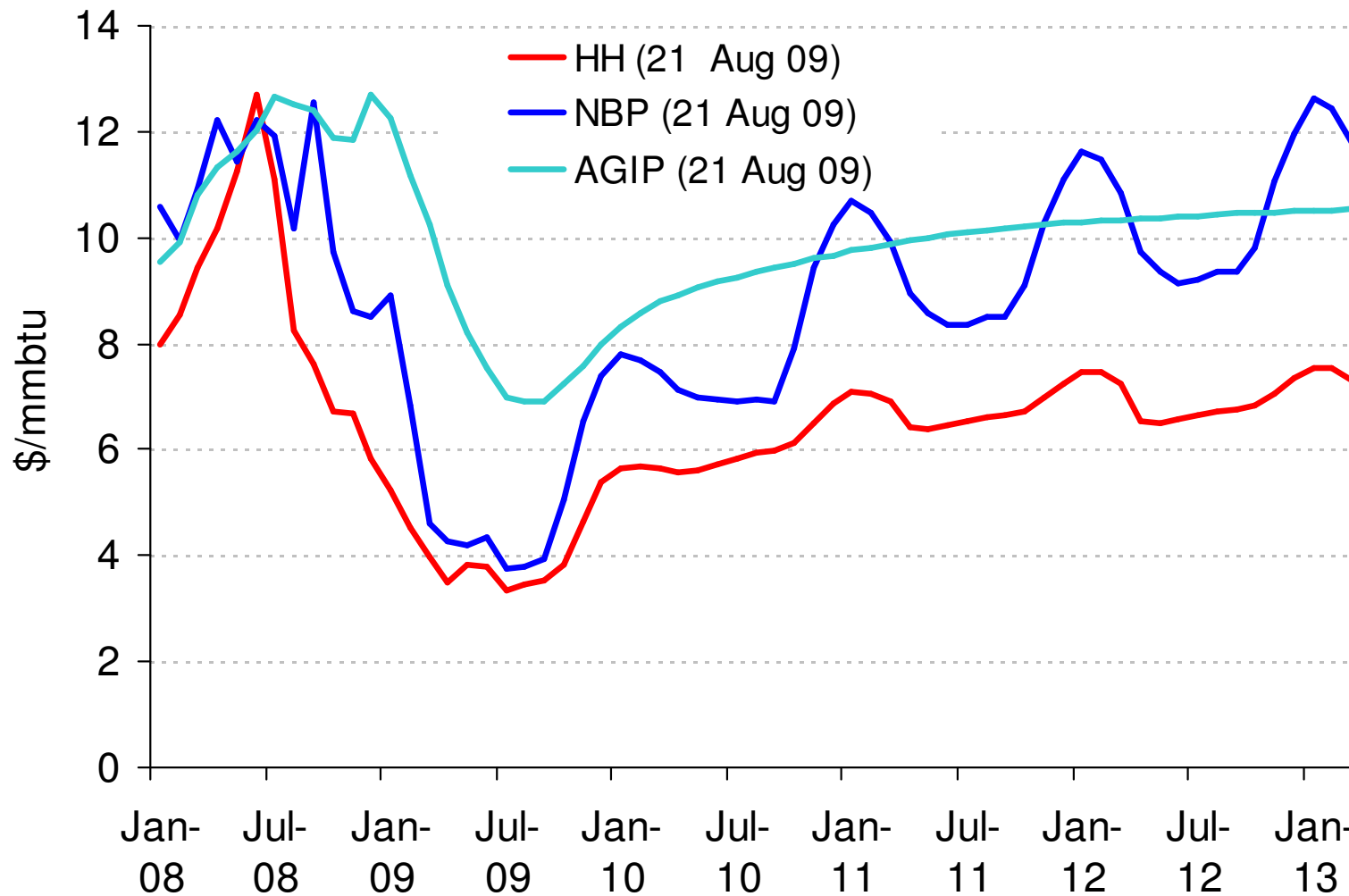
Source: project announcements

Growth in LNG supply coincided with end of recession. Initial surge absorbed by liquid markets but contract markets taking more LNG in 2010



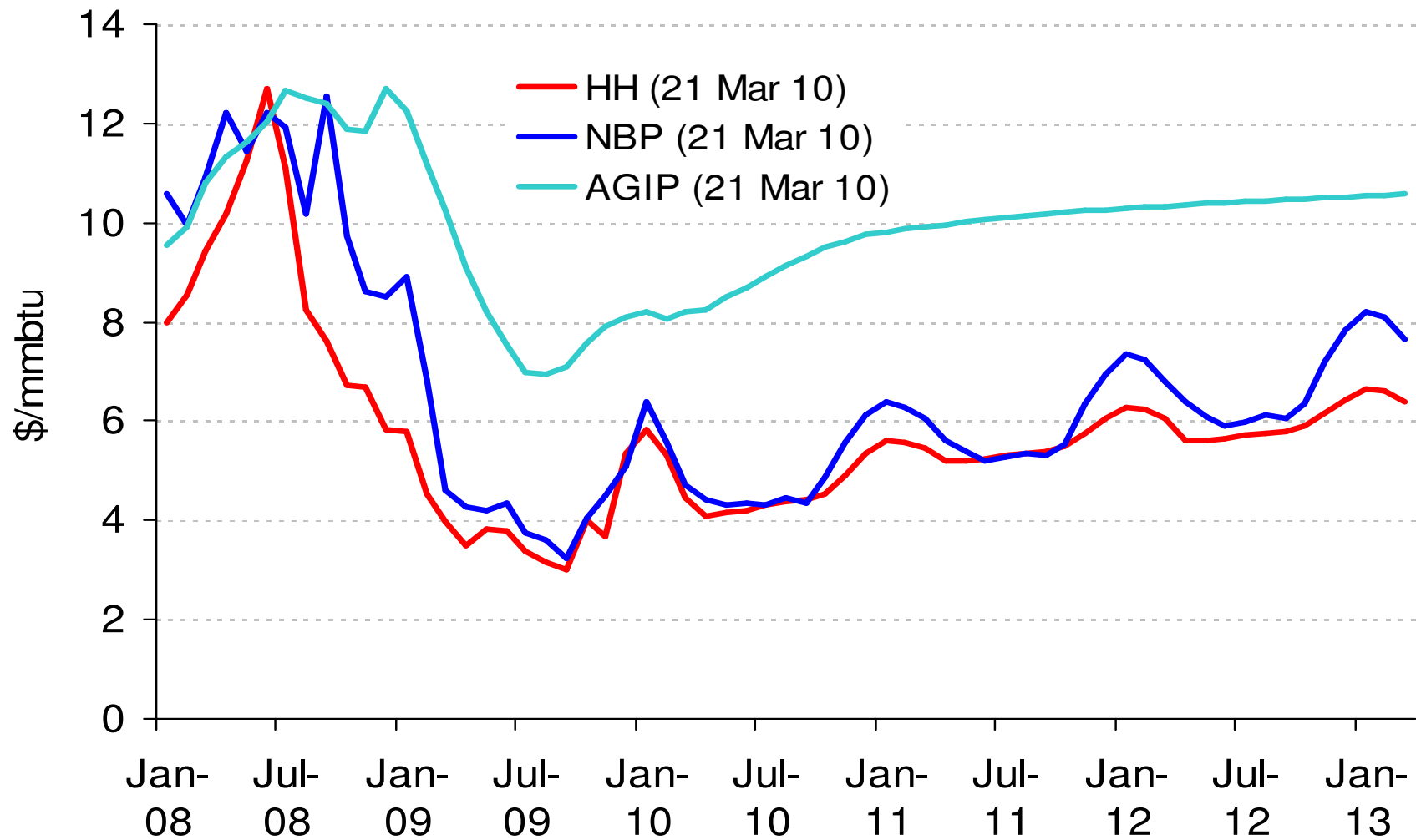
Source: Waterborne Report

A year ago, futures market was signalling return to historic NBP-AGIP relationship by winter 2010/11, with substantial premium to Henry Hub



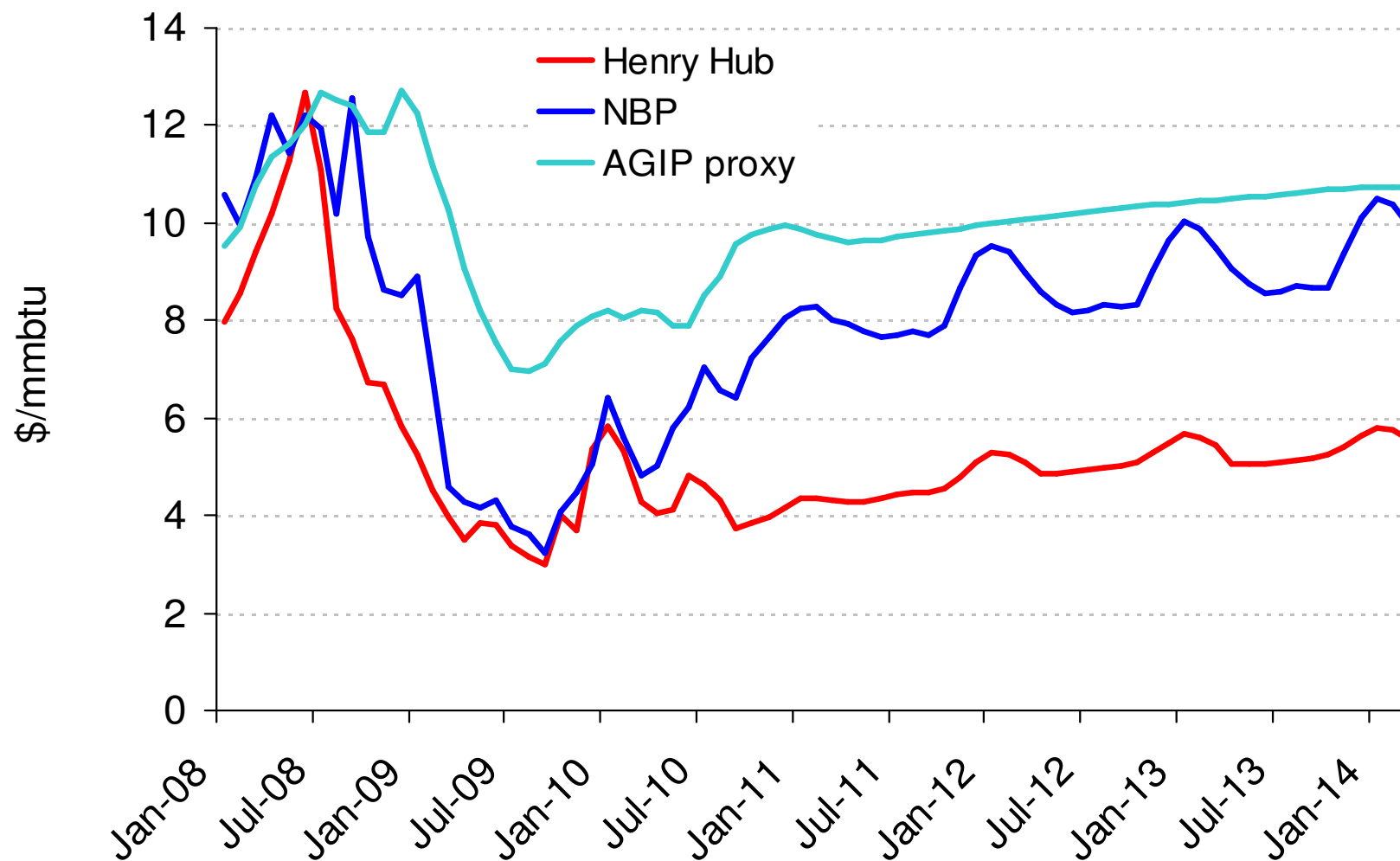
Source: Platts, BP analysis

BY March 2010, futures market was signalling protracted over-supply and close NBP/Henry Hub relationship



Source: Platts

Futures market now signalling a steady process of market re-balancing



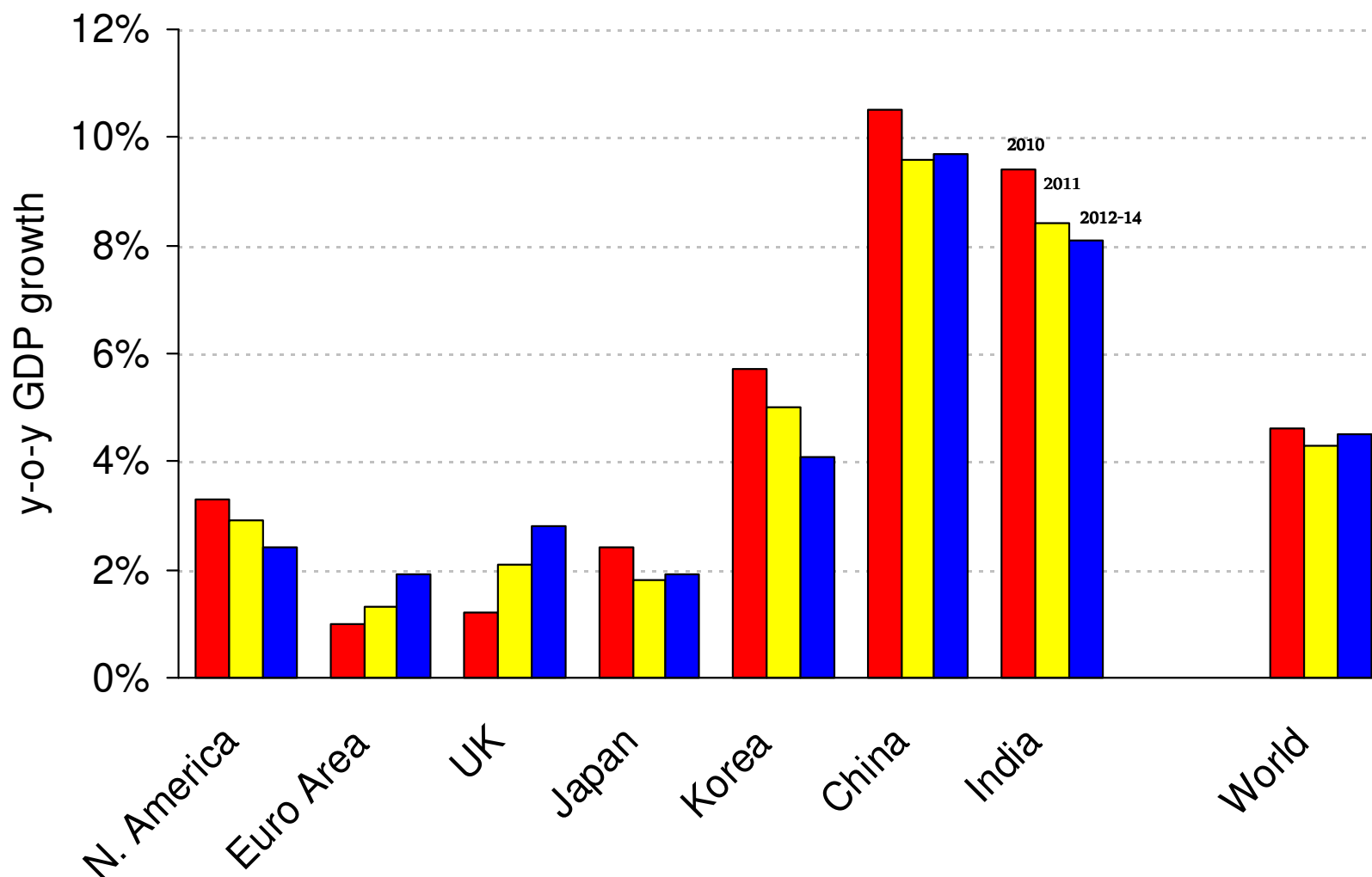
Near Term Market Outlook: Drivers



Multiple moving parts, all highly uncertain

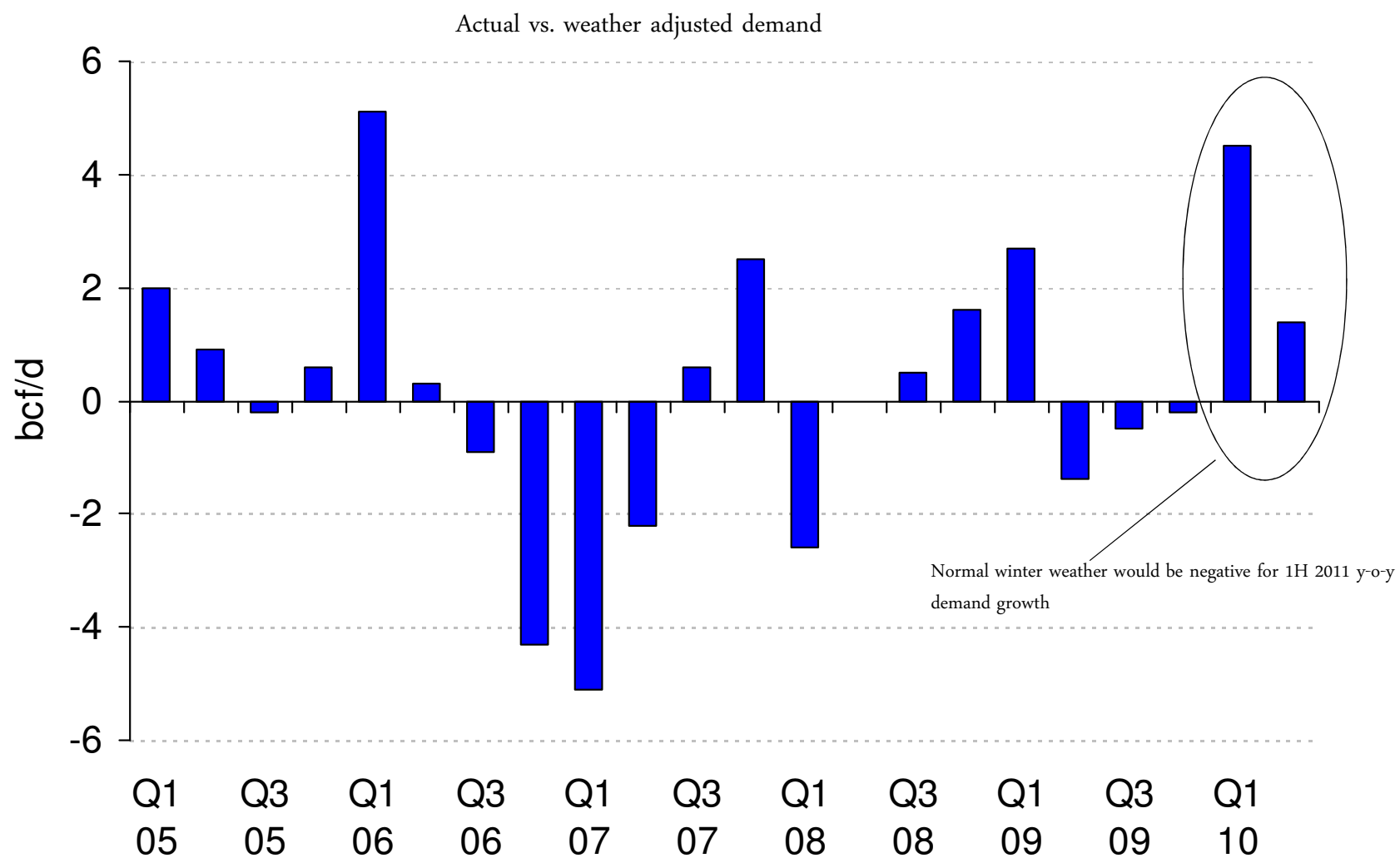
- Economic cycle
- Weather
- Asian nuclear
- European import contract flexibility
- Demand/price responsiveness of European gas production
- LNG plant commissioning delays
- Price responsiveness of US supply
- LNG plant operating performance
-and many more

Having returned close to trend growth in 2010, the world economy is forecast to grow at a similar rate from 2011 to 2014



Source: IMF

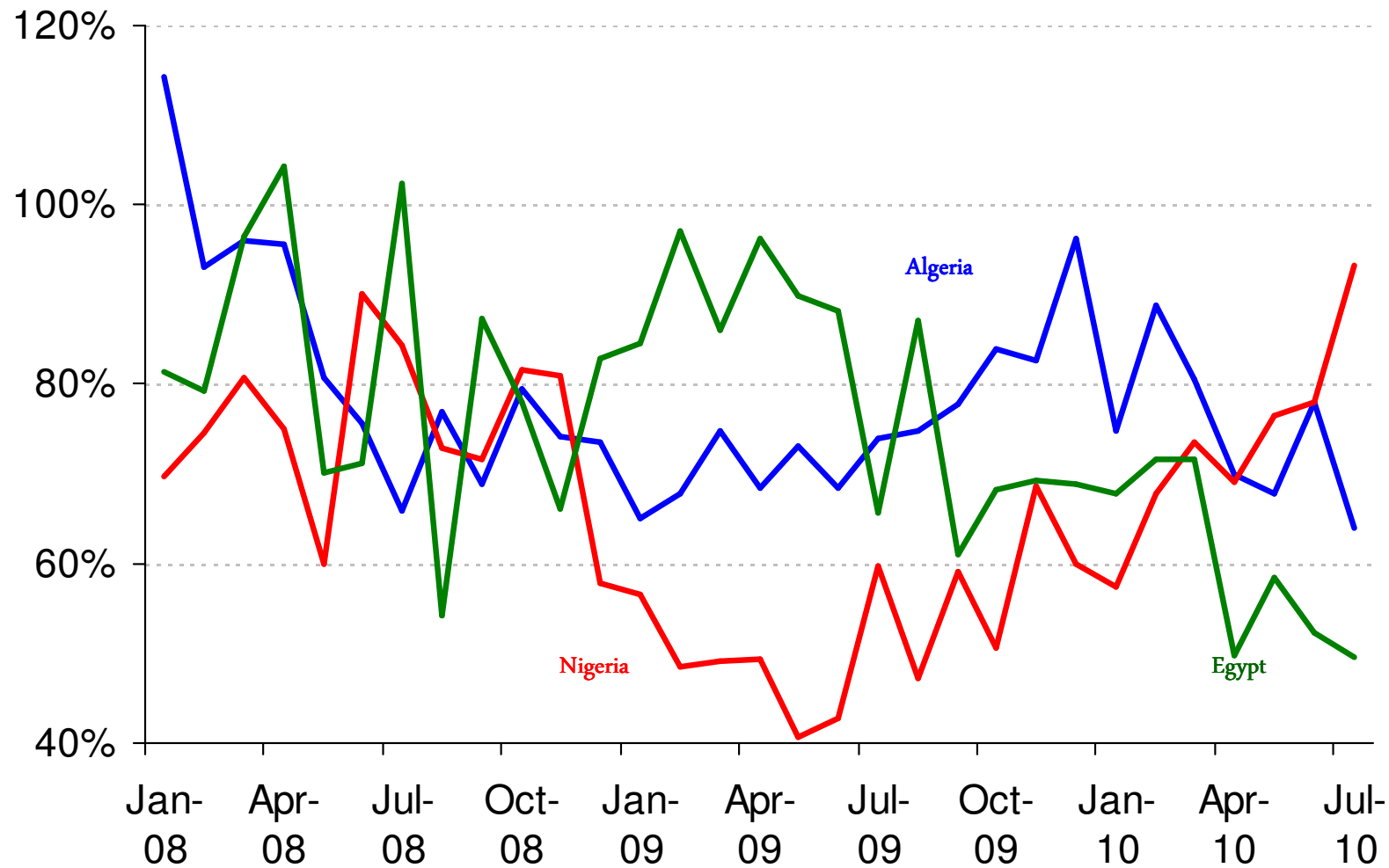
Weather impact on European* gas demand



* Big 6 consumers (UK, Germany, Italy, France, Netherlands & Spain)

Source: BP analysis

LNG project operating rates in some countries are very unstable

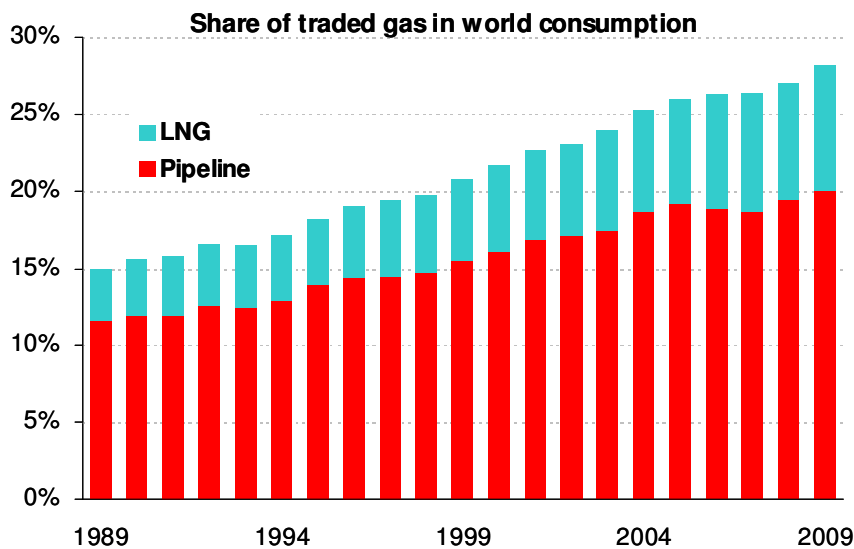
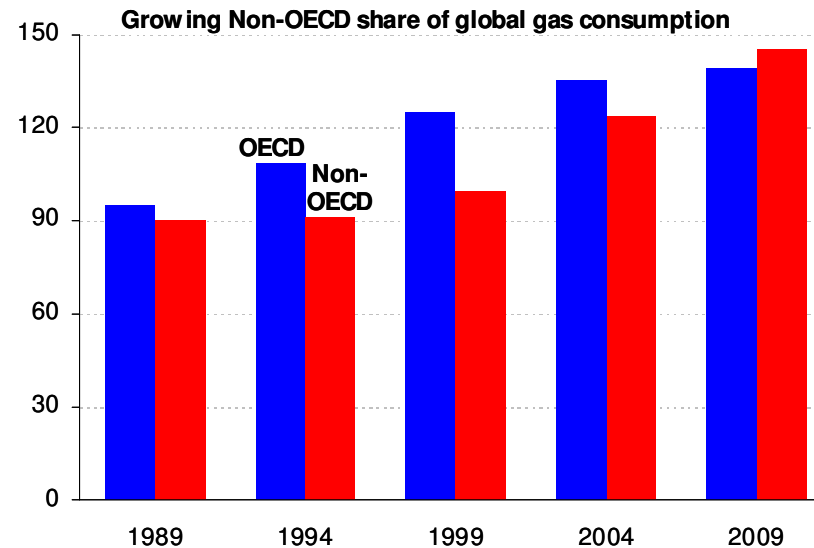
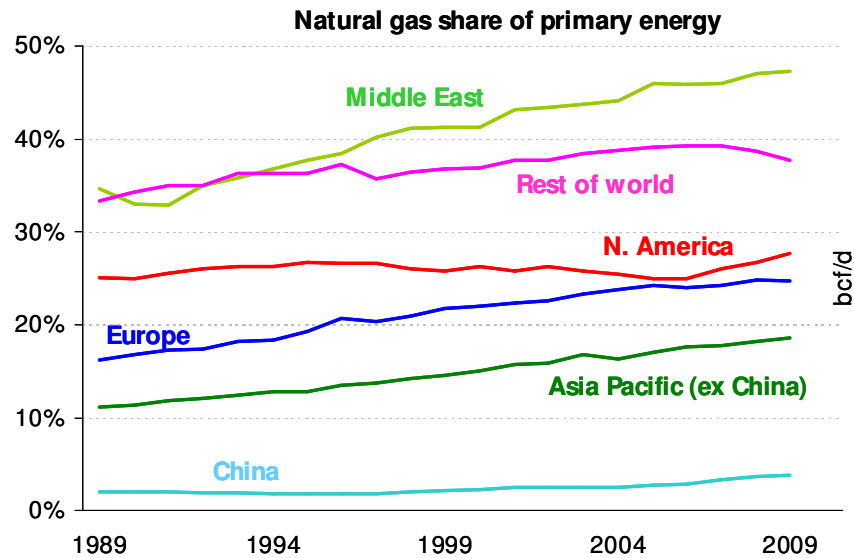


Source: Waterborne Report

Medium Term Outlook

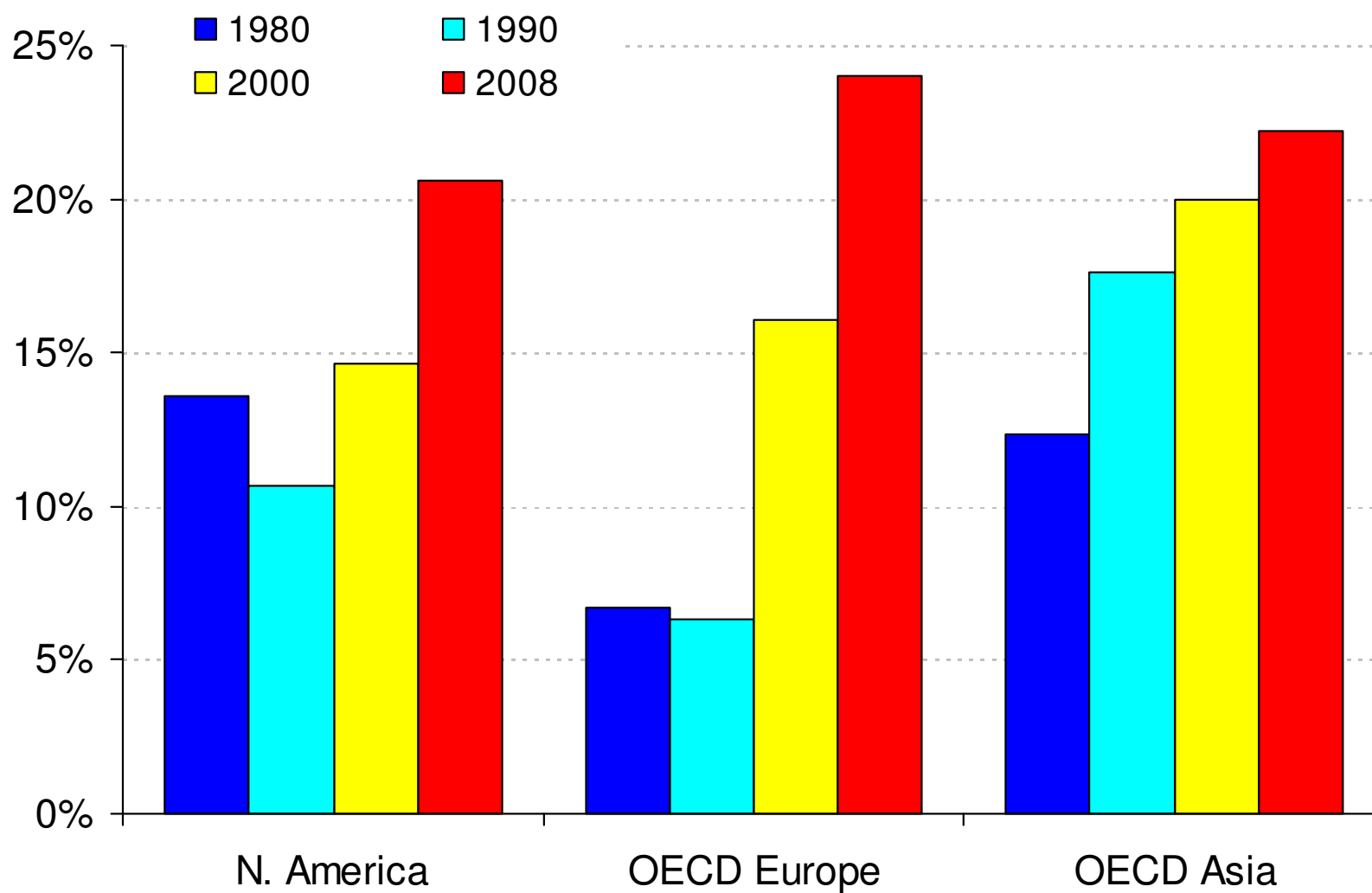


Historically, the gas market has been characterised by some enduring trends



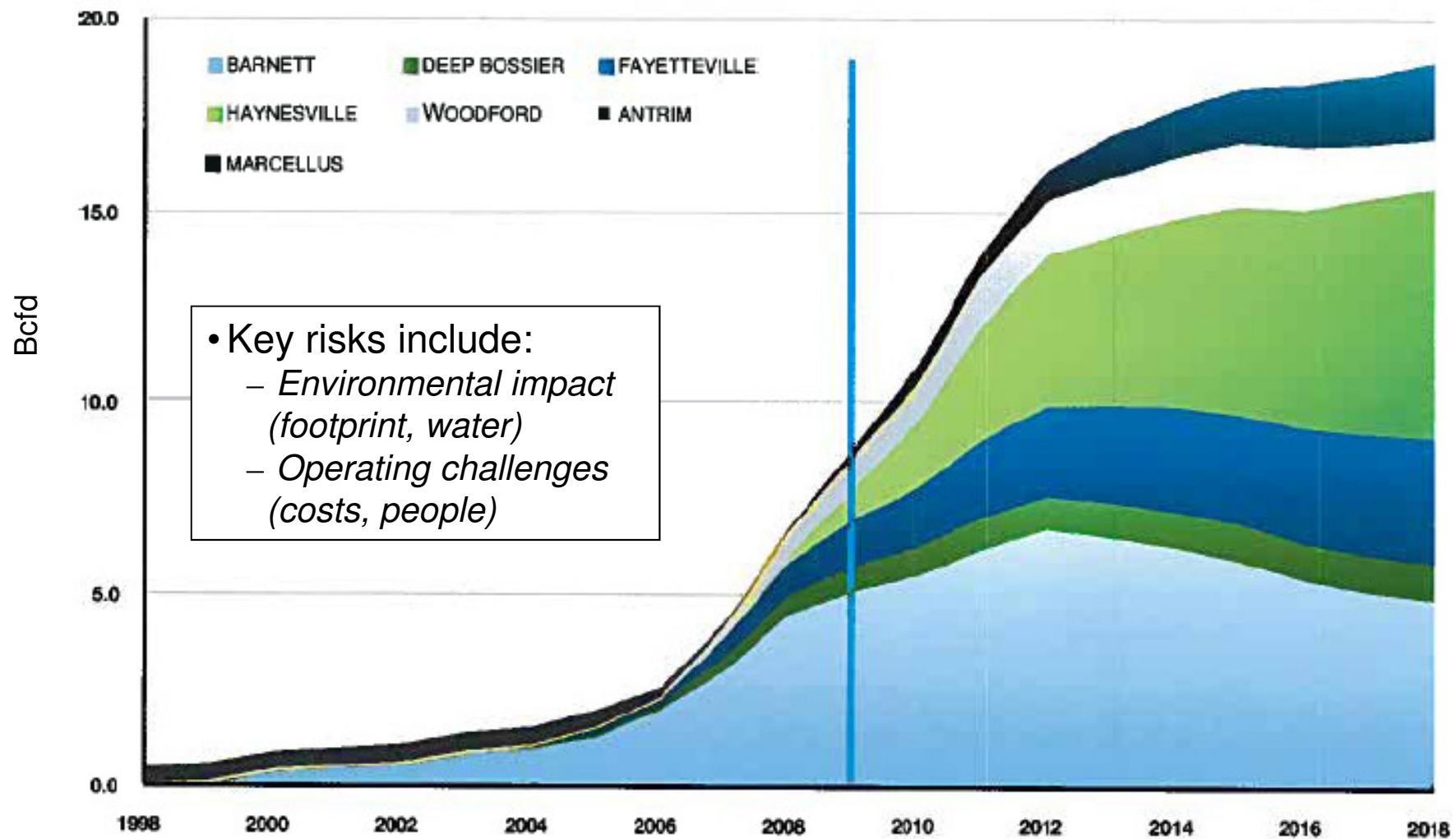
- Trend 1: gas gaining energy market share in all regions
- Trend 2: energy/gas demand growth fastest in Non-OECD
- Trend 3: traded gas growing historically at 2-3 x rate of overall gas consumption

Natural gas share of power generation increasing across the OECD



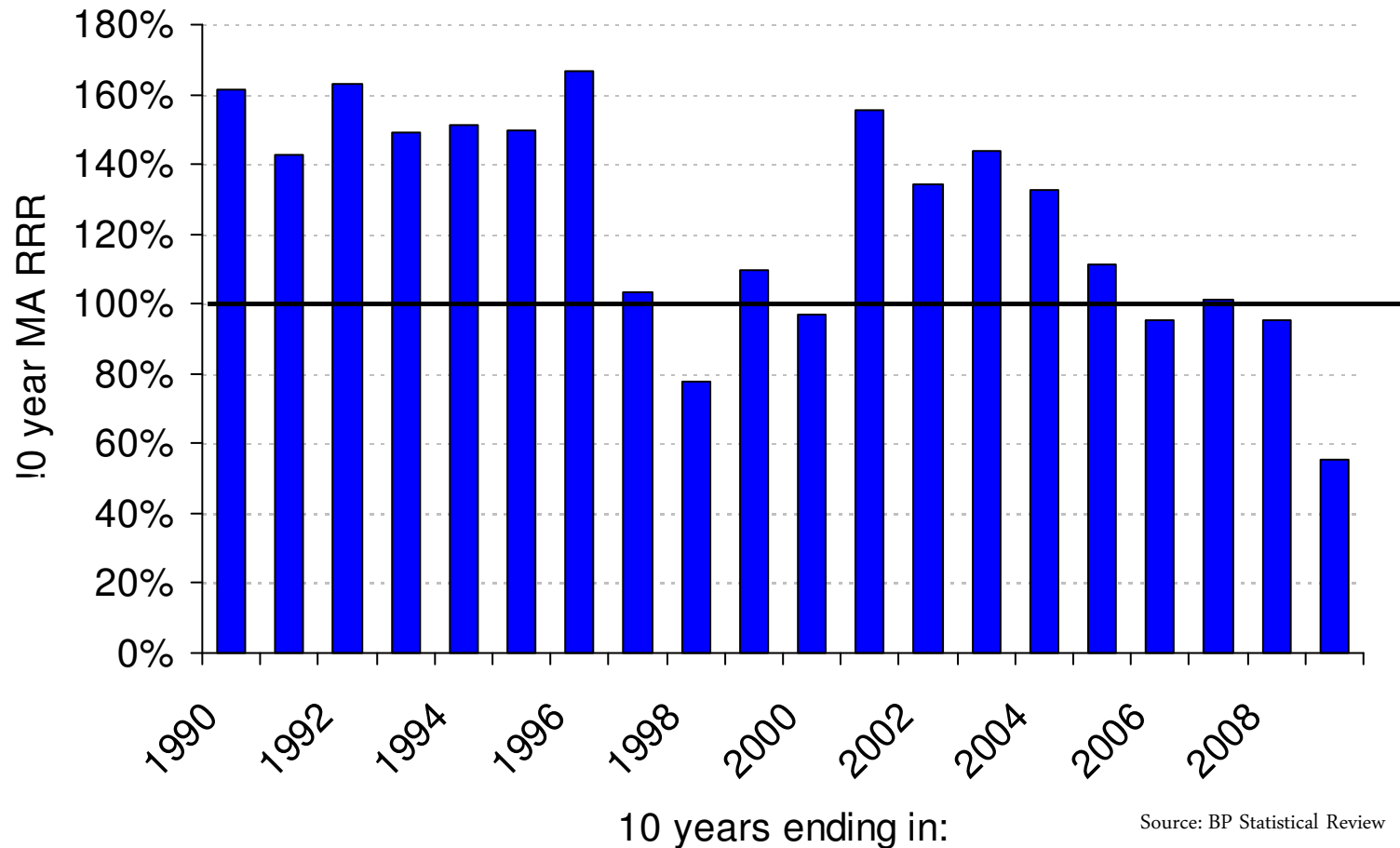
Source: IEA

US shale gas production growth expected to continue for foreseeable future



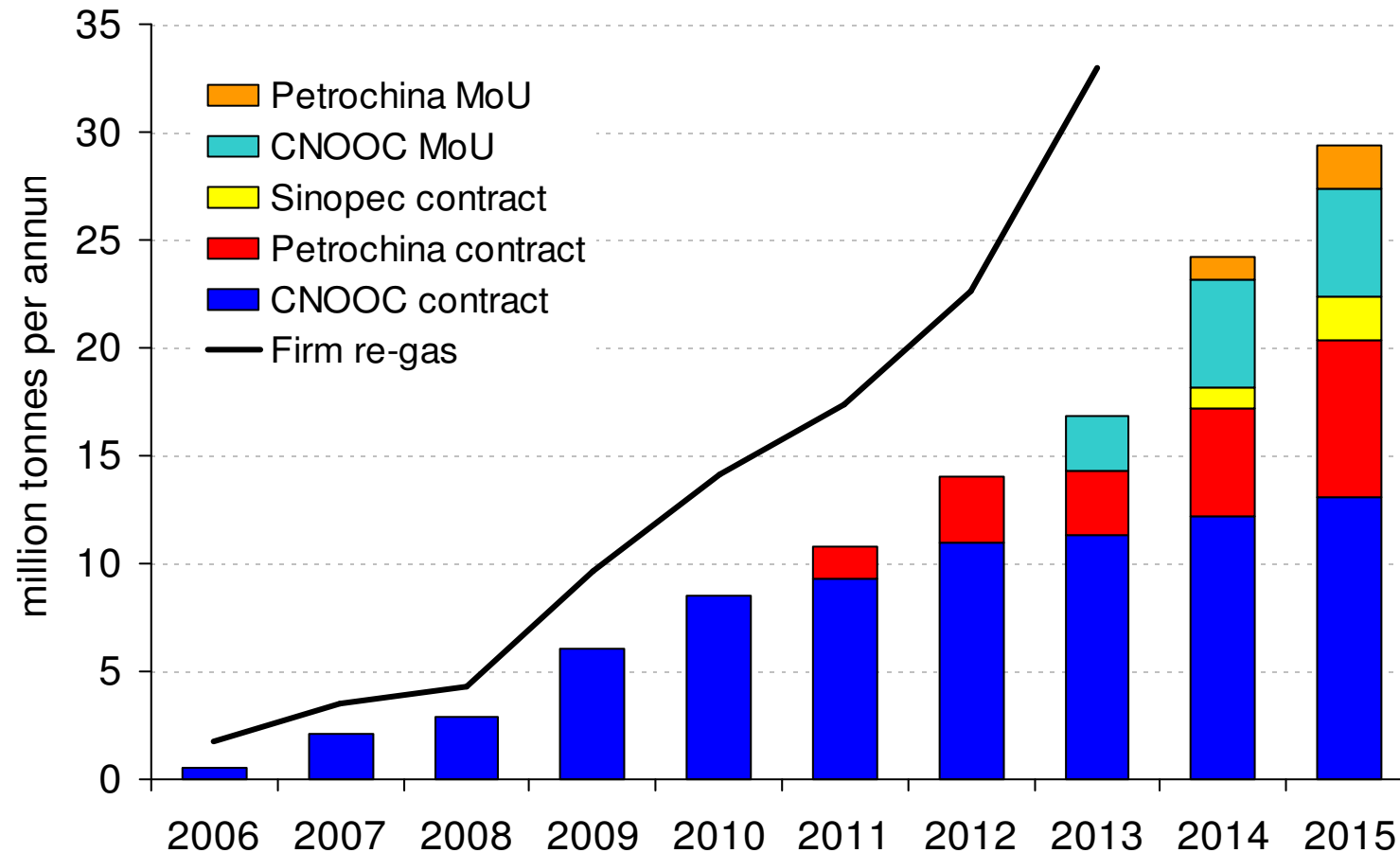
Source: America's Natural Gas Alliance, Tristone Capital

10 year moving average gas reserves replacement rate for Norway + Netherlands + UK + Denmark



- Reserves replacement rate of 100% implies flat production at a fixed reserves to production ratio
- Possible to increase production at reserves replacement rate below 100% by squeezing R/P ratio but not sustainable long term and leading to steeper decline once past peak (UK experience)
- Aggregate production for these four countries peaked in 2004 and has since declined by 7% (12% excluding Groningen/Troll production)

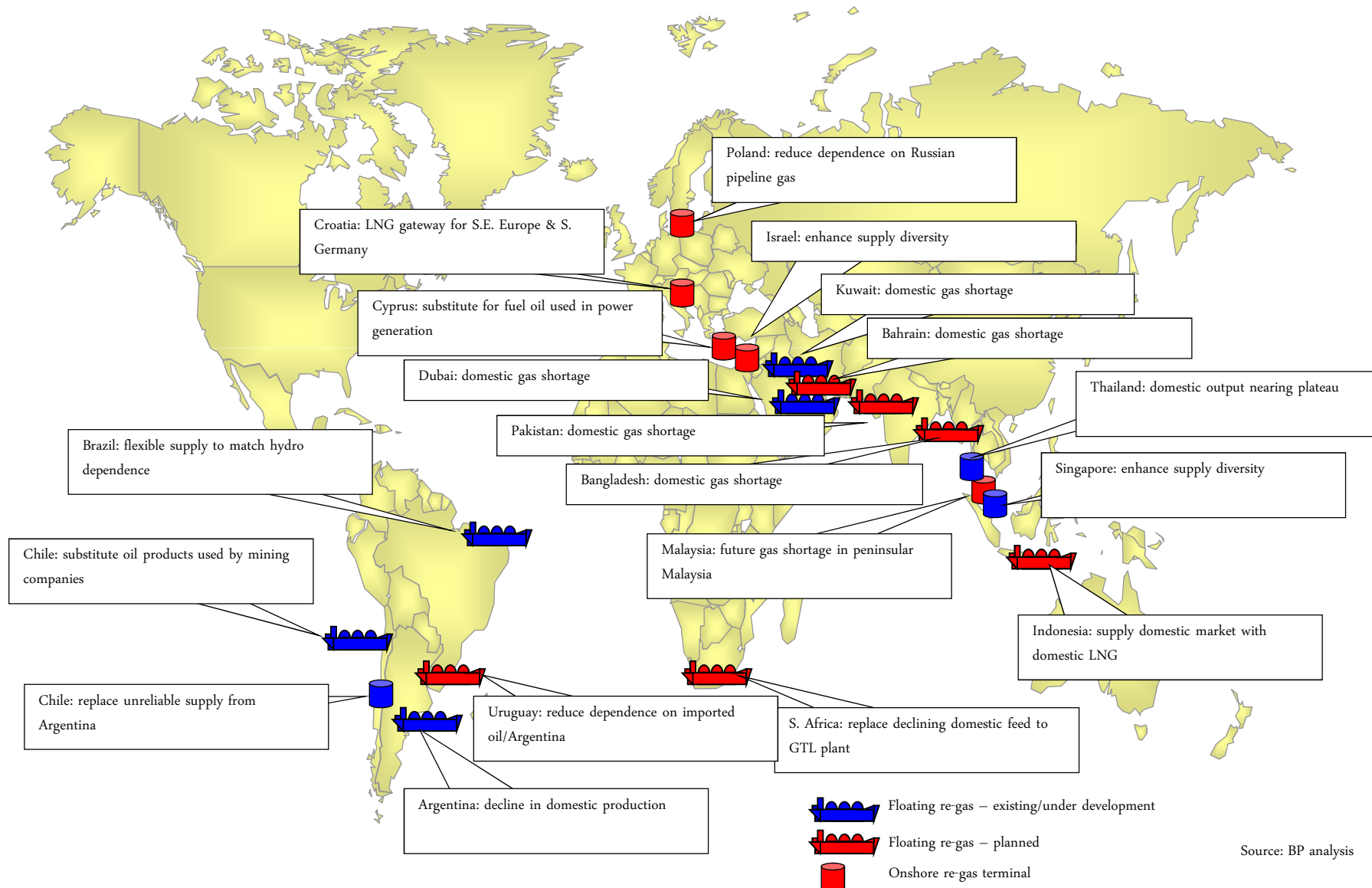
Growth in Chinese LNG imports underpinned by contract volumes and firm re-gas capacity through 2015



Source: Wood Mackenzie

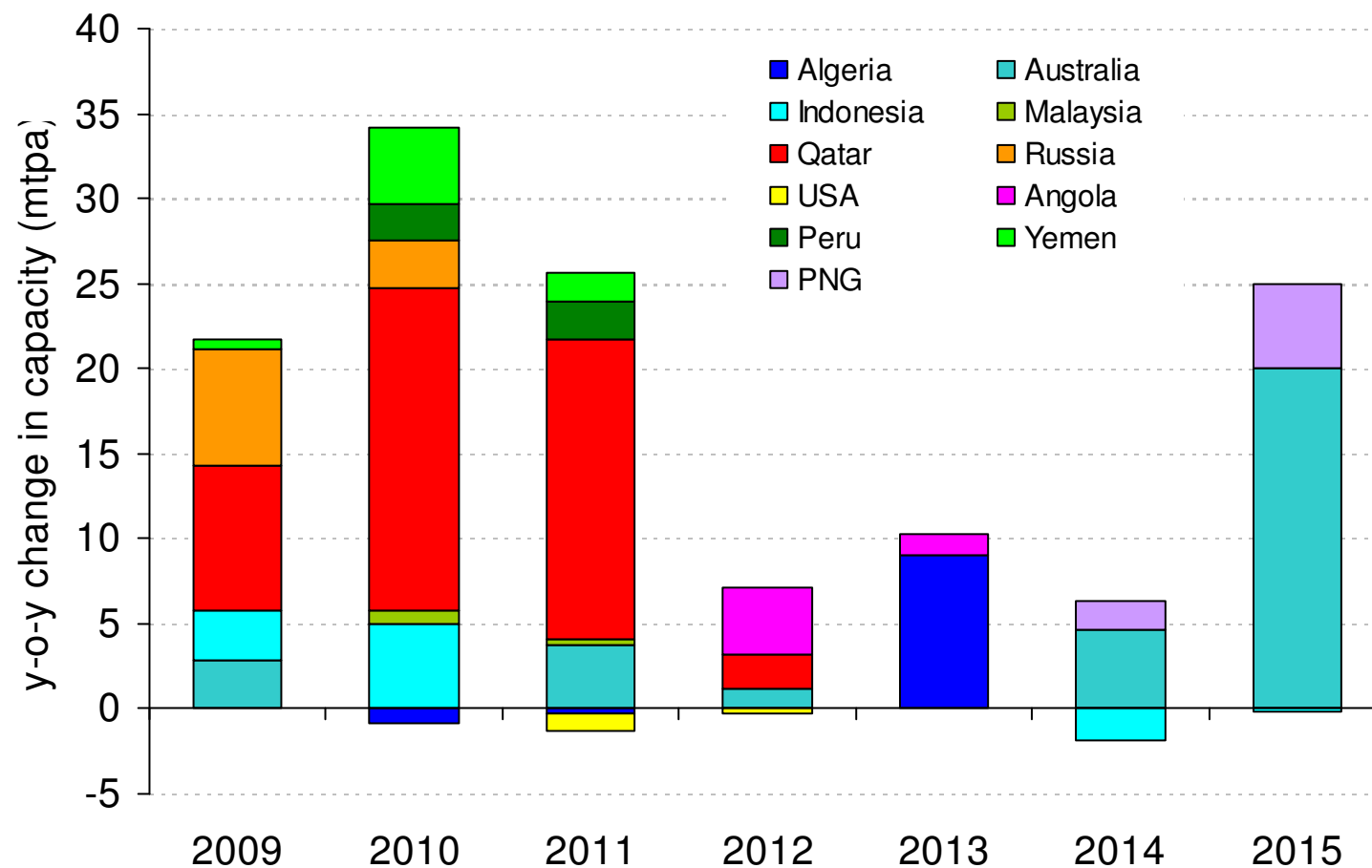
- Pricing issues remain with Qatari MoUs but assume eventual compromise
- Nine re-gas terminals existing or under construction, all with expansion potential – scope to roughly double capacity at existing sites

Emerging LNG markets: responding to local supply shortages and taking advantage of low cost re-gas



Source: BP analysis

LNG capacity additions (adjusted for month of start-up) fall sharply from 2012-14, helping to re-balance the market



- Last of Qatari mega-trains now scheduled to come on line in 1Q 2011 (Qatargas 4)
- Hiatus in project development reflected in low capacity additions 2012-14
- New projects required 2014-15 with impetus coming from Asian demand

Source: project announcements

Conclusions



- Strong 1H 2010 gas demand recovery in major markets
 - but significant weather & fuel switching elements
- Delayed ramp-up in LNG supply and flexibility of European suppliers have limited impact of recession on prices outside N. America
- Near term outlook highly uncertain but expect medium term market re-balancing
- Contrasting supply trends dictate future LNG requirements
 - shale gas underpins North American self-sufficiency
 - European production set for steady decline
 - emergence of new LNG importers in Asia and elsewhere