

International Gas Markets & GB Gas Supply Security Policy

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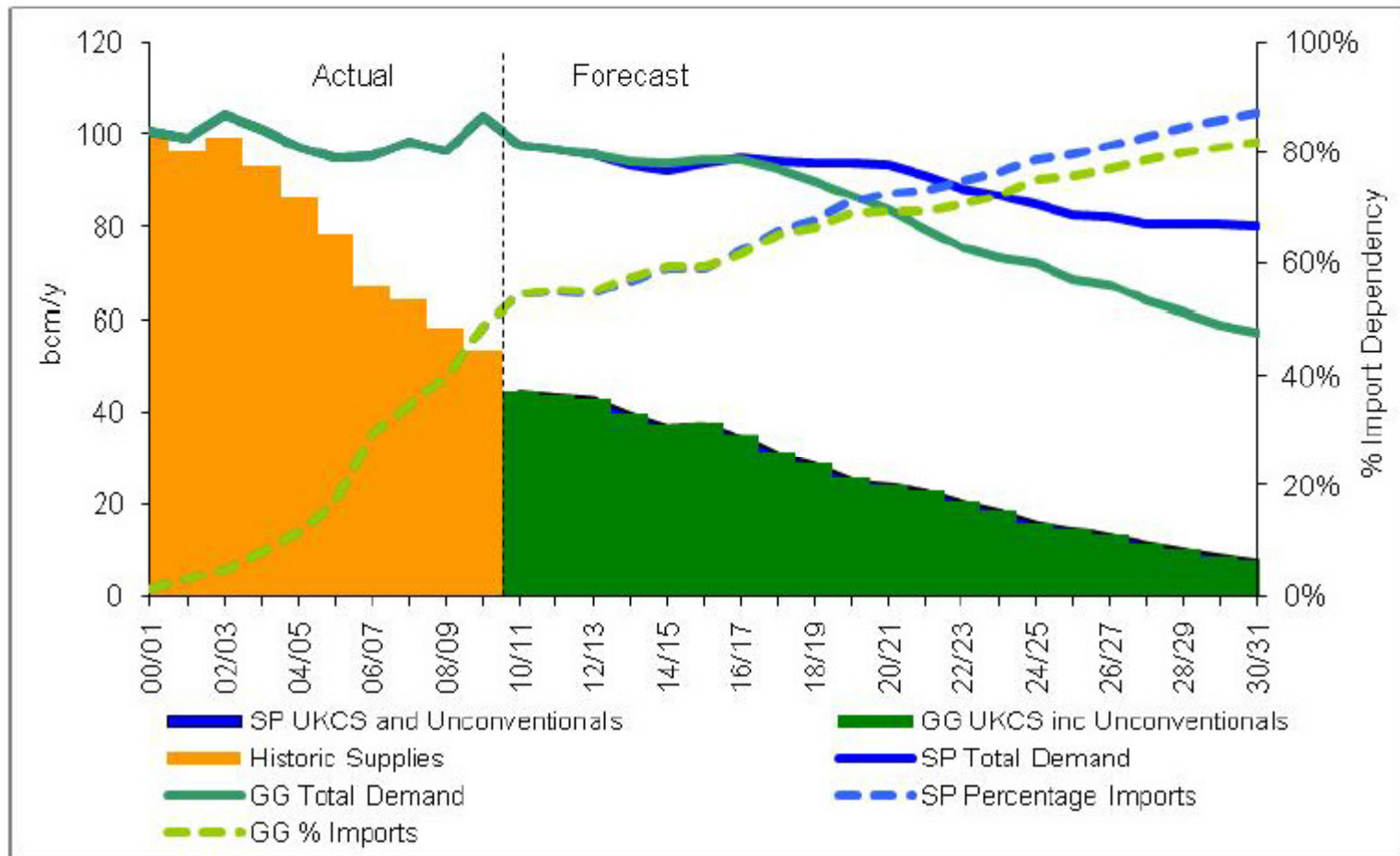
Plan

- I. UK Gas Security – Policy & Politics

- II. UK, EU and Global Gas Markets

I – UK Gas Security: Politics & Policy

UK debate is driven by transition to imports



Source: National Grid

The end of the UK exception

- “Securitisation” of energy policy
 - Imports perceived as a national security issue
- Governments are risk-averse
 - The market clearing price that Charles Hendry & Chris Huhne tolerate is way below the value of lost load
 - Political cost of emergencies is concentrated on whoever is in power at the time
 - Economic benefits of efficient energy security policy are spread over time and across the economy
 - Government always tempted to over-provide security -- *A key reason why EU Regulation is not needed*
- Economists outraged – but actually UK debate on gas security only becomes normal

The UK debate since 2005

- Price spikes of 2005-06 triggered a debate
 - “UK obsession with gas supply security” (NERA)
 - “Gas security: a fixture of the imagination” (P Davies, BP)
- Wicks report (2009)
 - **An import-dependent UK needs a new policy**
 - Storage mandate? Export ban? Special envoy??
 - Governance of network codes: industry must not be allowed to block new SoS arrangements
- Ofgem’s Project Discovery (2009)
 - There is no capacity problem to 2020
 - But UK security rests on somewhat thin LNG market
 - A long, cold winter might test the system

The UK debate (2)

- Poyry analysis for DECC (2010)
 - Capacity above peak demand in all scenarios (to 2025)
 - Very unlikely events lead to small volume of lost demand
 - Almost all policy options have negative net benefits
- DECC Policy Statement (2010) – based on Poyry
 - There is no (serious) problem to be solved
 - Current policies and arrangements are working
 - *Does it reflect the view of current ministers?*
- Ofgem v. Poyry – less difference than meets the eye?
 - **UK security relies on ability to attract LNG**
 - At what price? Is the market large and liquid enough?

The UK debate (3)

Two ways of looking at it

- If we allow the price to go up we will get gas
 - Price spikes are a solution
- We do not know how high we may have to pay, and high prices have economic (and political) implications
 - Price spikes are an energy security problem

UK debate (4) – Ofgem’s SCR (2011)

- Strengthen the **incentive-based** SoS policy
 - Focused on emergency situations
 - More dynamic emergency cash-out prices
 - Use of an estimate of VoLL for compensating involuntary interruptions
- But prepared to move to an **obligations-based** policy
 - “Technology neutral” obligations
 - Facilitate demand-side response
 - Storage obligation
- Draft decisions (Nov 2011)
 - **Preferred option includes further intervention**
 - One more report by May 2012...

EU regulation & UK policy

- Infrastructure standard: the UK complies
 - cf. Project Discovery; Poyry report; now “Risk Assessment”
- Supply standard

8(1) -- “The Competent Authority shall require the natural gas undertakings (...) **to take measures to ensure gas supply to the protected customers of the Member State (...)**”

 - Large degree of member state discretion, between:
 - “Why would companies not always be able to serve their customers – *at the market price?*” (Provided the S.O. can cope with overall demand.)
 - “We have a clear EU mandate for supplier obligations, including storage mandate”

DECC's Risk Assessment under EU Reg.

Supply standard

5.23. The cold spell analysis in section 5 demonstrates that the UK comfortably achieves the supply standard requirements to ensure gas supply to protected customers in the circumstances set out in Article 8 of the Regulation.

5.24. In practice, the UK achieves the requirements of the supply standard through sharp commercial incentives on shippers/suppliers to provide sufficient gas to meet the needs of all their firm customers²⁷ on any gas day and under any weather conditions or other circumstances.²⁸ These incentives are being sharpened further through the Ofgem Gas Security of Supply Significant Code Review.

5.25. DECC are, however, considering whether the UK needs to take any further action in order to formalise the terms of the Supply Standard within the UK arrangements.

- “Formalise the terms”? -- *EU Regulation will be used as excuse to move away from market-based security of supply*

Source: DECC, Risk assessment for the purpose of EU Regulation 994/2010 on security of gas supply, November 2011, p. 36

Emulating continental Europe?

- Hungarian memo after January 2009 crisis
 - “We addressed the crisis while ensuring that the price did not move”...
 - Hungary now has a large ‘strategic storage’ to shield the country from the gas market
 - **Is it what UK politicians dream of?**
- Germany, France, Italy
 - Large regulated storage is a key reason why the market does not take off – *you don’t need a market!*
 - **Is it what Brussels want to incentivise?**

Conclusions for Part I

- What Ofgem says it worry about is a short-term issue – nothing to do with “longer term security” – namely:
 - *What price would GB have to pay to attract the gas it needs in a tight market?*
- Reforming cash-out prices? Letting prices manage scarcity is certainly a good idea
- But the debate about “further intervention” is biased
 - *Emergency is highly unlikely – Not even 2005-6 winter*
 - *Since 2005, 70 bcma more import capacity and 75% growth in global LNG trade*
 - *Poyry (2010, for DECC) CBA rejected nearly all interventions*
- **Real driver: this government wants more storage!**
- And if Brussels can help re-regulate...

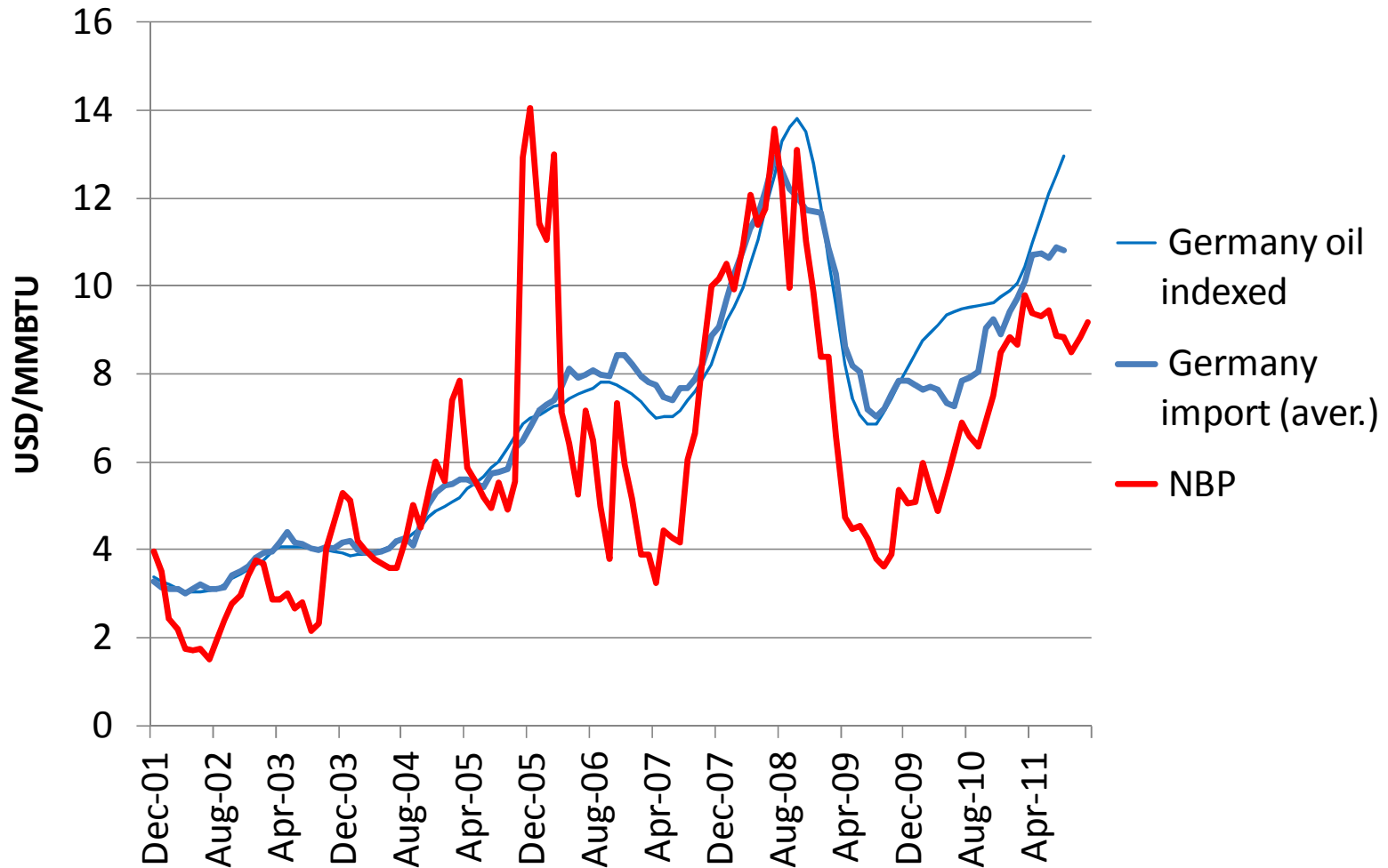
II – UK, EU and Global Gas Markets

EU, UK and global gas markets

- Continental Europe is moving away from oil-indexation
- NW Europe becomes more like GB – though pan-European market integration would need a real market for gas transport
- NBP / NW European prices will be pulled towards Asian prices

- North America will be brought back into the global market through exports – re-globalisation of gas
- Will non-conventional revolution go global?
- Will Asia move away from oil-indexation?

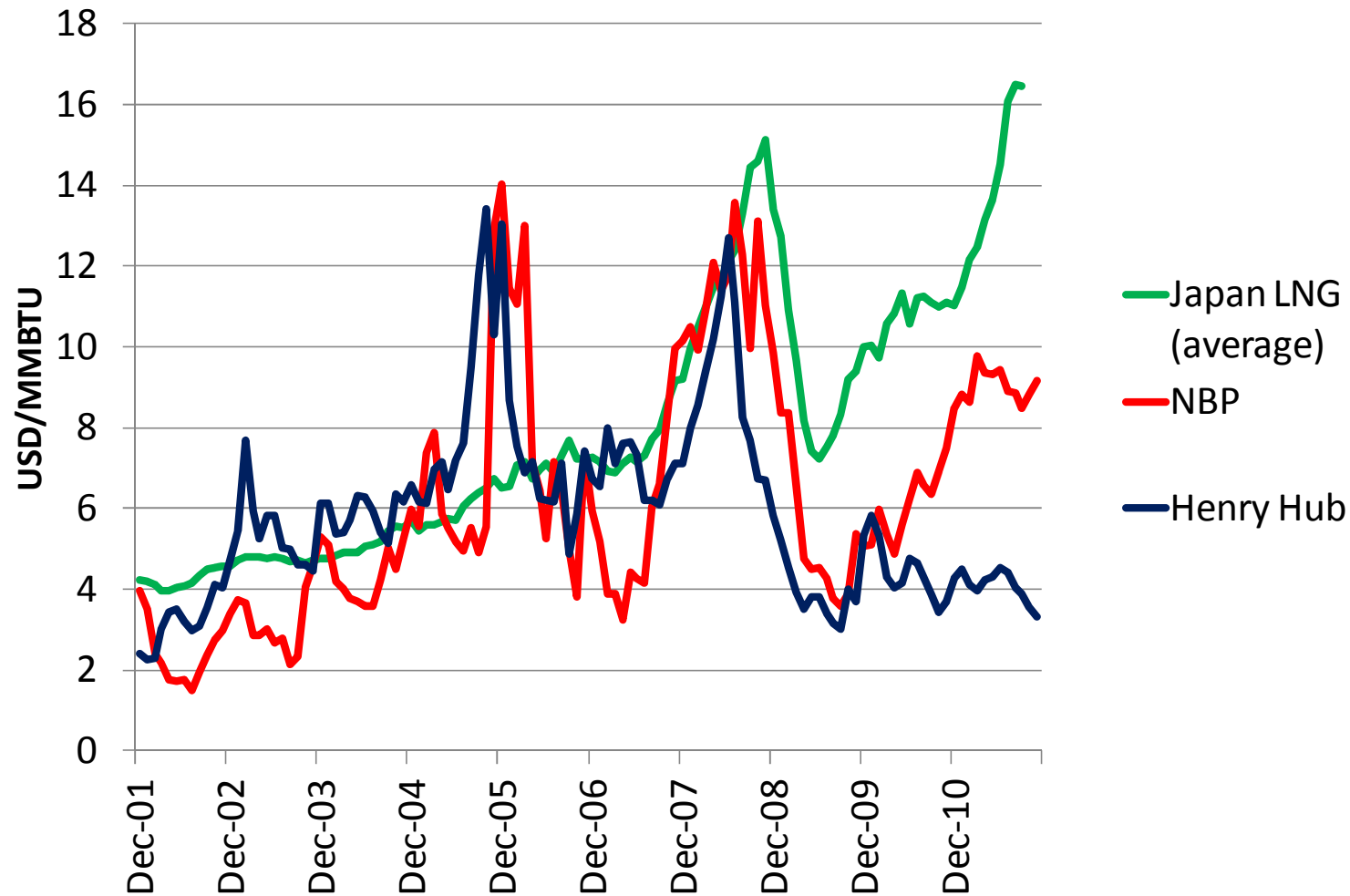
European de-indexation



Source: Bloomberg; Federal Ministry of Trade (Germany)

AGIP Proxy formula from H. Rogers (OIES)

De-globalisation – *huge arbitrage opp.*



Source: Bloomberg

US exports – BG deal with Cheniere

- 20/30 years; 115% of HH + \$2.25/mmbtu; 3.5 mtpa

Figure 2: US LNG export economics to Asia

Pricing element	Cost (\$/mmbtu)
Henry Hub Jan-15	\$5.40
15% + \$2.25	\$3.06
FOB Cost	\$8.46
Vessel charter	\$0.83
Fuel	\$1.06
Boiloff	\$0.16
Panama Canal crossing	\$0.07
Regasification terminal tariff	\$0.35
Delivered Cost	\$10.92
Japan LNG Contract (Forward curve)	\$13.02
Japan LNG Contract (DB forecast)	\$14.75

Source: Bloomberg Finance LP, Deutsche Bank

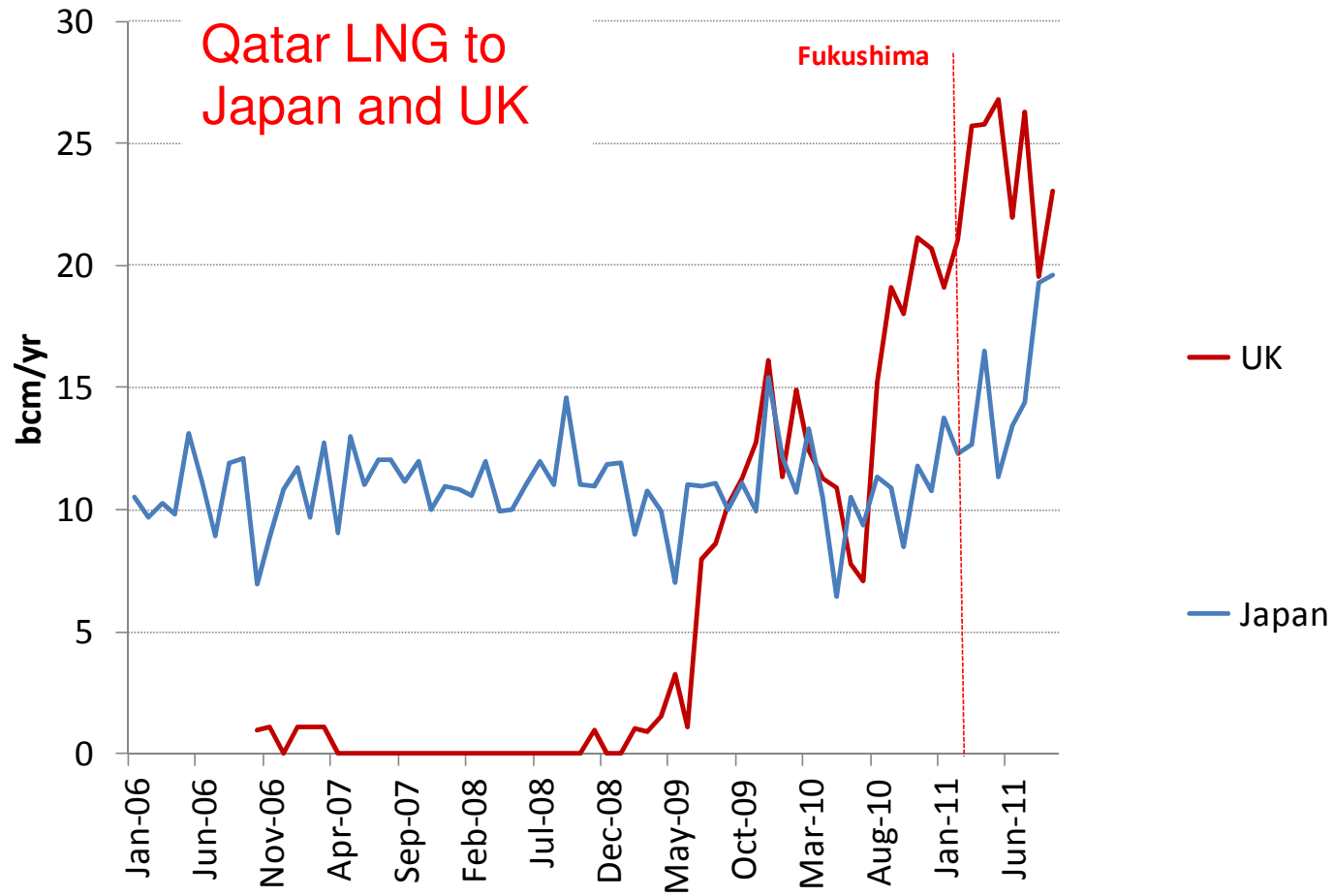
Figure 3: US LNG export economics to Europe

Pricing element	Cost (\$/mmbtu)
Henry Hub Jan-15	\$5.40
15% + \$2.25	\$3.06
FOB Cost	\$8.46
Vessel charter	\$0.35
Fuel	\$0.44
Boiloff	\$0.07
Regasification terminal tariff	\$0.35
Delivered Cost	\$9.67
NBP Cal-14 (Forward curve)	\$11.03
NBP Cal-14 (DB forecast)	\$15.00

Source: Bloomberg Finance LP, Deutsche Bank

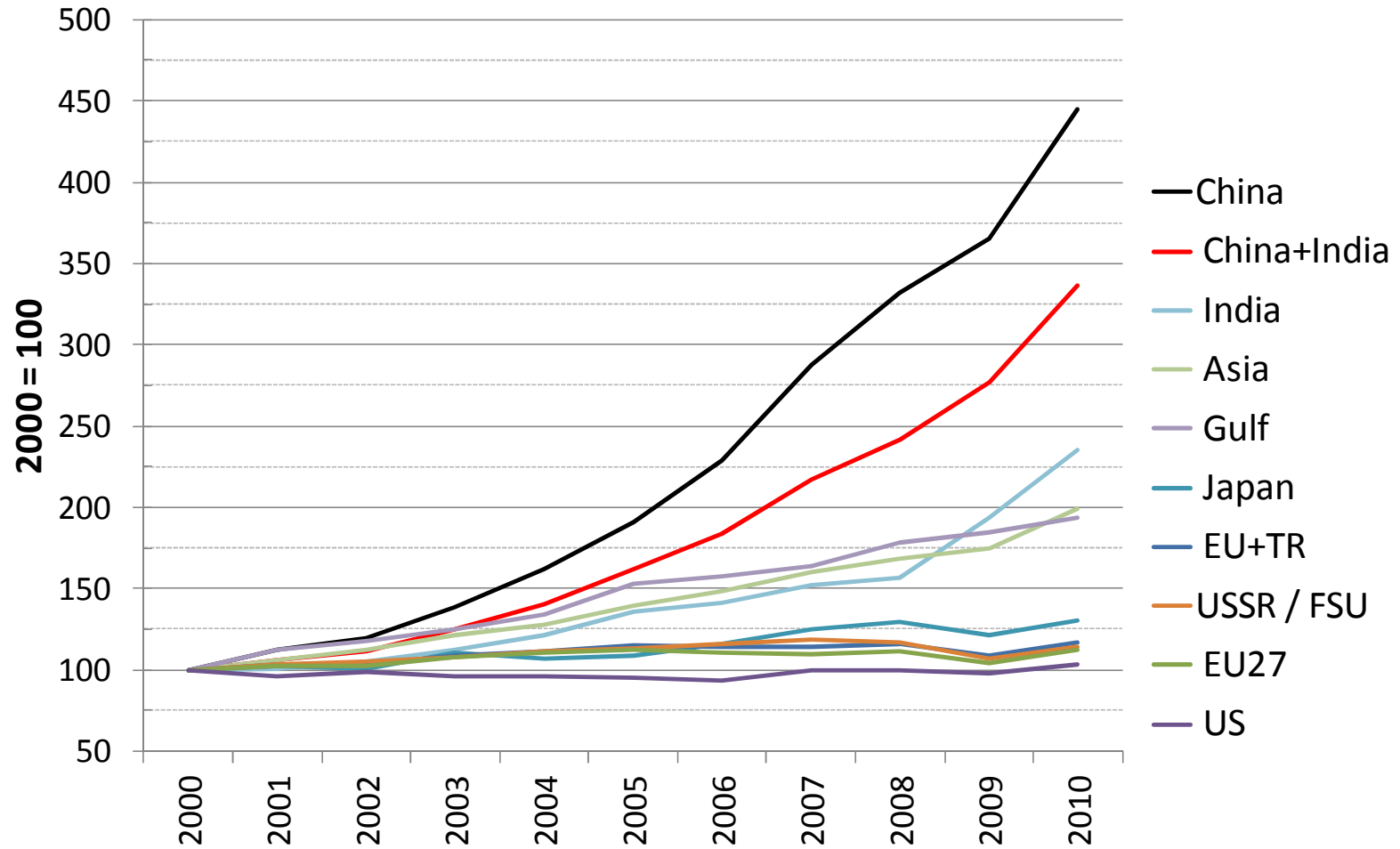
Source: Deutsche Bank

Europe v Asia: Fukushima...



Source: Poten Partners database

...but not only: Asian gas demand boom



Source: BP Statistical Review (2011)

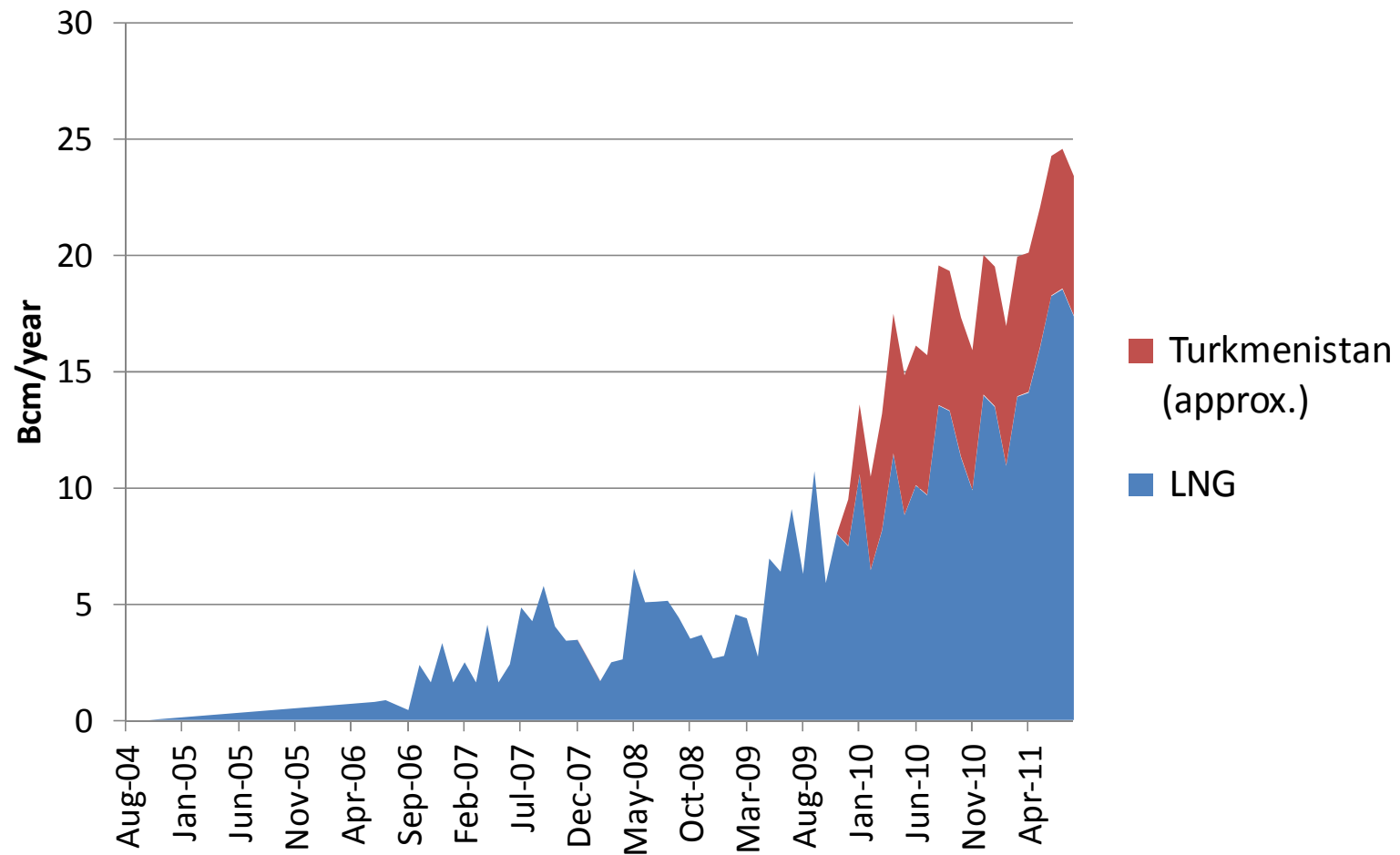
Asian imports rise fast

	Asian gas imports (gross)	% of world trade
1970	4 Mtoe	17%
1980	25 Mtoe	21%
1990	52 Mtoe	22%
2000	99 Mtoe	23%
2010	183 Mtoe	29%

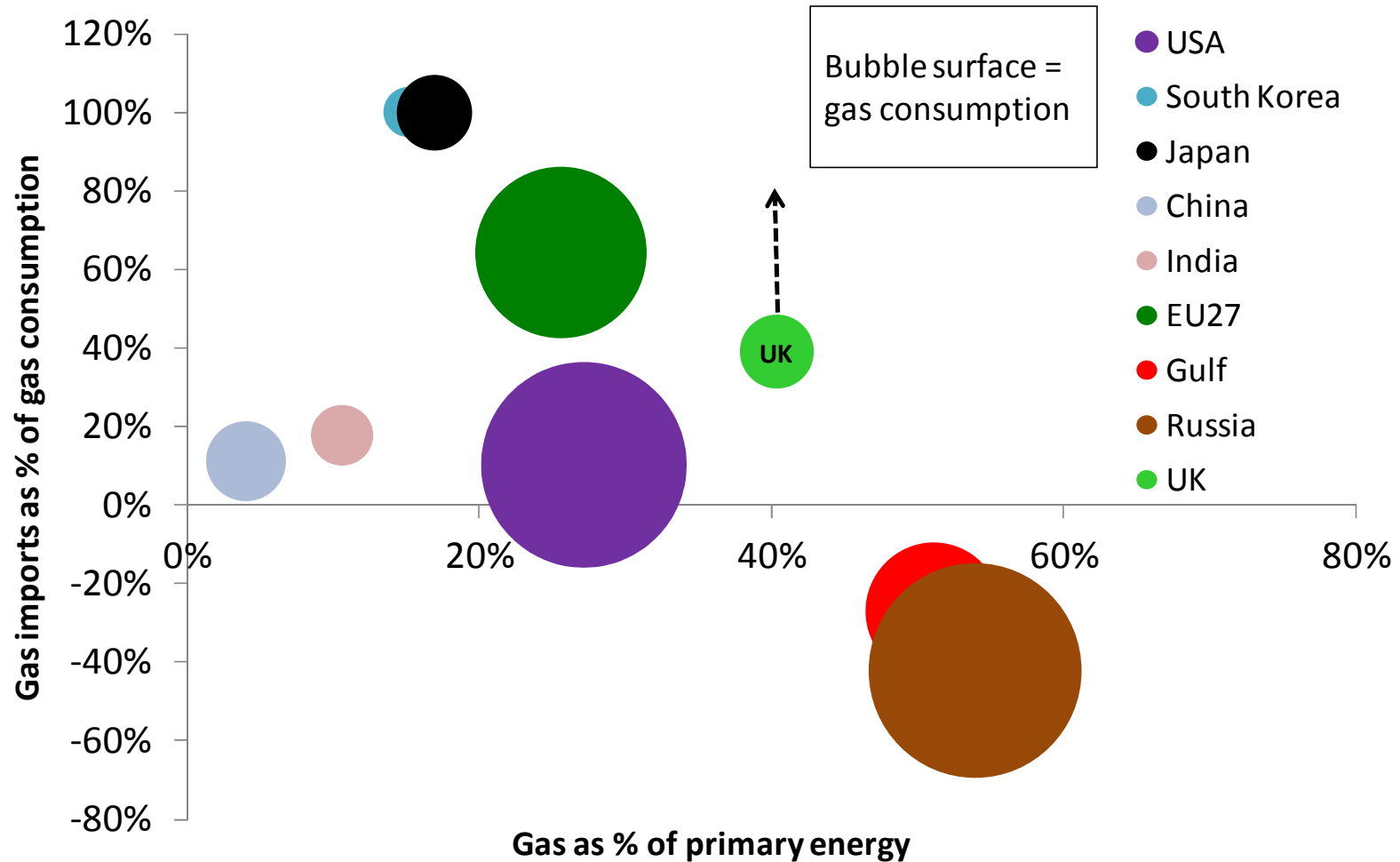
Excl. intra-FSU & intra-EU trade.

Source: BP Statistical Review

Chinese gas imports



'Gasification' & reliance on int'l markets



Figures for 2010

Source: BP Statistical Review (2011)

Conclusions

- European gas is globalising – UK policies have been a key enabler of this process – *EU Western Gas Corridor*
- Huge price differences between US, EU, Asia – Market forces will reduce them – *It is a transportable good!*
- UK will get the gas it 'needs' but will have to match Asian prices – convergence could come fast as Asian demand wipes out the LNG glut
- North American gas will reach world markets
- Europe = slowly declining market, moving away from oil indexation and increasingly integrated into a rapidly expanding global one – *The long-term security picture looks good*

Moreover...

B B C NEWS

LANCASHIRE

21 September 2011 Last updated at 20:22

Shale gas firm finds 'vast' gas resources in Lancashire

An energy firm which has been test drilling for controversial "shale gas" in Lancashire has said it has found vast gas resources underground.