# BG Group World Energy Outlook: Global Gas and LNG



2012 Oil & Gas Energy Forum - 4 July 2012 - Taipei

Dr. Andrew Walker – Head of LNG Strategy





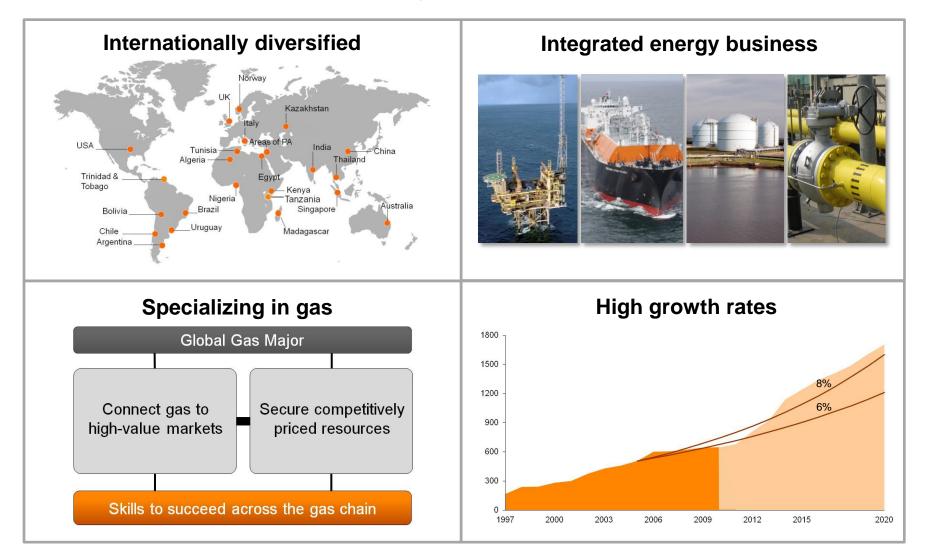
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# A world leader in natural gas





# Global gas and LNG outlook

- Global gas outlook
- Recent LNG trade evolution
- Future of global gas pricing



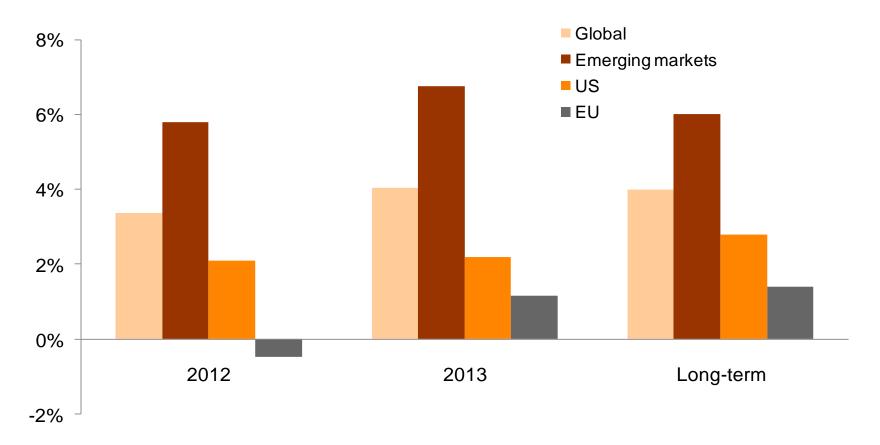
# Global gas outlook





# Emerging markets drive global growth outlook

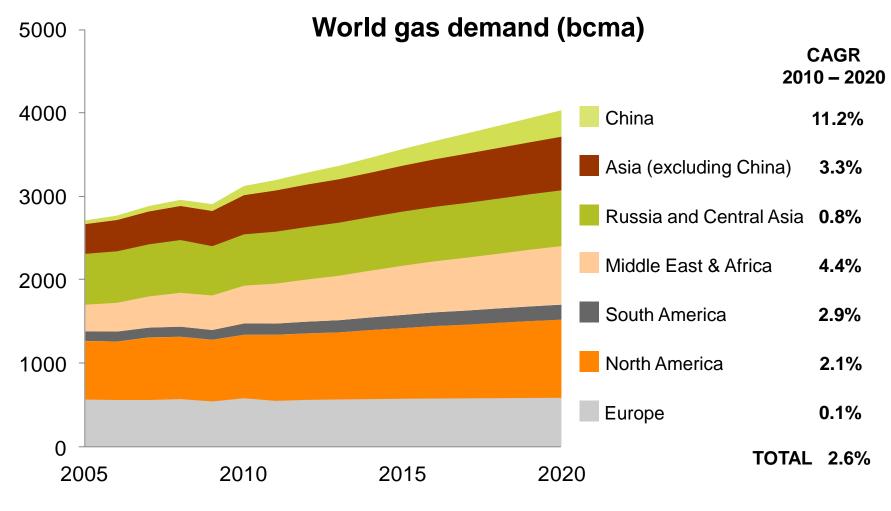
**Real annual GDP growth rate** 



Sources: BG Group interpretation of Credit Suisse, Morgan Stanley, Deutsche Bank, JP Morgan Cazenove



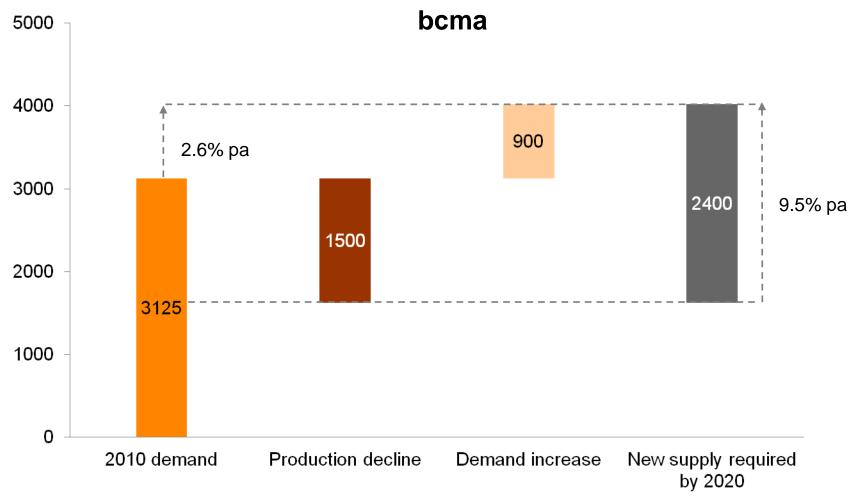
# Strong gas demand growth



Sources: IEA, BG Group



# Global gas supply challenge (2010 - 2020)

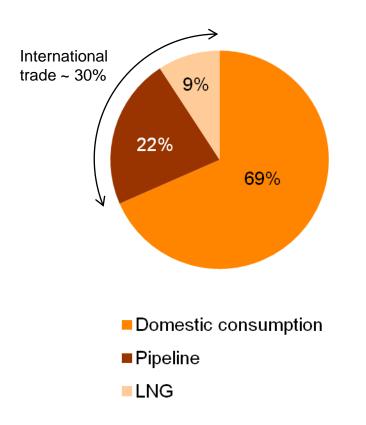


Sources: BG Group, BG Group interpretation of Wood Mackenzie

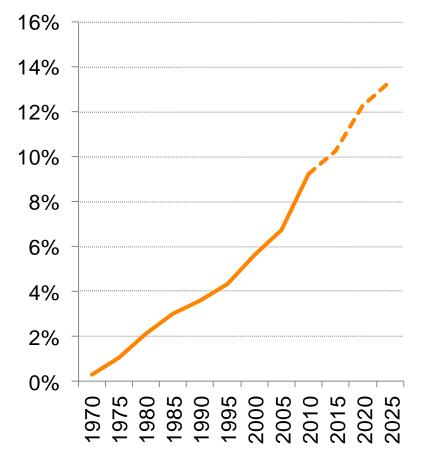
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### LNG's share of global gas

#### 2010 global gas consumption



LNG as share of global gas

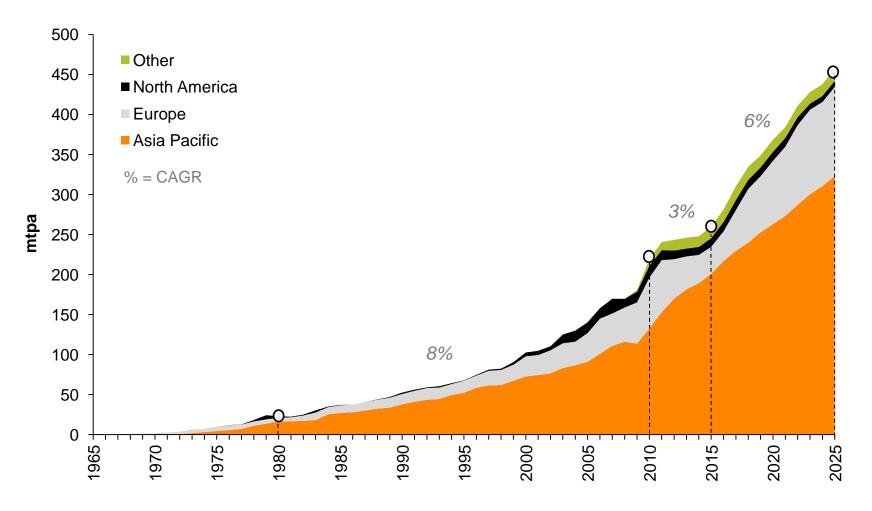


Source: Actual – CEDIGAZ (2011), Outlook – Wood Mackenzie (2011)

LNG outpacing natural gas industry growth



# LNG trade growth – by importing region



Source: CEDIGAZ World Outlook (1965 - 1999) and Wood Mackenzie (2000 - 2025) (May 2012) demand outlook

#### LNG – a high growth industry

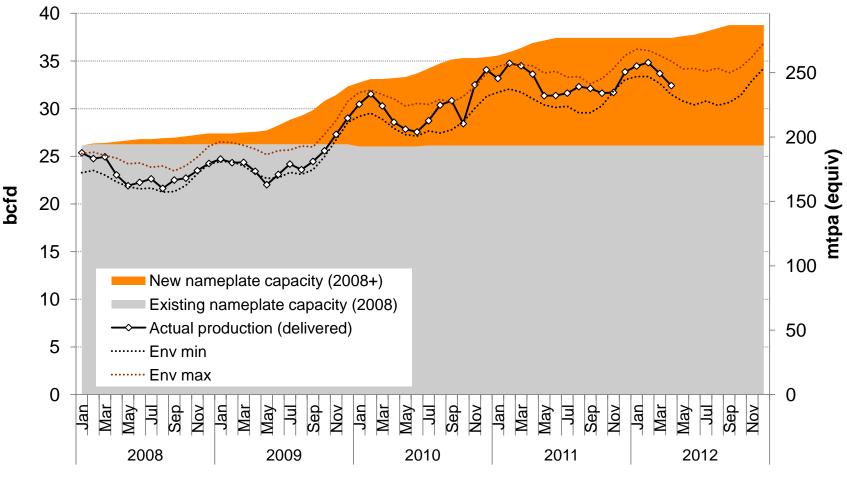
# Recent LNG trade evolution







## LNG supply by month: 2008 – 2012

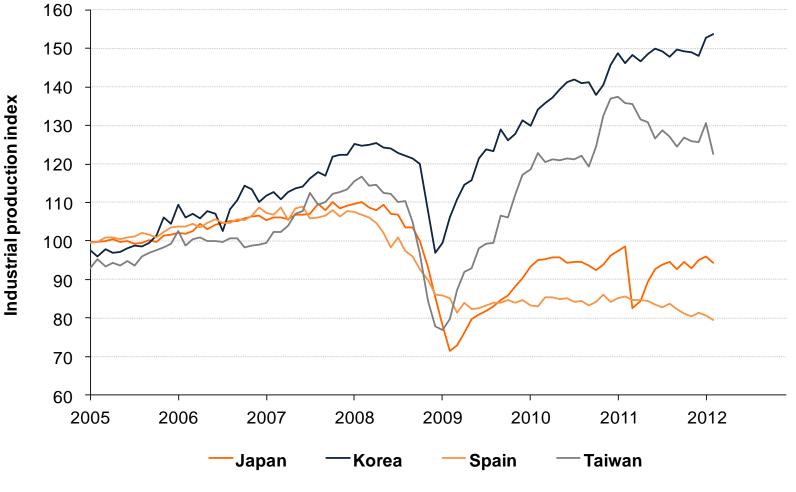


Source: Waterborne Energy

#### Rapid ramp-up in supply since 2008



### Industrial production by country: 2005+

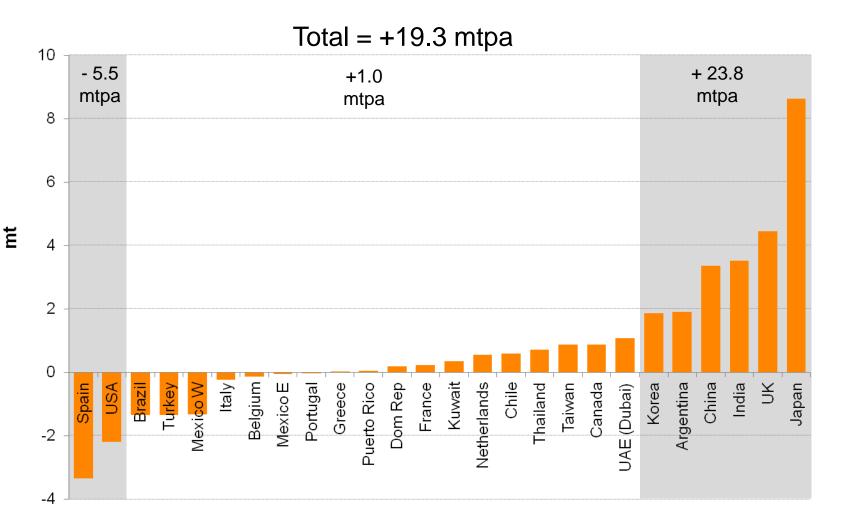


Source: CEIC (2012)

Economic downturn is behind us – in some countries



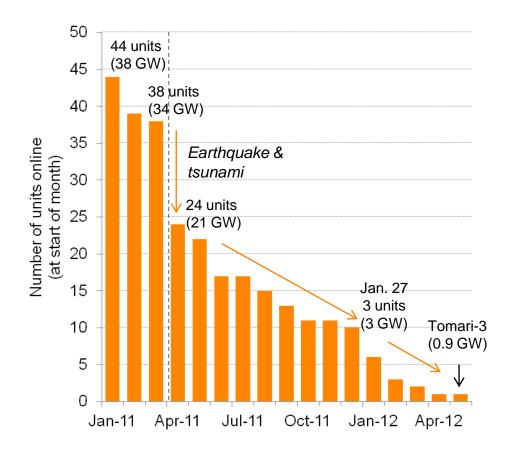
#### LNG markets: 2011 YoY



Source: Waterborne Energy (2012)



### Japan – nuclear capacity 2011



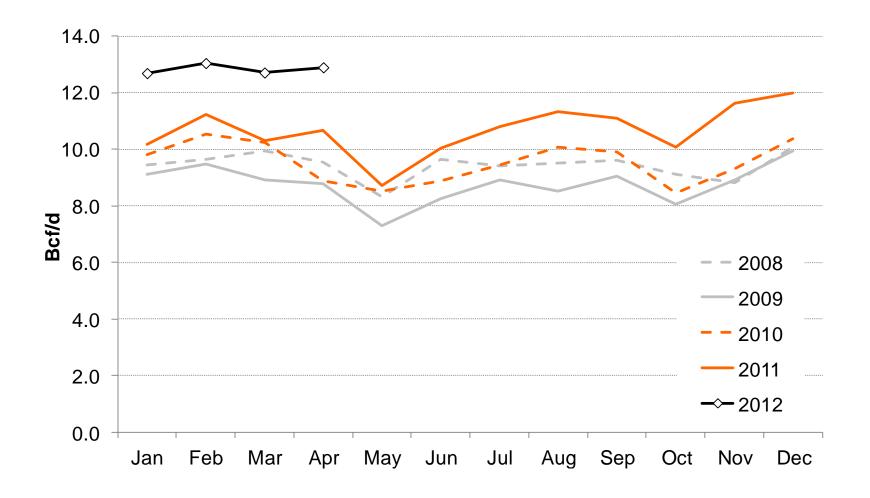
- 55 units (47 GW) total capacity
- 38 units (34 GW) operating prior to earthquake
- 11 units (12 GW) shut down by earthquake
- All units are now offline Tomari-3 went down May 5
- Current opinion is nuclear free summer likely – at most 2-3 units on by end of year
- Future nuclear policy?

Source: JAIF (2012)

LNG demand increased 12% in 2011 YoY



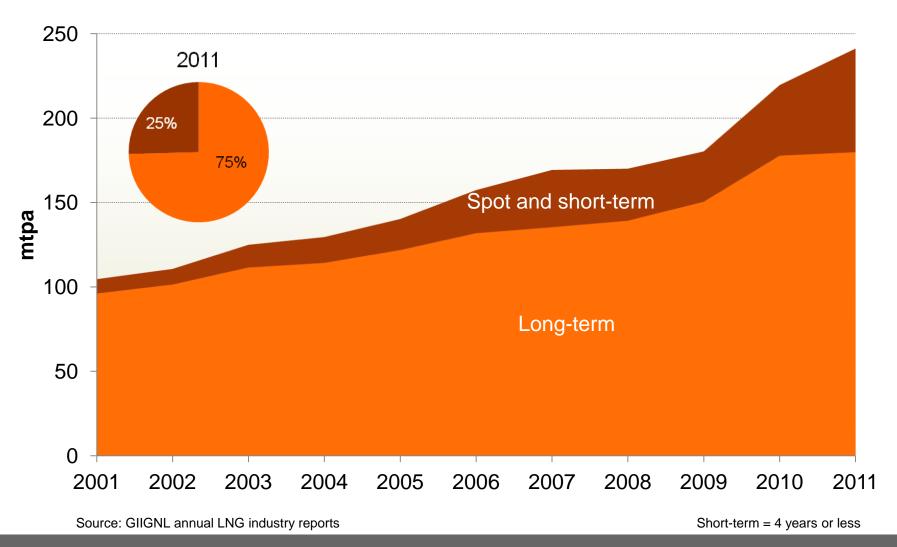
#### LNG imports – Japan



Data = Waterborne Energy (2012)



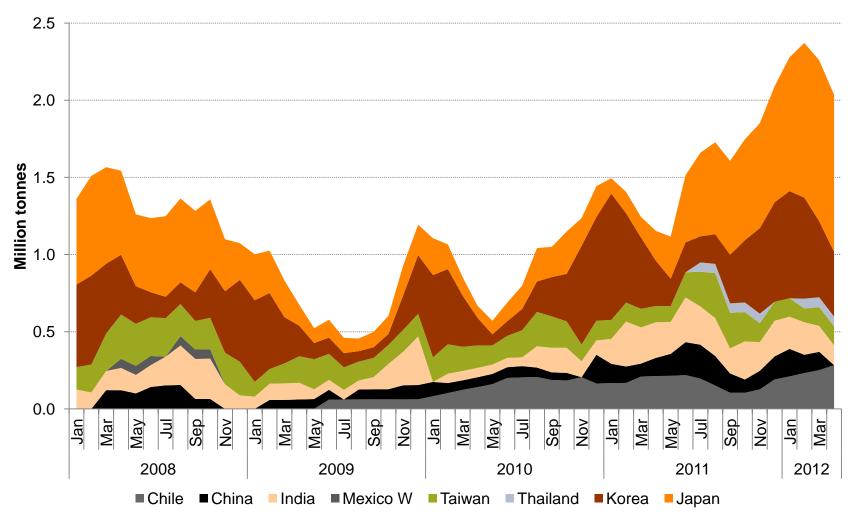
# Short vs. long-term LNG contracts: 2001 to 2011



Will the LNG industry become more liquid?



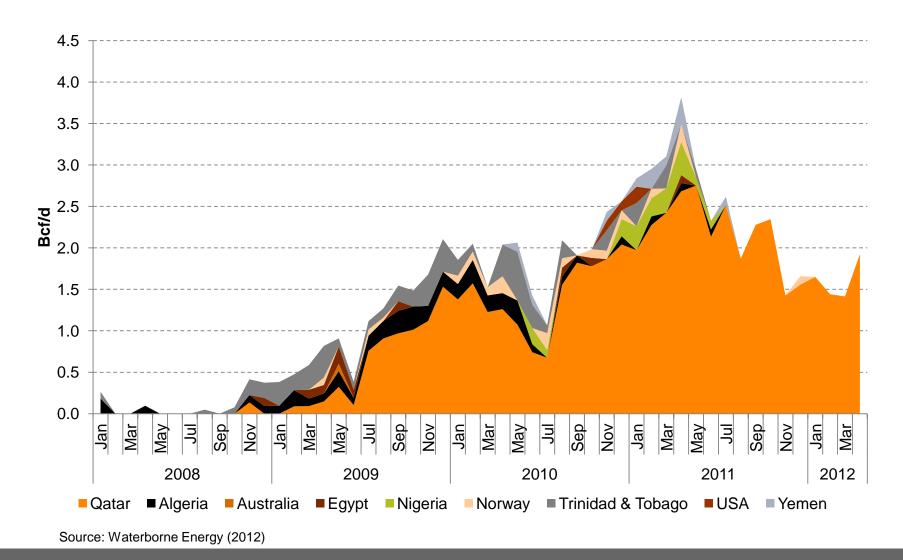
# Atlantic Basin to Pacific Basin LNG flows



Source: Waterborne Energy (2012), 3 month moving average



## UK LNG imports by supply country



19



25th world gas conference "Gas: Sustaining Future Global Growth"

# Future of Global Gas Pricing

By: Elizabeth Spomer, SVP Business Development,

**BG** Group

Date: 5<sup>th</sup> June 2012

Venue: Kuala Lumpur







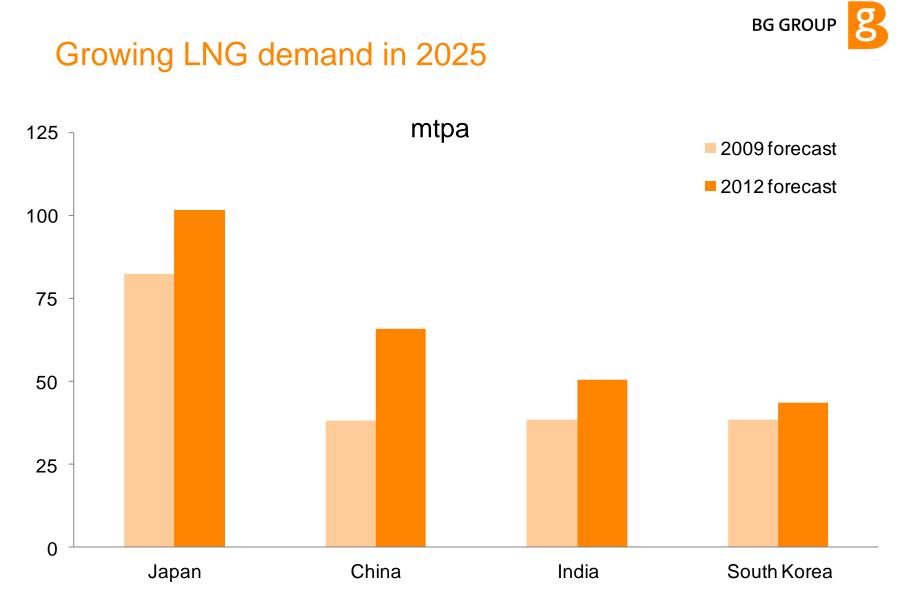


Gas

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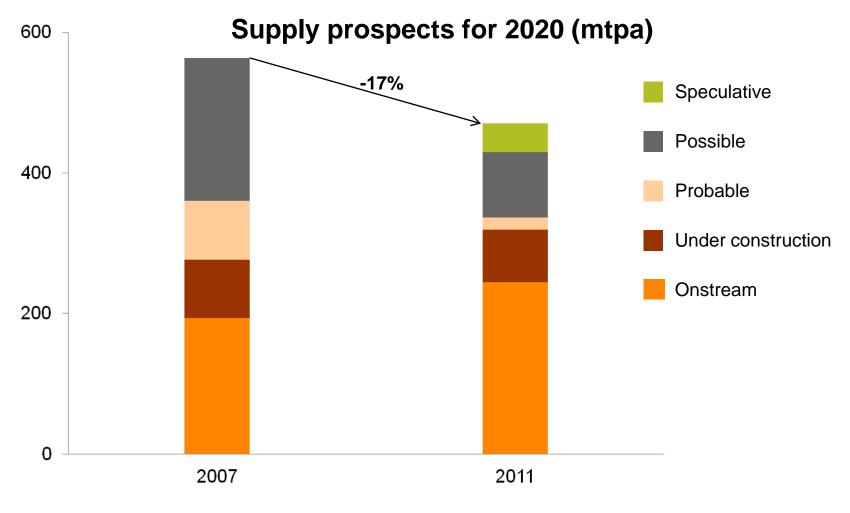




Source: BG Group interpretation of Wood Mackenzie data: (2009 and 2012 forecasts)



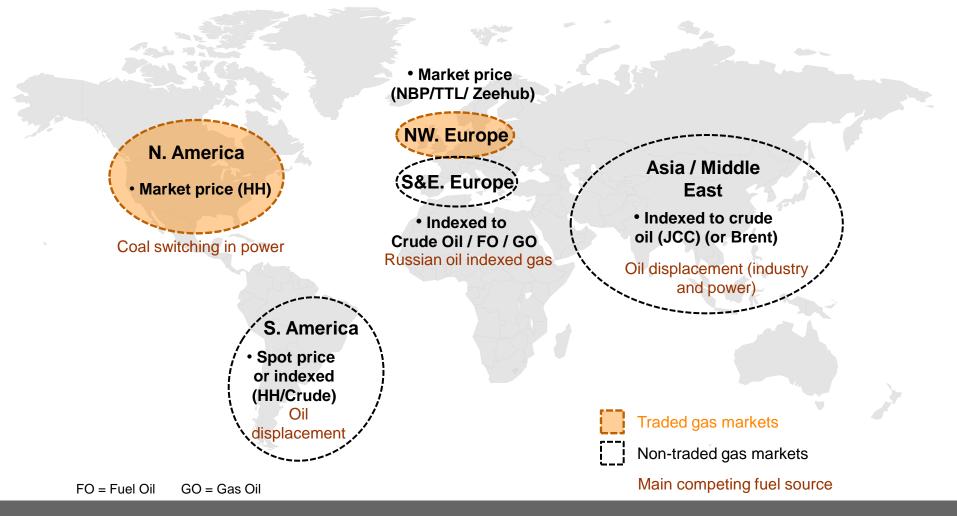
### Long-term supply challenges



Source: Wood Mackenzie – LNG Service and Tool

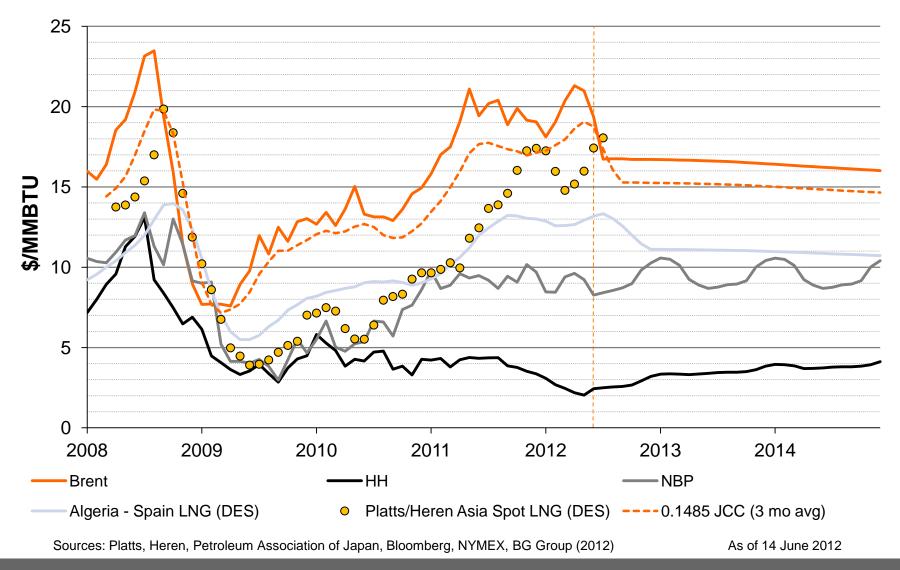


### Gas pricing mechanisms by region





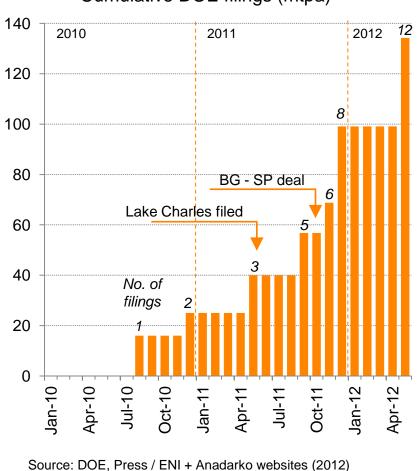
## LNG and gas prices





# Rapidly changing supply perspective

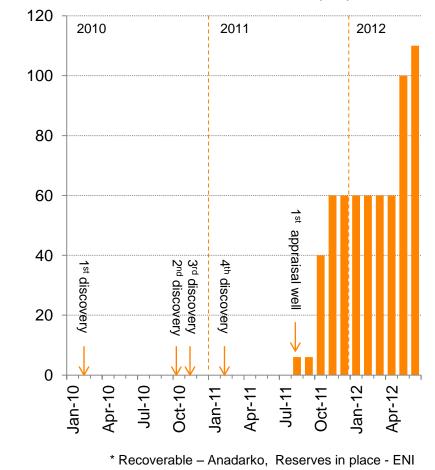
#### **US LNG exports**



#### Cumulative DOE filings (mtpa)

#### Mozambique

Reserves announced \* (Tcf)





# What could delay or constrain US exports?

US government regulation	<ul> <li>Desire for energy independence</li> </ul>
	<ul> <li>Impact on gas prices &amp; jobs</li> </ul>
	<ul> <li>Public concerns over hydraulic fracturing</li> </ul>
	<ul> <li>Shale sustainability unproven</li> </ul>
	<ul> <li>Petrochemicals lobby</li> </ul>
Public sentiment	<ul> <li>'Cheap' gas to controversial trading partners</li> </ul>
	<ul> <li>NIMBY-ism (West Coast)</li> </ul>
	<ul> <li>Sierra Club – Cove Point agreement</li> </ul>
Legal intervention	<ul> <li>Revocation of non-FTA licenses</li> </ul>
	<ul> <li>Stakeholder capability</li> </ul>
Ability to deliver	<ul> <li>EPC contractor capacity</li> </ul>
	Financing



# Future of global gas pricing – conclusions

- Fully traded global gas market unlikely
  - Regional pricing differentials will persist
- No trusted price marker in Asia
  - HH / NBP result of de-regulation
- LNG trade remains highly capital intensive
  - Significant barrier to entry
- Long term contracts >80% of trade



# Thank you

