Europe in the New Global Gas Market

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Nikos Tsafos, Senior Manager

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Contents

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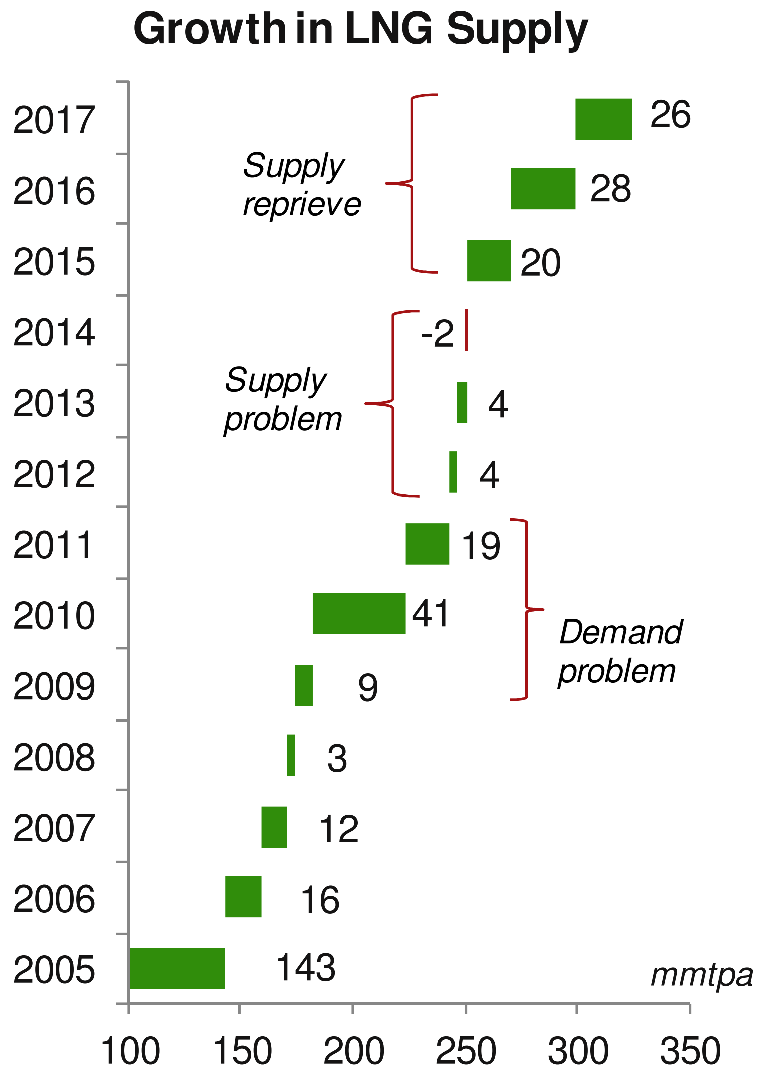
Near-Term Tightness – No Reprieve Pre 2015

- In 2009-2011 (pre-Fukushima), global gas had a demand problem
- Now, there is a supply problem: very little supply growth before 2015
- Only after 2015 will LNG grow again – but at first, this is just catching up



Source: Global LNG Service

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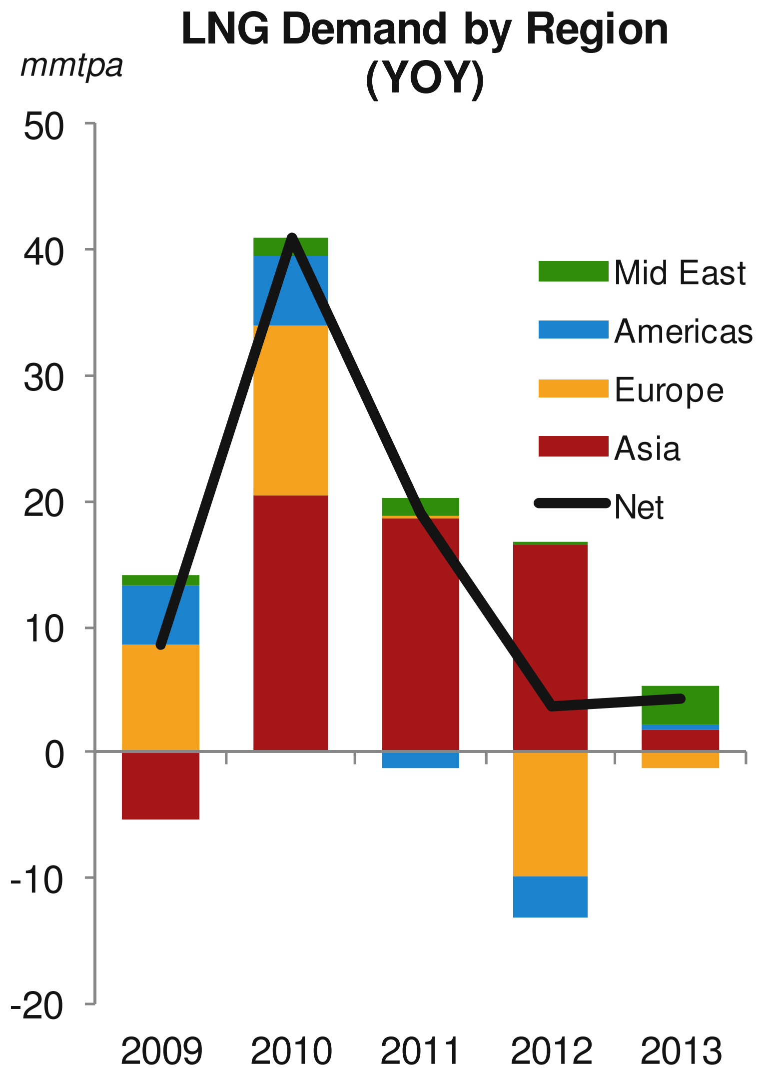
Redirecting LNG and Replacing LNG with Piped Gas

- LNG influx into Europe stops. Drop from weak demand (Spain), substitution of pipeline gas (Spain, Turkey and UK)
- Continued decline into Americas; US decline vs. growth elsewhere
- Middle East keeps growing and gets big boost in 2013 from Israel
- Strong growth in Asia in 2012 moderated in 2013 as Japanese nuclear power comes back online



Source: Global LNG Service

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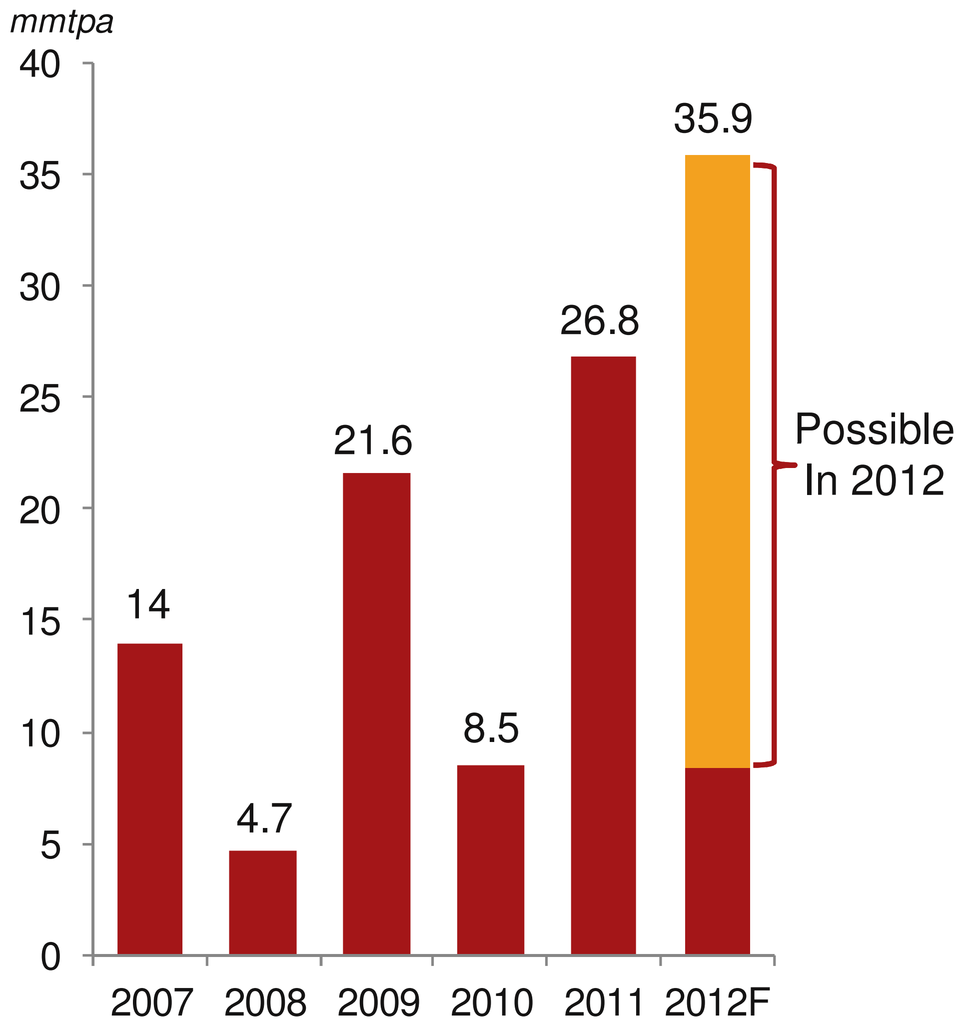
Project Development Responding to Tight Market

- Record level of FIDs in 2011
- Largely an Australia story
  - Gladstone LNG (Australia)
  - Donggi Senoro (Indonesia)
  - Prelude LNG Floating (Australia)
  - Australia Pacific LNG (Australia)
  - Wheatstone LNG (Australia)
- How much in 2012?
  - Ichthys (Australia) – Q1
  - Australia Pacific LNG T2?
  - Sabine Pass T1-4 (USA)?
  - Kitimat T1 (Canada)?
  - Other floating?

Sanctioned LNG Capacity



Source: Global LNG Service

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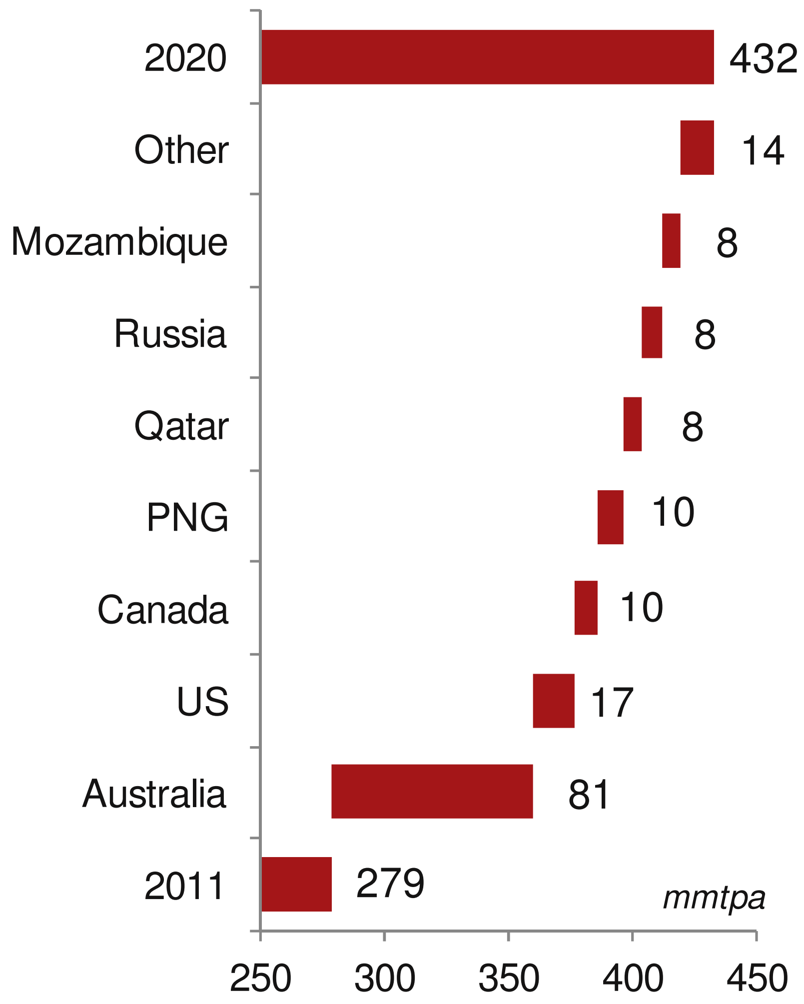
LNG Capacity Grows 55% from 2011 to 2020

- LNG capacity at 432 mmtpa in 2020 (vs. 604 mmtpa planned)
- 90+% of the growth to 2020 geared towards Asian demand
- Growth from 11 countries
- Australia makes up 53% of the growth
- North America contributes 17%
- Qatar debottlenecking is only growth from Middle East

LNG Capacity: 2020 vs 2011



Source: Global LNG Service

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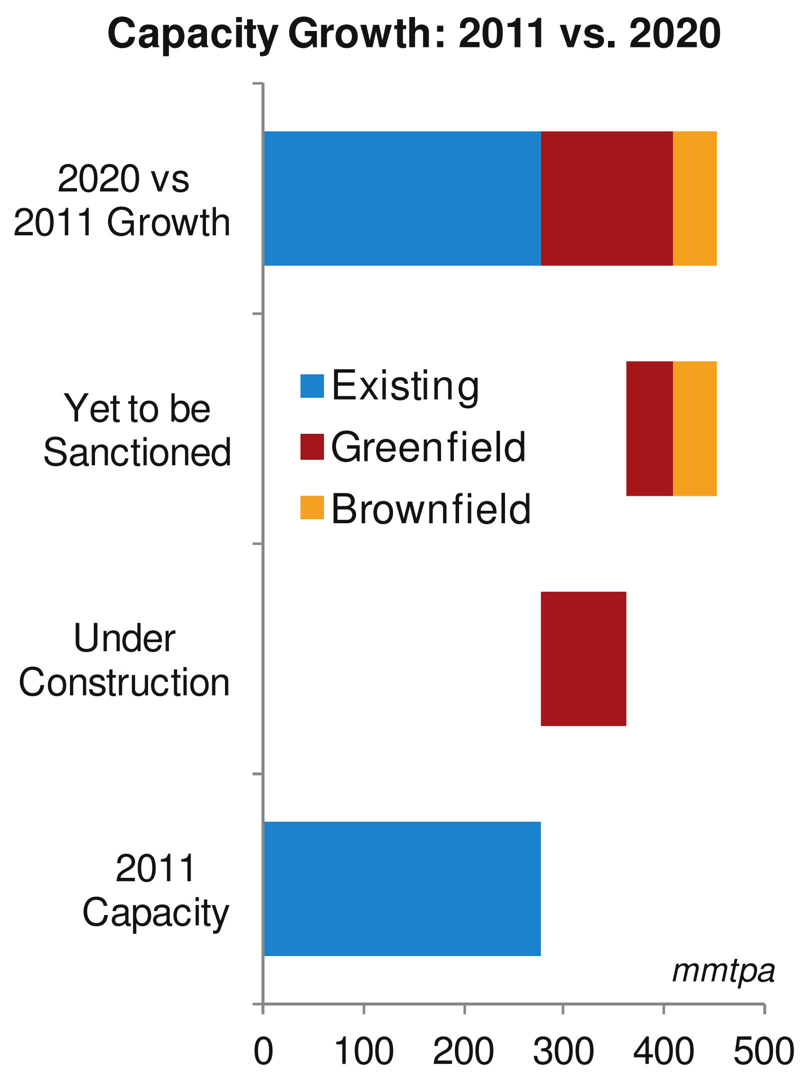
Next Wave of Projects is Cheaper

- Under construction projects mostly greenfield
- But new wave of projects will include a mix of greenfield and brownfield developments
- How much pressure will this put on pricing?



Source: Global LNG Service

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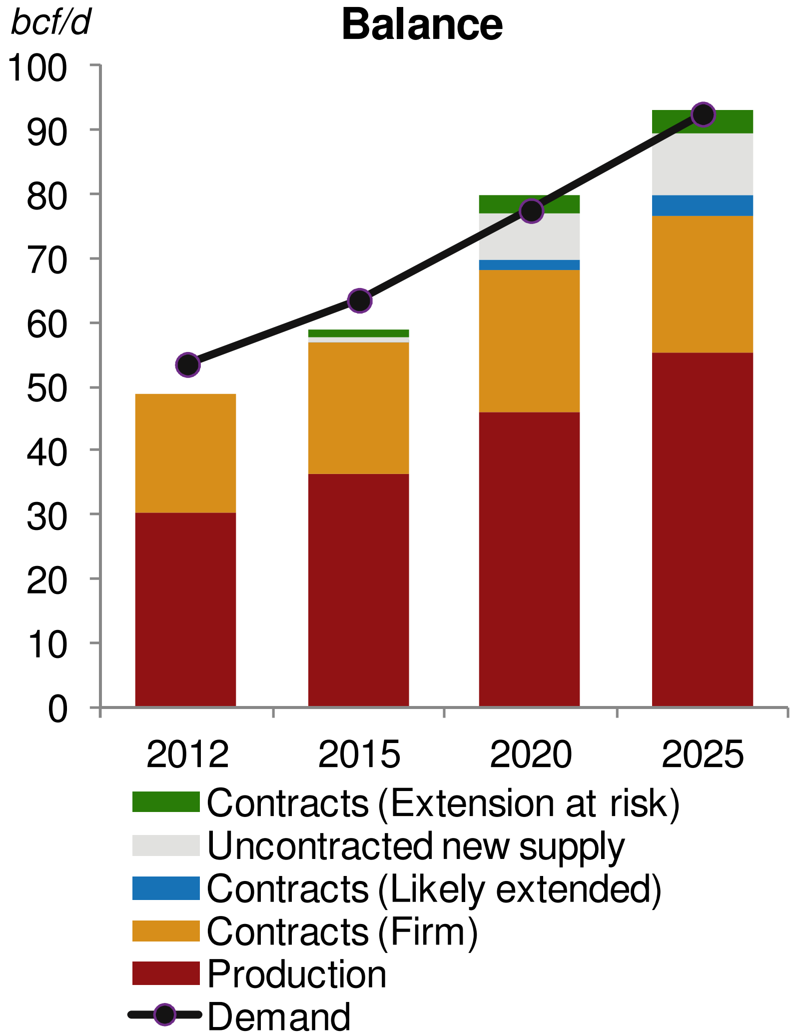
North America Will Add to Asia's Price Pressure

- Asia's supply options:
  - Domestic supply (e.g. China, India, SE Asia)
  - Existing pipeline and LNG contracts
  - Contracts likely to be extended (e.g. Qatar, Australia)
  - New LNG projects targeting Asia without firm contracts
  - Contracts at risk for extension
- Asia may be balanced or moderately over-supplied by 2020
- How low do prices get before triggering a demand response?

Asia Supply-Demand Balance



Source: Global LNG Service, PFC Energy Demand Model

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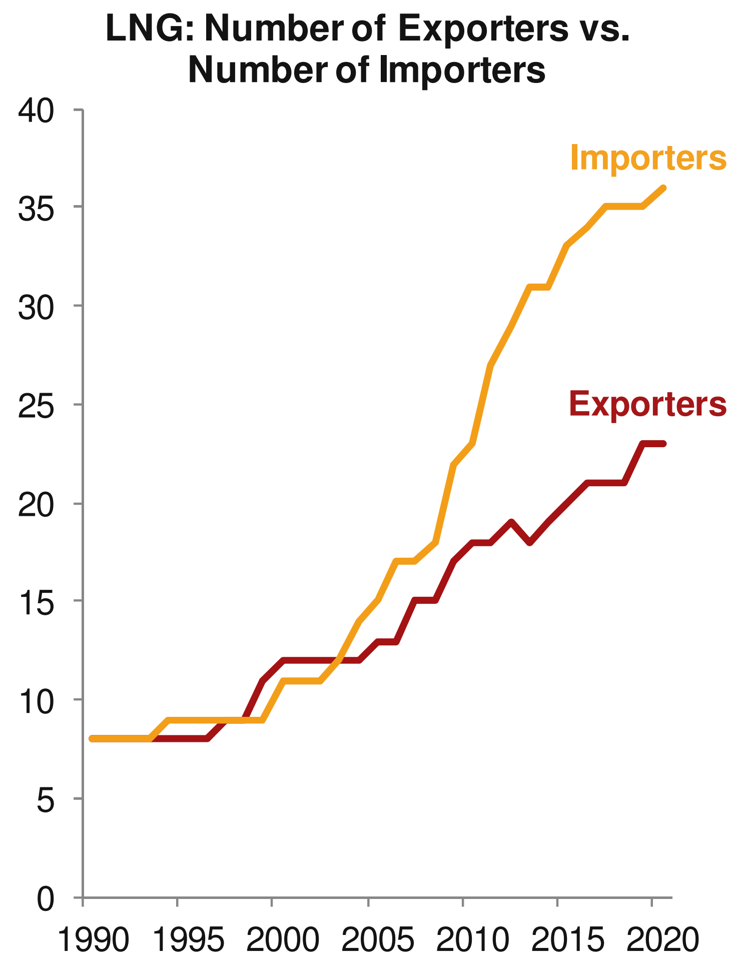
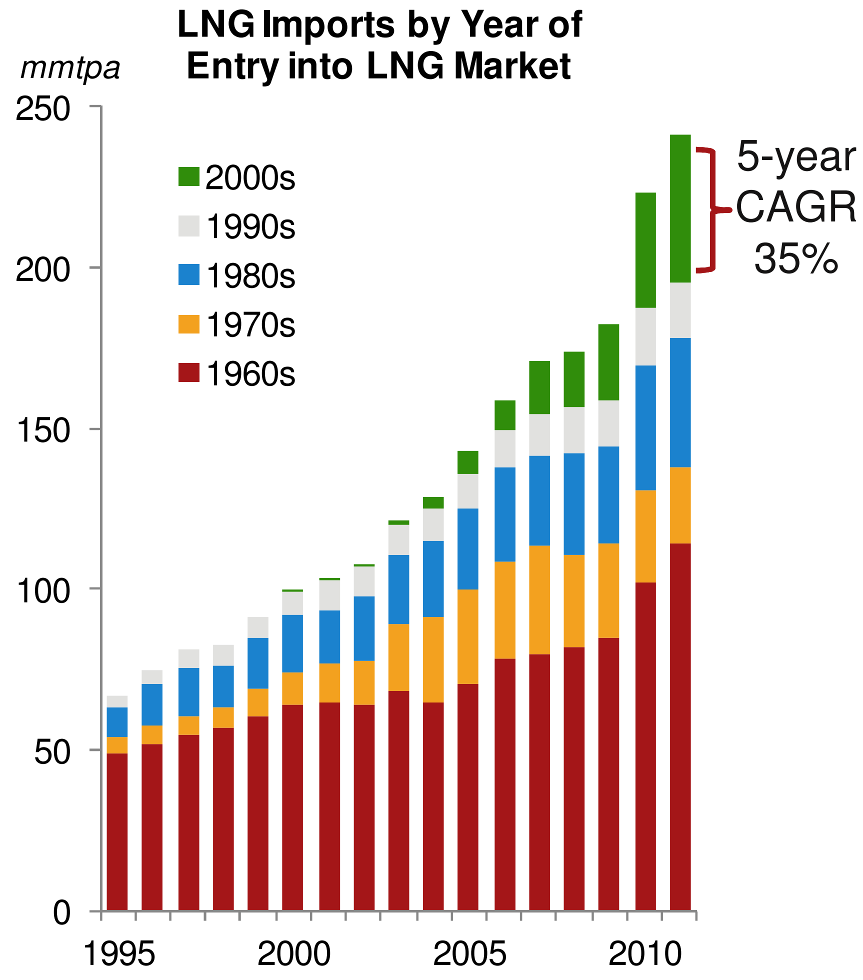
New Entrants Contribute to Tightness & Change Rules



60% more buyers than sellers by '20

Source: Global LNG Service



20% of market from new buyers

Source: Global LNG Service

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Contents

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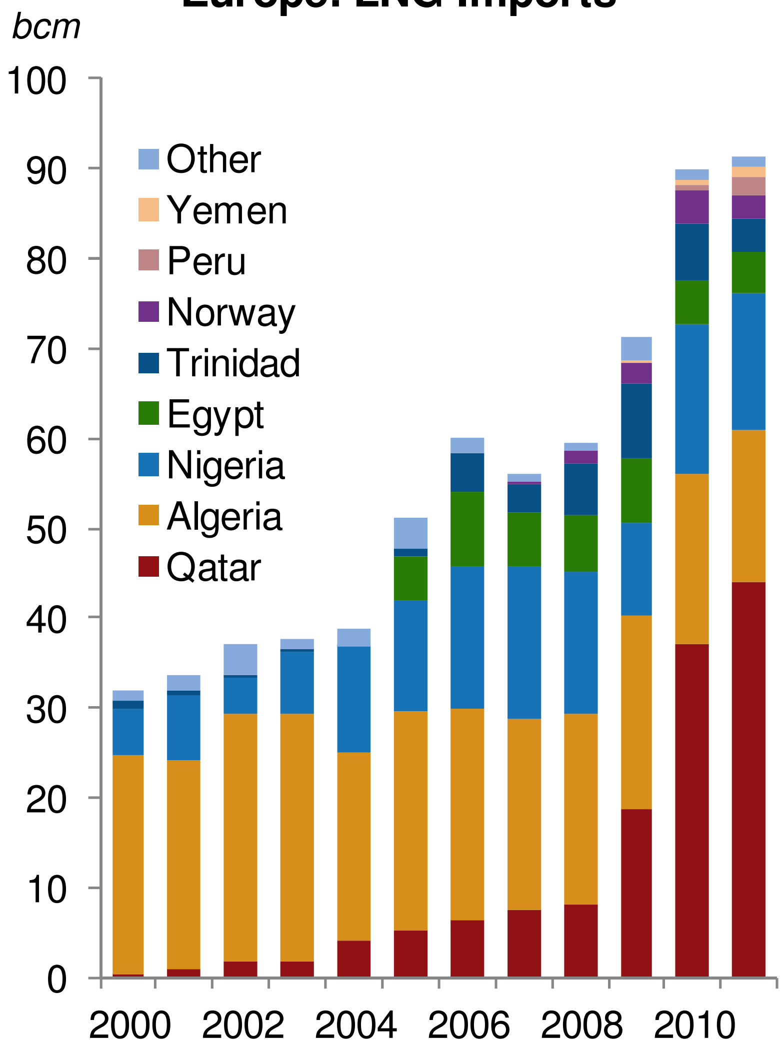
Europe's Gas Glut Driven by Qatar

- 2011 LNG imports +50% vs. 2008
- Most of the growth came from Qatar
- Can Europe sustain a steady influx of LNG in a tighter market?

Europe: LNG Imports



Source: Global LNG Service

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Europe's Complacence / Absence in LNG

Buyer Type (mmtpa)	2007	2008	2009	2010	2011	*Total*
Japanese Companies	18.1	0.0	3.6	4.1	6.7	***32.5***
Chinese NOCs	1.0	6.0	8.9	0.7	7.6	***24.1***
IOCs	6.3	3.8	4.7	0.8	4.2	***19.9***
European Utilities	4.8	0.7	3.3	0.0	6.3	***15.1***
Korean Companies	0.5	0.0	2.0	4.9	3.1	***10.5***
Other	1.0	2.0	4.5	1.2	0.0	***8.7***
Indian Companies	1.3	0.0	3.0	0.2	5.2	***9.6***
Other Asia	0.0	3.0	3.0	1.7	0.6	***8.3***
Latin American Companies	1.7	0.0	0.0	0.0	0.0	***1.7***
Total	***34.6***	***15.5***	***33.0***	***13.6***	***33.6***	***130.3***

Source: Global LNG Service

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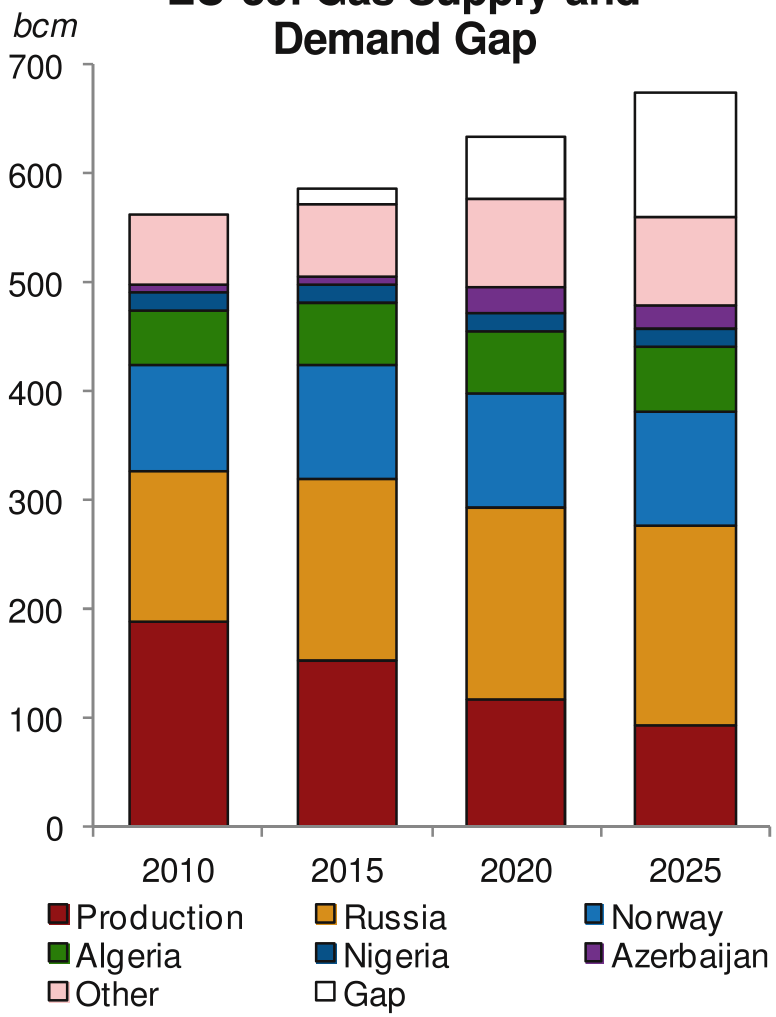
Europe is Gas Short by 2020

- Europe needs to replace ~100 bcm from declining production by 2025
- Most of its existing suppliers will not increase exports
- Europe faces a supply-demand gap by 2020 and it grows larger by 2025

EU-30: Gas Supply and Demand Gap



Source: Gas Markets Database

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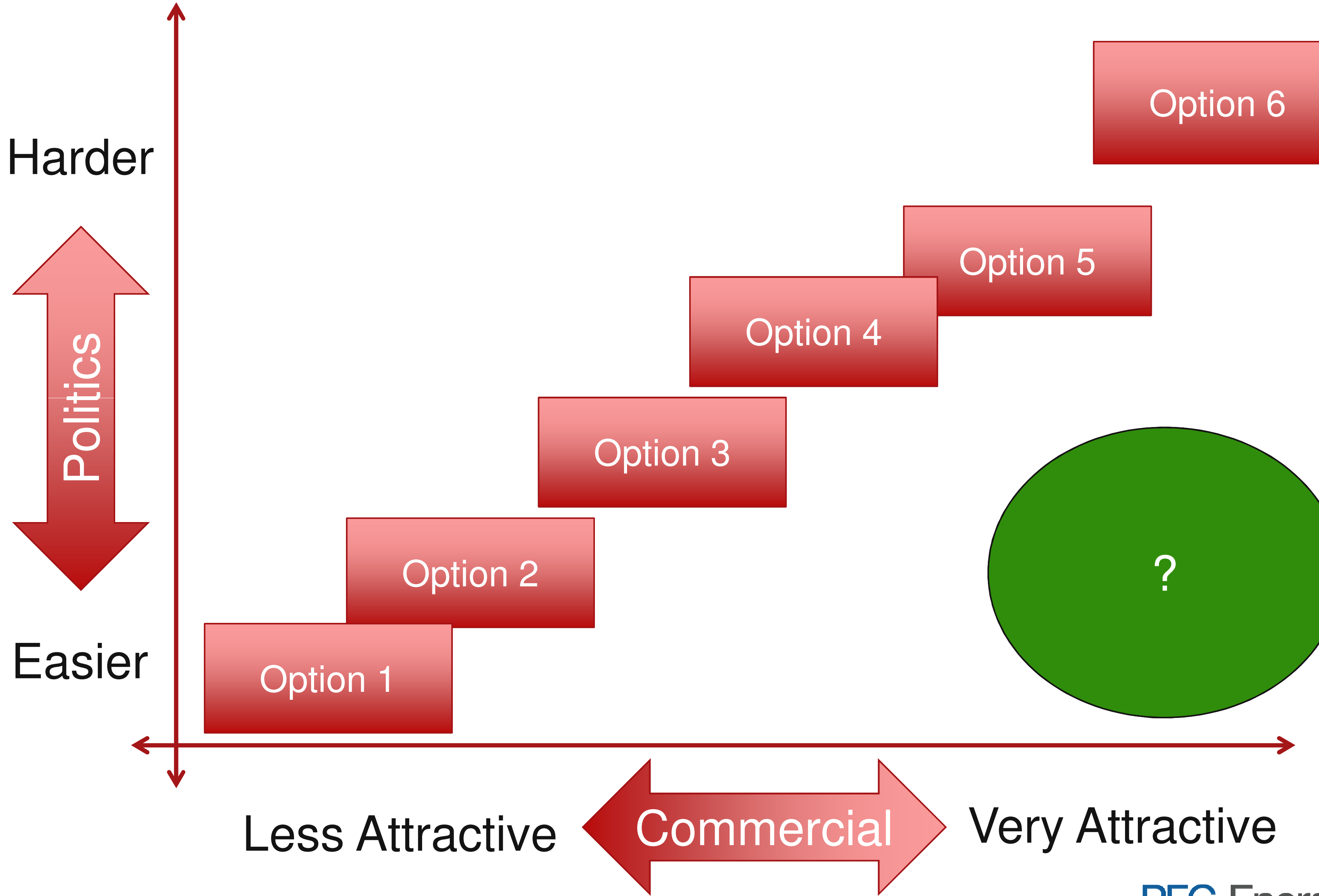
Eastern Mediterranean Commercialization Options



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Key Conclusions

- Global gas market headed towards extreme tightness
- Prices will keep rising and force substitution between piped gas and LNG
- The industry is responding with record-level project sanctioning
- Large growth in LNG could potentially weaken pricing in Asia – but not much
- Europe has been slow to develop new supply sources
- Can Asia be well supplied while Europe is gas short in 2020?

PFC Energy Locations and Contact Information

NORTH AMERICA

PFC Energy, Washington
1300 Connecticut Avenue, NW
Suite 800
Washington, DC 20036, USA
Tel +1 202 872 1199
Fax +1 202 872 1219

PFC Energy, Houston
2727 Allen Parkway, Suite 1300
Houston, Texas 77019, USA
Tel +1 713 622 4447
Fax +1 713 622 4448

EUROPE

PFC Energy, France
19 rue du Général Foy
75008 Paris, France
Tel +33 1 4770 2900
Fax +33 1 4770 5905

ASIA

PFC Energy, Kuala Lumpur
Level 27, UBN Tower #21
10 Jalan P. Ramlee
50250 Kuala Lumpur, Malaysia
Tel +60 3 2172 3400
Fax +60 3 2072 3599

PFC Energy, China
79 Jianguo Road
China Central Place Tower II, 9/F, Suite J
Chaoyang District
Beijing 100025, China
Tel +86 10 5920 4448
Fax +86 10 6530 5093

PFC Energy, Singapore
9 Temasek Boulevard
#09-01 Suntec Tower Two
Singapore 038989
Tel +65 6407 1440
Fax +65 6407 1501

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Beijing | Brussels | Delhi | Ho Chi Minh City | **Houston** | **Kuala Lumpur** | **Lausanne** |
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www.pfcenergy.com | info@pfcenergy.com

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