Europe in the New Global Gas Market

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The Global Gas Market
The European Gas Market
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
- 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
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

![Graph showing LNG capacity over years with a possible increase in 2012.](Source: Global LNG Service)
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**

- **2020**: 432 mmtpa
- **2011**: 279 mmtpa

**Sources**:
- Global LNG Service

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- 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?

Next Wave of Projects is Cheaper

Capacity Growth: 2011 vs. 2020

- Under Construction
- Yet to be Sanctioned
- 2011 Capacity

Source: Global LNG Service

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?

Source: Global LNG Service, PFC Energy Demand Model
New Entrants Contribute to Tightness & Change Rules

LNG: Number of Exporters vs. Number of Importers

60% more buyers than sellers by ’20

Source: Global LNG Service

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The Global Gas Market
The European Gas Market
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
## Europe’s Complacence / Absence in LNG

<table>
<thead>
<tr>
<th>Buyer Type (mmtpa)</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total</th>
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<td>4.1</td>
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<td>IOCs</td>
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<td>1.7</td>
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<tr>
<td><strong>Total</strong></td>
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<td>15.5</td>
<td>33.0</td>
<td>13.6</td>
<td>33.6</td>
<td>130.3</td>
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</tbody>
</table>

Source: Global LNG Service

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
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?
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