International Pressures on European Energy Supplies: what are the natural gas issues?

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The Context of European External Gas Pressures post-2008

Heightened concern about gas security because of:

• increasing import dependence of European countries
• Russia-Ukraine crisis of 2009
• unstable (worsening?) political situation in North Africa and the Middle East
• concern about potential demand levels in China and India
• much higher (oil and) gas prices and the possibility of a “gas-OPEC”

Contrast with domestic pressures: carbon reduction targets; regulatory policy under GTM and the Third Package
### European* Gas Balance: 2010 (Bcm)

<table>
<thead>
<tr>
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<th>567</th>
</tr>
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<tbody>
<tr>
<td>DEMAND</td>
<td>567</td>
</tr>
<tr>
<td>PRODUCTION</td>
<td>301</td>
</tr>
<tr>
<td>IMPORTS:</td>
<td>464 (81% pipeline, 19% LNG)</td>
</tr>
<tr>
<td>LNG</td>
<td>87 (22% Algeria, 44% Qatar)</td>
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<tr>
<td>PIPELINE</td>
<td>377 (50% intra- 50% extra-Europe)</td>
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<tr>
<td>% of imports:</td>
<td></td>
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<tr>
<td>NETHERLANDS</td>
<td>13</td>
</tr>
<tr>
<td>NORWAY</td>
<td>25</td>
</tr>
<tr>
<td>ALGERIA</td>
<td>8</td>
</tr>
<tr>
<td>RUSSIA (CIS)</td>
<td>35</td>
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DOES EUROPE NEED ANY NEW GAS? IF SO WHERE AND WHEN?
Gas Demand in Europe 1960 – 2011, in mcm

1990-2000: + 4.2 % per year

2000-2008: + 2 % per year

2008-2009: - 5.6 %

2009-2010: + 7.5%

2010-2011e: - 8%

Source: Honore (2010) and updates from IEA monthly service
EU Gas Consumption Under the 2050 Roadmap Scenarios (mtoe)
Falling Production + Increasing Demand = Increasing Import Dependence

- European conventional gas reserves are “running out”; production will decline in future; could unconventional gas change this?
- Rising demand – but not in 2008-11 – means that..
- An increasing proportion of Europe’s gas will need to be imported in future

EU/OECD projections are that European import dependence will increase from around 33-50% today to 66-80% in 2020-30; is this a major security problem and if so, why?
Import Dependence: theories of “unreliable and nasty foreigners”

- “unreliable foreigners”: unable to maintain installations properly
- “nasty foreigners”: likely to cut supplies for commercial and political reasons
- Distant foreigners at the end of long pipelines: the more unreliable (and nasty?) they are likely to be
- Diversify imports for commercial and security reasons

Arguments predicated on domestic supplies being more secure than imports, but is this true?
GEOPOLITICS: Russian Supplies

- Natural gas relations between Russia and Europe have a highly political character with huge sensitivities on both sides.

- When existing long term contracts bring Russian exports up to 200 Bcm (~145 Bcm in 2010) – a limit on exports could be reached from the European side because of:
  - fears of over-dependence and Russian political leverage: gas supplies and Gazprom downstream ownership
  - Russian gas availability for Europe
  - Nord and South Stream pipelines: resolve security problems or create new threats?

2009 Ukraine crisis was a turning point; DG Comp 2012 proceedings against Gazprom could be another
First line commissioned November 2011; second line – October 2012; discussion of Nord Stream 3 and 4
South Stream Pipelines

South Stream: final investment decision now depends on cost/profitability and politics
GEOPOLITICS: Middle East and North African (MENA) Supplies

- OECD fears of Islamic fundamentalism, war on terror etc
- Problematic situation in Iraq
- Worsening relationship with Iran – UN sanctions
- Israeli-Palestinian/Lebanese deadlock
- 2011 “revolutions” in North Africa – a regional phenomenon?

Why is there no discussion of threats to European gas supplies due to these pressures eg Libya-Italy, Iran-Turkey?
LNG: Very Useful Diversification Strategy

- Allows access to a variety of sources
- Can also serve as a storage facility
- Allows flexibility in case of uncertain demand

BUT:
- In a global market, other countries may be able to bid supplies away by higher prices
- Winter requirements particularly at risk from rich countries

Price security becomes a major issue
Asian LNG prices are far higher than those in Europe

BAFA = Average German Import Price
NBP = UK National balancing Point Price
HH = Henry Hub US Price

Japanese LNG average
Brent crude
European Oil Indexed Pipeline Contracts

Source: Rogers OIES
Potential Asian LNG Imports 2010-25

Source: Rogers OIES
LNG Supply 2005 – 2025
(Excluding Possible US & Canadian Projects)

Source: Waterborne LNG, D. Ledesma, H. Rogers
GECF: an organisation with momentum?

- So far not an “OPEC-type” organisation but a “discussion forum”
- Strong objections to EU (and national) liberalisation on grounds of:
  - No consultation with exporters
  - Attack on existing contracts and revenues
  - Problems of financing without LT contracts
- Signs at the 2007 meeting that the Forum was becoming more serious about studying issues such as pricing

A long way to go before anything like an OPEC-type organisation is possible
Current Distractions from Important European Gas Issues

- The Southern Corridor
- Shale gas in Europe
“Southern Corridor” Gas Pipelines
Pipeline Gas From Middle East/Caspian Region: the “Southern Corridor”

- there is a 30 year history of proposed pipeline projects with the Iran-Turkey pipeline as the only success but it has a very bad contractual/security track record;
- (domestic and) international political problems with Iran have prevented pipeline and LNG trade over the past 30 years;
- Azeri gas will provide the early gas;
- Turkmenistan: trans-Caspian problems;
- Iran/Iraq: security problems

Maximum of 10 Bcm/year available prior to 2020; large scale (ie 100 Bcm/year) currently unrealistic
# Unconventional Gas Production Outside North America in 2011 (Bcm)

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<thead>
<tr>
<th></th>
<th>LatAm</th>
<th>Europe</th>
<th>MENA</th>
<th>FSU</th>
<th>Asia</th>
<th>Australia</th>
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<tbody>
<tr>
<td>CBM</td>
<td>&lt;1</td>
<td></td>
<td>&lt;1</td>
<td>2</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Tight</td>
<td>2</td>
<td></td>
<td>&gt;3</td>
<td>20</td>
<td>35</td>
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<tr>
<td>Shale</td>
<td></td>
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<tr>
<td>TOTAL</td>
<td>2</td>
<td>&lt;1</td>
<td>&lt;3</td>
<td>21</td>
<td>37</td>
<td>6</td>
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Global shale gas production outside North America – zero
Global unconventional gas production outside North America <70 Bcm
Global gas production outside North America 2625 Bcm

Impact of Unconventional Gas in 2035
(source IEA)

Gas trade in the Low Unconventional Case is up 30%, some trade patterns are reversed, gas prices are higher & the position of the main conventional exporters reinforced.
Conclusions

- European-wide gas analysis misses important national issues: in some countries, gas can become a “default fuel” in the event of other options failing.
- Demand will increase in only a few countries, but imports will increase – at least over the next decade.
- Pre-occupation with security issues of Russian gas is highly political and remains important.
- Most important issues are price formation and price level both in Europe and elsewhere in the world – these will determine much about supply, demand, trade and security.

Market conditions in Europe and elsewhere are changing all the time, complicating even short term projections.
Gas with CCS in the UK – waiting for Godot? Howard Rogers


Algeria’s Shifting Gas Export Strategy: Between Policy and Market Constraints – Hakim Darbouche

The Transition to Hub-Based Gas Pricing in Continental Europe – Jonathan Stern & Howard Rogers

Does Gas Need a Decarbonisation Strategy? The Cases of the Netherlands and the UK – Floris van Foreest

The Impact of Import Dependency and Wind Generation on UK Gas Demand and Security of Supply to 2025 – Howard Rogers

Can Shale Gas be a Game-changer for European gas markets? – Florence Geny


Natural Gas Markets in the Middle East and North Africa – eds. Bassam Fattouh & Jonathan Stern

The Transit Dimension of EU Energy Security: Russian gas transit across Ukraine, Belarus and Moldova – Katja Yafimava