Recent developments in natural gas market

by

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A Gas Centre dedicated to economies in transition

The UNECE Gas Centre was launched in 1994 as a technical cooperation programme. “Promotion and Development of a Market-Based Gas Industry in Economies in Transition - the Gas Centre”. It was established to assist governments and gas companies in Central and Eastern Europe in their efforts to create more decentralized and market-based gas industries.

Today, in addition to contributing to institutional capacity development and training for the benefit of economies in transition, the Gas Centre activities are focussed on:

• Exchange of information and data between the member companies on the gas markets and gas industry and especially between member companies with experience in free-market conditions and companies in countries with an economy in transition;
• Exchange of information and views between the gas industry, the ECE and government on policy issues;
• Serving as a platform for discussions on topics of interest and policy development.
The programme is extra-budgetary and financed by some 20 major gas companies, state-owned and private, from Europe, the United States and the Mediterranean Basin, namely:

**AFRIQUIA GAZ** (Morocco) – **BOTAS Petroleum Pipeline Corporation** (Turkey) – **EDF** (France) – **EDISON** (Italy) – **Egyptian Natural Gas Holding Company (EGAS)** (Egypt) – **Eni Gas and Power** (Italy) – **GAIL** (India) – **GasNatural Fenosa** (Spain) – **GAZNAT** (Switzerland) – **GAZPROM** (Russia) – **GDF Suez** (France) – **KazMunaiGaz** (Kazakhstan) – **MOL/FGSZ Ltd** (Hungary) – **NJSC NAFTOGAZ/UKRTRANSGAS AC** (Ukraine) – **OMV Gas & Power GmbH** (Austria) – **PLINACRO** (Croatia) – **ROMGAZ** (Romania) – **PLINOVODI** (Slovenia) – **SOCAR** (Azerbaijan) – **SRBIJAGAS** (Serbia) – **STEG** (Tunisia) – **SWISSGAS** (Switzerland)
Natural gas: global market under construction

Source: BP Statistical Review 2013

Consumption per capita 2012
Tonnes of equivalent
Gas is available – and widely distributed.

Remaining global natural gas resource
Thousand trillion cubic feet

Based on current demand, the world has over 200 years of natural gas available.

Source: ExxonMobil/IEA

World total 27.9
Conventional
Unconventional

North America
2.8
4.0

Latin America
2.8

Europe
1.6

Middle East
4.8

Russia/Caspian
6.6

Africa
3.1

Asia Pacific
4.8

200+ years

Source: ExxonMobil/IEA
Shale gas leads growth of production in the USA
Natural gas and LNG exports from the USA

Source: EIA, Annual Energy Outlook 2013 Early Release
Emerging economies, mainly Asia, drive the energy demand.

Growth in primary energy demand – by region

Global energy demand increases by one-third from 2010 to 2035, with China & India accounting for 50% of the growth.

Source: IEA
Natural gas demand growth comes mainly from Asia.

**Diagram:**

- **Natural gas demand by selected region in the New Policies Scenario, 2009 and 2035**
  - **North America:**
    - 2009: 1,000 bcm
    - Additional to 2035: 500 bcm
  - **European Union:**
    - 2009: 800 bcm
    - Additional to 2035: 200 bcm
  - **Middle East:**
    - 2009: 600 bcm
    - Additional to 2035: 100 bcm
  - **Russia:**
    - 2009: 400 bcm
    - Additional to 2035: 100 bcm
  - **China:**
    - 2009: 300 bcm
    - Additional to 2035: 100 bcm
  - **India:**
    - 2009: 200 bcm
    - Additional to 2035: 100 bcm
  - **Japan:**
    - 2009: 100 bcm
    - Additional to 2035: 50 bcm

**Source:** IEA

*Gas demand grows fastest in the non-OECD regions, led by China, which accounts for more than a quarter of the worldwide increase in demand between 2009 & 2035.*
Cost of export from US to Asia / Europe:
Henry hub plus 5-6 USD/mmbtu
Natural gas partnering with renewables

Society needs energy 24 hours / 7 days

<table>
<thead>
<tr>
<th>Source</th>
<th>Capacity Utilisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>90-100%</td>
</tr>
<tr>
<td>Wind</td>
<td>30-40%</td>
</tr>
<tr>
<td>Solar</td>
<td>10-25%</td>
</tr>
<tr>
<td>Hydro</td>
<td>Drought</td>
</tr>
</tbody>
</table>

Natural gas easy to turn on and off
Natural gas for transportation (CNG / LNG)

Economics and environment – the main drivers

Fleets

Less
- Particles/soot
- CO2
- NOx - smog

Maritime
Gas – fueling more of the world!

65%
Gas grows faster than any other major fuel source, with demand up 65 percent by 2040.

Source: ExxonMobil 2014
Global gas markets

- **North America – the shale gas revolution**
  - Boosting economy and reducing CO2 emissions
- **Europe – gas squeezed**
  - Renewables subsidies and low coal prices
- **Asia and South America**
  - Gas pricing a key issue
- **Middle East / Africa – domestic use and export**

*Huge regional variations!*
Diversification of supply routes and suppliers
China’s diversified gas supply sources

Turkmenistan supplies 30 bcm/yr plus

Myanmar supplies 10 bcm/yr plus

Source: SHWE Gas Movement

Source: IHS CERA, various sources.
Policy and regulation to encourage investments

- Investments in gas infrastructure
  - International partnership, risk sharing, long term contracts
- Market-oriented prices and tariffs
- Facilitate transfer of technology
- Financing and tax regime

Enable business to do business!
Supply post-Fukushima

- Around 12.5 million tonnes in 2011 from the Atlantic Basin
  - Cargoes diverted from West Africa and Europe
- Europe – increased pipeline supplies (Russia, Norway)
- LNG demand increase 15 mill tonnes in 2012 (20 bill cm)
- Qatar, Russia, Malaysia and Indonesia arranged swaps and diverted cargoes.

**Successful response by gas industry**
Main Reasons for the importance of NG in Europe

- Contribution to the reduction of CO2 emission
- Better adaptability to the intermittency of electricity production
- Increase the Security of Supply due to the new Gas Corridor
  - 58% Norwegian
  - 27% Russia
  - 7% pipes from North Africa
  - 8% LNG
Reduction of CO2 Emissions

Natural Gas emits:

- 57% less CO2 than oil
- 43% less CO2 than coal

For the same amount of electricity produced.
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Thank you