EBC Working Committee Energy

Introductory Remarks by the Chairman

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EBC WORKING COMMITTEE "ENERGY"
Sub-Working Group "Natural Gas Markets"
Paris, France, 23 March 2012

Agenda

1. Introductory Remarks
   by the Chairman Uwe Fip, Senior Vice President, E.ON Ruhrgas
2. Shale gas – opportunity, challenges and uncertainty
   How to exploit this resource in an environmentally responsible manner?
   by Bruno Courme, Total Gas Shale Europe
3. Shale Gas in Europe – update on activity & technology
   by Tom O'Gallagher, Manager of Schlumberger Technology Center in Russia
4. Shale gas and European Energy Policy
   by Onursal Soyer, Director, Lambert Energy
5. The Dutch position on shalegas
   by Warner ten Kate, GasTerra
6. Unconventional gas
   by Paul Kleijnen, Vice-President ExxonMobil Russia
7. LNG price developments
   by Mr. Andrey Okhotkin, Commercial Director of Sakhalin Energy
8. Discussion and date of next meeting

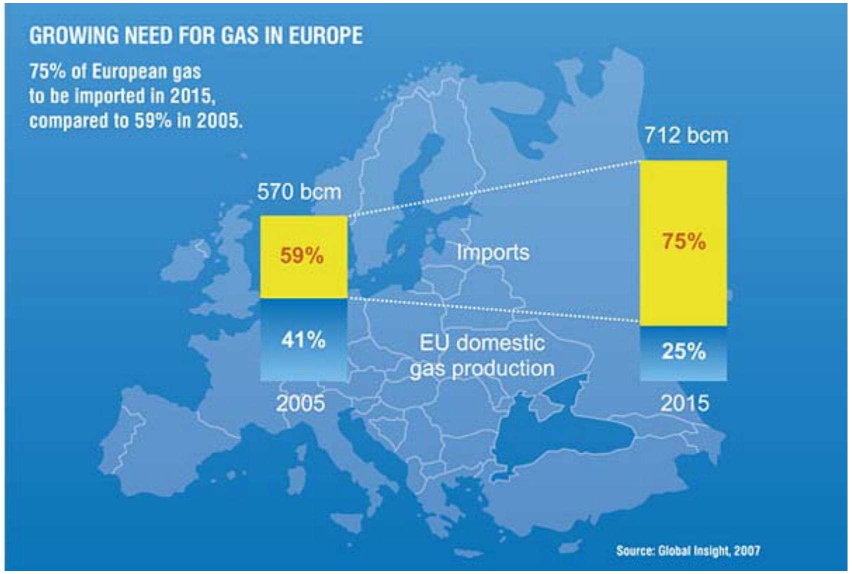
Second part of pipeline string is almost complete...

- Since November 2011, Nord Stream has been contributing to the EU's energy security.
- Construction of 2nd string started in May 2011 and shall be finalized before end of 2012.

- In February Nord Stream won "Pipeline Project of the Year" award at the 2012 European Gas Conference.
- To expand the protection of the Baltic Sea Nord Stream intends to establish an international nature conservation foundation.

Source: Nord Stream

. . . and another Russian project is yet to come
South Stream – Large-scale project backed by Gazprom



- Gazprom reacts on Europe's additional future demand for natural gas, by pushing forward with this major gas pipeline system.
- Capacity: 63 bcm/a
- Offshore from Russia to Bulgaria or Romania across Black Sea
- Onshore to Austria/Italy or Slovenia
- Length:
  ➔ Offshore 923 km
  ➔ Onshore 1600 to 2540 km (depending on route)
- FID: 2012; start of commercial operations: 2015
- Latest news: Henning Voscherau has recently been announced to head the BoD

Low HH prices and shale gas bonanza lead to re industrialization of U.S.

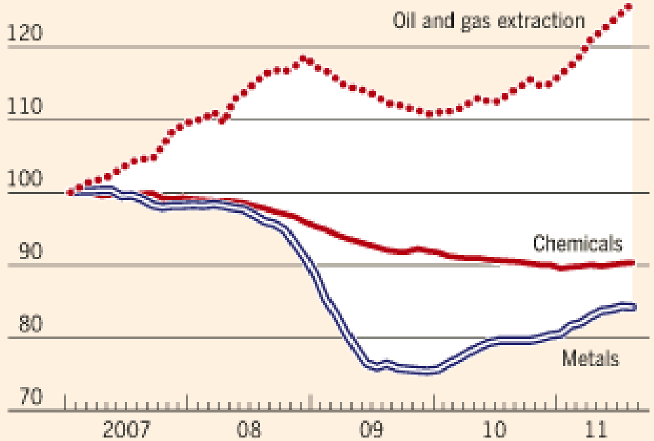
Shale gas reviving chemical industry

Dow and other companies are planning to build new plants in the United States, the first since 2001.

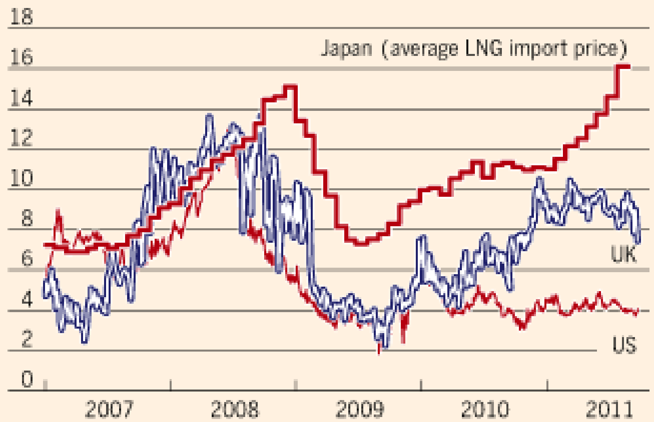
Source: pressherald.com

Source: Financial Times, online edition

Employment in selected US related industries
Rebased (Jan 2005 = 100)



Natural gas spot prices at major global market
British thermal units ($ per million)



Sources: EIA; BLS; Thomson Reuters Datastream

Shale gas is a game changer also for power

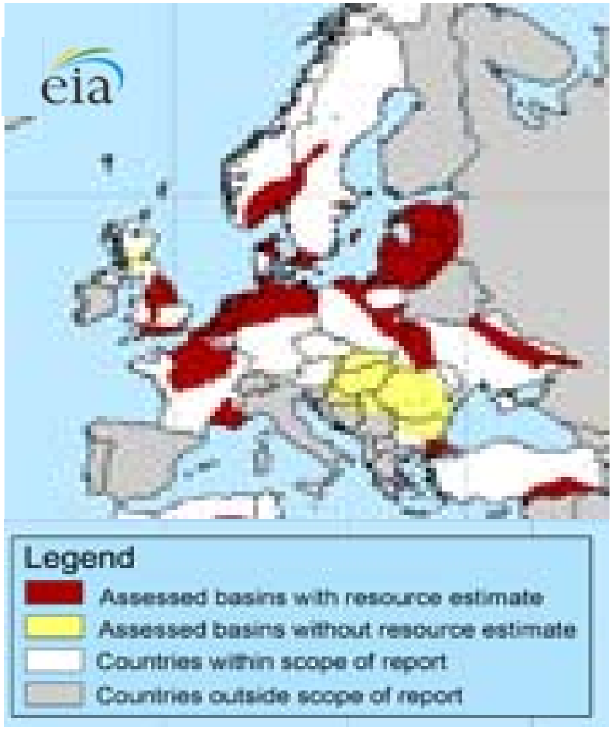
Cheap Natural Gas Unplugs U.S. Nuclear-Power Revival

Utilities Turn to Less Risky Alternative to Generate Electricity, Respond to Allure of Abundant Source

Source: Wall Street Journal, 19 Mar 2012

Will this trend spill over to Europe? ...

Most promising areas in Europe



Technically Recoverable Shale Gas Resources *bcm*	
France	5097
Germany	227
Netherlands	481
Norway	2350
U.K.	566
Denmark	651
Sweden	1161
Poland	5295
Turkey	425
Ukraine	1189
Lithuania	113
Others	538

Source: EIA, International Energy Statistics, March 2011

- Most promising shale gas deposits located in Poland.
- EIA estimates these could cover domestic consumption for 300 year
- More than 100 licenses have been granted to national/ international groups in Poland
- Significant resources were also discovered in France, Norway and Ukraine

. . . and have an impact on the European market?

Exploitation of European deposits is no fast-selling item . . .

- Buildup of production to plateau level requires 5-10 years of continuous drilling activity
- Only limited experience and equipment exist in Europe at present
- European deposits tend to be deeper underground and harder to extract than in the U.S.
- America's gas industry faces fewer and friendlier regulations than Europe's.
- Environmental issues might play a big role

. . .but provides good reasons to become a future market driver

- Europeans care about the environment but also care about the security of their energy supply, and its price.
- Many European countries buy gas to a large extend from Russia and seek to diversify their sources
- European gas prices are around twice what they are in America, a big incentive to frackers.
- Gazprom often denounces efforts to extract shale gas—a sure sign that its bosses are alarmed