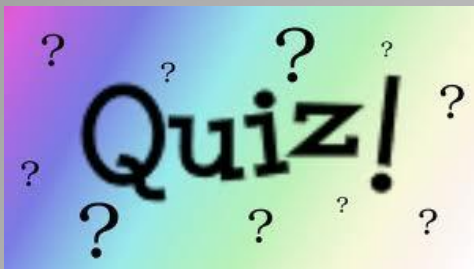




5TH CENTRAL EUROPEAN GAS CONGRESS



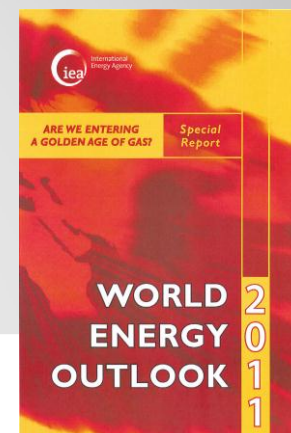


- ✓ 50 bcm
- ✓ 250 bcm
- ✓ 450 bcm
- ✓ 900 bcm

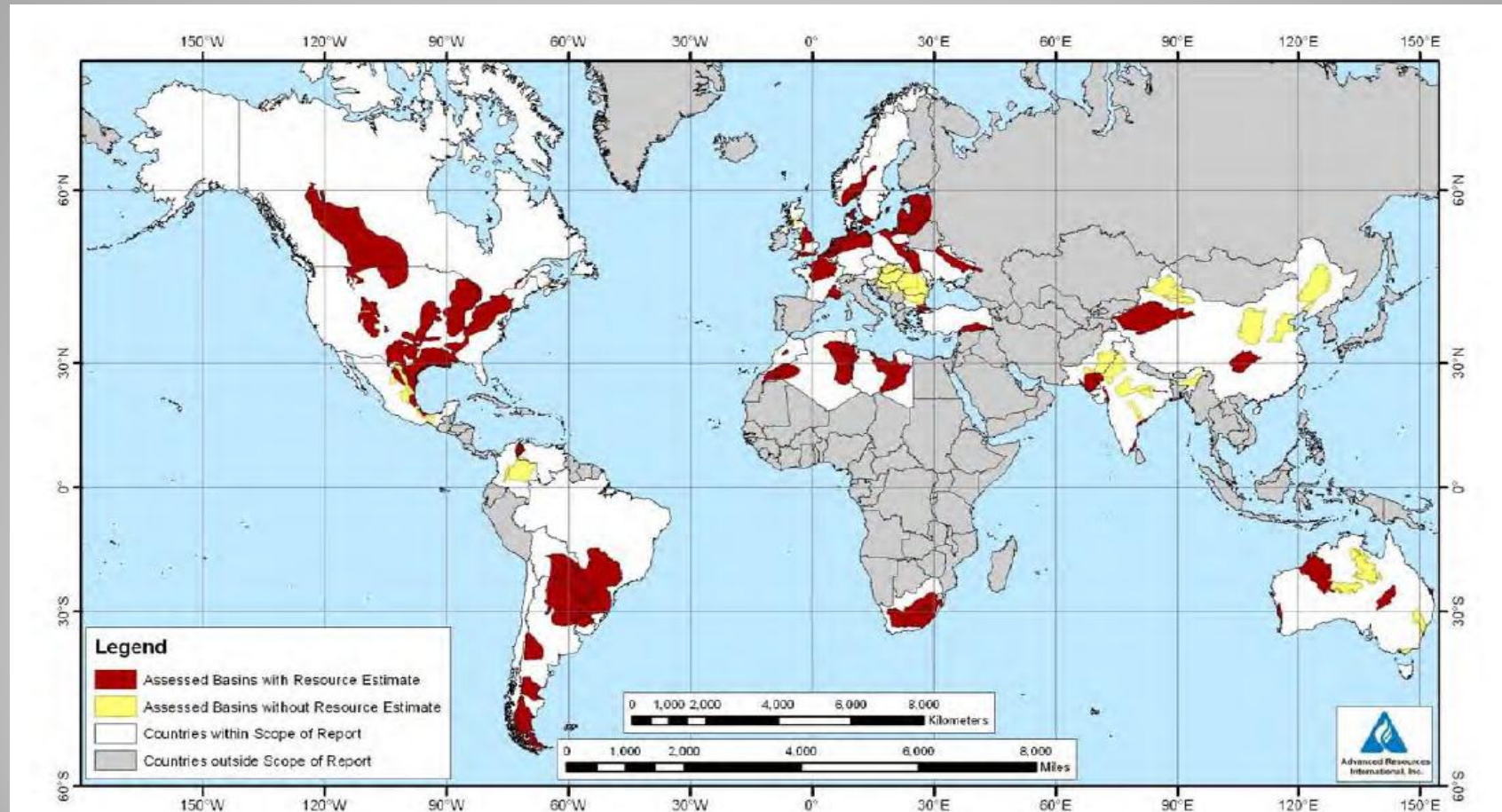
How big worldwide is yearly unconventional gas production today?



Source: Stanisław Rychlicki PGNiG S.A..



Map of 48 Major Shale Basins in 32 Countries



Source: *World Shale Gas Resources: An Initial Assessment of 14 Regions Outside the United States* US EIA April 2011

The EU Commission publishes new studies on unconventional gas

7th. September 2012



- ✓ Three new studies on unconventional fossil fuels, in particular shale gas.
- ✓ The studies look at the potential effects of these fuels on:
 - a) energy markets,
 - b) the potential climate impact of shale gas production,
 - c) the potential risks shale gas developments and associated hydraulic fracturing ("fracking") to human health and the environment.

The study on energy market impacts shows that unconventional gas developments in the US have led to greater LNG supplies becoming available at global level, indirectly influencing EU gas prices.[...]

Service industry what does it means? Can we estimate the worth of the market?

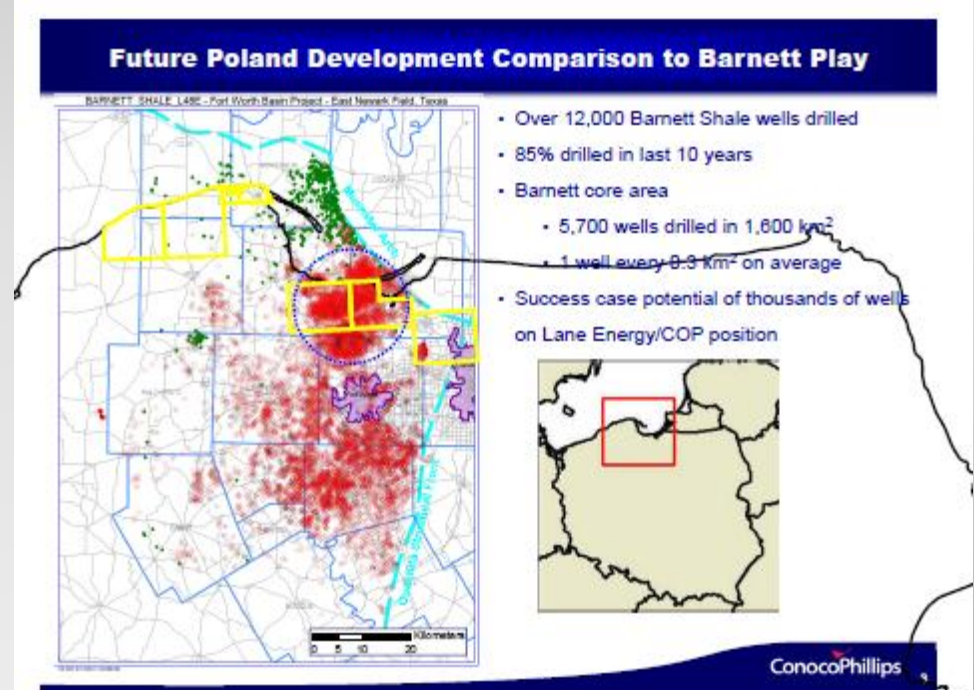
Among others services like:

- ✓ Drilling services
- ✓ Geoscience
- ✓ Wireline
- ✓ Water (!)
- ✓ Sand (!)
- ✓ Pumping
- ✓ Pipelines
- ✓ Mud logging
- ✓ Cementing
- ✓ Coiled tubing
- ✓ Slickline services
- ✓ Well testing
- ✓ Completion
- ✓ Hydraulic fracturing
- ✓ and many, many more...

✓ Project management services...

„The plan calls for Halliburton to provide services including drilling services, mud logging, cementing, coiled tubing, slickline services, well testing, completion and hydraulic fracturing. Halliburton will support the project with project management services.[...] Present in Poland for more than 15 years, Halliburton performed the first-ever shale hydraulic fracturing operation in Poland for PGNiG in August 2010”

Source: www.halliburton.com/public/news/pubsdata/press_release/2011/corpnws_071311.html



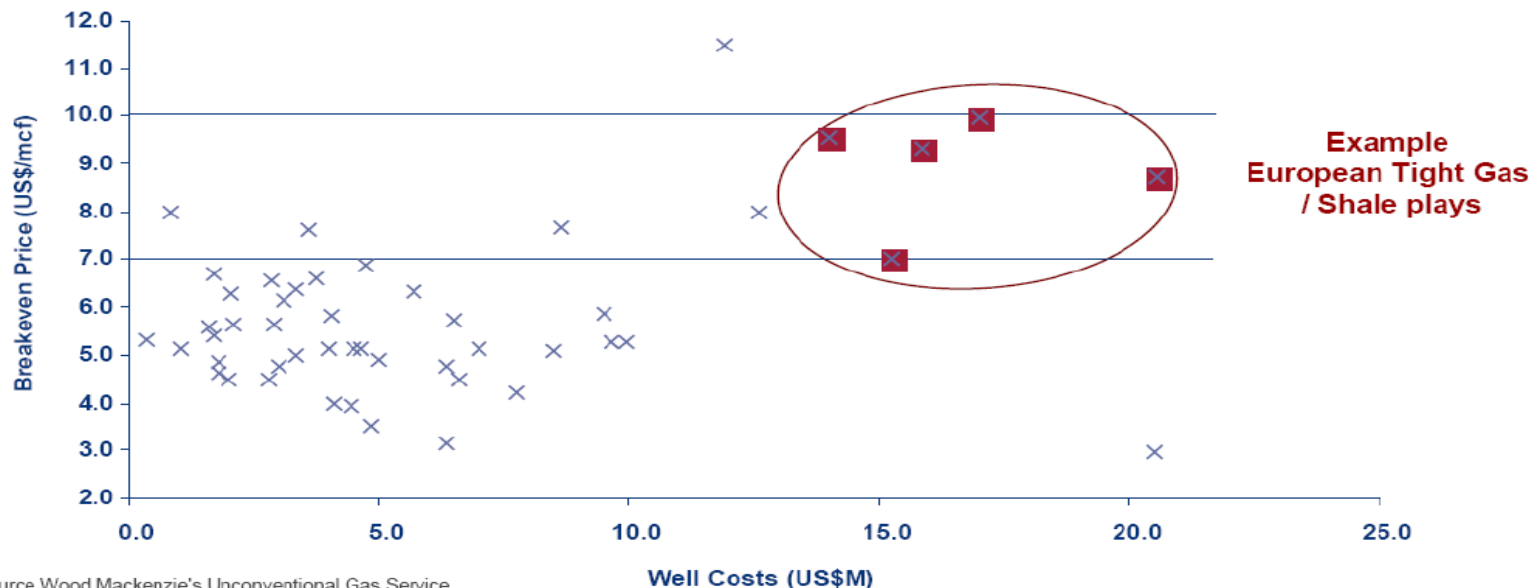
Source: Bill Babcock „CoP US-Poland Energy Roundtable 2010”

Current „status quo” in Europe

2

Current forecasts of breakeven costs for European shale gas and tight gas are significantly higher than those for the US and Australia

Well Costs vs. Breakeven Prices for Shale Gas and Tight Gas Plays Around the World



Source Wood Mackenzie's Unconventional Gas Service

DG COMP ANTI TRUST INVESTIGATION ON GAZPROM

4th. September 2012

GAZPROM COMP PROBLEM

- Gazprom may have imposed unfair prices on its customers by linking the price of gas to oil prices.



DG COMP BASE POSITION

- **Why are gas prices so high?**
- While some gas supply contracts have fixed prices many others are historically linked to oil prices. This oil/gas price link may have been beneficial for consumers during the many years of low and stable oil prices, but is now posing a problem for consumers. This link could also be a symptom of malfunctioning markets. In well-functioning markets the price would to a much greater extent be set by gas-to-gas competition.
- **Is the gas-oil price link compatible with a competitive market?**
- Gas import contracts use price indices that are linked to oil derivatives. The indexation of gas prices to oil prices in gas supply contracts has historical roots from the pre-liberalization period. However, with market opening and the emergence of credible gas hubs, one would expect such contractual practices to gradually become less pronounced. This expectation is supported by the situation in the United Kingdom, a more liberalized energy market where gas-oil link indexation is much less prevalent.
- No clear trend towards more market based pricing mechanisms can currently be observed in long-term import contracts. As a result, wholesale prices fail to react to changes in the supply and demand for gas, which is damaging to security of supply. Ensuring liquidity will be crucial to improve confidence in price formation on gas hubs, which will allow for a relaxation of the linkage to oil.

Basic DG COMP Legal Foundations

- The Commission suspects exclusionary behaviour, such as market partitioning, obstacles to network access, barriers to supply diversification;
- exploitative behaviour, such as excessive pricing.
- Any such behaviour could be in breach of EU antitrust rules that prohibit abuse of dominant positions and restrictive business practices (respectively Articles 102 and 101 of the Treaty on the Functioning of the European Union – TFEU).



DG COMP: 3 SPECIFIC COMPLAINTS AGAINST GAZPROM

1. Gazprom may have divided gas markets by hindering the free flow of gas across Member States.
2. Gazprom may have prevented the diversification of supply of gas.
3. Gazprom may have imposed unfair prices on its customers by linking the price of gas to oil prices



DG COMP ANTI TRUST INVESTIGATION ON GAZPROM

DG COMP PROBLEM

- Gazprom may have prevented the diversification of supply of gas.



DG COMP BASE POSITION

- **Why is the Commission concerned about market foreclosure?**
- A market which is foreclosed (i.e. from which new market entrants are excluded) is not subject to effective competition. If a new entrant cannot start up their business in a certain market, the incumbents are not subject to competitive pressure that encourages them to provide customers with good services at low prices.
- **Are long term contracts alone enough to foreclose the market?**
- The Commission will look at contract duration in addition to other contractual clauses and market conditions which may lead to market foreclosure. It is necessary to examine whether there are real concrete possibilities for a new competitor to penetrate a bundle of contracts. Factors that would be considered include the volumes tied under the individual contracts, the duration of the contracts, the cumulative market coverage of the contracts and any efficiencies claimed by the parties. It is also necessary to consider any exclusivity clauses in the contracts which may prevent the customer from switching supplier. The cumulative effect of long term contracts, exclusivity clauses and market characteristics may make it very difficult for the customer to switch.
- **How can the problems highlighted on downstream markets be addressed?**
- The analysis indicates that levels of foreclosure vary considerably in different Member States. Generally, the Commission will look to impose remedies in merger and anti-trust cases that will assist in opening up downstream markets to competitors. Removing barriers to entry is a key goal in EU energy markets. Closely related to this is splitting the network companies away from the potentially competitive parts of the gas and electricity supply chain (such as retail, generation, gas production). This helps to ensure that new entrants gain non-discriminatory access to essential pipeline and grid networks.

GAZPROM COMP PROBLEM

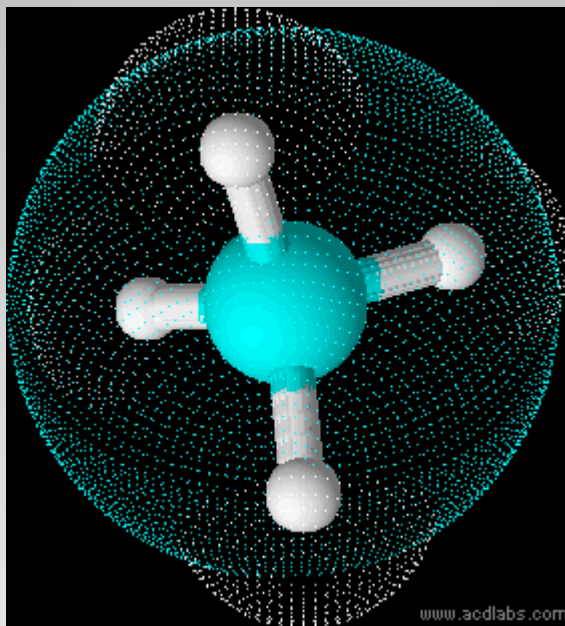
- Gazprom may have imposed unfair prices on its customers by linking the price of gas to oil prices.

DG COMP BASE POSITION

- **Are long-term gas supply contracts in upstream markets anti-competitive?**
- Long contract duration is not, in itself, anti-competitive. It is established Commission policy that long term import contracts have an important role to play when it comes to ensuring Europe's security of supply. However, where a significant proportion of the gas that can come to the market is locked in for the long-term, the cumulative effect might be that new entrants are excluded from the market.
- Individual terms and conditions contained in such contracts may also be anti-competitive: e.g. territorial restrictions are generally viewed negatively under Community competition rules. However, legitimate needs to underpin large investments with certain long-term contracts, must be taken into account.

DG COMP ANTI TRUST INVESTIGATION ON GAZPROM

5TH CENTRAL EUROPEAN GAS CONGRESS



„Let the power and simplicity of natural gas rise the economy, open minds and will be the base for sustainable energy future.”

Prague 2012

5TH CENTRAL EUROPEAN GAS CONGRESS



Mr. Andrzej Sikora
Energy Studies Institute,
CEO

THANK YOU!

5TH CENTRAL EUROPEAN GAS CONGRESS

- 1. Looking for our partners from Hungary in spite of the fact that there are politics, we are mainly engineers believing in science – knowledge and we do not care about the color of methane molecule!**
- 2. V4 members have got a clear vision for the European gas market. It should function in order to benefit individual consumers and industrial stakeholders. Gas market should be free and open.**
- 3. Natural Gas in Europe should be traded on a few, consolidated, liquid hubs with an independent access of the stakeholders. (Where is the place – the hub – for V4?)**
- 4. Prices should be based on supply and demand, decoupled from other resources such as crude oil. Natural gas should be trade as commodity!**
- 5. The liquid market has to be supported by the necessary infrastructure (transport, storage, LNG terminals).**
- 6. The wholesaler/stakeholder (consumer / end-user) has to be able to safeguard its competitiveness by choosing freely the best gas resource corresponding to its needs. Market has to be open for all sources with shale potential.**
- 7. V4 members had identified a number of concrete measures adopted by the EU that would secure the competitiveness of European natural gas industry, ensure fair prices for consumers and improve the security of supply of natural gas on the European market.**
- 8. We have got a dream - we are looking for free, independent, fair, open natural gas market by the end of 2014!**

5TH CENTRAL EUROPEAN GAS CONGRESS

„Natural gas is a clean, affordable, reliable, efficient and secure energy source. It has a vital role to play in a sustainable energy future.[...]”

Budapest 2011