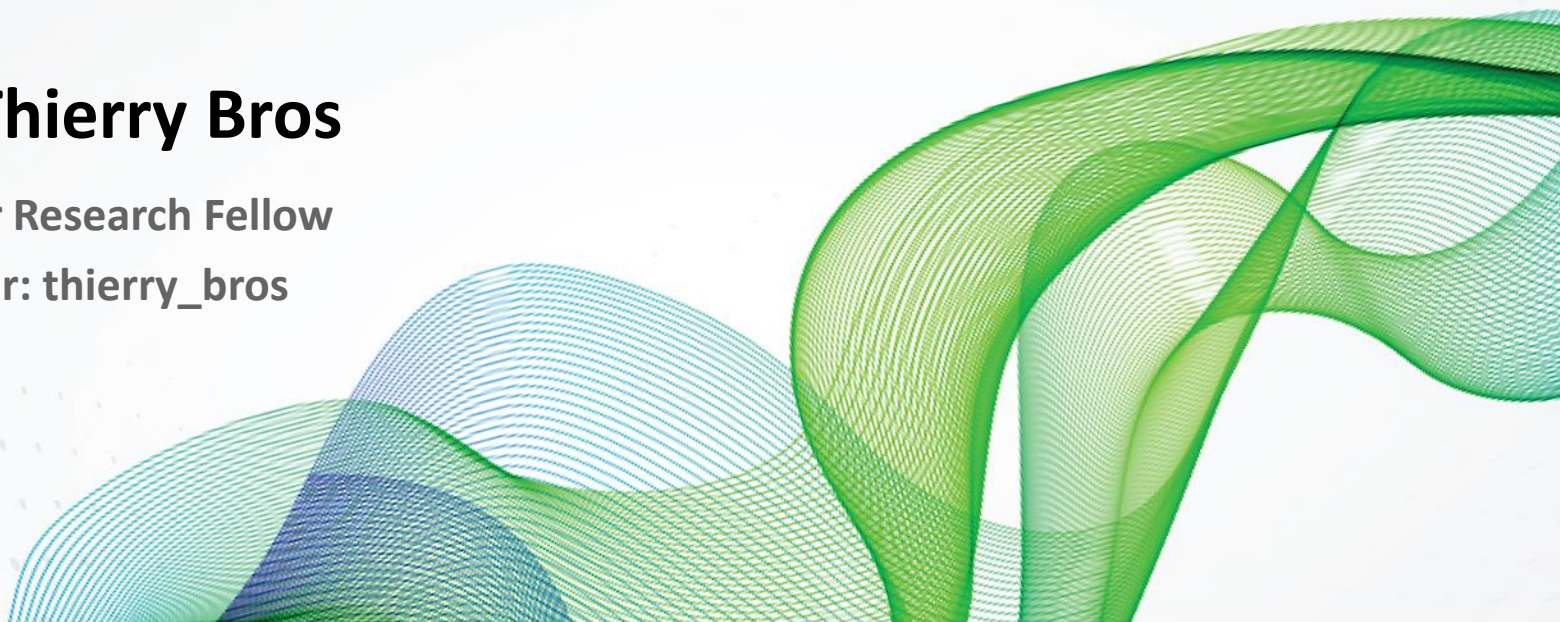


European gas markets: Key trends

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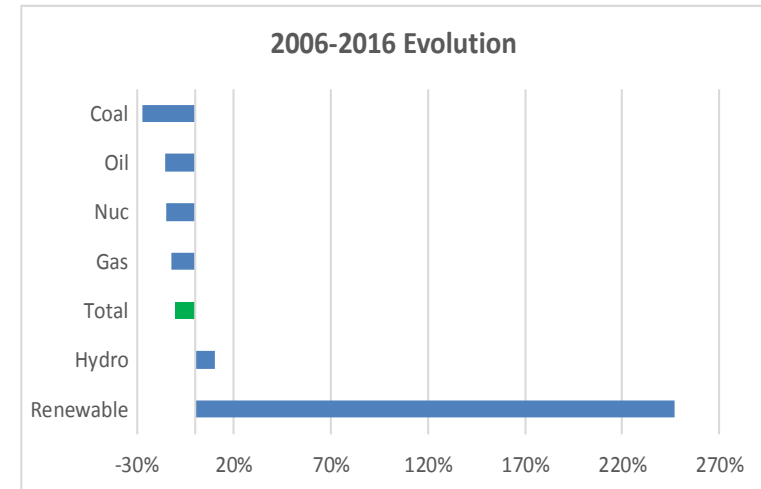
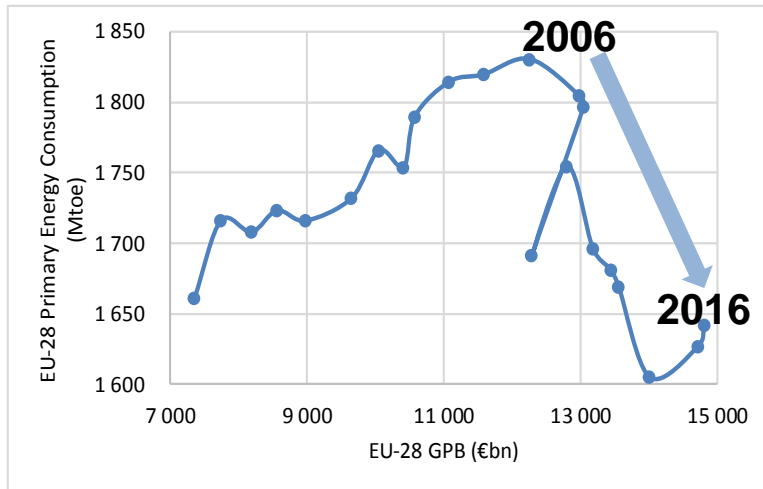


Gazprom – 5 July 2017

The changing landscape

EU Primary energy consumption
Down by 10,3% since 2006

Most fuels down
Renewable x3.5



Source: BP Statistical Review June 2017, RichesFlores Research, Macrobond, thierrybros.com

Who was right in 2007 about 2017?

EU Commission

2020 objectives

20% from renewables
20% increase in efficiency
20% cut in greenhouse gas emissions

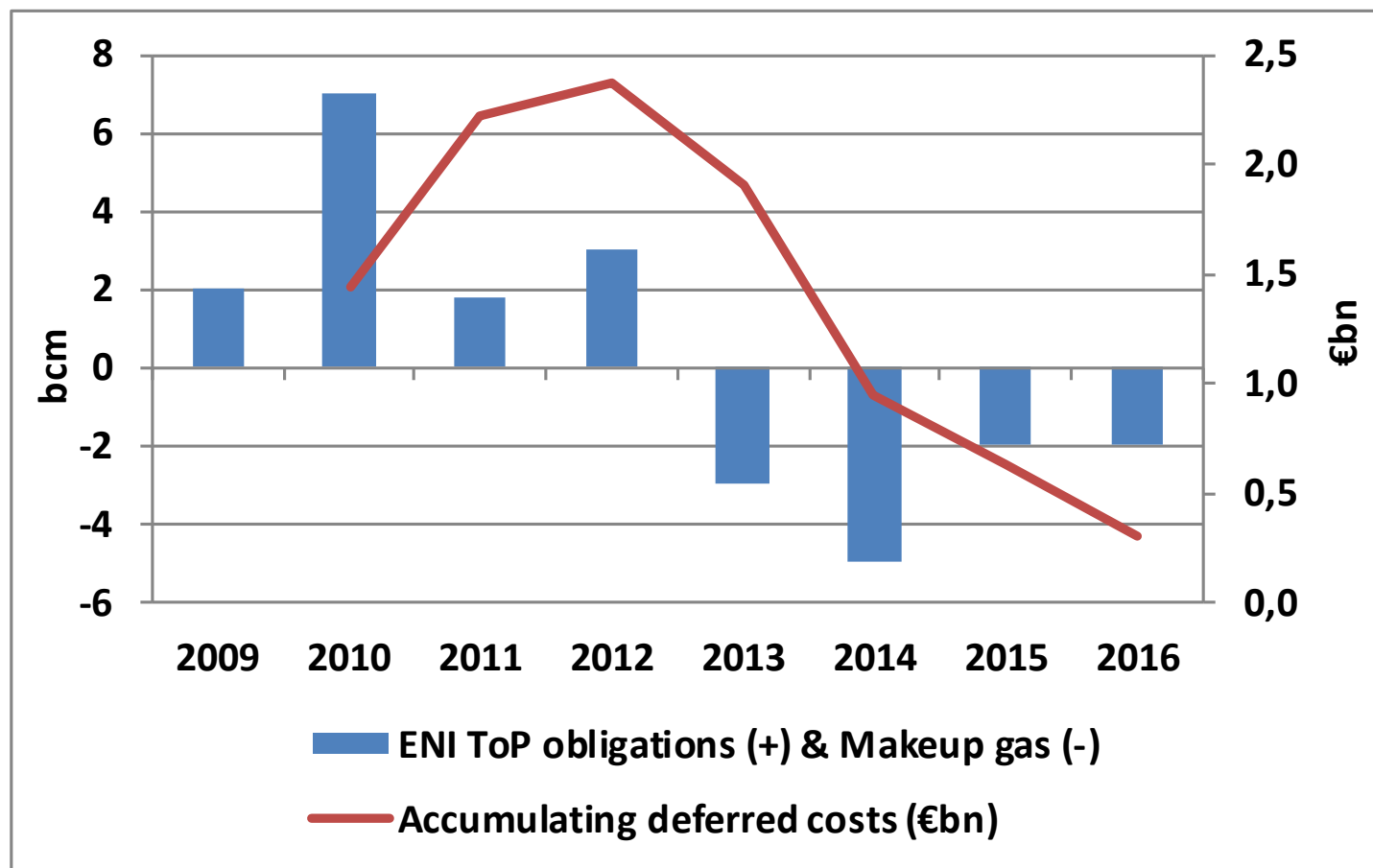
Industry

- Growth in demand
- Constrain in production
- High prices
- No alternative strategy

**Policy has a better track record of forecasting
than industry**

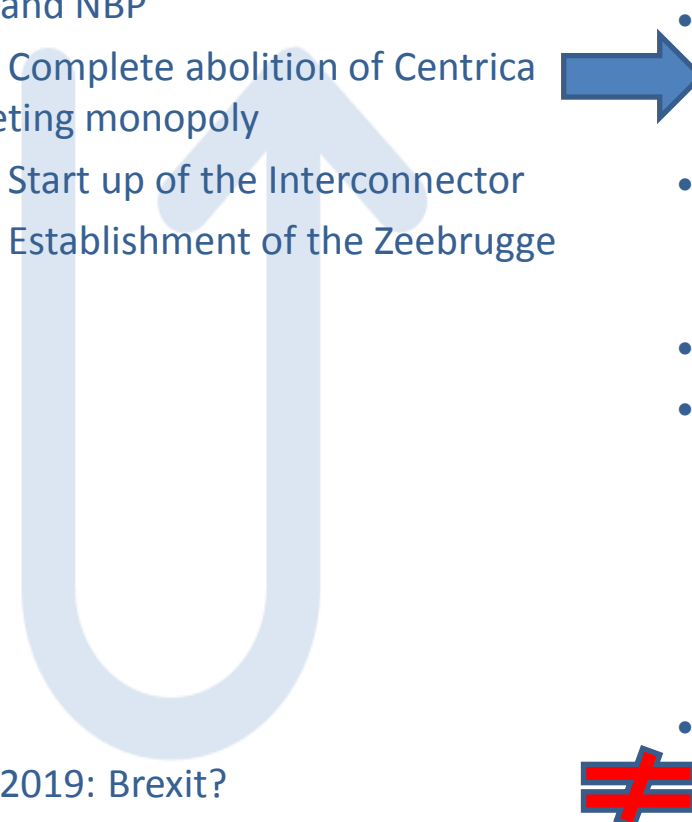
Negatively impacting utilities

No more ToP obligations?



Source: ENI, thierrybros.com

Main steps of European gas liberalisation

- 1986: Privatisation of British Gas
 - 1996: Establishment of the Network Code (TPA) and NBP
 - 1998: Complete abolition of Centrica marketing monopoly
 - 1998: Start up of the Interconnector
 - 1999: Establishment of the Zeebrugge Hub
 - 2017-2019: Brexit?
- 
- 1998: Directive concerning common rules for the internal market (following telecom deregulation)
 - 2003: Directive concerning common rules for the internal market and repealing 1998 directive
 - 2007: Third energy package
 - 2009: Art 194 of the Lisbon Treaty, carefully crafted compromise between national sovereignty governing energy mix, exploitation of natural resources and energy taxation and a shared EU competence for other areas
 - 2015: Energy Union?

Energy Union

Dream or a reasonable ambition?

- **The biggest change since the 1951 Coal and Steel Community Treaty**
 - <http://ec.europa.eu/avservices/play.cfm?ref=1098040&videolang=EN+EN&off=1>
 - ~~Pool resources, connect infrastructures, diversify energy sources, reduce energy dependence and unite in order to strengthen EU negotiating power vis-à-vis third countries~~
- ❖ **Energy security, solidarity and trust**
 - The Commission will assess options for voluntary demand aggregation mechanisms for collective purchasing of gas during a crisis and where Member States are dependent on a single supplier
 - When the conditions are right, the EU will consider reframing the energy relationship with Russia based on a level playing field in terms of market opening, fair competition, environmental protection and safety, for the mutual benefit of both sides
- ❖ **A fully integrated energy market**
 - Citizens take ownership of the energy transition and benefit from new technologies to reduce their bills
- ❖ **Energy efficiency contributing to moderation of demand**
 - 2030 indicative target (EU level): at least 27% for improving energy efficiency (compared to projections)
 - NEW PROPOSAL (30/11/2016): binding EU-wide target of 30% for energy efficiency by 2030
- ❖ **Decarbonisation of the economy**
 - 40% cut in greenhouse gas emissions compared to 1990 levels
 - The cornerstone of Europe's climate policy is a well-functioning EU Emissions Trading System
 - Becoming the number one in renewables (27% for the share of renewable energy in the mix in 2030)
- ❖ **Research, Innovation and Competitiveness**

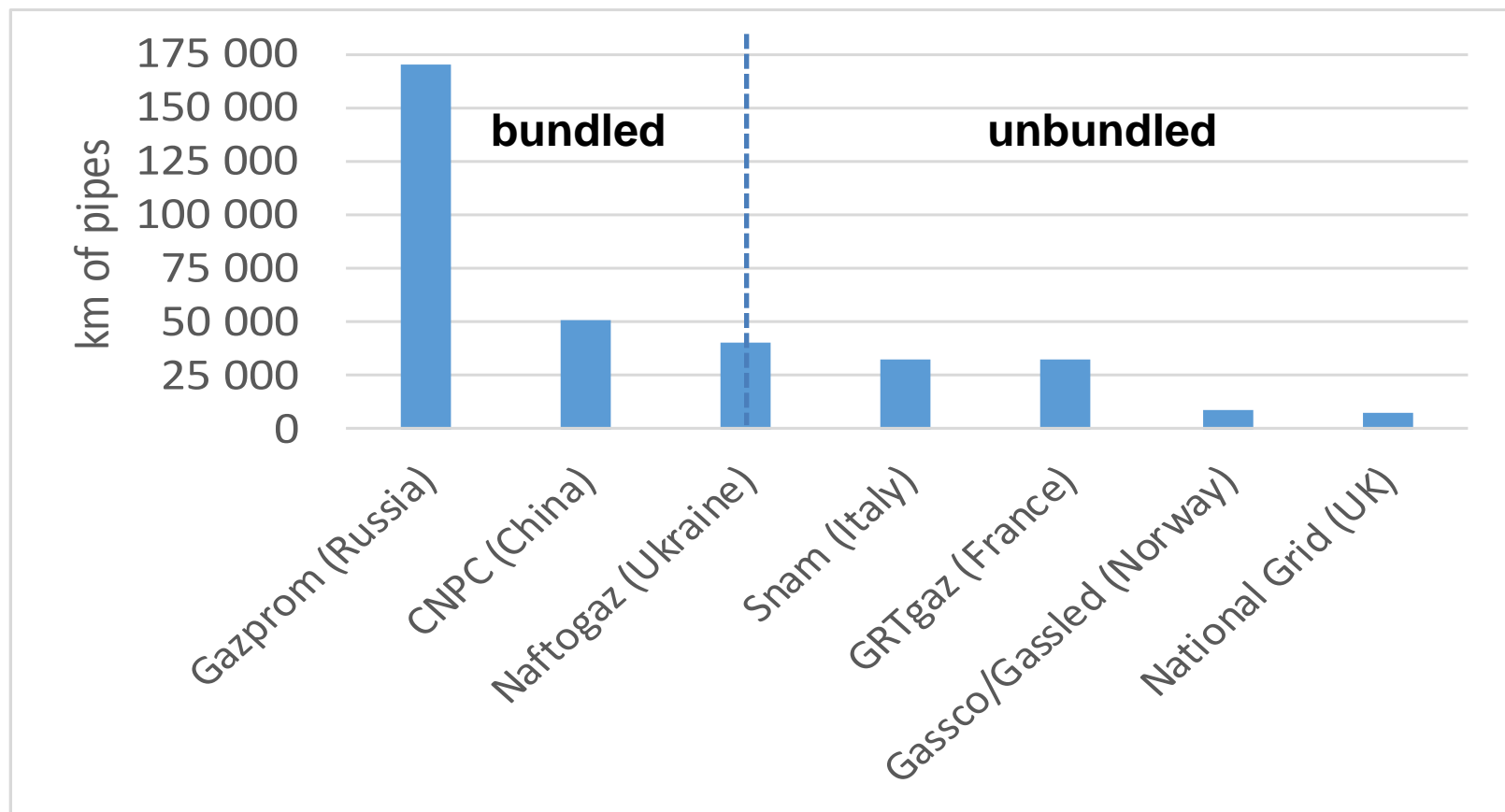
Europe: regions, markets & hubs



Only 2 'mature' gas trading hubs in Europe: NBP and TTF

Source: Heather/Petrovitch

Markets become price-correlated due to network unbundling



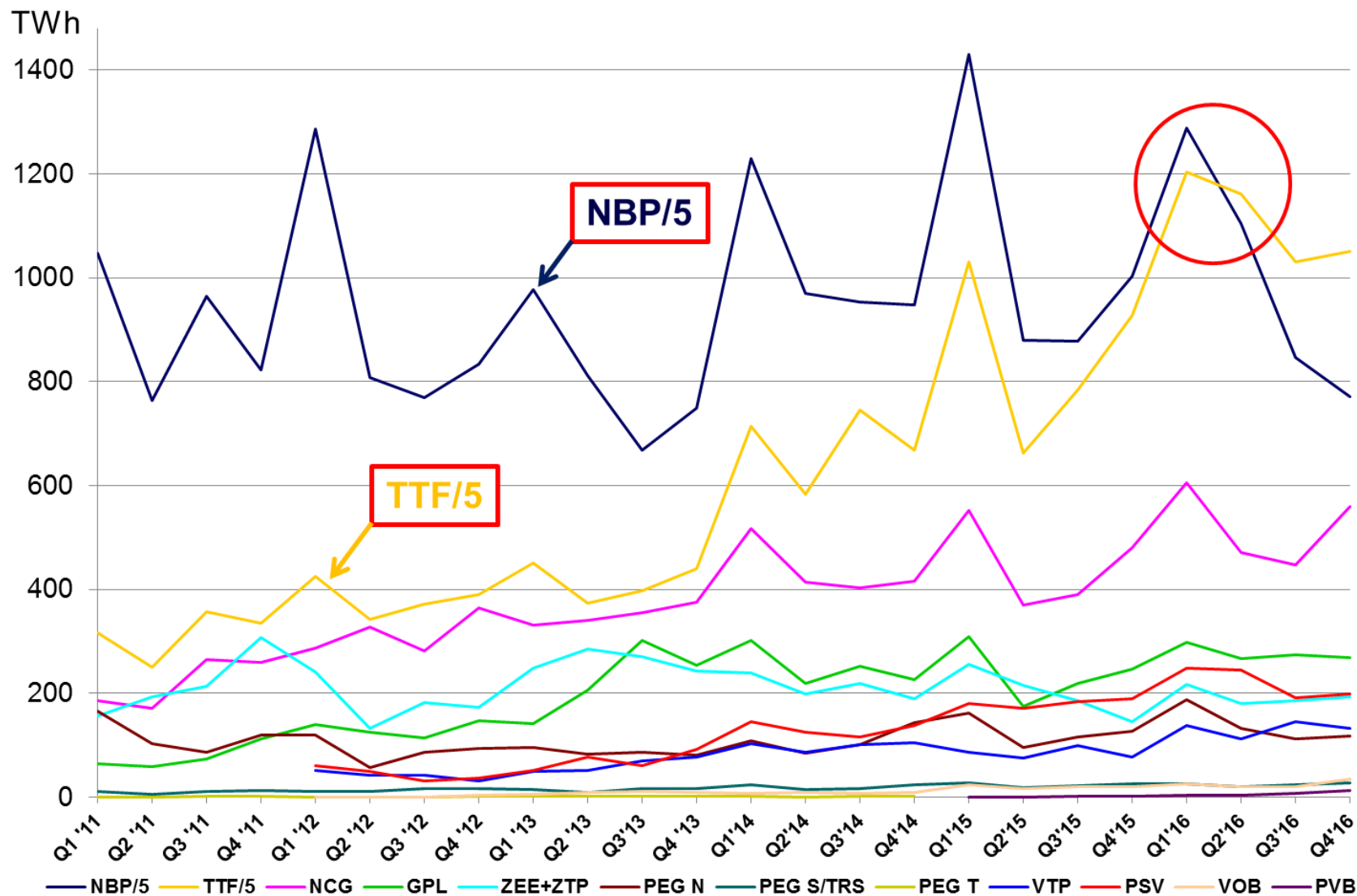
Source: thierrybros.com, company data



What if?

- Energy transportation is viewed like roaming for telecom
- EU maximize overall welfare state
 - ❖ The legislative process of developing harmonized market rules from the Third Energy Package may be soon completed. Looking ahead, DG Energy is seeking for substantiated analysis as to whether the current regulatory framework in the gas sector is the most effective in order to maximize overall EU welfare or whether amendments may be necessary and if so what the key recommended changes are.
 - ❖ Put simply, a well-functioning, integrated EU internal gas market should mean:
 - the lowest possible gas prices (commodity & network) for EU consumers;
 - reduction (or elimination) of price differences across the continent that are due simply to competitors being able to exercise market power in certain geographic regions;
 - secured gas supply across the EU by having access to multiple sources of supply.

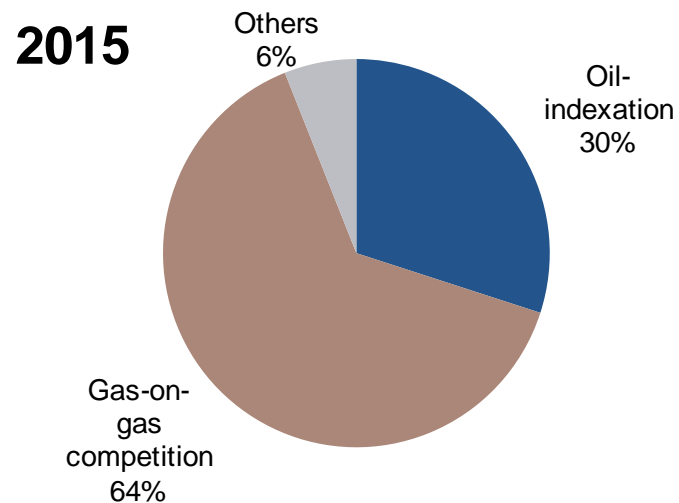
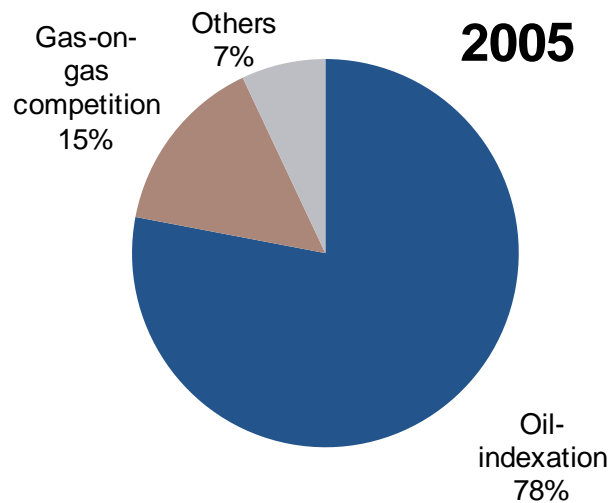
Traded volume development



TTF now European largest hub

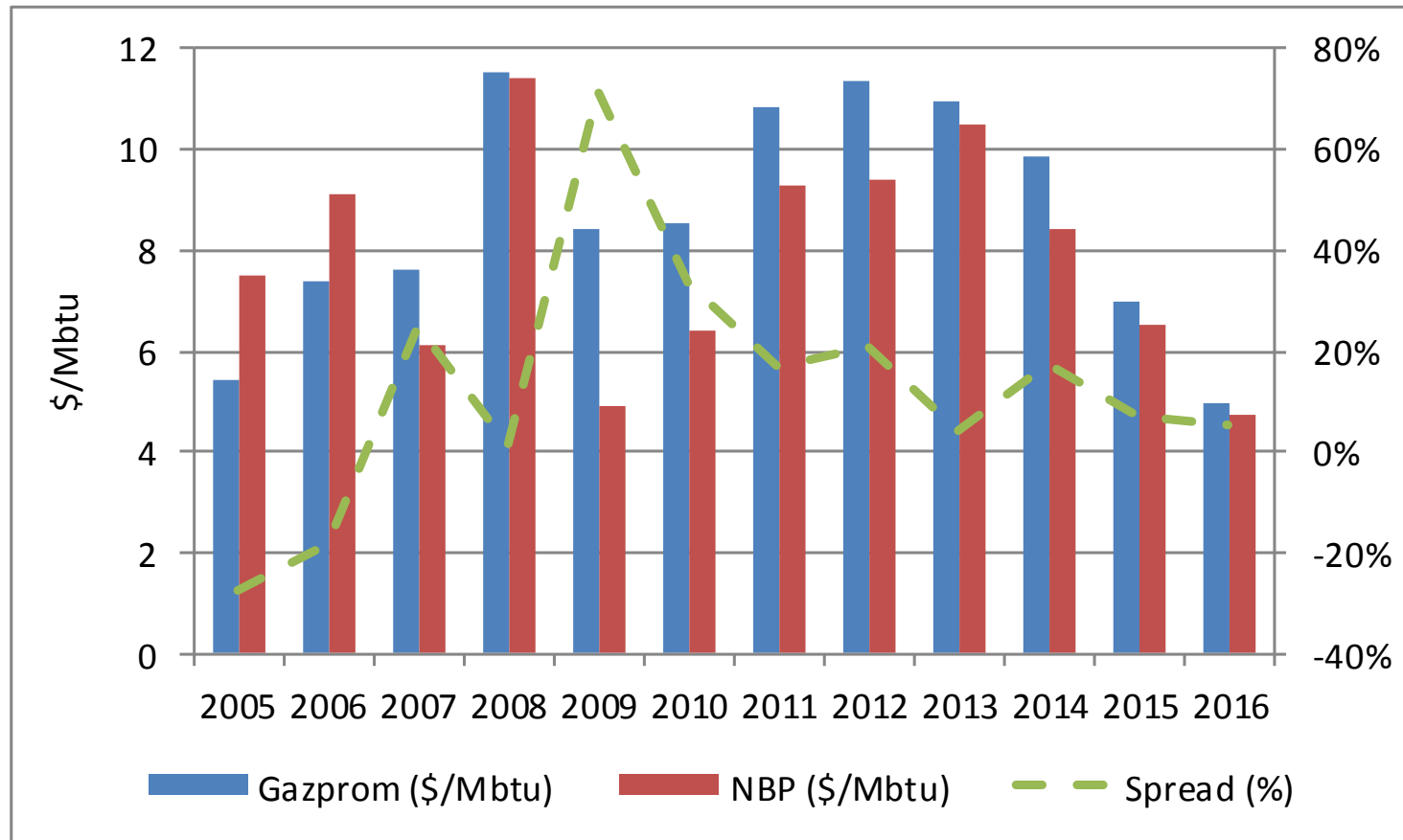


European wholesale gas pricing...



Source: *thierrybros.com, IGU*

... is influenced by Gazprom

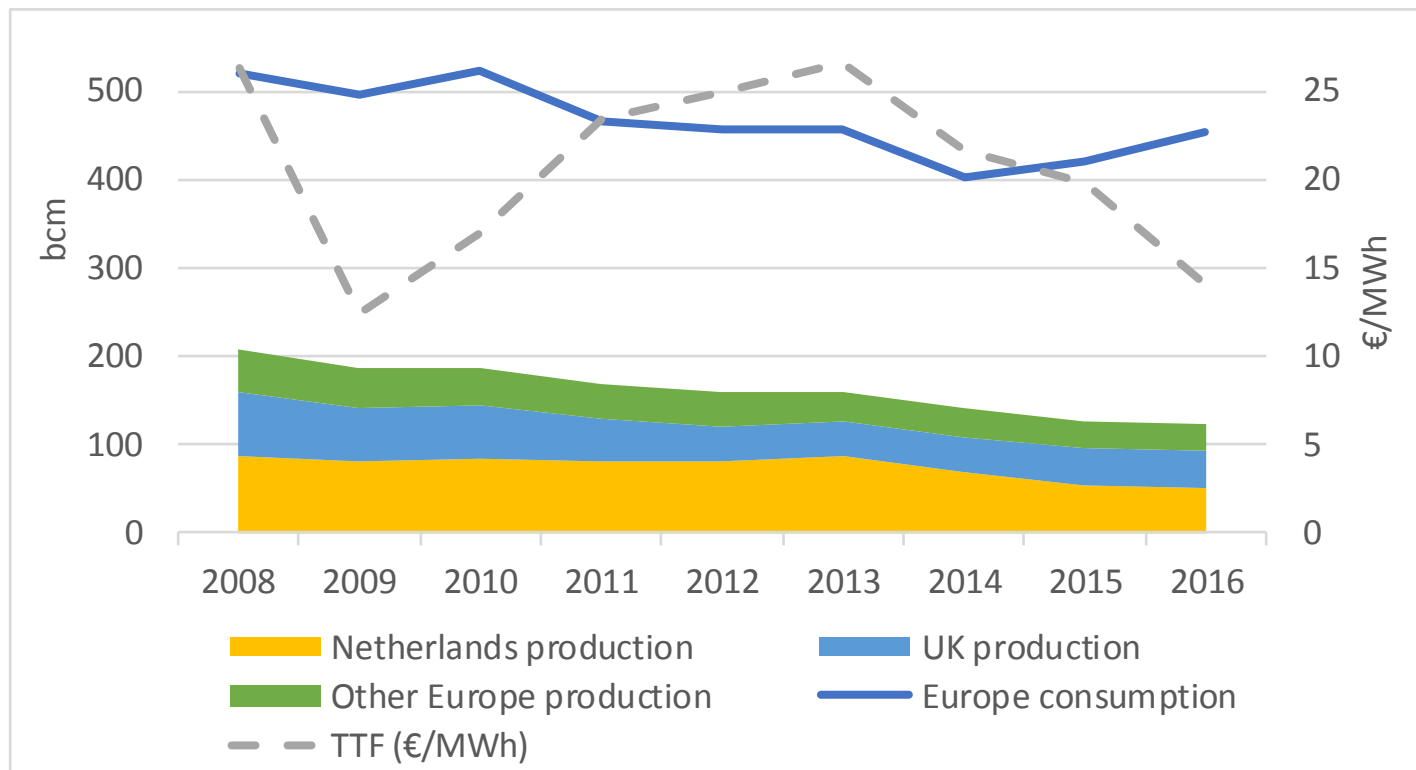


Source: *thierrybros.com*, Gazprom, Argus

2 major gas shocks with completely different outcomes

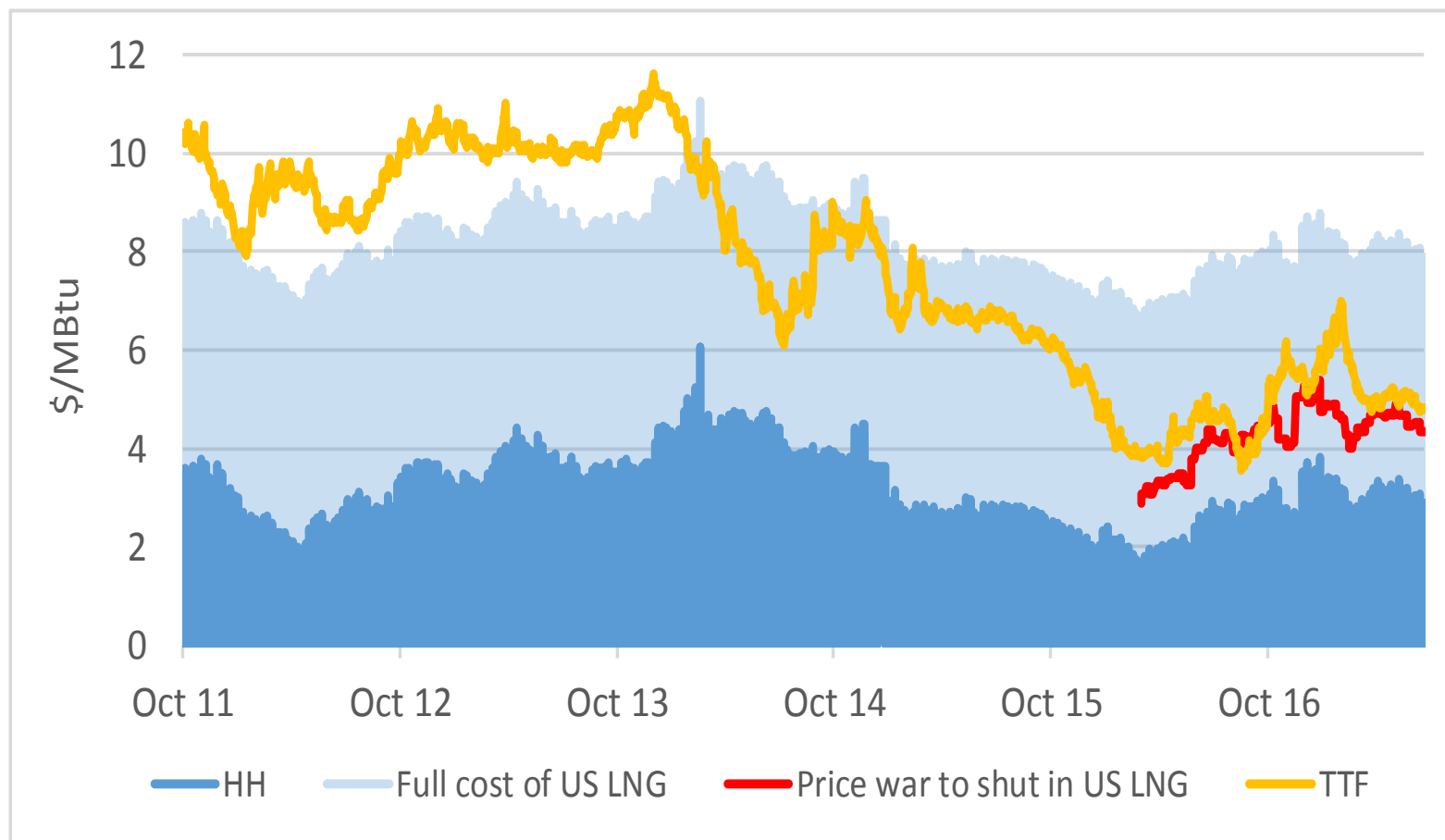
| | | Event | Results |
|------|-----|--|------------------------------|
| 1991 | Oil | Build-up to Gulf War | IEA strategic stocks release |
| 2005 | Oil | Hurricanes Katrina & Rita in US Gulf of Mexico | IEA strategic stocks release |
| 2011 | Oil | Libya: disruption of supplies | IEA strategic stocks release |
| 2011 | Gas | Fukushima: 7% of global LNG rerouted to Japan | Market answer: higher prices |
| 2015 | Gas | Groningen cap: loss of 9% of European demand | Market answer: lower prices |

Europe import needs at record high



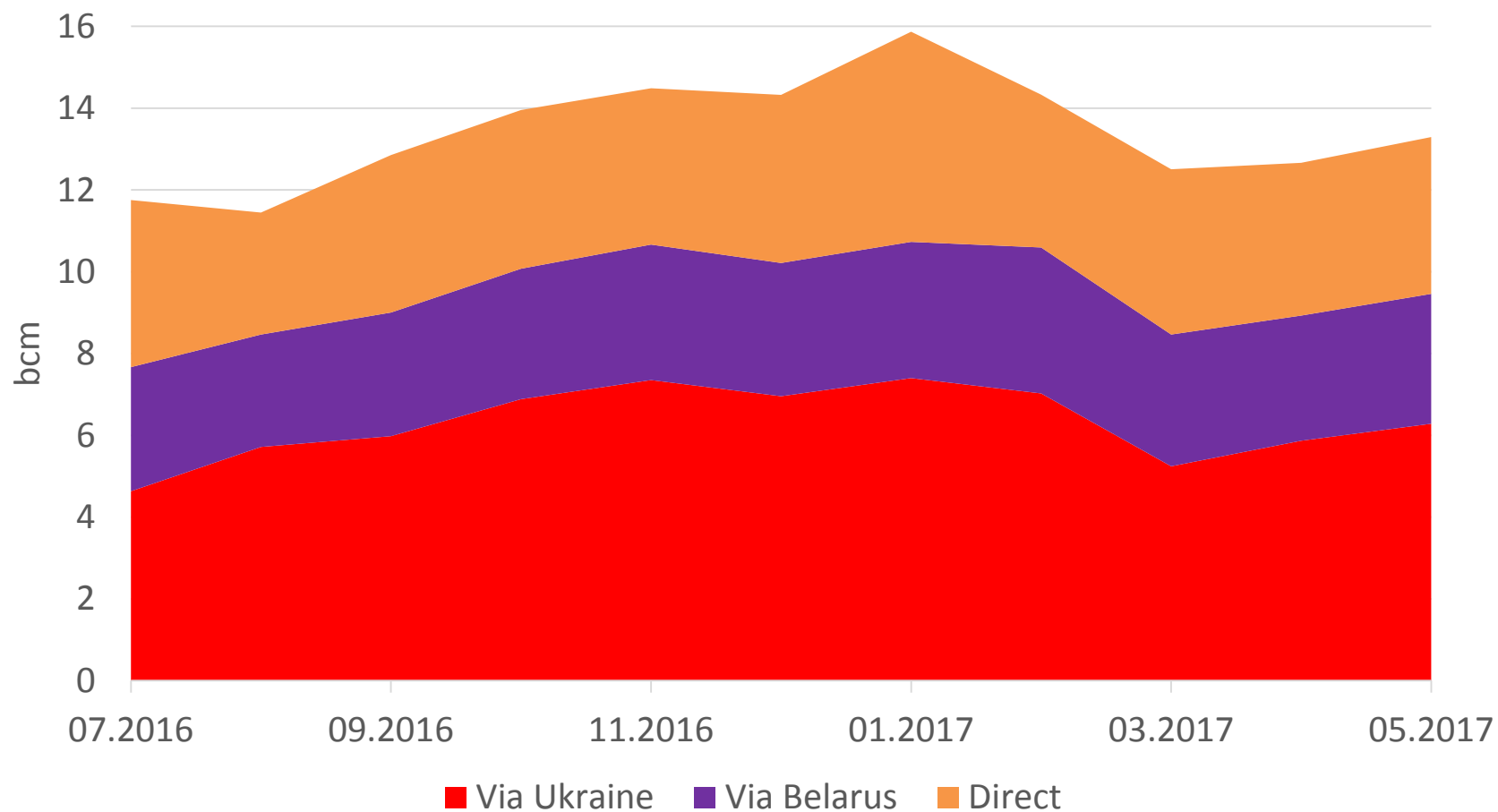
Source: IEA, JODI, thierrybros.com

US LNG vs Russian pipe



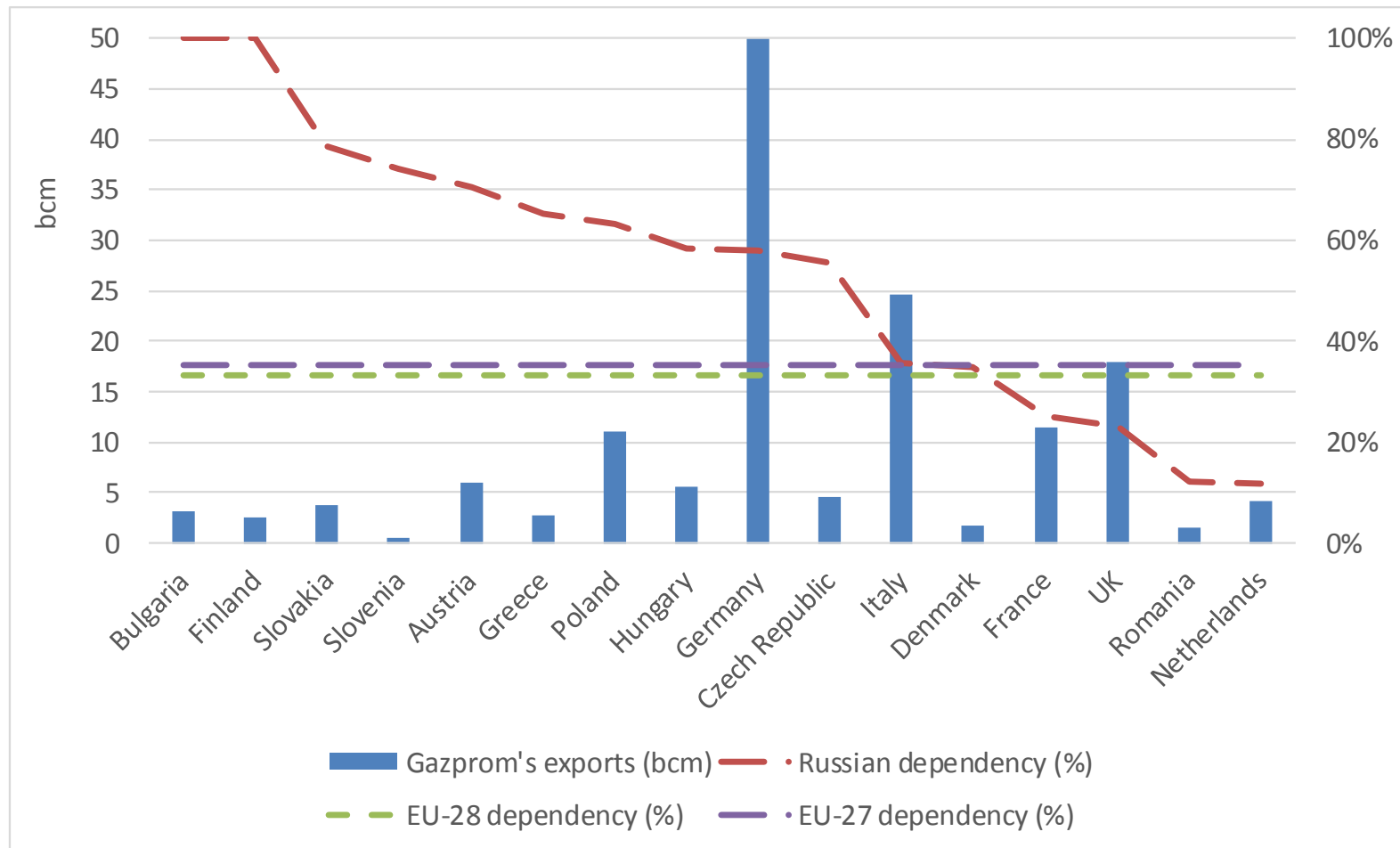
Source: Argus, thierrybros.com

Gazprom EU exports at record high



Source: Gazprom, thierrybros.com

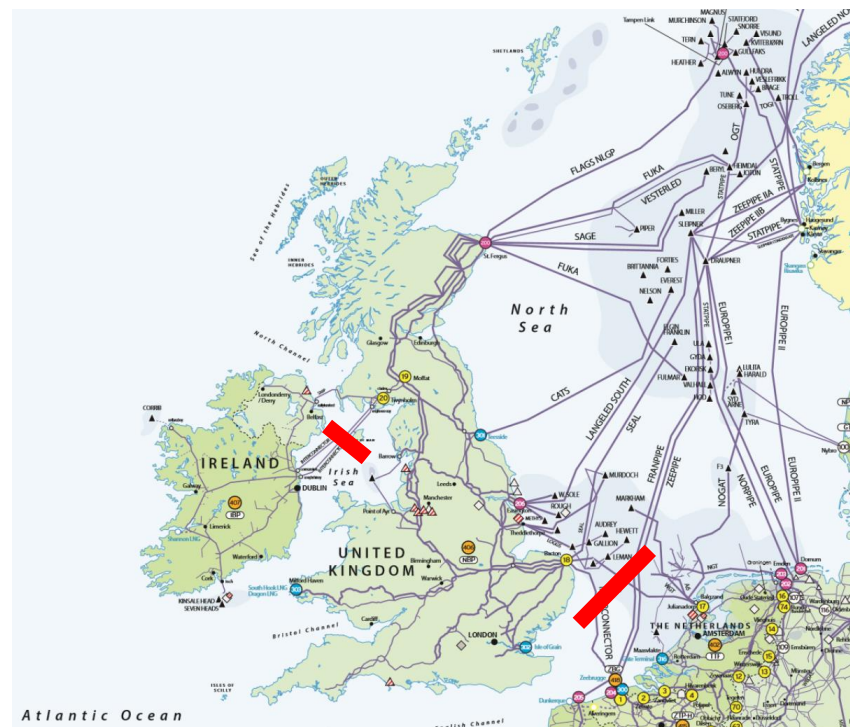
Gazprom exports and Europe dependency



Source: Gazprom Export, thierrybros.com

Brexit's impact on gas markets

- Policy
 - ❖ For SoS, UK needs to reshape its energy diplomacy
- Regulatory
 - ❖ 3 EU-UK interconnectors?
- Markets
 - ❖ NBP premium and volatility to increase versus TTF
 - ❖ Independent trading houses, Norway and LNG producers could take advantage of the increased NBP premium & volatility vs TTF



Source: *ENTSOG, thierrybros.com*

Brexit timing: a lengthy uncertainty

H1 17

- **Triggering article 50 by the UK – 29 March 2017**
- Negotiations guidelines adopted by the European Council – 29 April 2017
- Commission presented to the Council a recommendation to open the negotiations – 3 May 2017
- Council authorised start of the negotiations by adopting first set of negotiating directives – 22 May 2017
- **Starting of negotiations – 19 June 2017**

Q4 18 – Q1 19

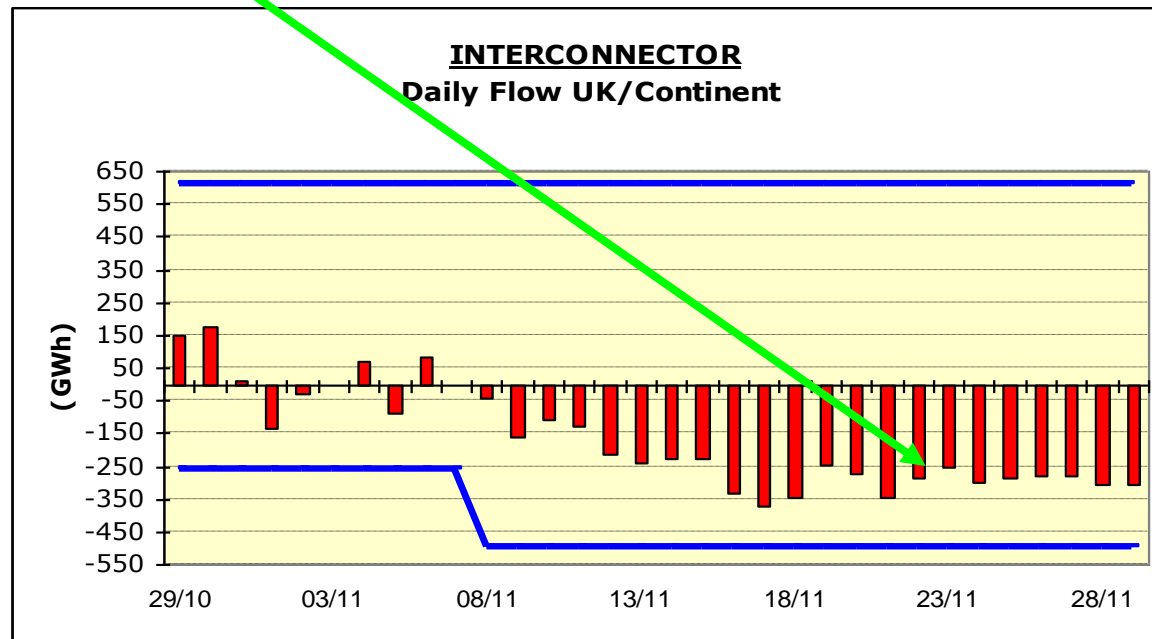
- Union negotiator will present an agreement proposal to the Council and the European Parliament, taking into account the framework of the future relationship of the UK with the EU
- European Parliament must give its consent, by a simple majority vote (incl. UK Members of the European Parliament)
- Council will conclude the agreement, by a vote of strong qualified majority
- UK must also ratify the agreement according to its own constitutional arrangements

After leaving

- “To succeed, we need to devote the first phase of negotiations exclusively to reaching an agreement on the principles of the exit” Michel Barnier at the plenary session of the European Parliament (5 April 2017)
- “Bilateral agreements between the UK and one or more remaining EU countries, would be in breach of the EU Treaties” EU Parliament
- **Intergovernmental agreements (UK-IR, UK-BE & UK-NL) to be renegotiate. As one or as 3?**
- **Impact on Nord Stream 2?**

Remember pre-markets time?

- On the 22nd November 2005, at 170 p/th only 58 % of the Interconnector “reverse” capacity was used

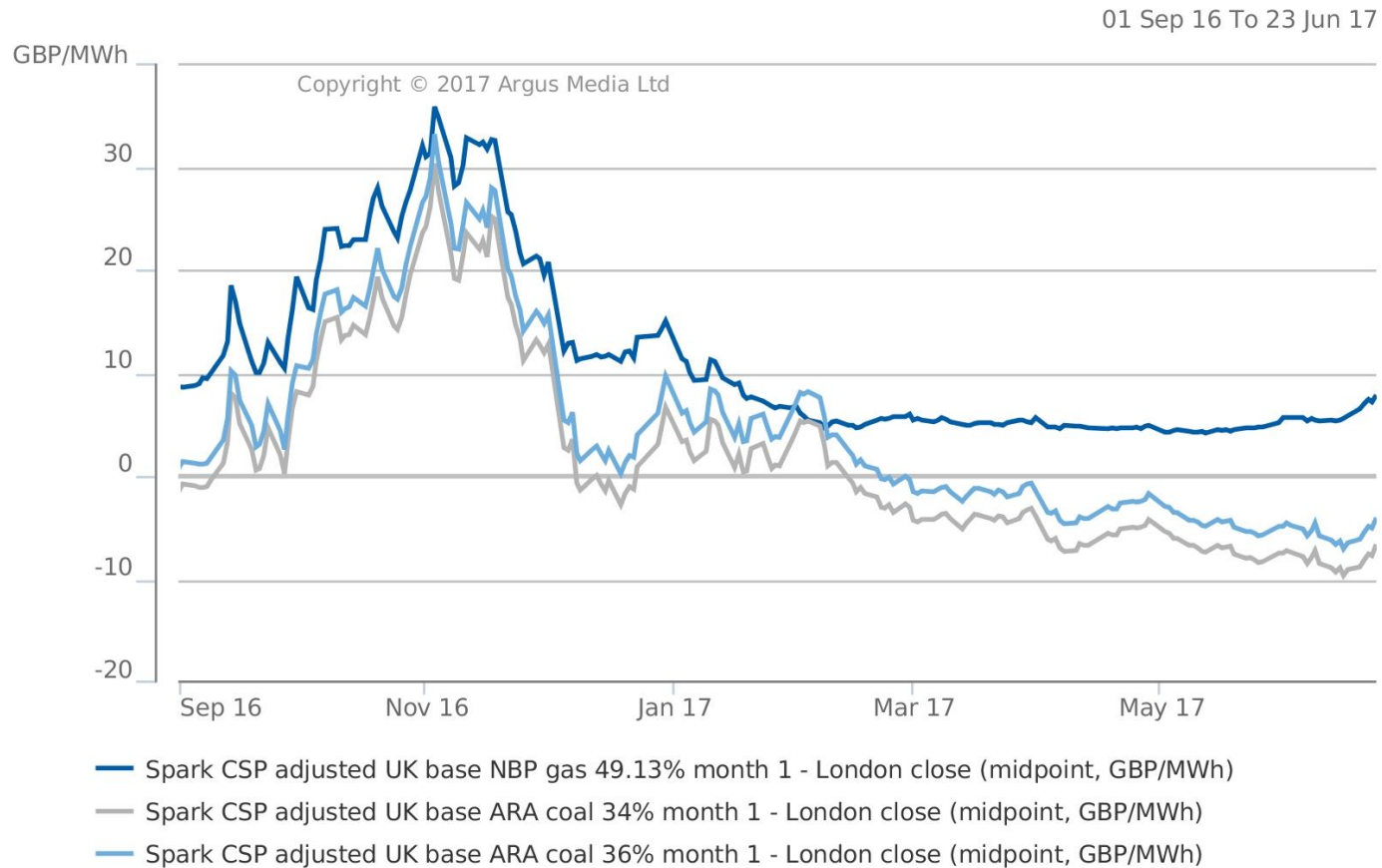


- Licence obligations prevented Continental European gas companies to release gas at the beginning of Winter

Source : *thierrybros.com, IUK*



Gas displaces coal in UK



Coal vs gas in Germany



EU ETS

- Covers emissions from electricity generation & heavy industry
- Provides a common carbon price across participants
- Market mechanism
 - ❖ Least-cost approach without creating competitiveness challenges for industry
 - ❖ EEA countries (part of the EU single market) are members of the EU ETS
 - ❖ Switzerland & EU ETS to be linked
- But price too low to remove coal from energy mix
- Emissions not covered by EU ETS?

UK & EU ETS?

Leave

- UK has since 2013, a national policy (Carbon Price Floor) that delivers coal switching
- EU ETS doesn't deliver a price switching level
 - ❖ Too many allowances
- Taxation works
- EU-27 to review the allowances or implement a tax

Stay

- Single energy / electricity market
- Liquidity
- EU-27 unable to review the allowances or implement a tax

Thank you

