European Gas Market: Myths and Realities

by Sergei Komlev

Gazprom Export LLC
Head of Contract Structuring and Pricing Directorate

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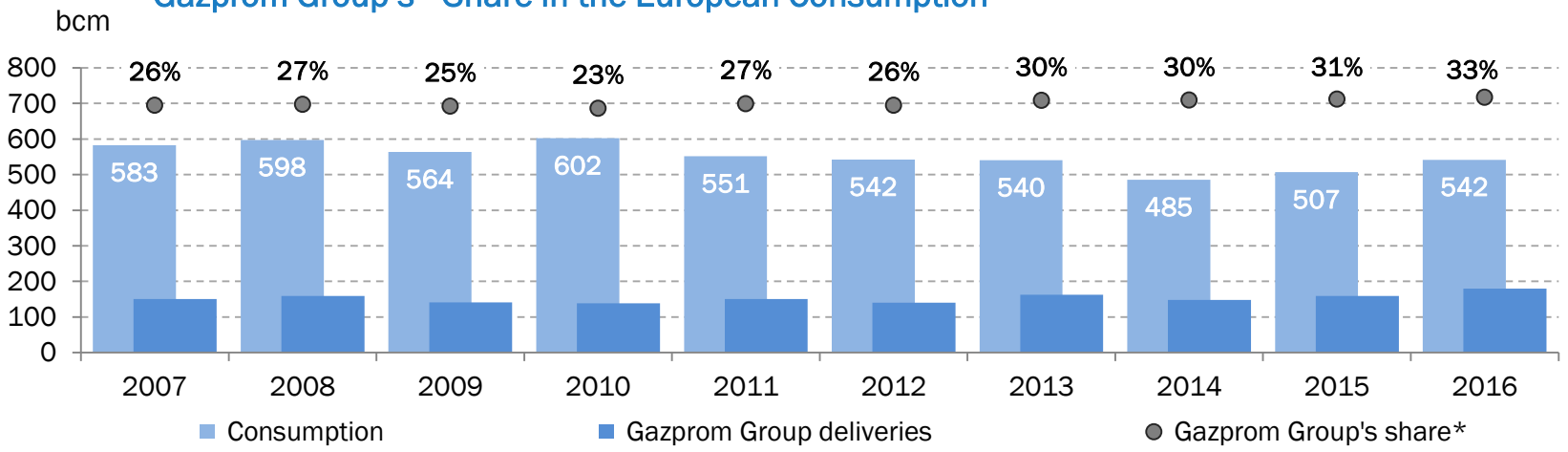
Myth #1

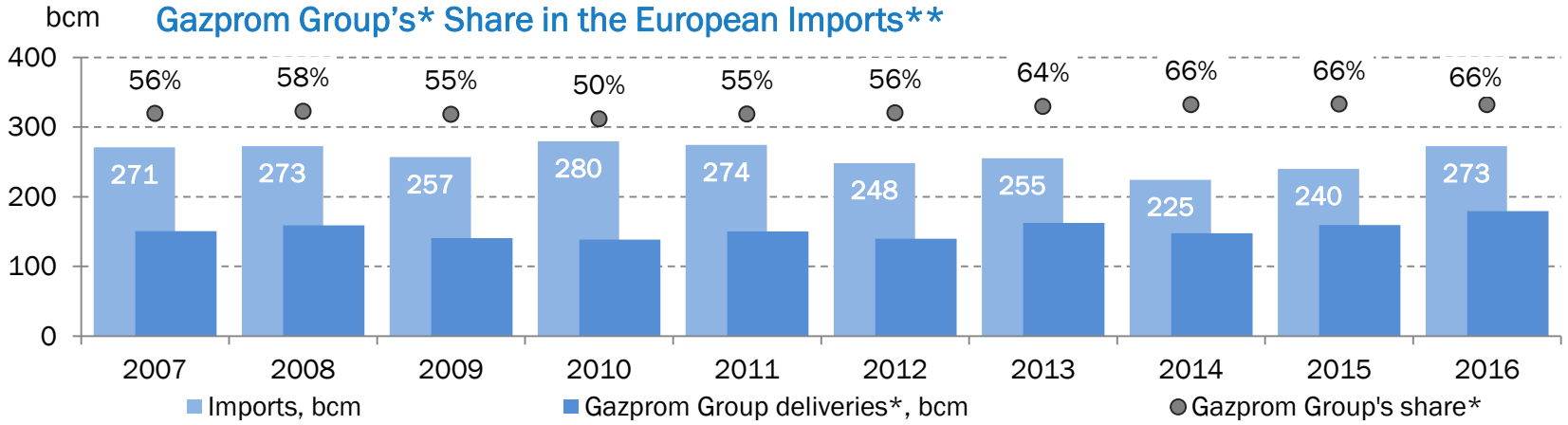
Gazprom's Place in Boatful of Supplies is Insecure due to Falling Demand and EU Diversification Policies

Gazprom on European Gas Market

Gazprom Group's* Share in the European Consumption



Gazprom Group's* Share in the European Imports**



** Volumes sold under "Gazprom export" and "Gazprom Schweiz" contracts to European Far Abroad*

*** Difference between consumption and domestic production*

Gazprom Deliveries on European Market in Q1 2017

European Far Abroad (E)

	Q1 2016	Q1 2017	Δ, bcm	Δ, %
Gas deliveries by Gazprom*, bcm	44.4	51.0	6.6	14.9%
Share in consumption, %	24.8%	27.8%	3.1 pp	-
Share in imports, %	63.7%	71.1%	7.4 pp	-

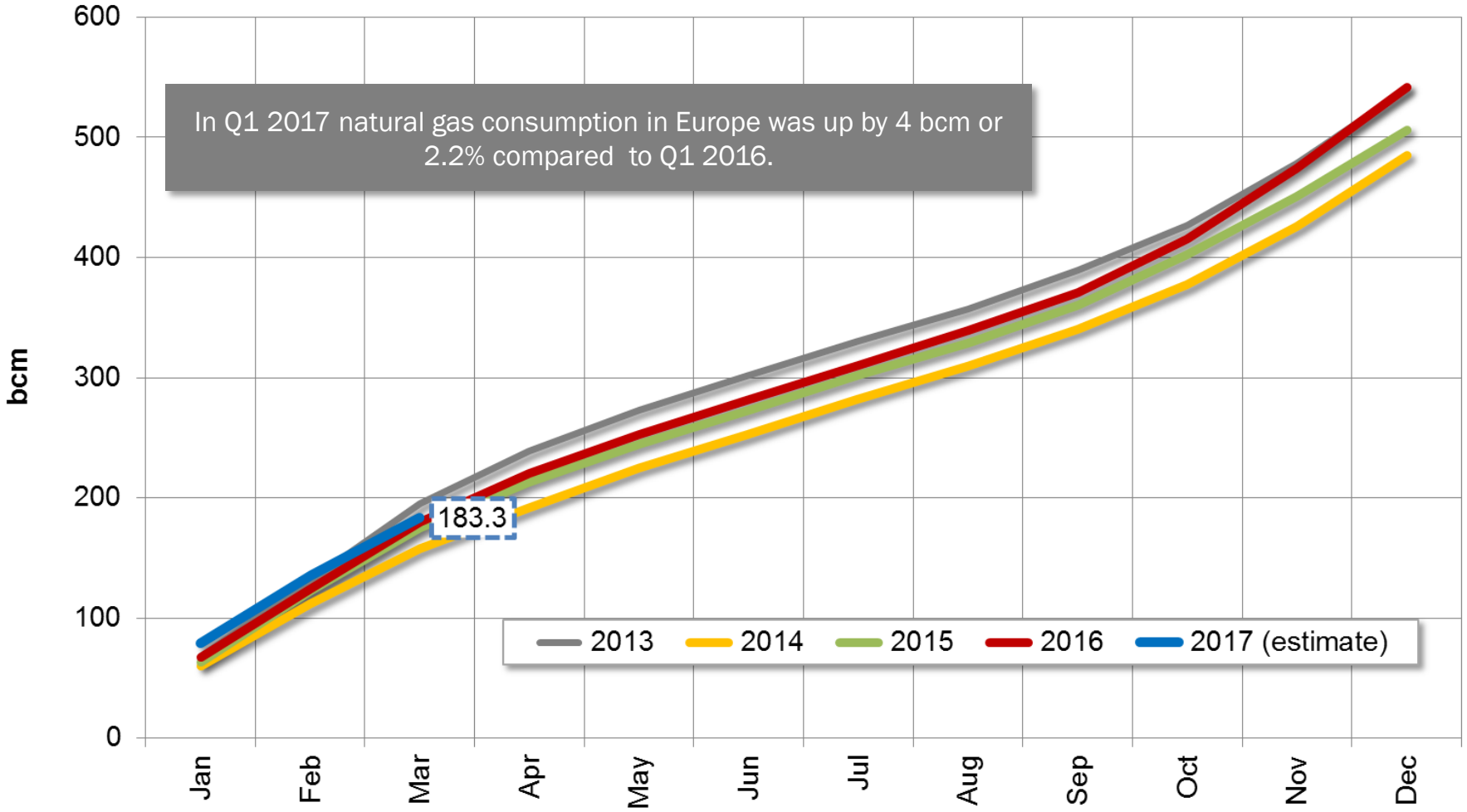
European Union (E)

	Q1 2016	Q1 2017	Δ, bcm	Δ, %
Gas deliveries by Gazprom, bcm	38.4	43.3	4.9	12.7%
Share in consumption, %	23.7%	26.4%	2.7 pp	-
Share in imports, %	43.8%	49.8%	6.0 pp	-
Share of EU in Gazprom's exports	86.5%	84.8%	-1.6 pp	-

** Including the contracts of Gazprom Export LLC, direct contracts of Gazprom Schweiz AG and volumes marketed via gas auctions of Gazprom Export LLC.*
Sources: Gazprom PJSC, IEA, Eurostat.
Given values may differ from the calculated ones as they are rounded.

Gas Consumption in Europe, 2013 – 2017

Monthly Gas Consumption (Accumulated Values)



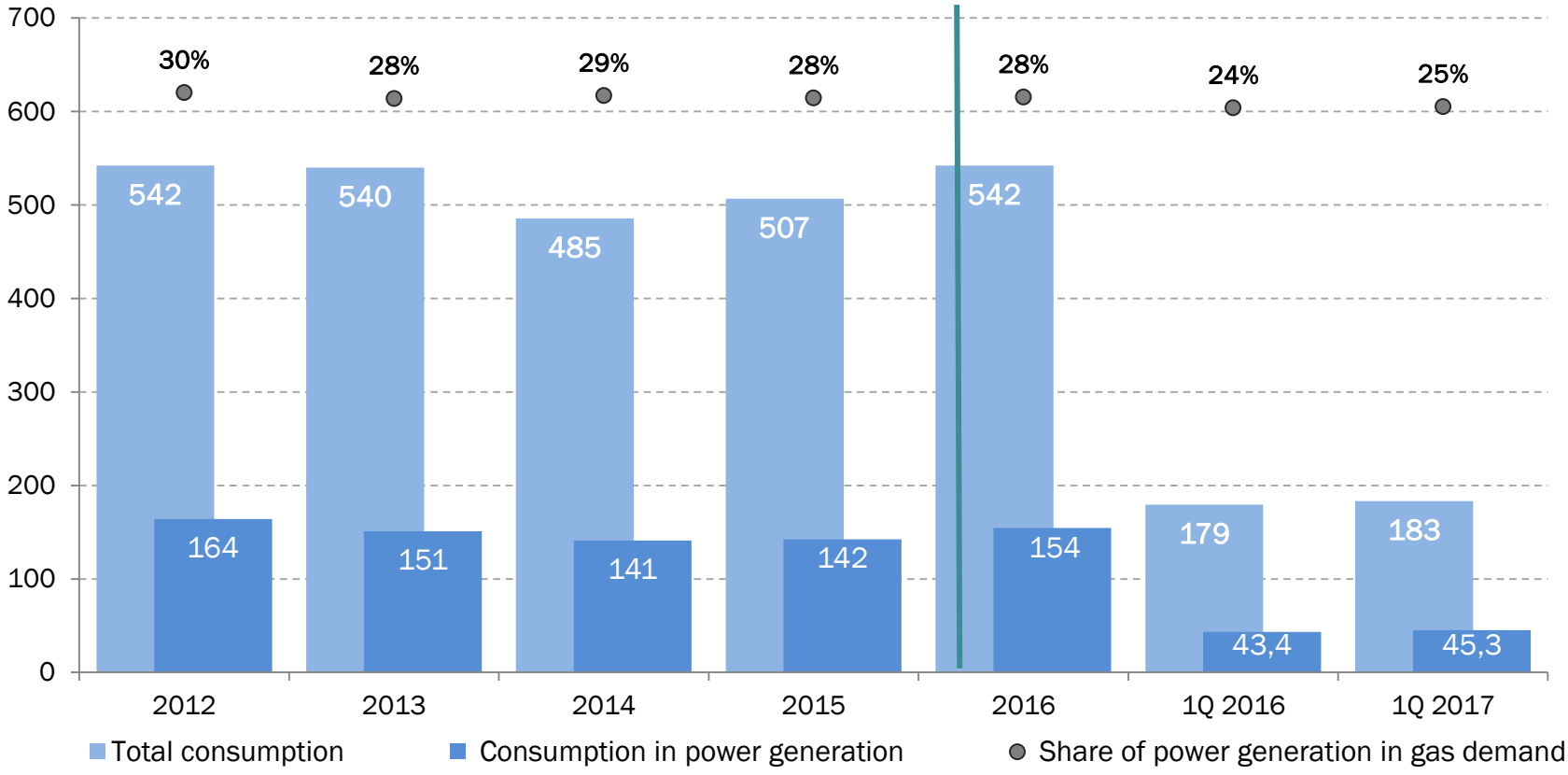
Major Factors Affecting Gas Consumption in Europe in Q1 2016 and Q1 2017*

	Q1 2016	Q1 2017
1.Favorable weather conditions (cold and long winter, hot summer)	↓	↓
2. Economic recovery	—	↑
3. Use of gas in power generation	↑	↑
4. Base period effect	—	—
Total consumption dynamics, YoY:	+2.7%	+2.2%

** Factors are defined in comparison with long-term averages. Factors could affect consumption in a bidirectional way. Changes in volumes made on year-on-year and quarter-on-quarter basis.*

Demand for Natural Gas in Power Generation

Demand for Natural Gas in Power Generation in European Far Abroad



Sources: Eurostat, International energy agency (IEA), ENTSOG, IHS, PIRA, National Statistical Agencies as of April 2017. Given values may differ from the calculated ones as they are rounded.

Deliveries by Major Suppliers in Q1 2017

Deliveries by Major Exporters

(bcm)

	Q1 2016	Q1 2017	Δ, bcm	Δ, %
Gazprom PJSC*	44.4	51.0	6.6	14.9%
Algeria (incl. LNG)	11.2	14.2	3.0	26.6%
Qatar	6.8	5.1	-1.7	-25.2%
Nigeria	2.4	3.5	1.1	47.8%
Iran	2.3	2.1	-0.1	-4.9%

Deliveries by Major Indigenous Producers

(bcm)

	Q1 2016	Q1 2017	Δ, bcm	Δ, %
Norway**	34.5	35.1	0.7	1.9%
United Kingdom	14.2	14.0	-0.2	-1.3%
Netherlands	11.8	12.3	0.5	4.4%

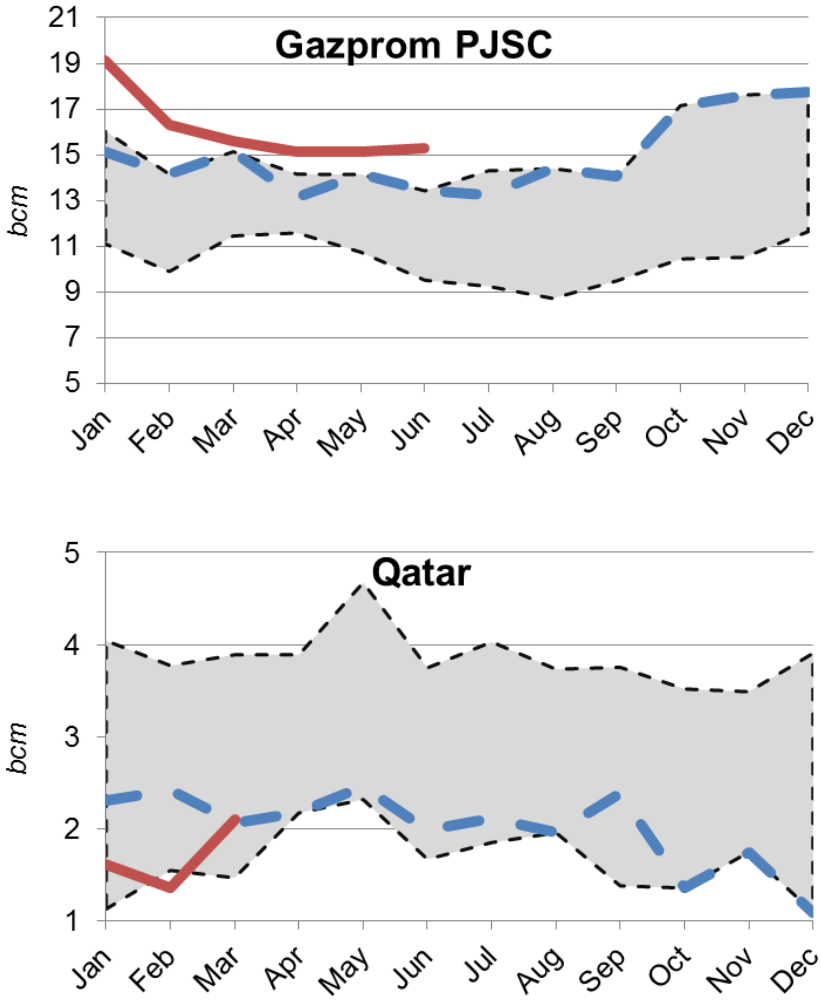
** Including the contracts of Gazprom export LLC, direct contracts of Gazprom Schweiz AG and volumes marketed via gas auctions of Gazprom Export LLC.*

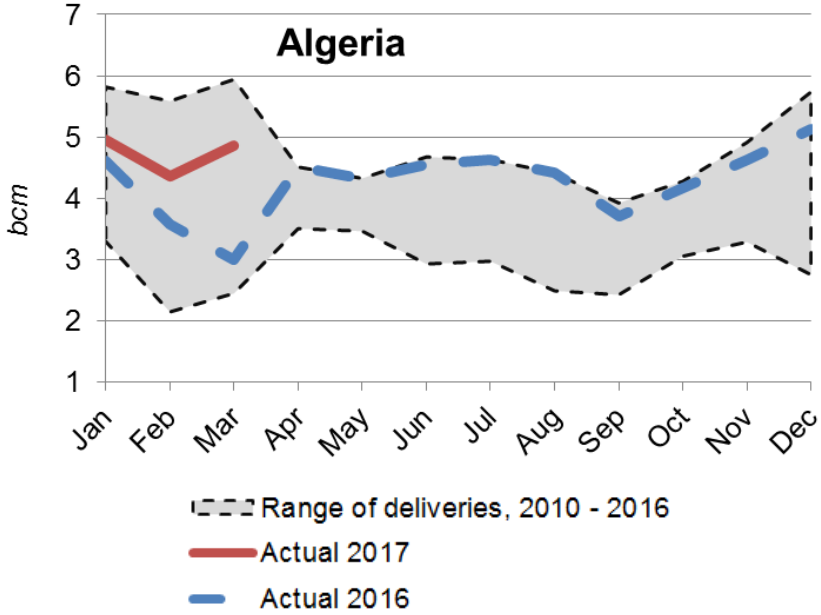
*** Including pipeline and LNG deliveries from Norway to the European market and excluding LNG to Asia and America.*

Sources: Eurostat, IEA, ENTSOG, Bloomberg, National Statistical Agencies as of April 2017.

Given values may differ from the calculated ones as they are rounded.

Supply Dynamics to Europe by Major Exporters in Q1 2017

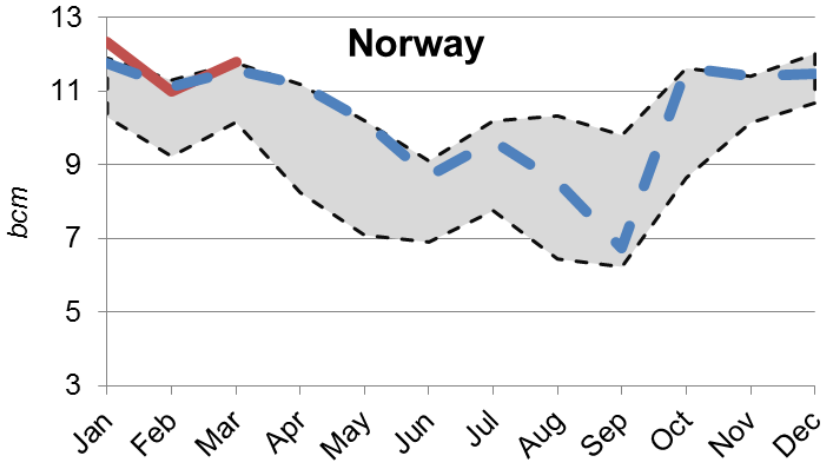


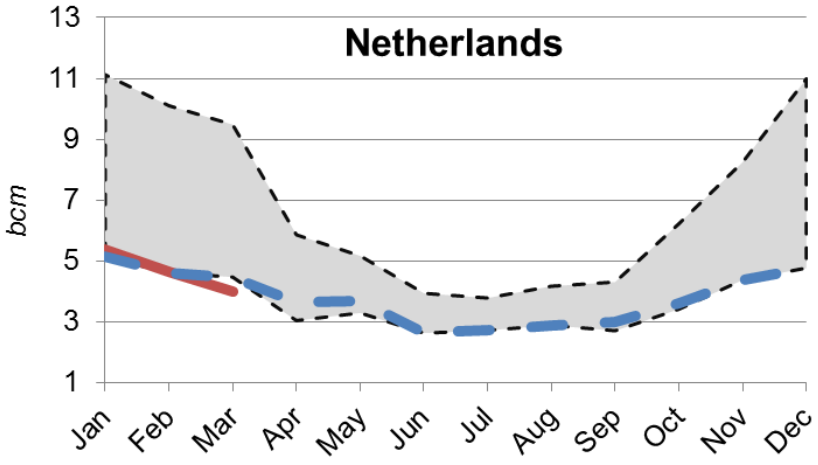


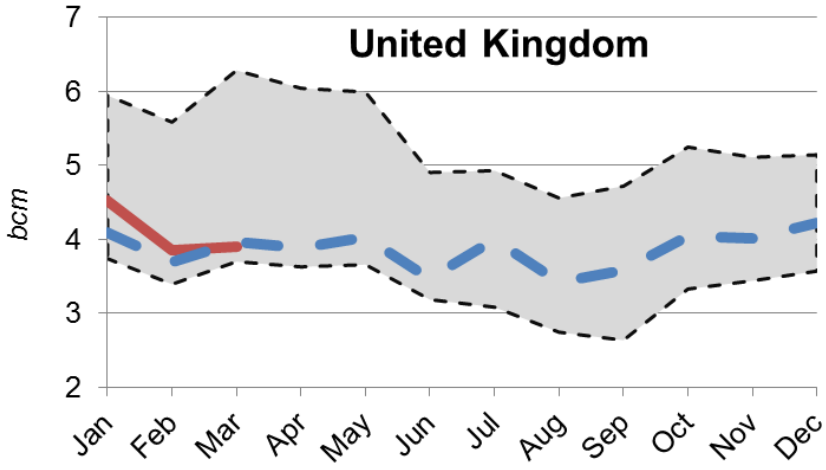
Record high Russian supplies compared to deliveries by Algeria and Qatar.

Sources: Eurostat, IEA, ENTSOG, Bloomberg, National Statistical Agencies as of April 2017.
Given values may differ from the calculated ones as they are rounded.

Supply Dynamics to Europe by Major Internal Suppliers in Q1 2017







Norway maximizes its output while deliveries from Netherlands and UK are in their lows

Sources: Eurostat, IEA, ENTSOG, Bloomberg, National Statistical Agencies as of April 2017.
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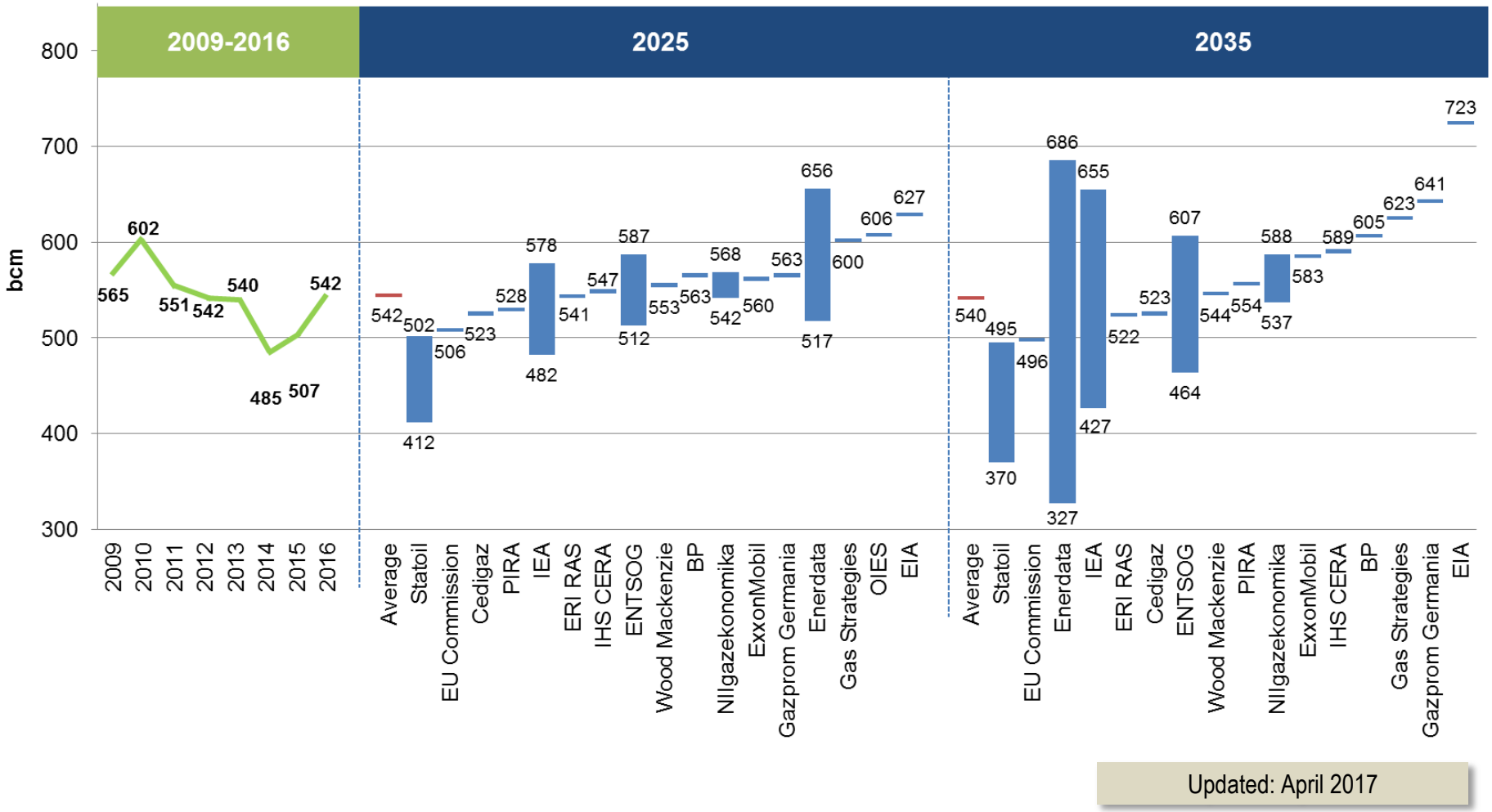
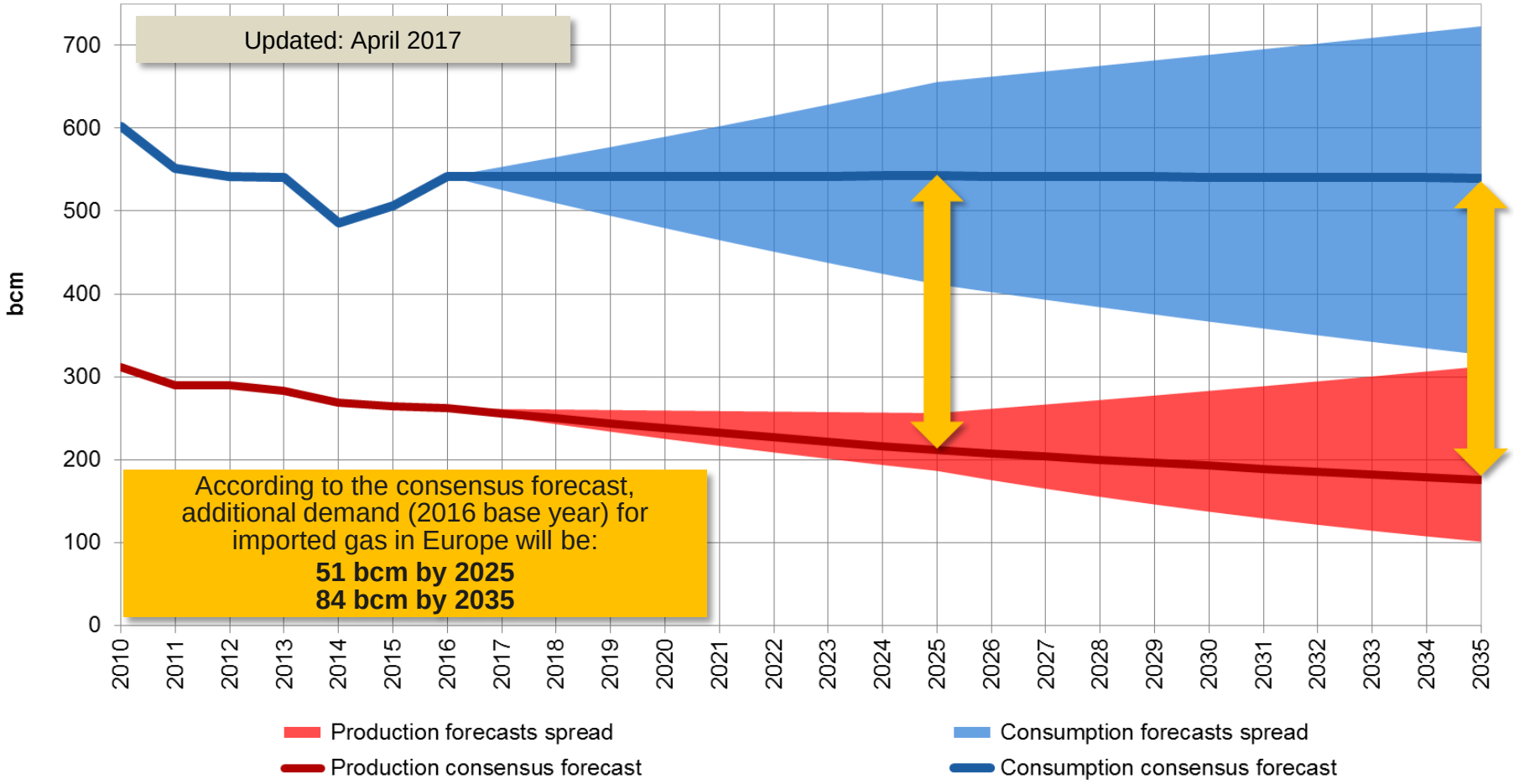
European Gas Consumption: Scenarios and Forecasts



Definition of European countries slightly differs from one forecast to another. For the purpose of comparison all forecasts and scenarios are restated on compound annual growth rates. Forecasts surveyed for the consensus analysis are updated on a regular basis.

There will be Vacant Places in Boatful of European Suppliers after 2020



Natural gas European demand and production gap is calculated as the difference between the demand consensus forecast and the production consensus forecast. Wide range of forecasts is explained by variability of scenarios from optimistic scenario of Energy Information Administration and to pessimistic scenarios of Statoil, Enerdata and EU Commission.

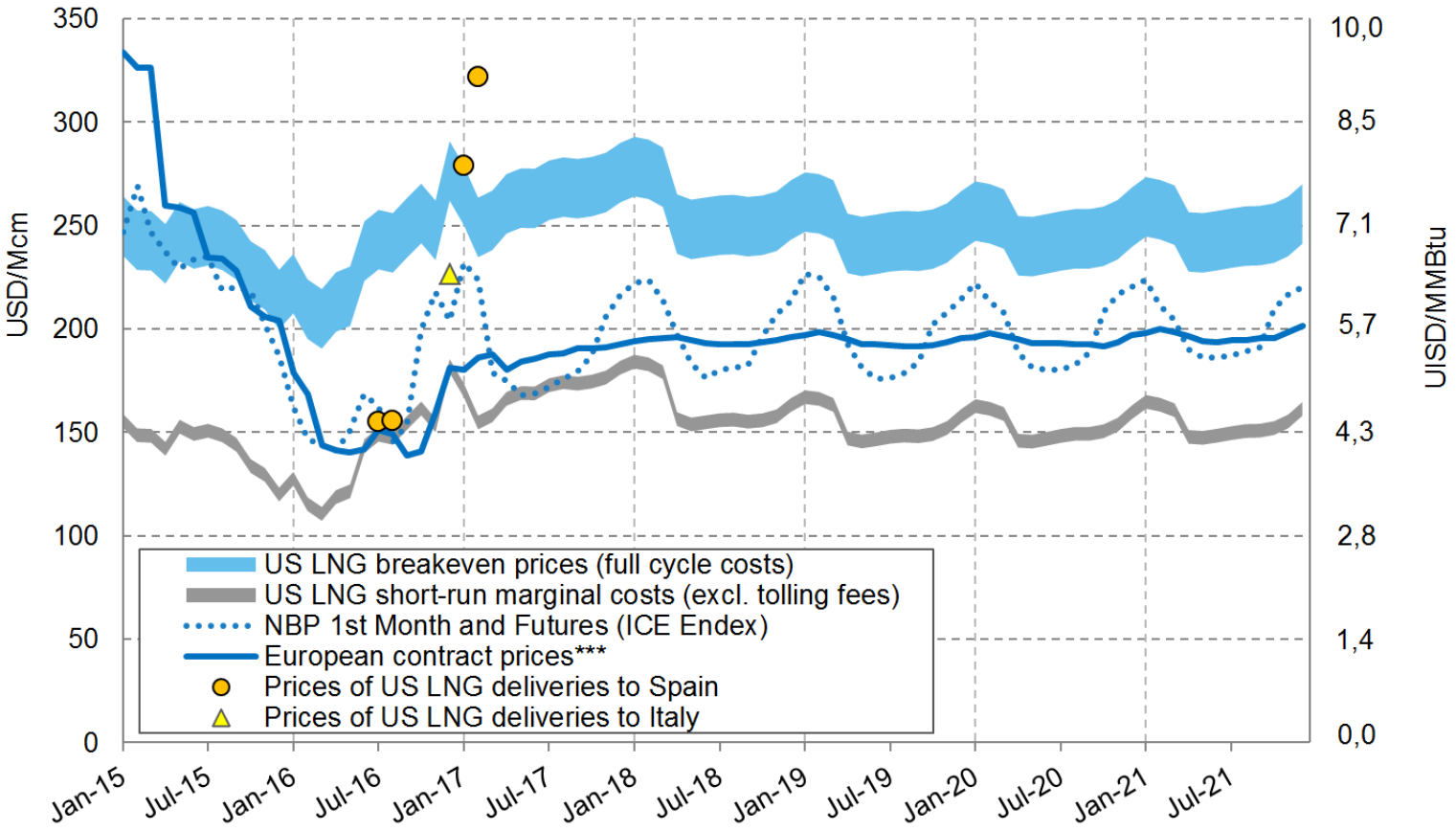
Myth #2

Trump's Global Energy Dominance Plan will Result in Flood of US LNG to Europe

Outlook for NA LNG Exports to Europe

Futures on European gas hubs stay below full cycle costs of US LNG indexed to Henry Hub forward prices

Estimated Costs* of US LNG Deliveries to Europe vs. Prices of European Gas Futures**



** Based on Henry Hub-related contract price, P = 115% * Henry Hub + X, where X are costs of liquefaction, shipping and regasification*

*** Historical NBP 1st Month and current NBP Futures*

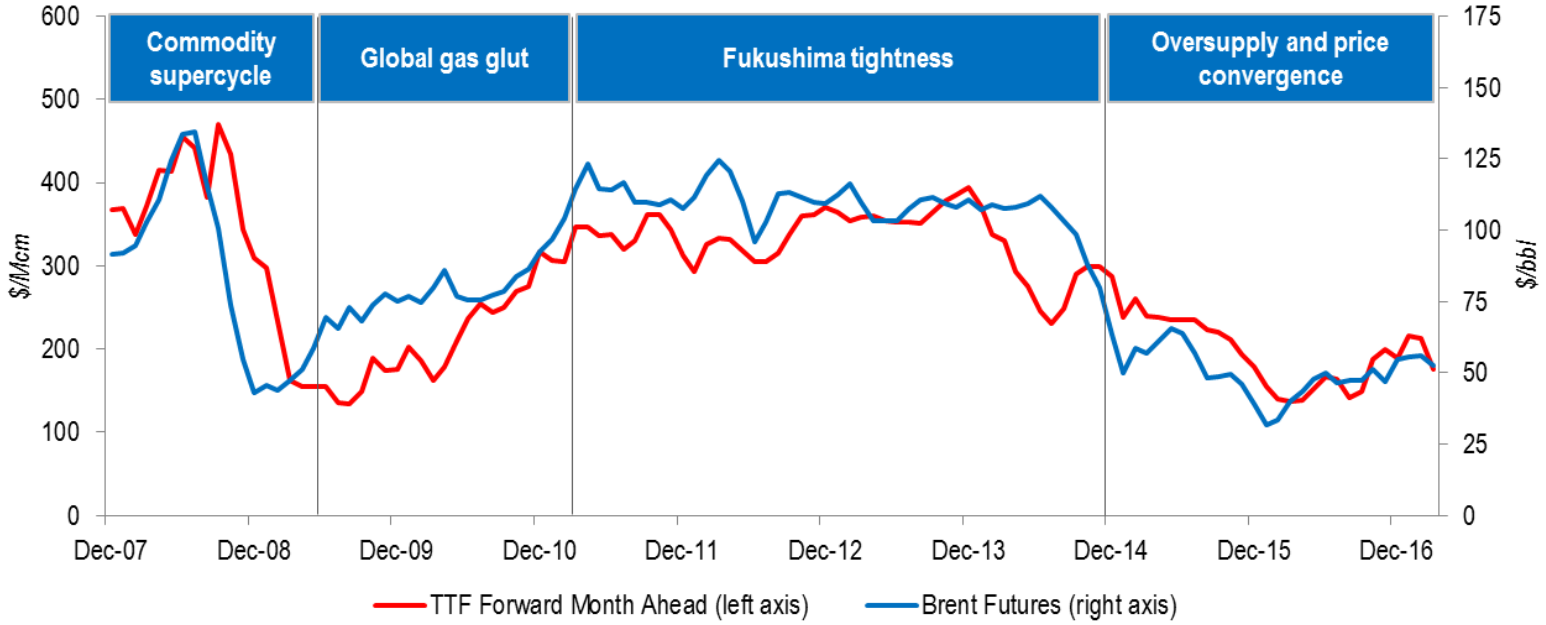
**** Historical price of Russian gas deliveries to Germany (based on World Bank data) and projected price based on current Brent and TTF Futures*

Source: Bloomberg, Cheniere Energy, Wood Mackenzie, World Bank

Myth #3

European Gas Prices Delinked from Oil Completely and are Driven by Supply and Demand

Market Tightness is Inadequate Criteria for Division of European Gas History into Periods



Source: Adapted from Timera Energy

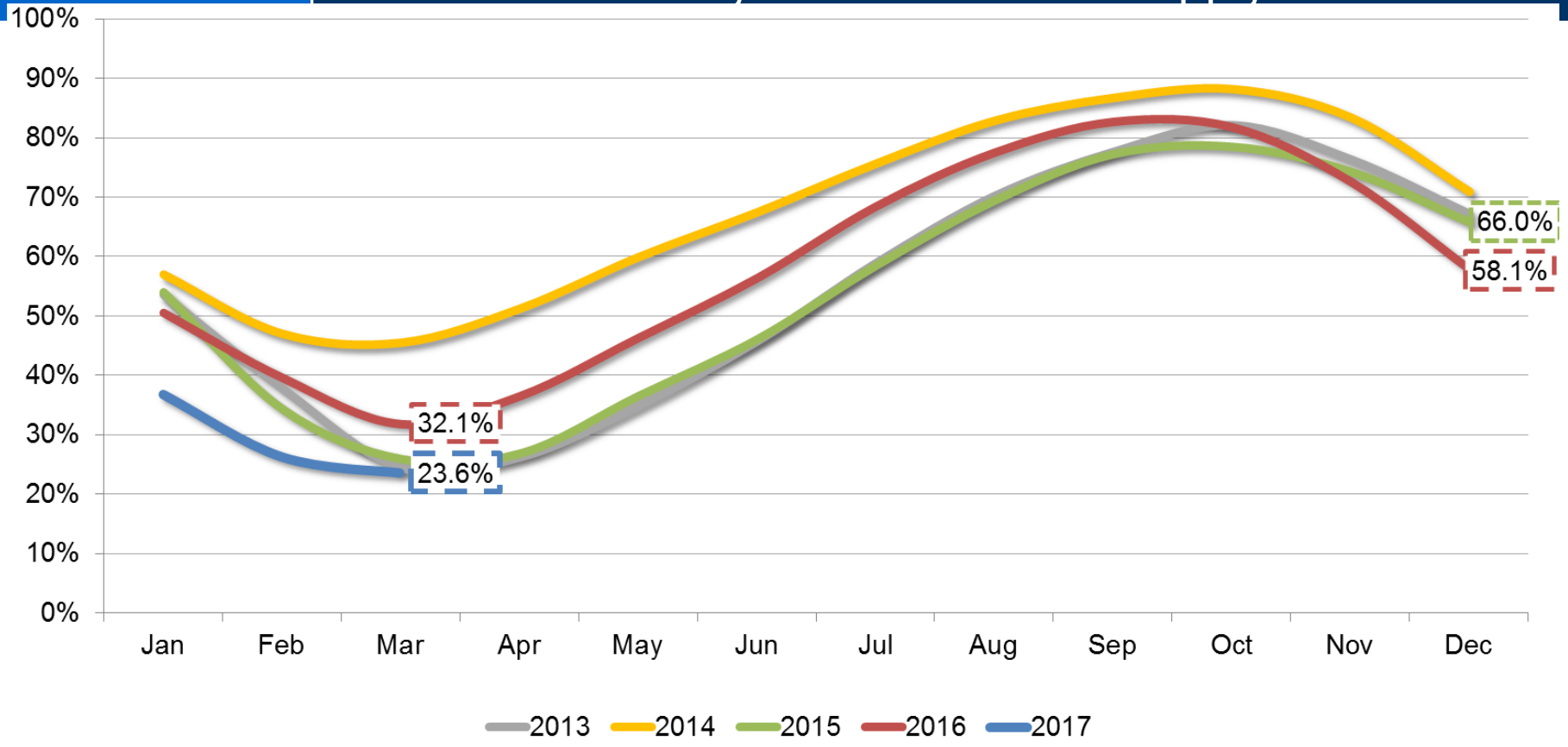
"Global gas glut" (Jun '08 – Dec '10) only strengthened European gas prices despite the LNG flood; European gas prices just followed oil price recovery prior to Fukushima

"Fukushima tightness" (Mar '11 – Dec '14) gave no special momentum to gas price developments: erratic fluctuations of gas prices completely ignored outflow of large LNG volumes from Europe

"Oversupply and price convergence" (Dec '14 – current): collapse of gas prices coincided with oil price drop; LNG not coming to Europe

European gas history periodization based on market tightness creates parallel reality. It supports an absurd conclusion that oversupply leads to higher prices and vice versa

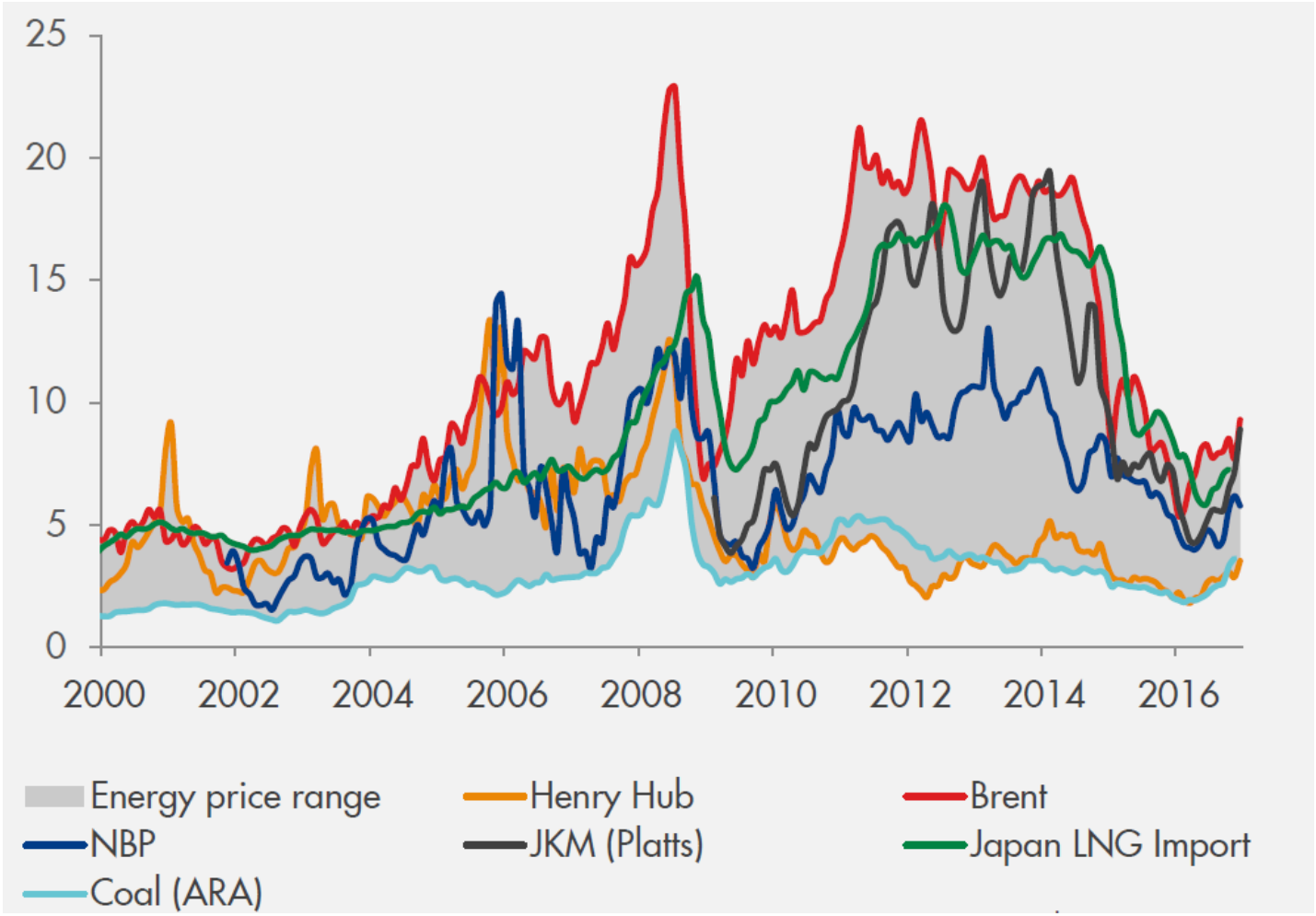
Deficit in European Gas Stocks Does not Point to Situation of Nearly Permanent Oversupply



By the end of Q1 2017 the UGSs of European countries were filled by 23.6%, a new minimum over the last five years.

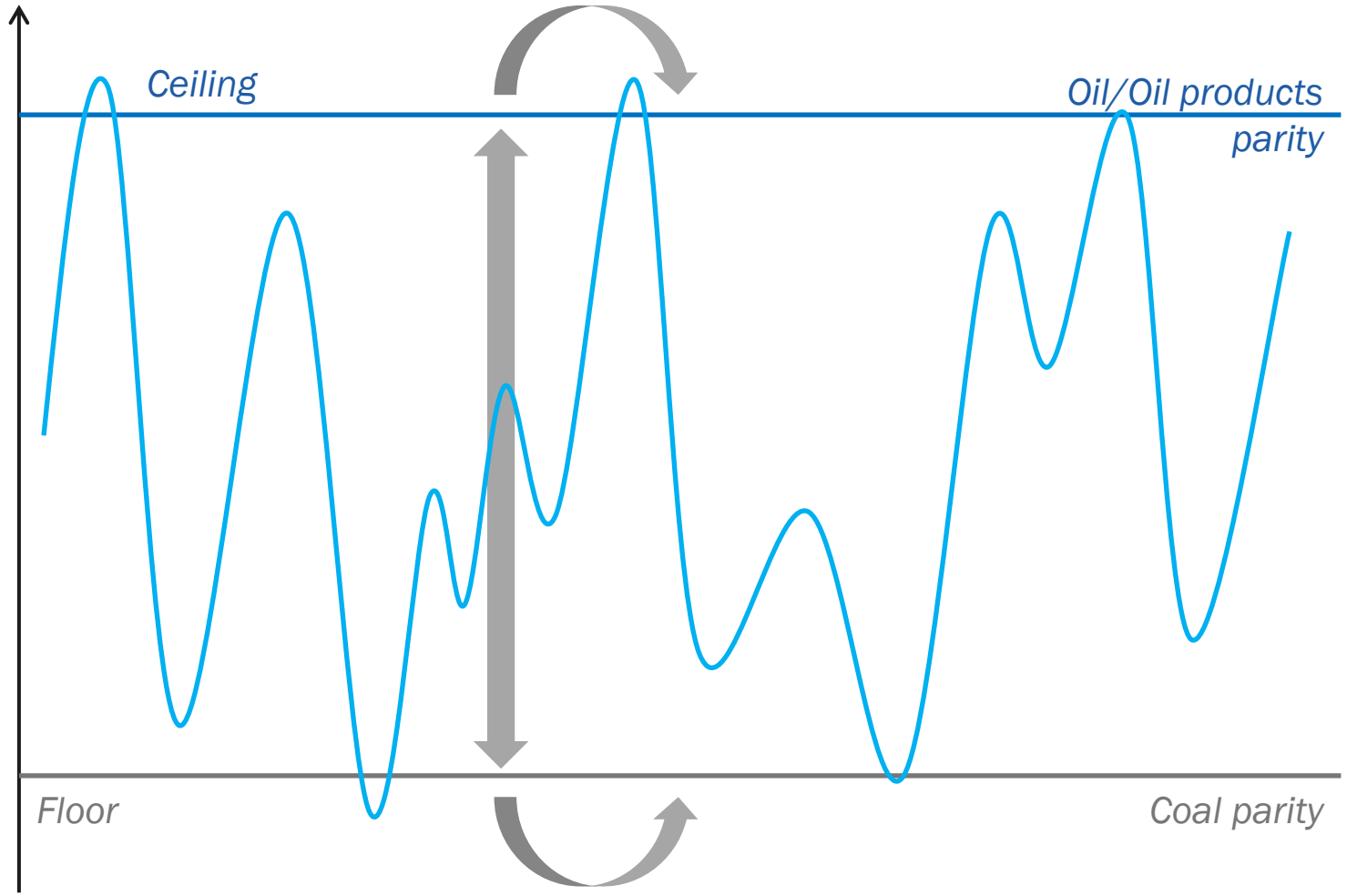
Source: Based on IHS and IEA data

Competition with Other Hydrocarbons Locks Natural Gas in Price Envelope



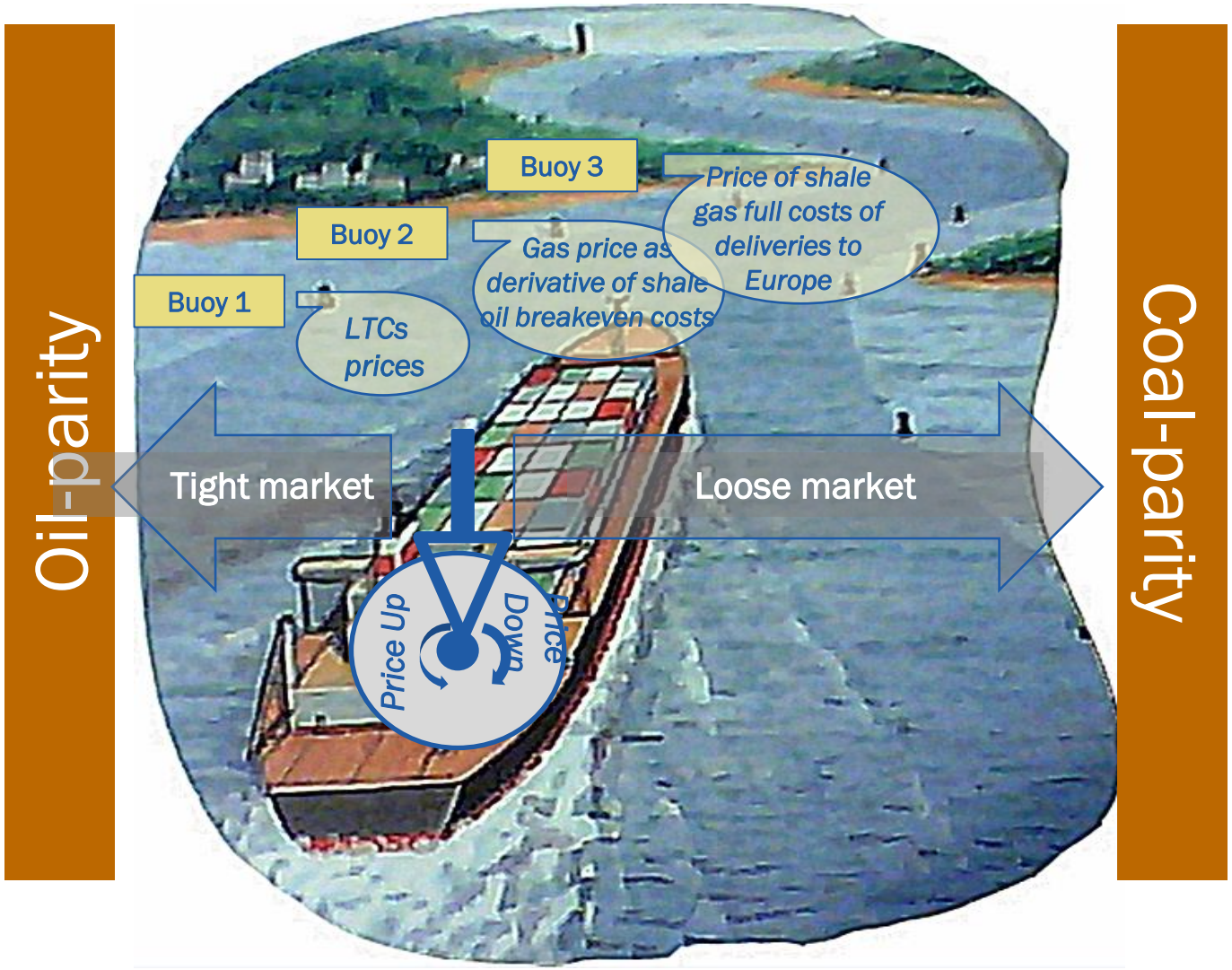
Source: Shell

Inter-Fuel Competition Defines Upper and Lower Price Range Levels for Natural Gas



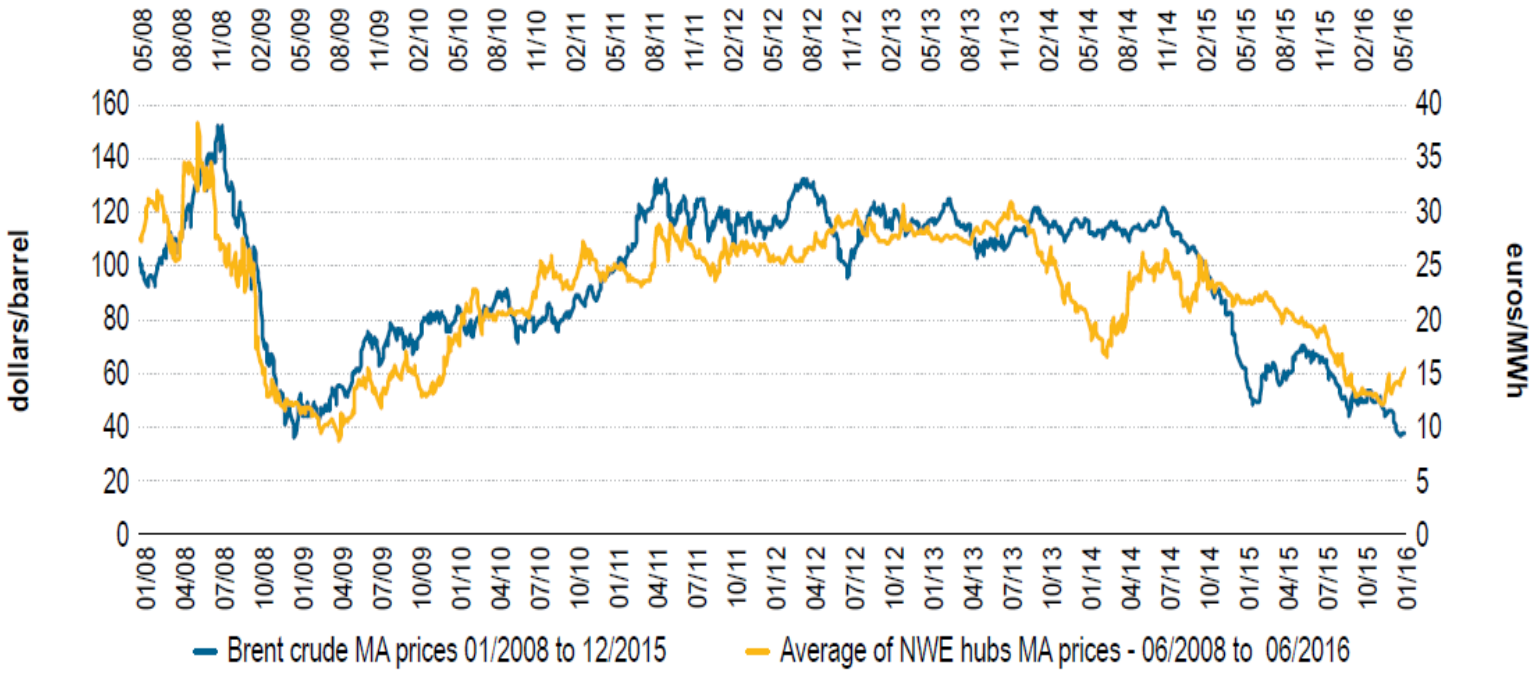
Source: Gazprom Export

Hub Natural Gas Price Navigation in Europe



ACER 2016 Report: Correlation between Oil and Gas Prices is High

Figure 20: Oil and gas hubs price evolution in Europe – 2008–2015



Source: Platts (2015) and ACER calculations.

Note: A six-month forward-lag is used for gas in the comparison with oil prices, which is the usual practice in the indexation formulas of gas long-term contracts.

Correlation and Regression Analysis Indicates that TTF Price Dependence on Oil Prices is Increasing

	Time period	Brent, USD/barrel	Oil Price: Six month moving average	Oil Price: Nine month moving average
Correlation (TTF MA, USD/mcm)	2008-2016	76.6%	85.5%	83.3%
	2008-2013	69.9%	84.7%	81.9%
	2014-2016	79.5%	87.3%	88.7%
R Squared (TTF MA, USD/mcm)	2008-2016	58.6%	73.1%	69.4%
	2008-2013	48.9%	71.8%	67.1%
	2014-2016	63.2%	76.3%	78.6%

This effectively means that NA shale breakeven costs which emerged as the major determinant for global oil prices are setting price rage for European hub prices

Thank you for your attention