



Russian gas in Europe: economics and politics

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31 May 2018



US LNG – A SUCCESSFUL MARKETING VEHICLE

- **US LNG business model special aspects**
- Results of 2017: US LNG is more alive



RUSSIAN GAS IN EUROPE: ECONOMICS VS. POLITICS

D. Trump about the US HCs



Donald Trump

the 45th President of the United States



США – кладовая углеводородов,
теперь мы их экспортируем.
Всякий раз, когда вам нужна
энергия, просто позвоните нам.

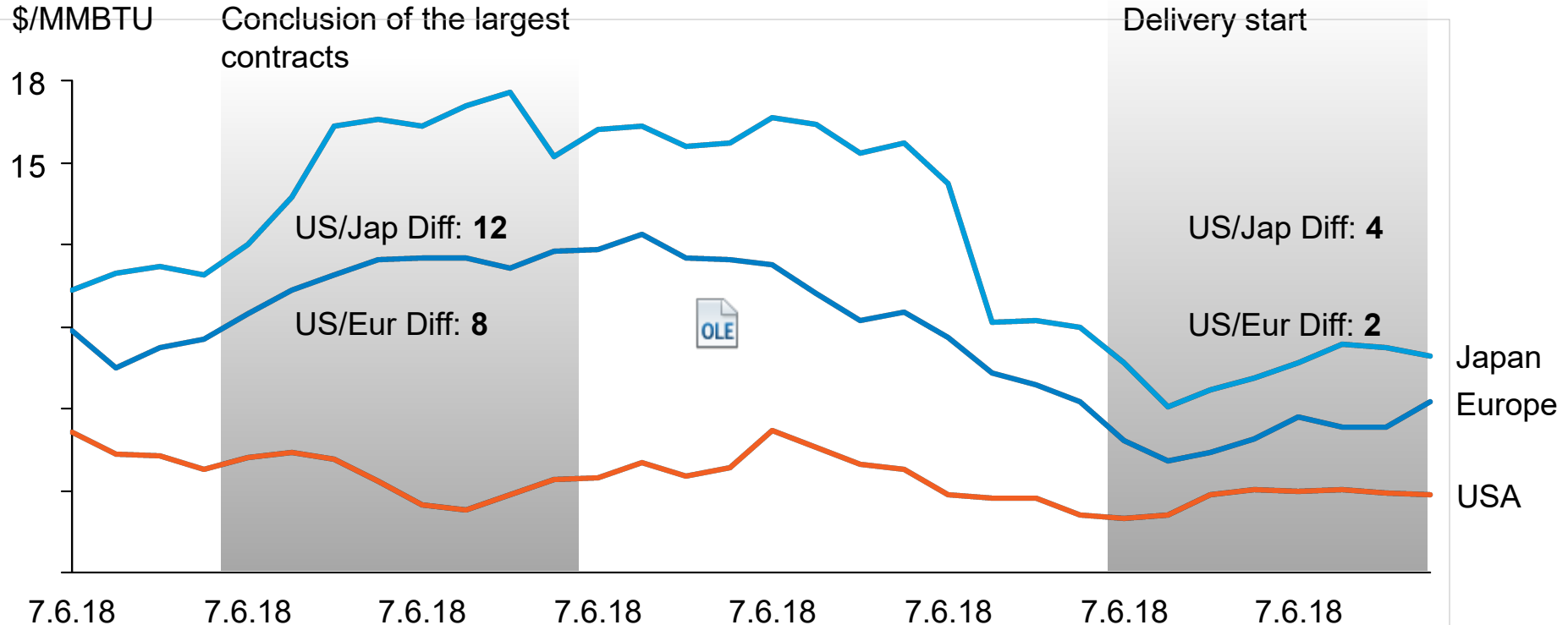
We are sitting on massive energy,
we are now exporters of energy.
Whenever you need energy, just
give us a call.



Visit to Poland, 5 June 2017

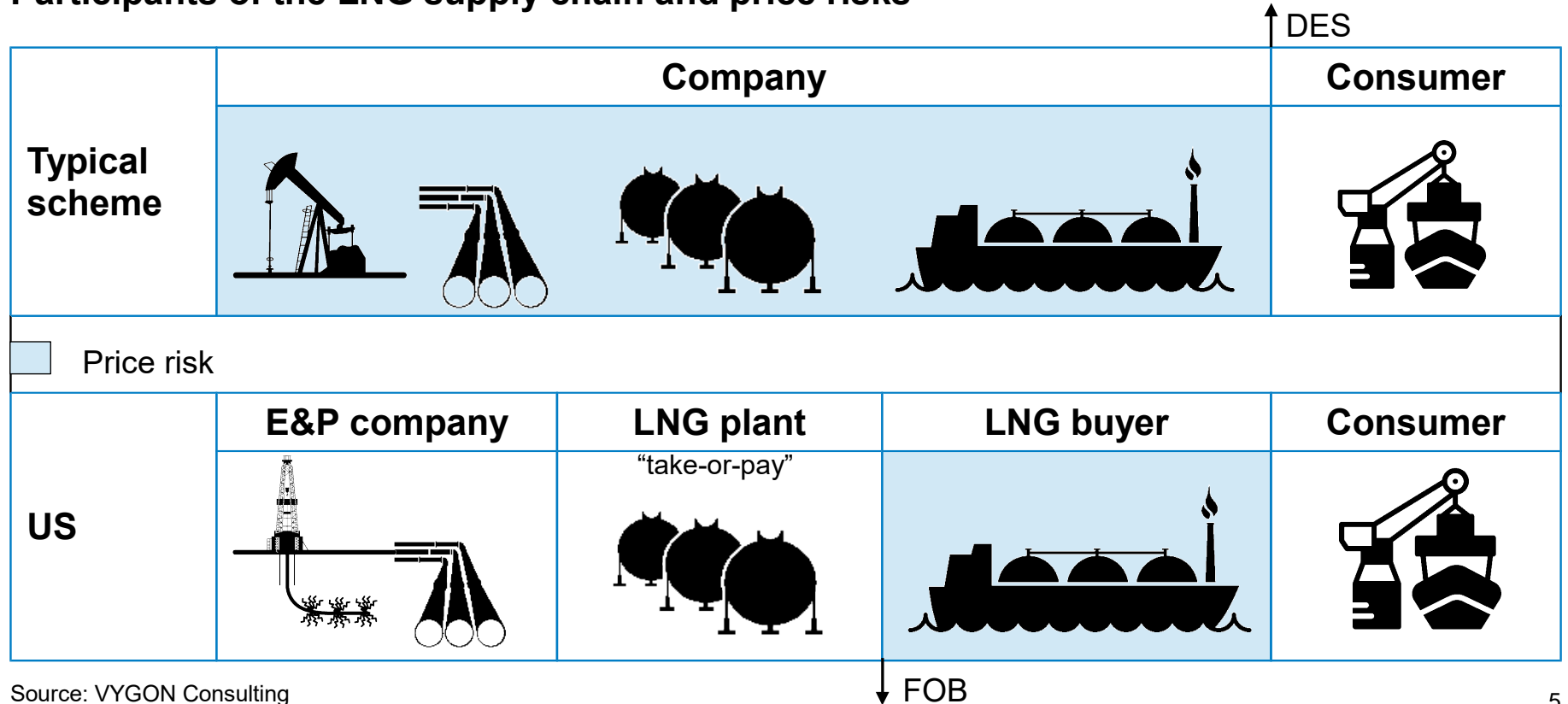
Most LNG contracts in the US were concluded at the highest natural gas price differentials

Regional gas prices and the main milestones in the US LNG history



In the US LNG scheme there are 4 parties and buyers bear the risks unlike in the typical LNG trading

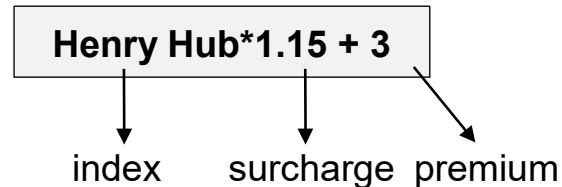
Participants of the LNG supply chain and price risks



LNG pricing formulas for US LNG move away from traditional oil indexation

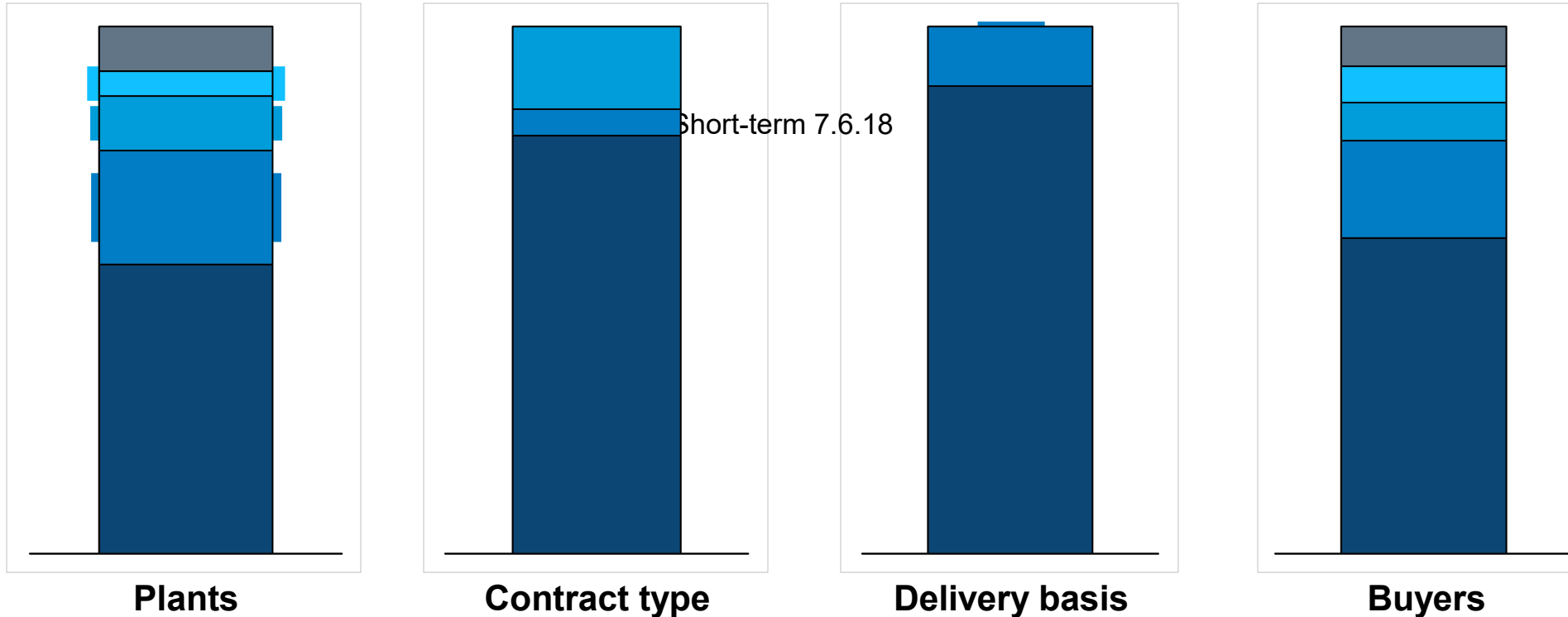
Typical LNG contract formulas

Exporter	LNG plant	Buyer	Formula	Sign year
USA	Sabine Pass	BG	$\text{Henry Hub} * 1.15 + 2.25$	2011
USA	Sabine Pass	BG	$\text{Henry Hub} * 1.15 + 3$	2012
USA	Corpus Christi	Endesa	$\text{Henry Hub} * 1.15 + 3.5$	2014
Australia	GLNG	Petronas	$\text{JCC} * 0.1485 + 1$	2011
Australia	Ichthys	Japan	$\text{JCC} * 0.1455$	2012



80% of contracted US LNG will be traded within the long-term agreements

US LNG contract structure by plants, terms and buyers, mt





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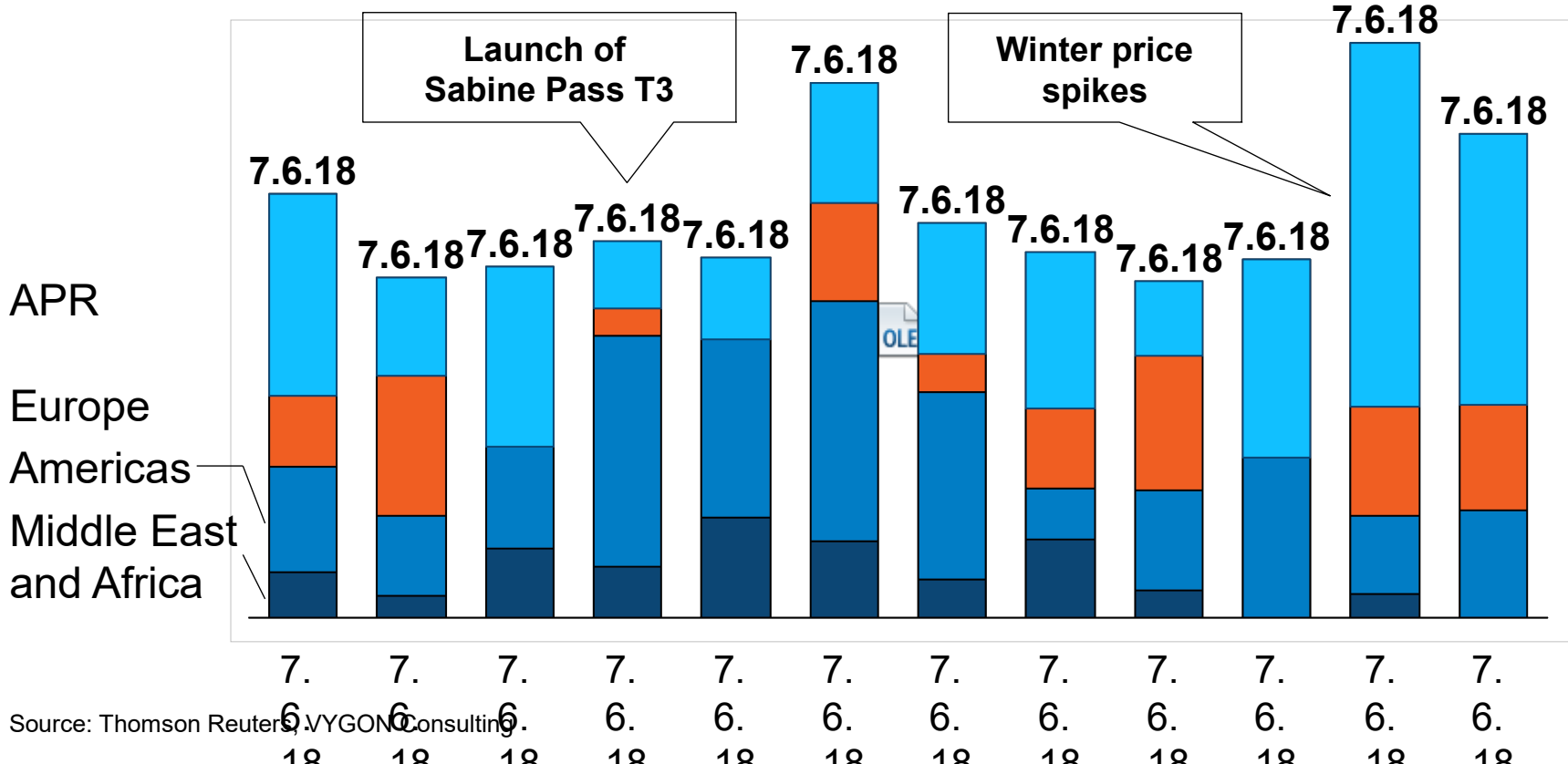
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16% of US LNG headed to Europe in 2017 vs 10% in 2016, mostly received on spot basis

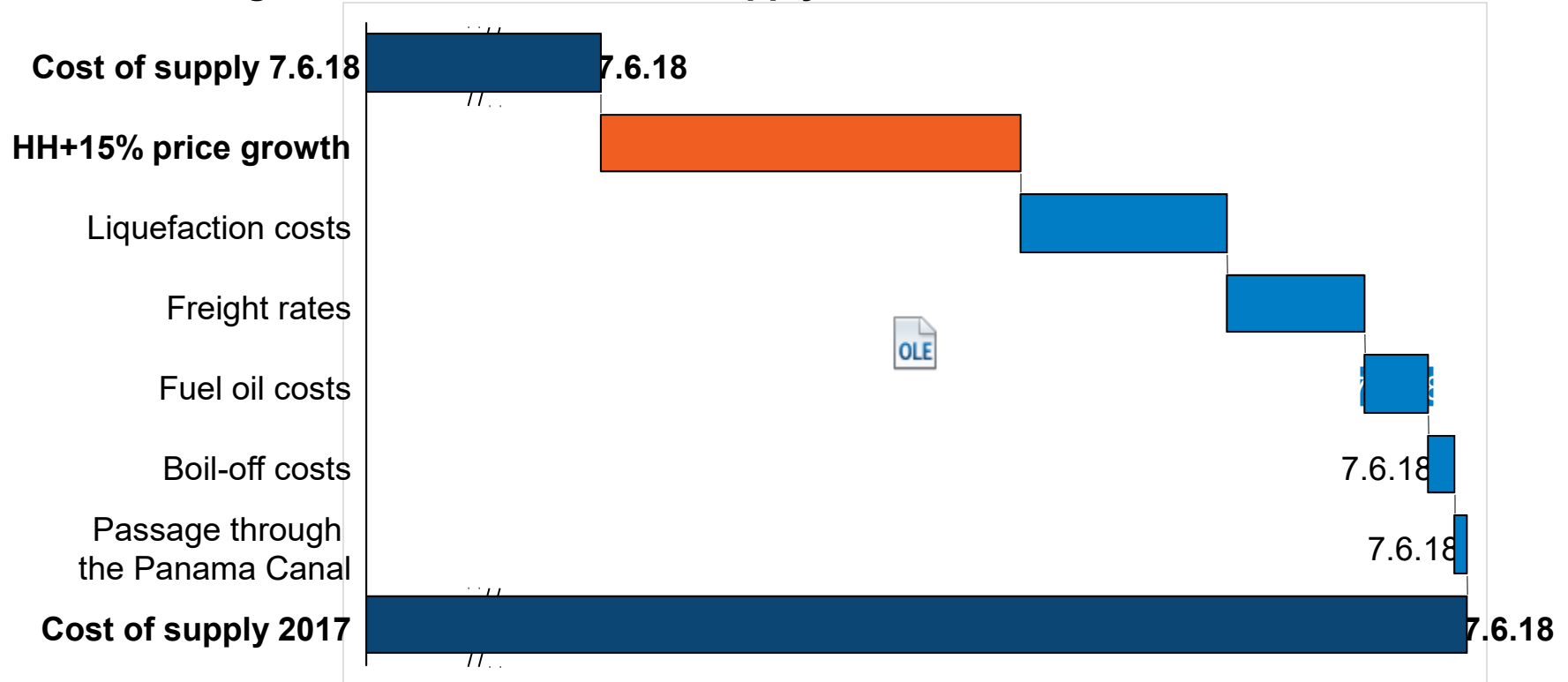
US LNG exports by tanker arrival date in 2017, mt



Source: Thomson Reuters, VYGON Consulting.

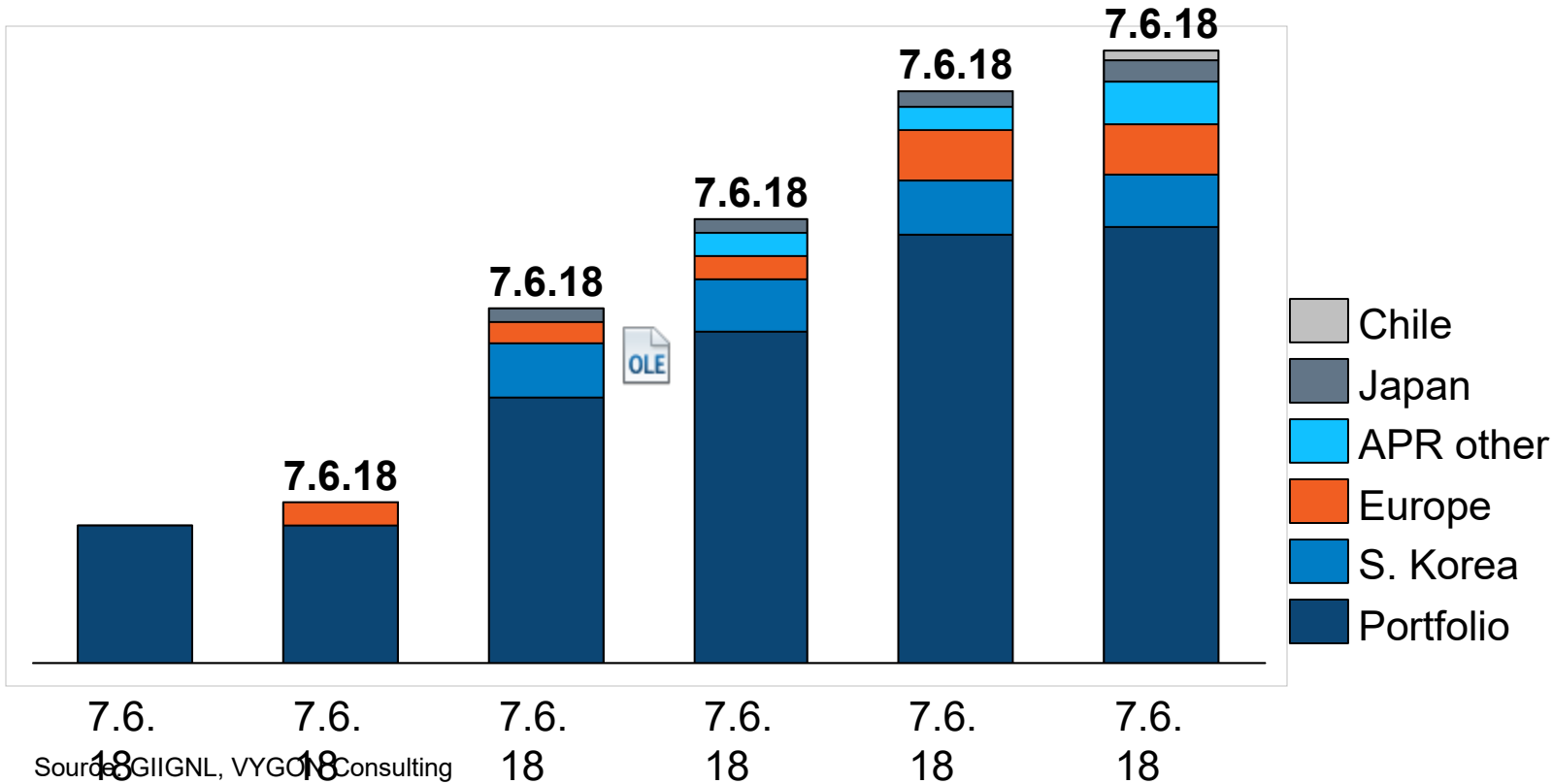
Average cost of supply increase corresponded to the LNG import prices rise

Factors of change in the US LNG Cost of supply in 2016-17, \$/MMBTU



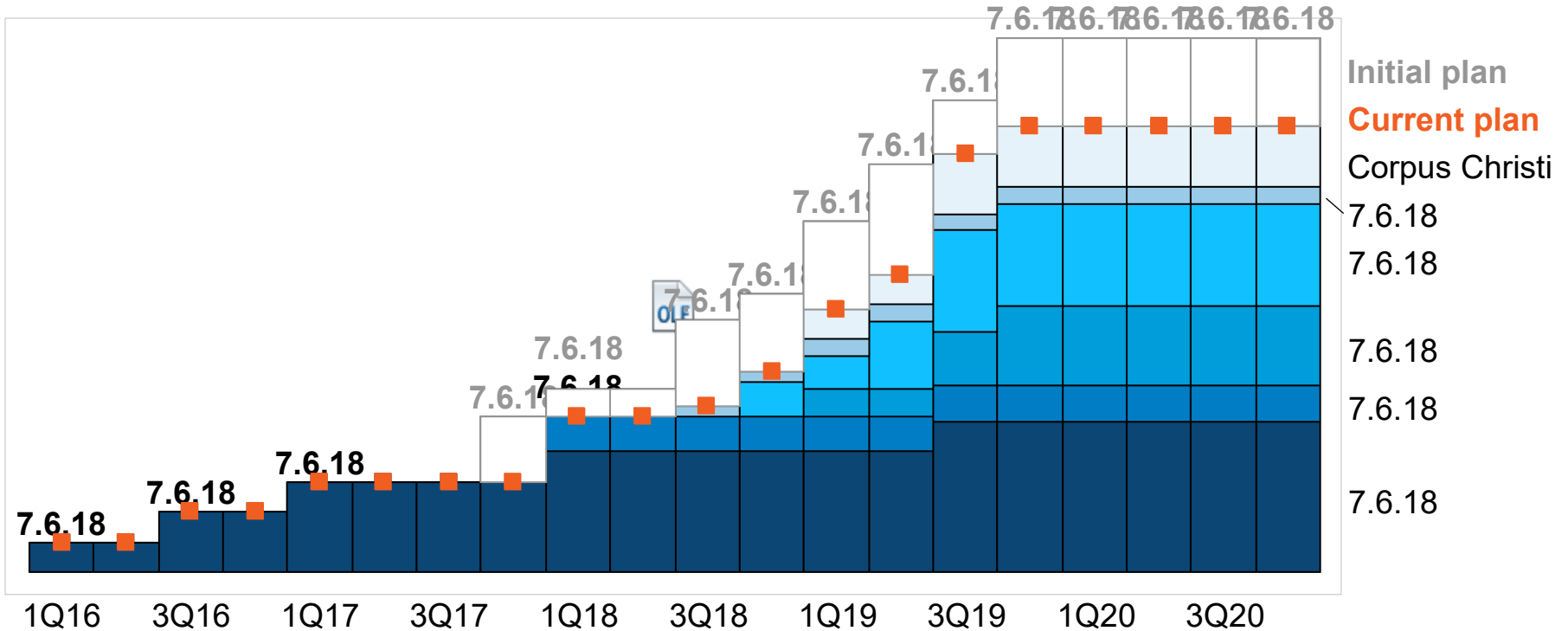
More than half of the declared capacities are already contracted, the share of Europe is 8%

Contracted US LNG volumes by 2020, mt



The US export capacity by 2020 was adjusted from 80 to 67 million tonnes of LNG

Initial and current plan for the commissioning of US LNG capacity, mt



Source: companies data, VYGON Consulting



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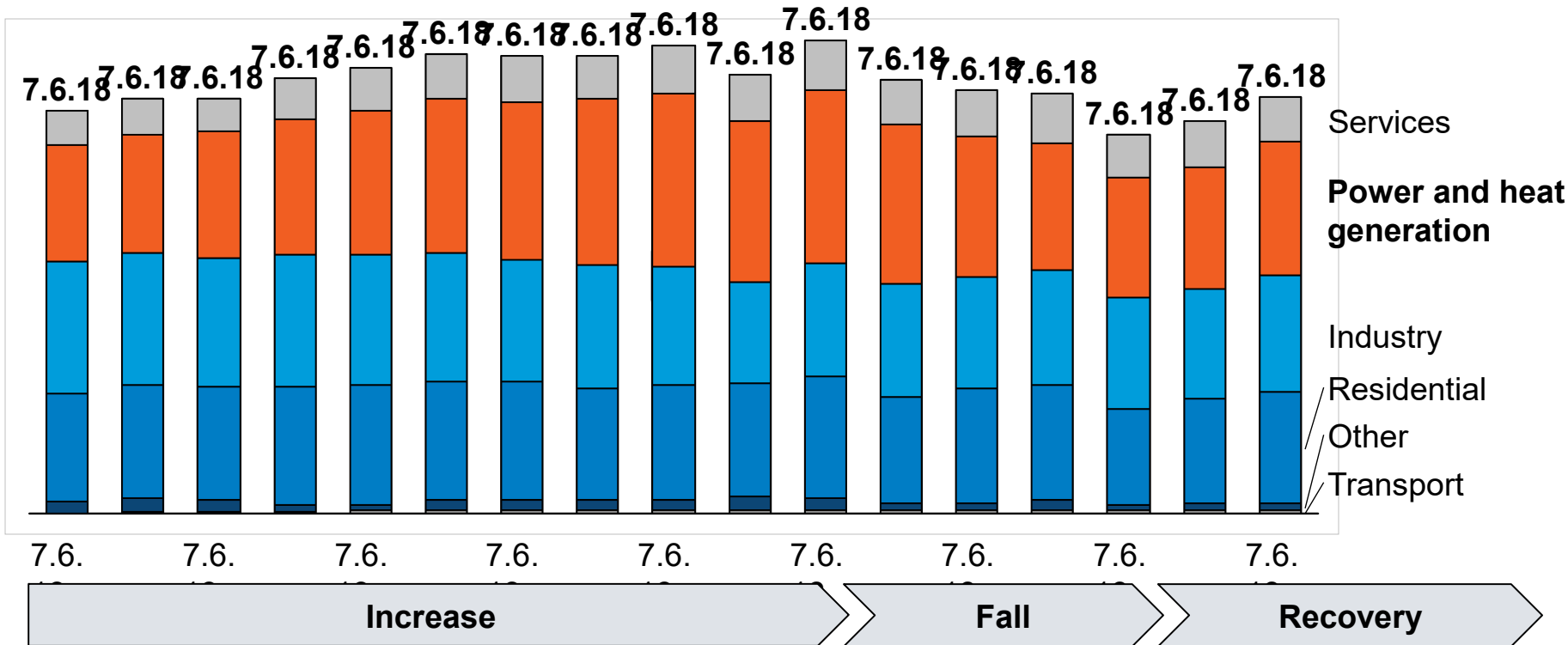


RUSSIAN GAS IN EUROPE: ECONOMICS VS. POLITICS

- **Focus on Europe**
- Regulatory risks and economic opportunities

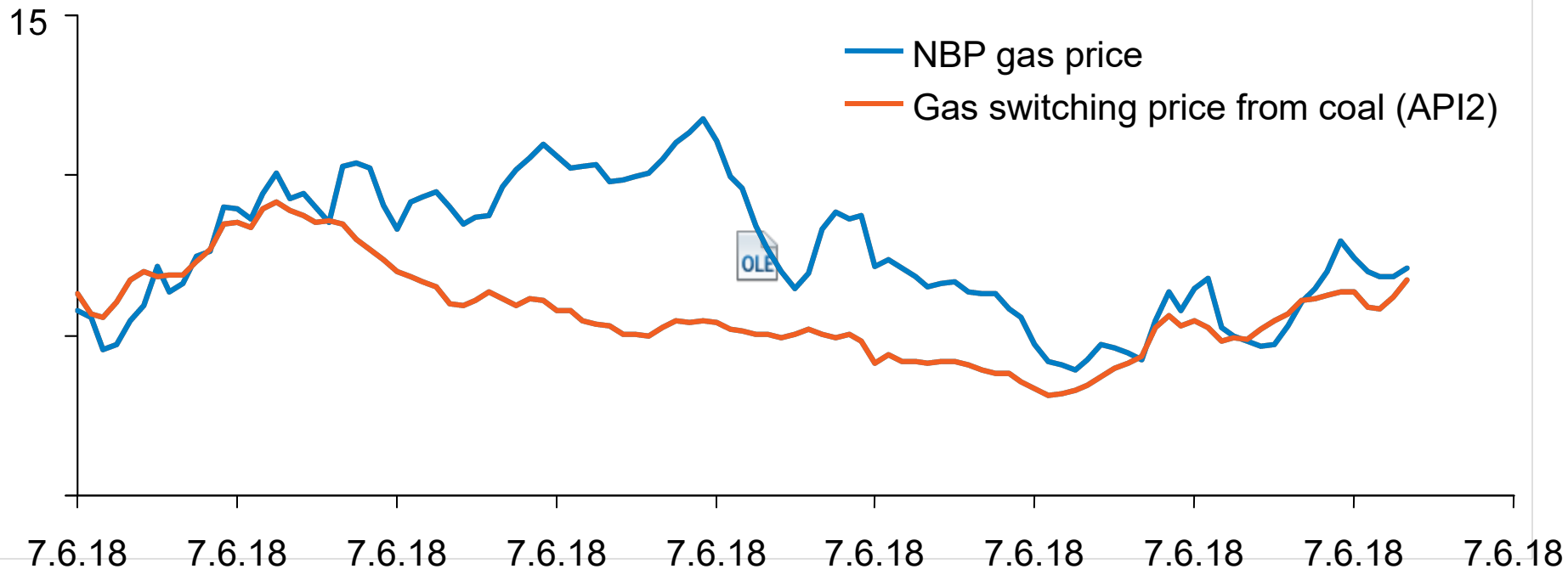
Generation sets the dynamics of gas demand in Europe, it is recovering for the last 2 years

Gas consumption in Europe by end-users, bcm



In the current decade, the situation in power generation in Europe was not in favor of gas until mid 2016

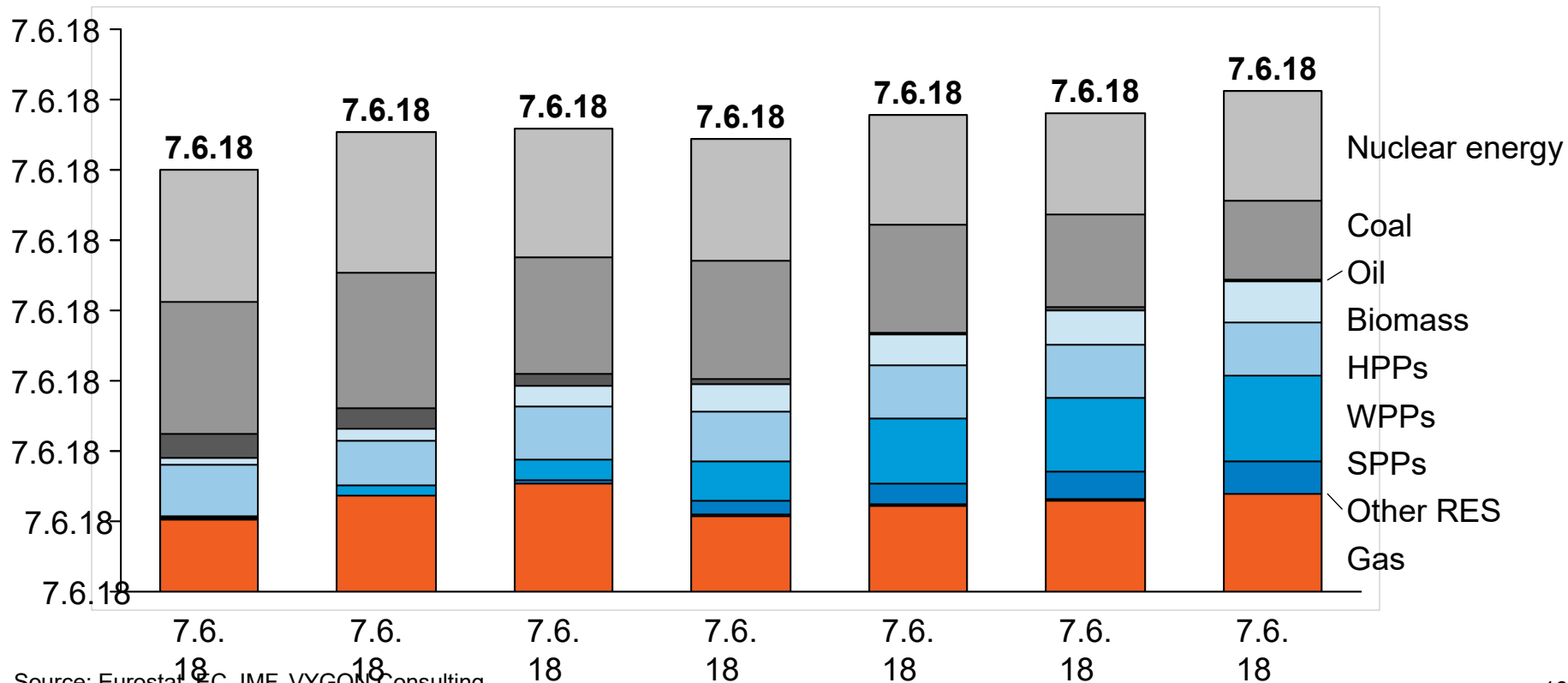
Coal to gas switching price in Europe, \$/MMBTU



The calculation accounts for the efficiency of the gas and coal power station of 0.5 and 0.35, CO2 price and the difference in operating costs

Gas will replace coal and nuclear generation due to inter-fuel competition

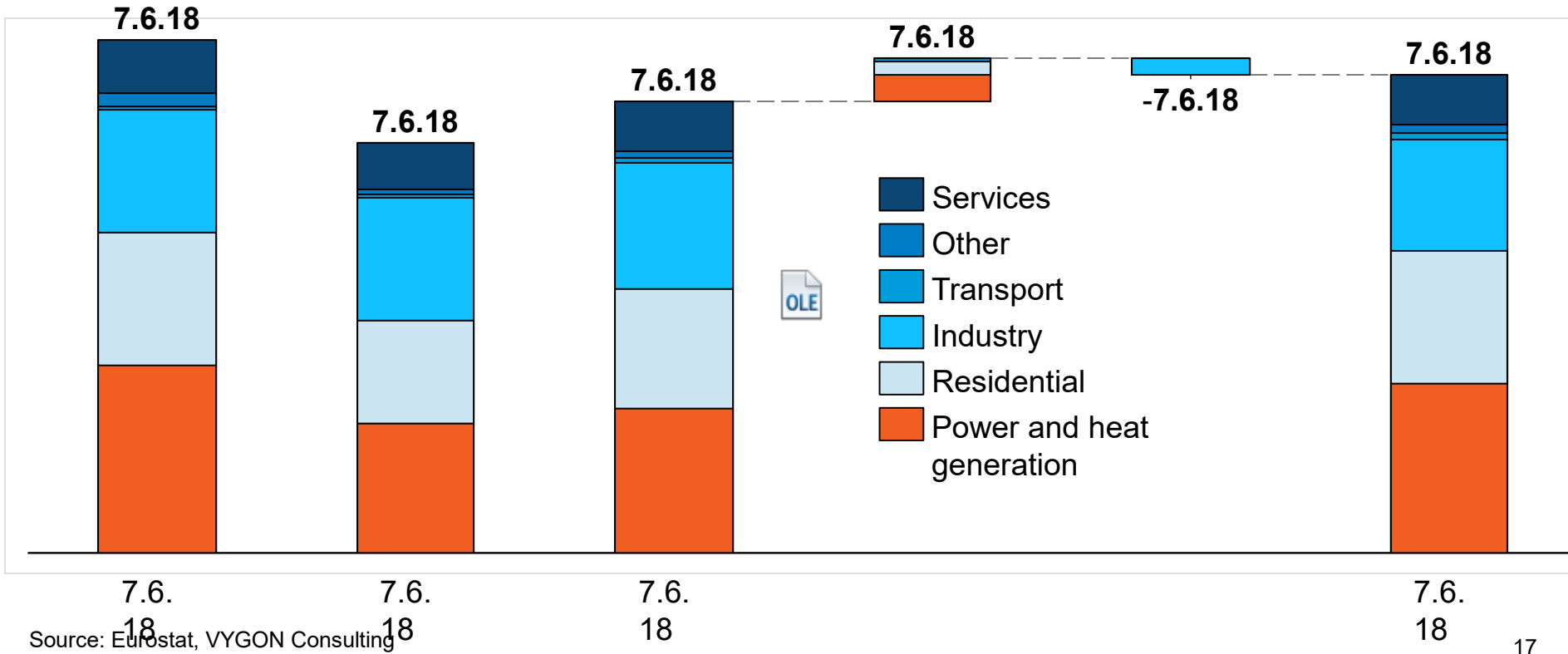
Forecast of electricity generation in Europe by source, TWh



Source: Eurostat, EC, IMF, VYGON Consulting

Gas demand growth in Europe by 2030 will amount to only 30 bcm, it will not reach the peak of 2010

European gas demand forecast by end-users, bcm





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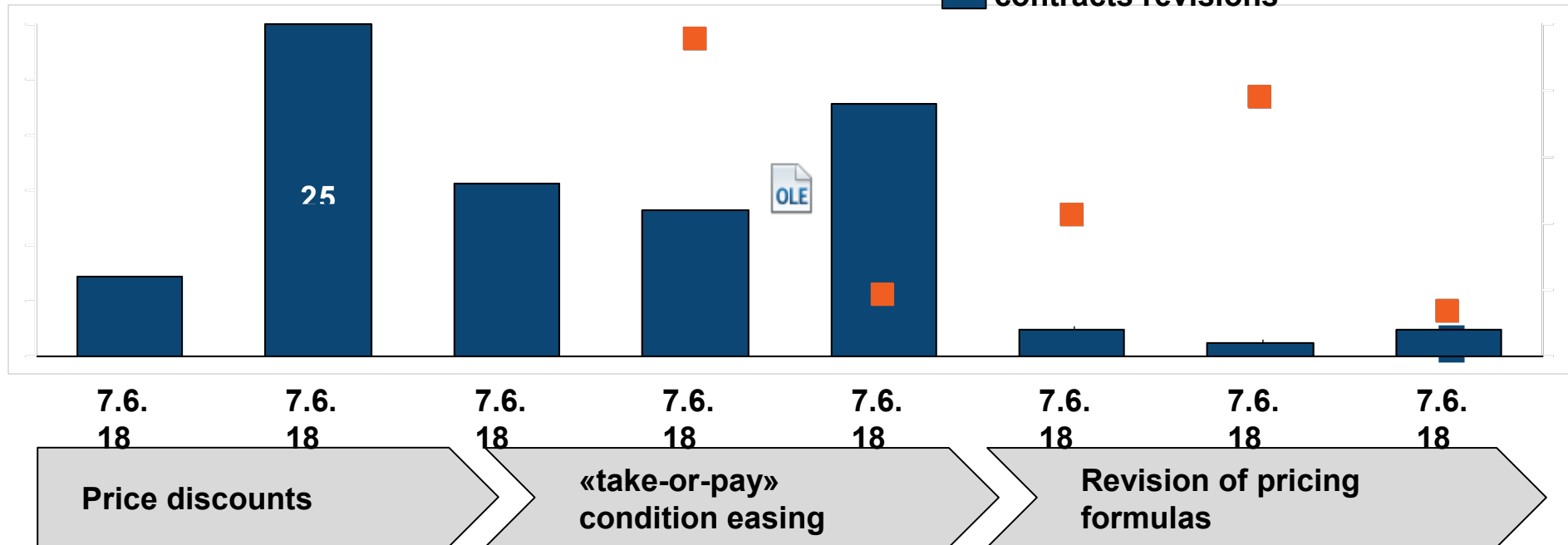
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Over the past 8 years, there have been more than 70 cases of Gazprom's export contracts revision

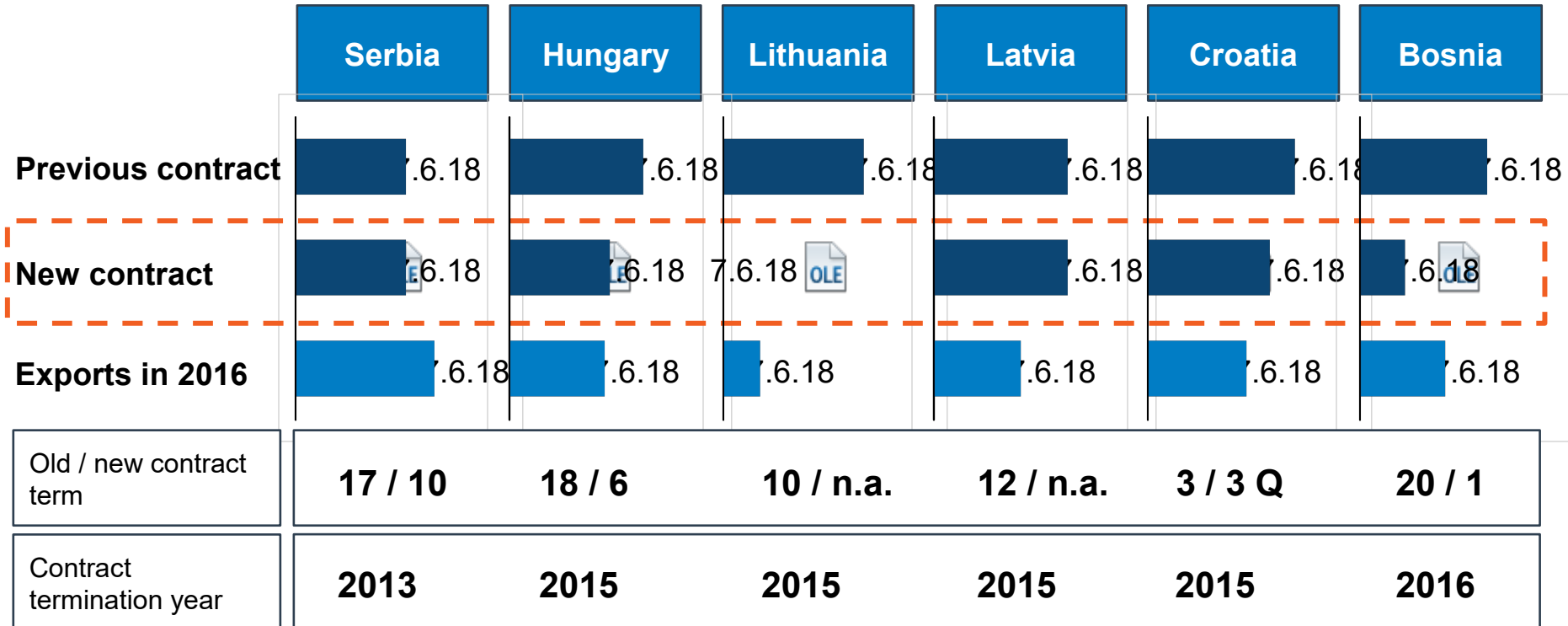
Cases of long-term contracts revisions and retroactive payments of Gazprom

■ retroactive payments, bln RUB
■ contracts revisions



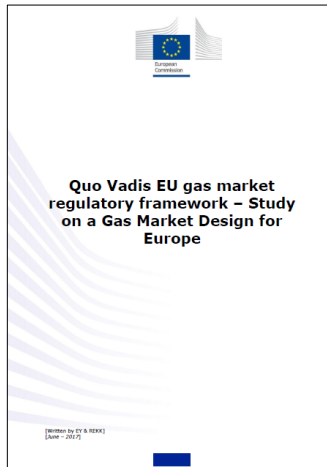
Russian long-term contracts are extended to the same or smaller volumes

Russian gas contracts and physical supplies, bcm



Quo Vadis: new crusade of the European Commission against Russian gas

Quo Vadis Study



Instead of the 3-rd Energy Package results – a set of scenarios for a radical reorganization of the existing gas market regulation system

Areas of "insufficient efficiency" of the EU gas market:

- 1** different level and structure of gas transportation tariffs
- 2** remaining contractual and infrastructural limitations
- 3** incomplete use of the GTS
- 4** high market concentration at the EU-level and in individual countries
- 5** remaining country-specific aspects in regulations
- 6** limited market transparency

Gazprom is accused of setting both high and low gas prices in Europe at the same time

2015



«The Commission's preliminary conclusion is that Gazprom has charged **unfairly high prices** in five Central and Eastern European countries (*Bulgaria, Estonia, Latvia, Lithuania and Poland*)»

European Commission - Fact Sheet Antitrust:
Commission sends Statement of Objections to Gazprom –
Factsheet, April 2015

Source: VYGON Consulting

2017



«The present pricing policy of Gazprom and its related strategy to swamp the EU with **low priced** gas well illustrates the competitive threat posed by the coming LNG glut. Such a pricing policy serves the objective to keep LNG away from the EU wherever and until it credibly threatens the market position of Gazprom»

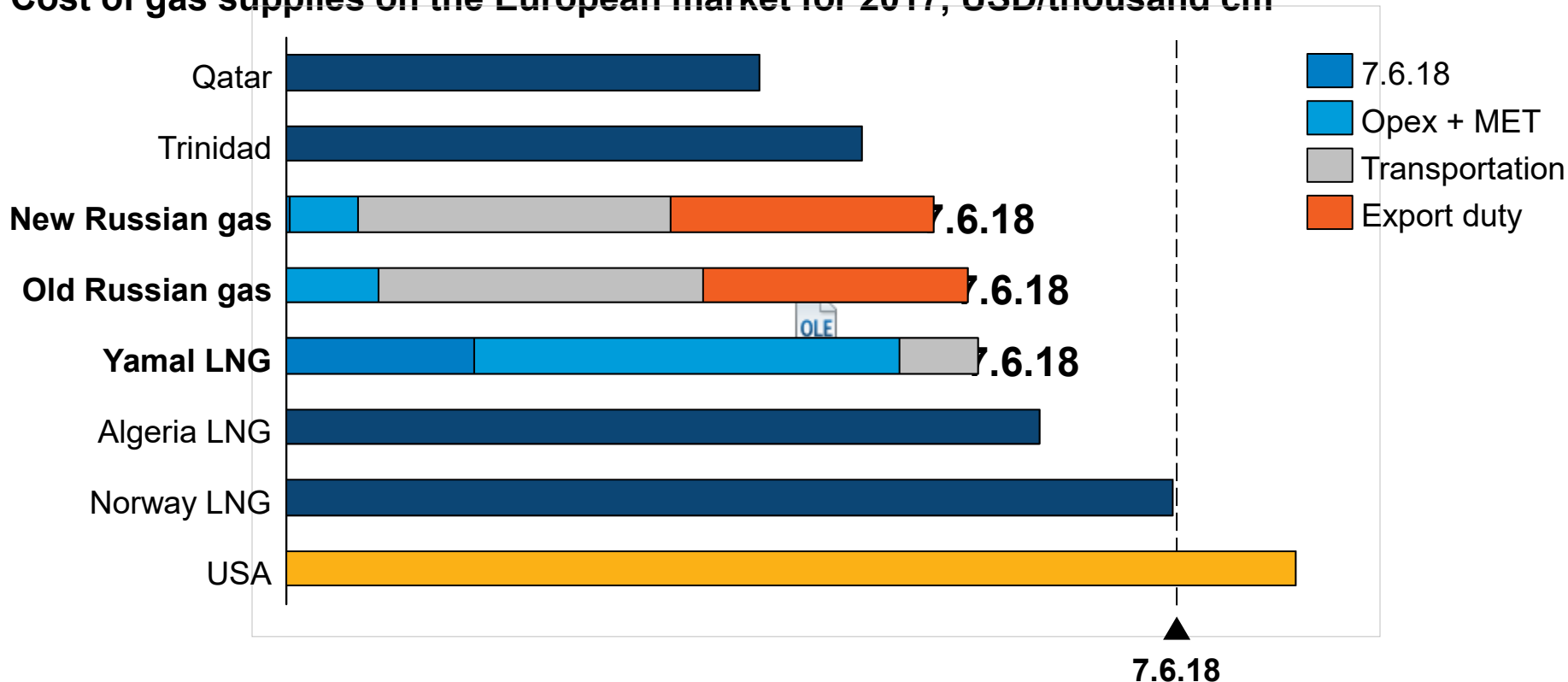
Quo Vadis EU gas market regulatory framework
– Study on a Gas Market Design for Europe, June 2017

Targets of the EU gas market model after 2020 may limit gas imports for key suppliers

Indicator	Target	Number of countries* that meet the target
Number of sources of supply (countries), incl. domestic production	≥ 3	17 countries
Herfindahl-Hirschman market concentration index (HHI)	≤ 2000	6 countries (average – 4832)
Residual supply index (RSI)	$\geq 110\%$ for more than 95 days a year	11 countries
Market concentration for trading operations	$\leq 40\%$	12 countries
Anti-monopoly investigation is not an indicator of the Target Model, but is taken into account in the forecast	Fines, contractual restrictions	8 countries

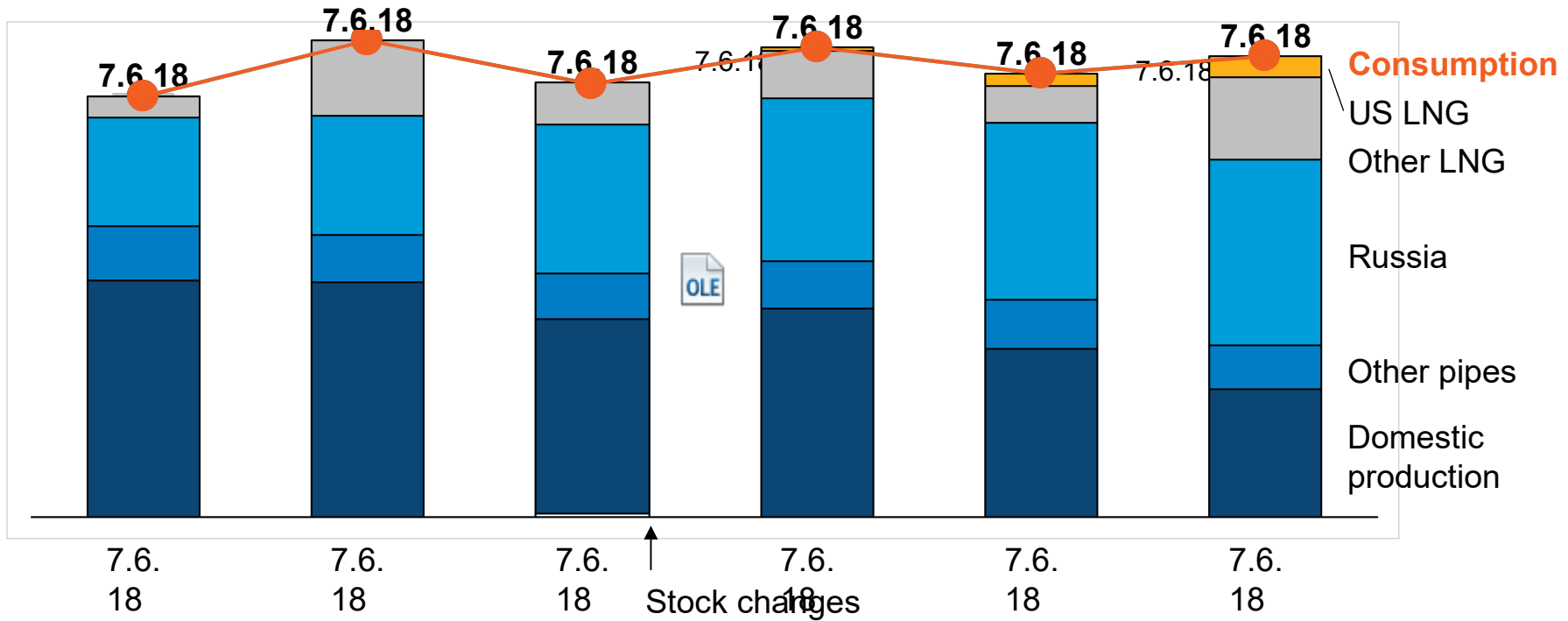
Competitiveness of Russian gas in Europe is among the highest

Cost of gas supplies on the European market for 2017, USD/thousand cm



Russia will expand its presence in Europe due to falling production and stable demand

Forecast of gas supply structure in Europe, bcm



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