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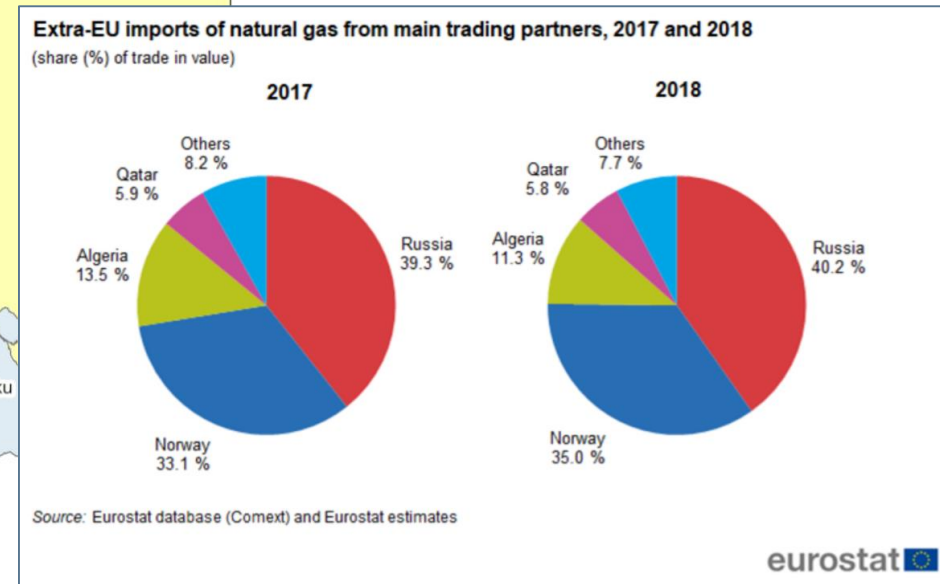
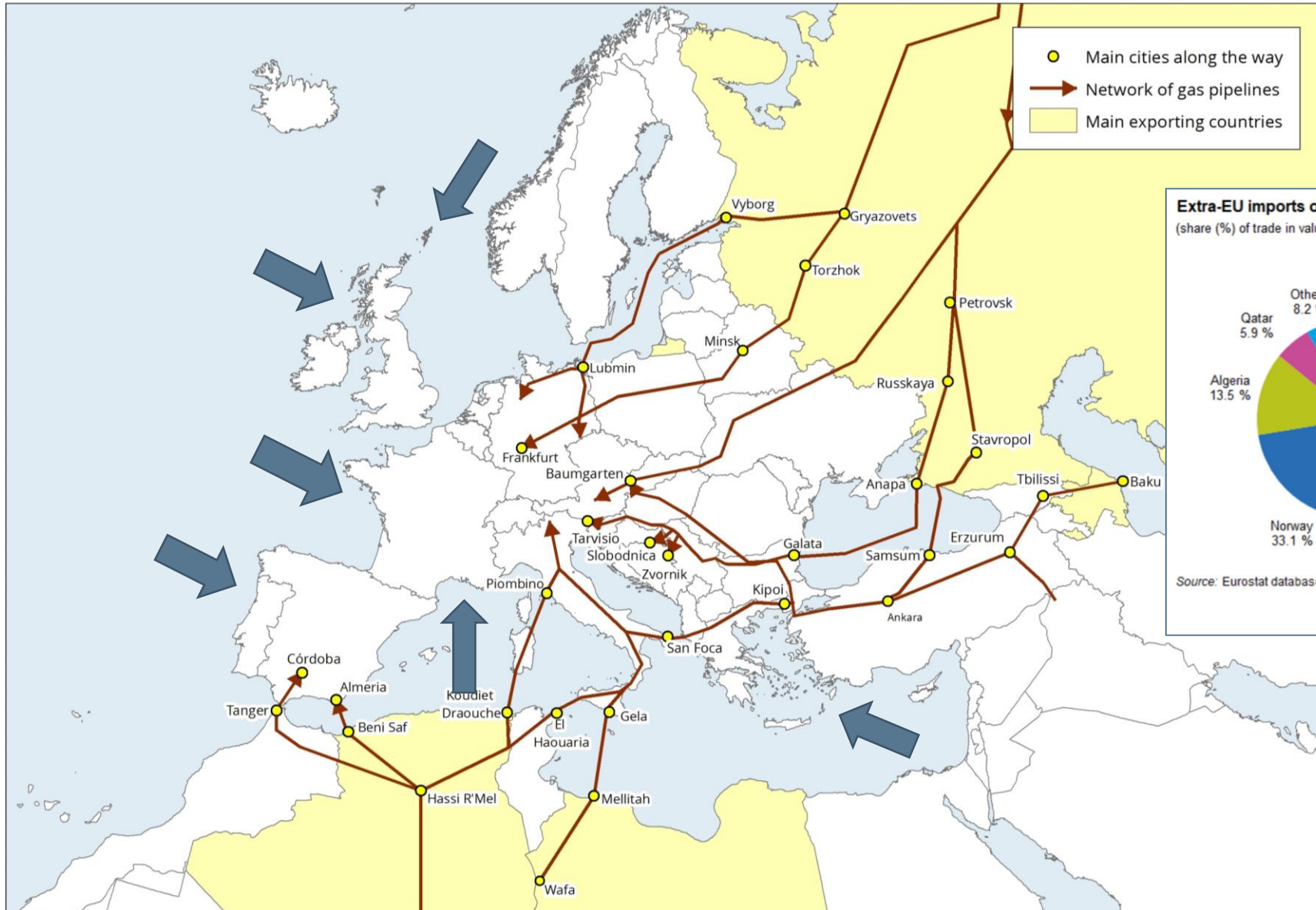
GEOPOLITICS OF THE EUROPEAN GAS

Mitrova Tatiana

Energy Centre
SKOLKOVO Business School
26 August 2019
Ljubljana



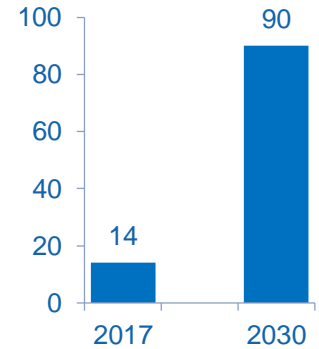
GAS PIPELINES AND LNG THAT SUPPLY EUROPE



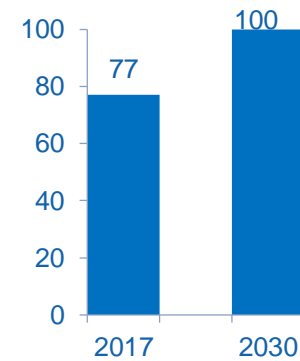
TODAY THERE ARE 4 MAJOR LNG PRODUCERS EXPANDING THEIR LNG CAPACITIES...



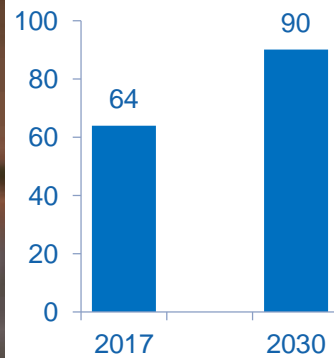
USA



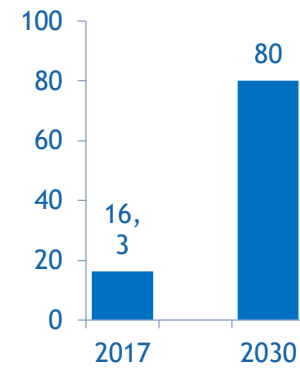
Qatar



Australia



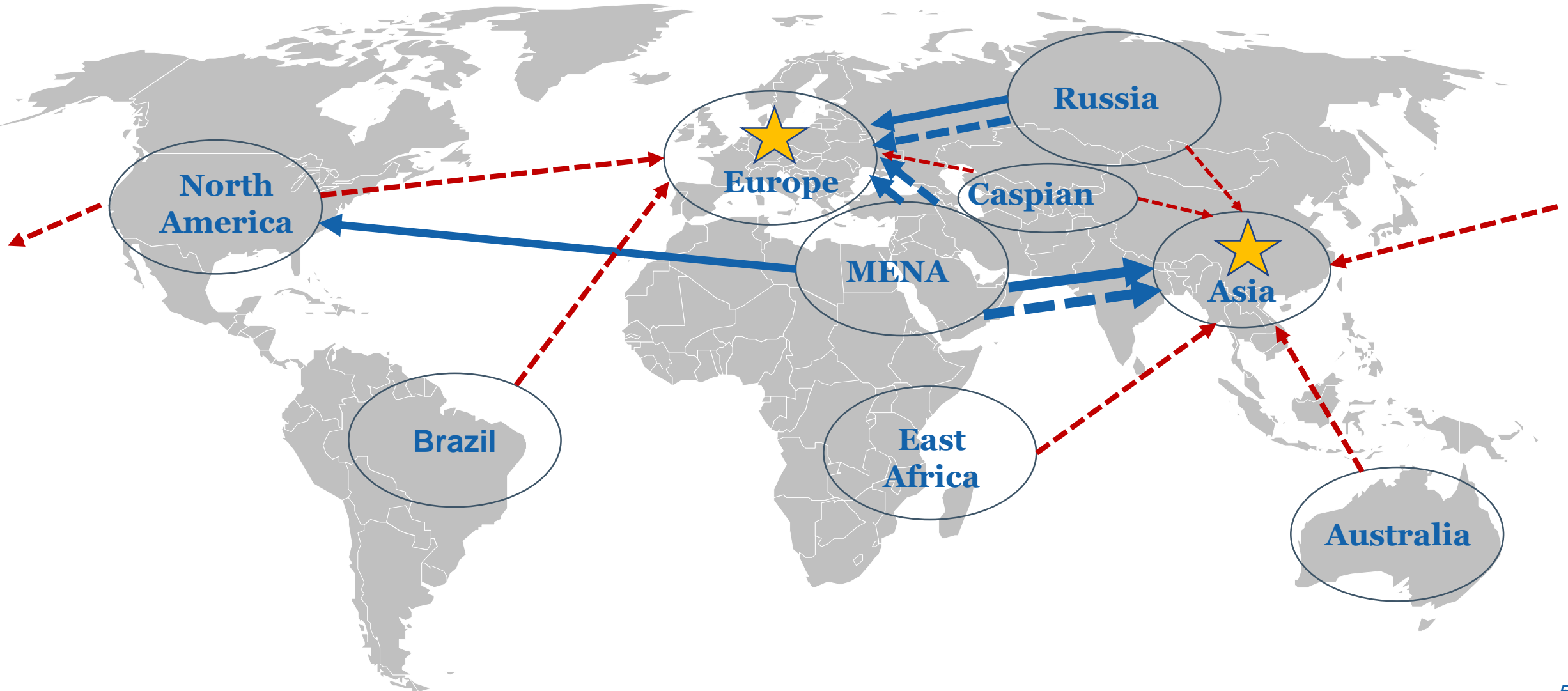
Russia



KEY GAS SUPPLIERS FOR EUROPE

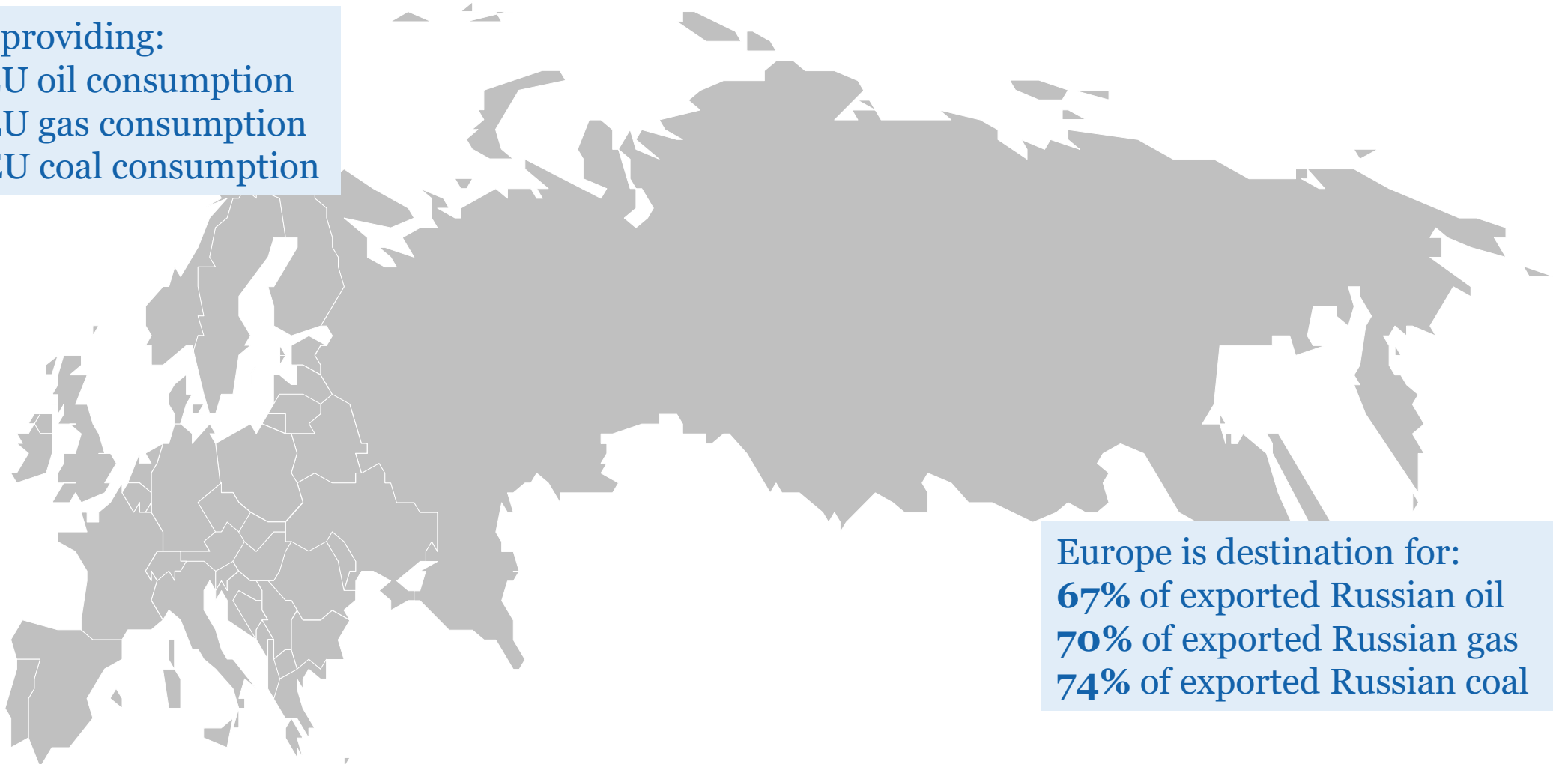


CHANGING GLOBAL ENERGY LANDSCAPE: “REPARTITION” OF THE SHRINKING NICHES IN THE BUYERS’ MARKET AND CHANGING ENERGY FLOWS



HUGE ENERGY INTERDEPENDENCY BETWEEN EU AND RUSSIA

Russia is providing:
26% of EU oil consumption
38% of EU gas consumption
30% of EU coal consumption

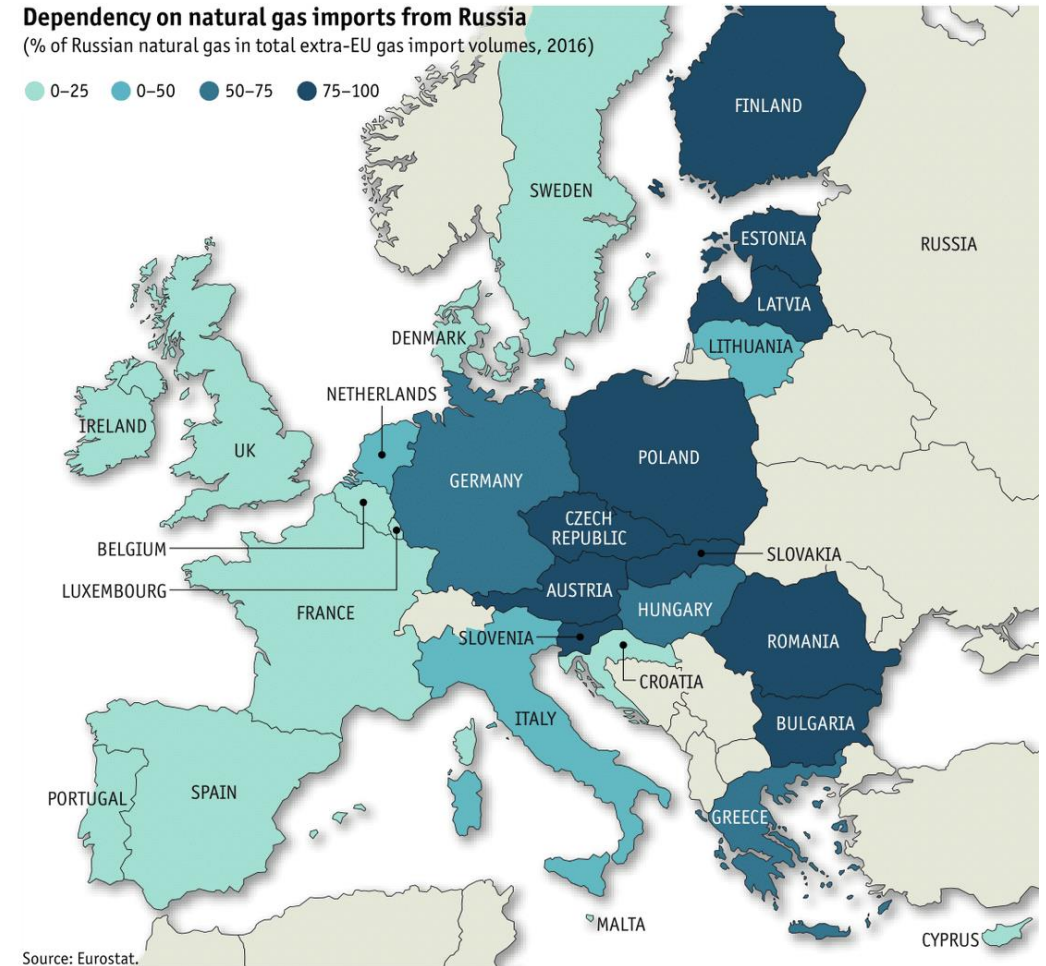


Europe is destination for:
67% of exported Russian oil
70% of exported Russian gas
74% of exported Russian coal

COLD WAR



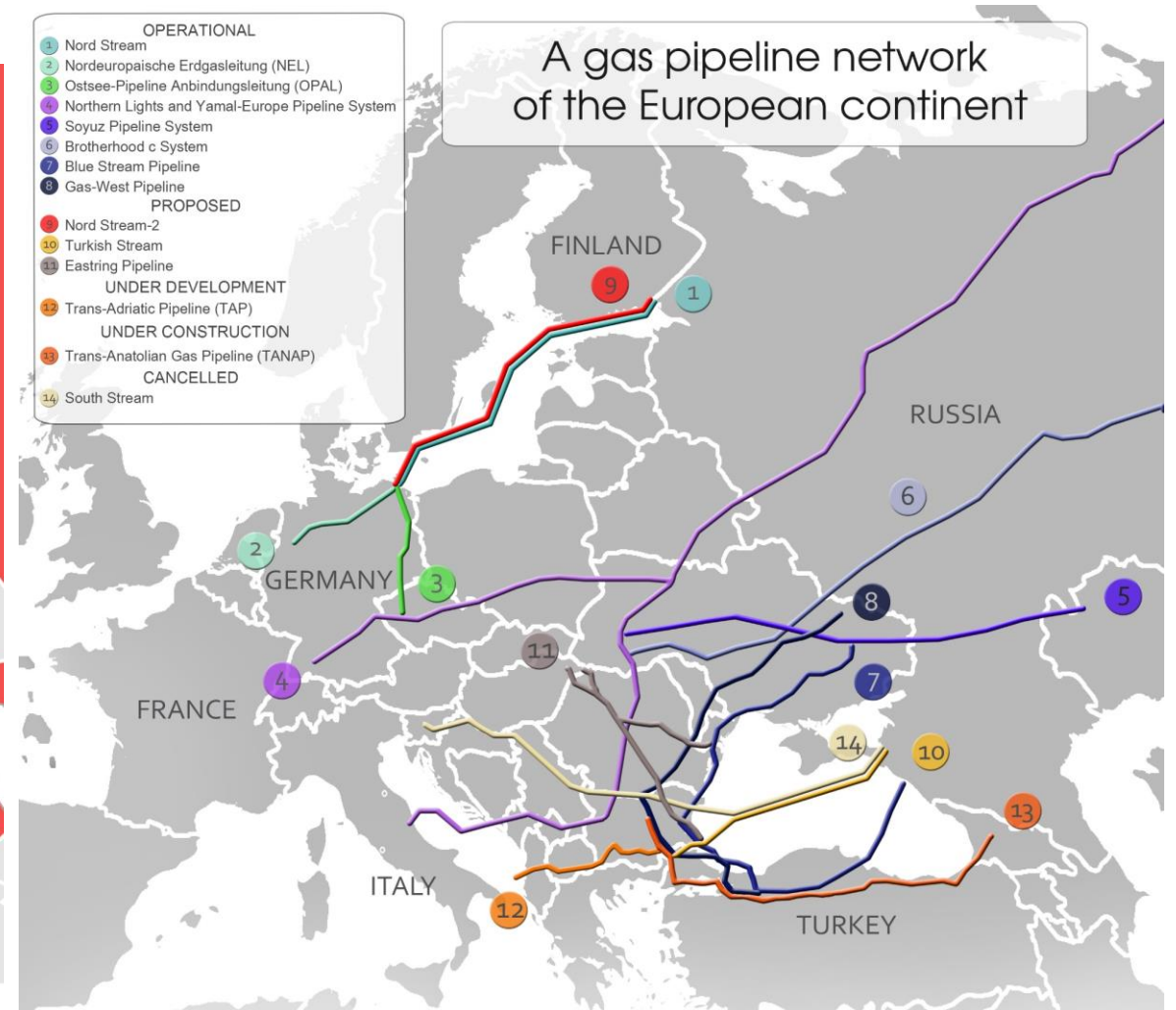
onomist.com/graphicdetail



POST-COLD WAR REALITY



Economist.com/graphicdetail

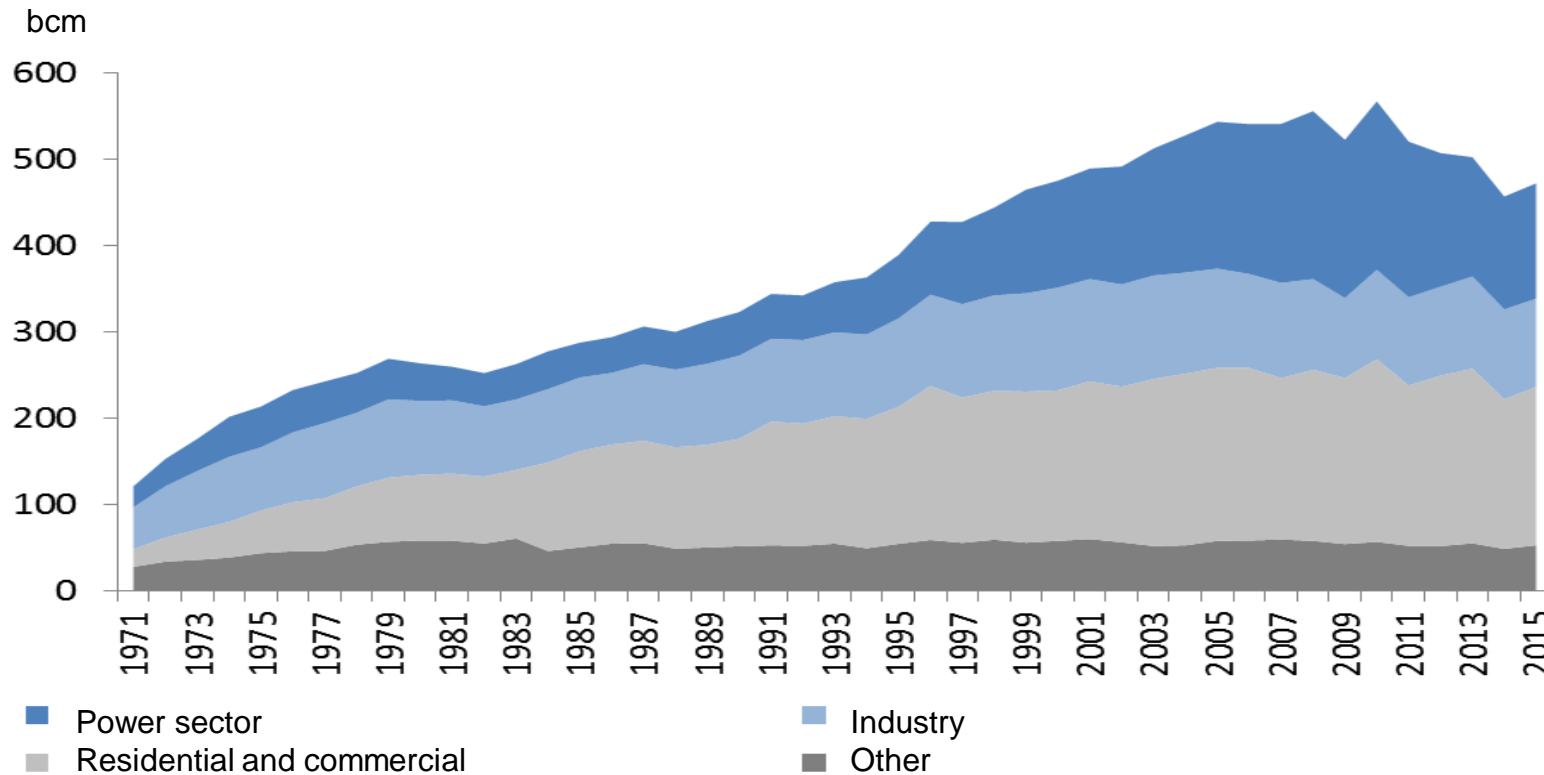


TRANSACTION COSTS IN PIPELINE GAS TRADE DEFINE INSTITUTIONAL STRUCTURES OF THE GAS MARKETS

- High specificity of assets and high probability of opportunistic behavior
- Long character of relationship between counterparts with strong interdependence
- High degree of uncertainty due to long investment cycle and long period of the subsequent operation of specific assets
- Strategic, social and infrastructural importance of gas industry as well as its role in formation of the state budgets, which causes active intervention of the state in its institutional structure
- International gas trade is often linked with geopolitical relationship between countries, which increases state involvement
- Transaction cost economics suggests that these characteristics of transactions favor mechanisms allowing to save on transaction costs (vertical integration or when vertical integration is impossible – for example in international relations - its substitutes – long term contracts with rigid obligations of the parties).

RISE AND FALL OF THE EUROPEAN GAS DEMAND

Gas demand in OECD Europe in 1971-2015

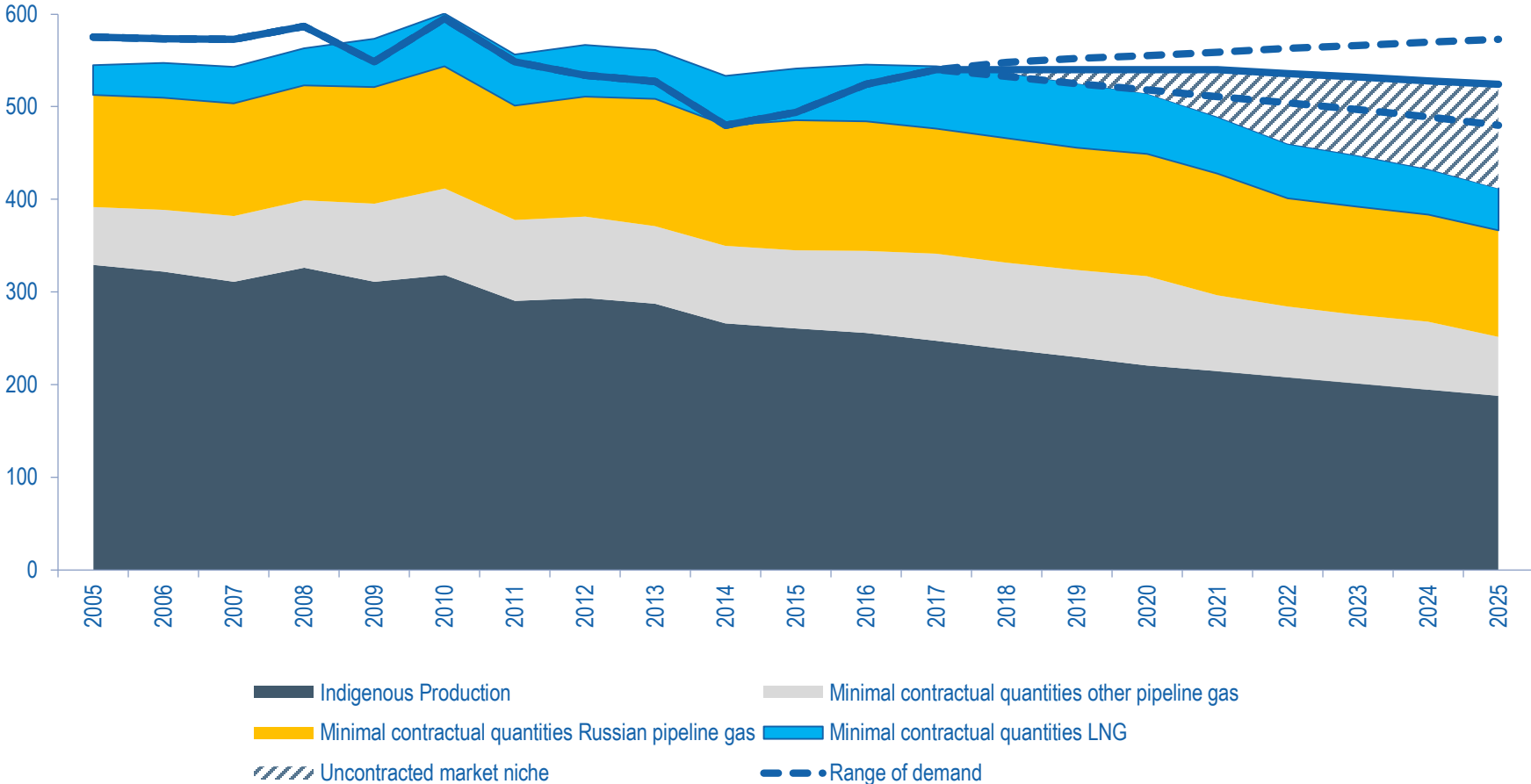


- **Power sector:**
 - Weak electricity demand growth
 - Fast expansion of RES
 - Coal still strong (and cheap)
- **Industry:**
 - Energy efficiency
 - Moved to the other regions
- **Households:**
 - Stagnant population
 - Energy efficiency
 - Switching from gas to electricity

Sources: IEA World Energy Balances 2017, IEA Natural Gas Information 2017.

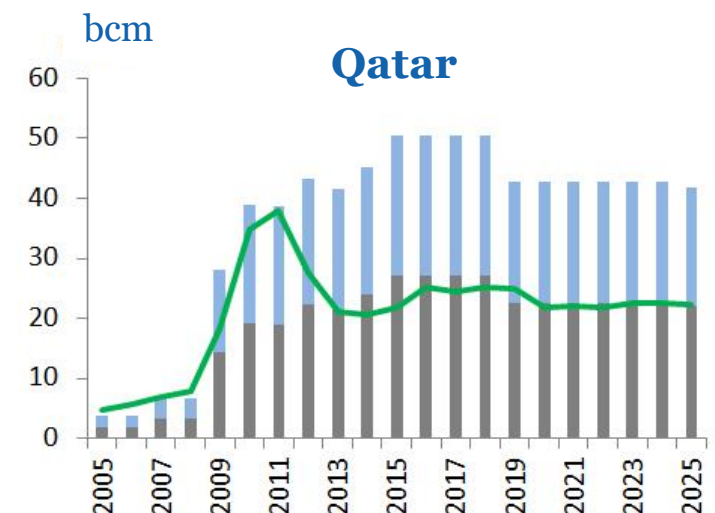
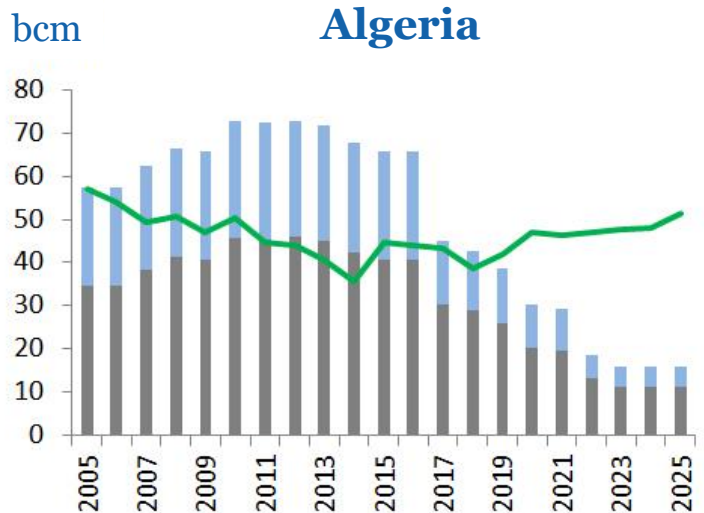
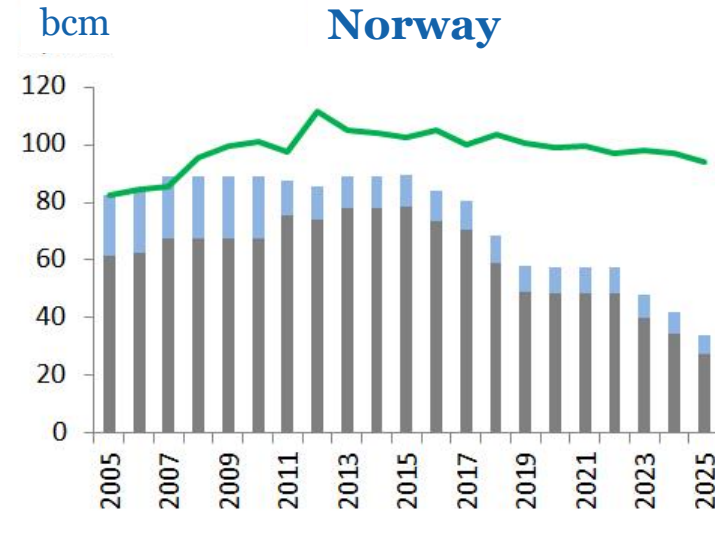
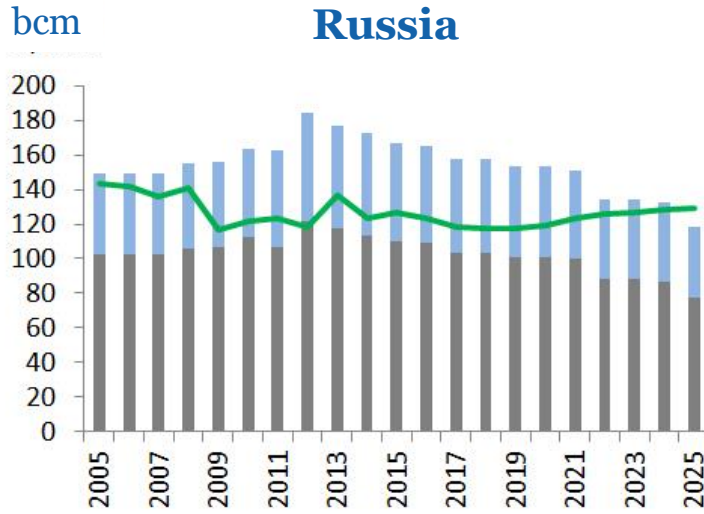
EUROPEAN GAS MARKET CONSISTS OF TWO SEGMENTS: LTCS AND SPOT, GAZPROM HAS SECURED IMPRESSIVE PORTFOLIO OF LTCS...

European gas balance



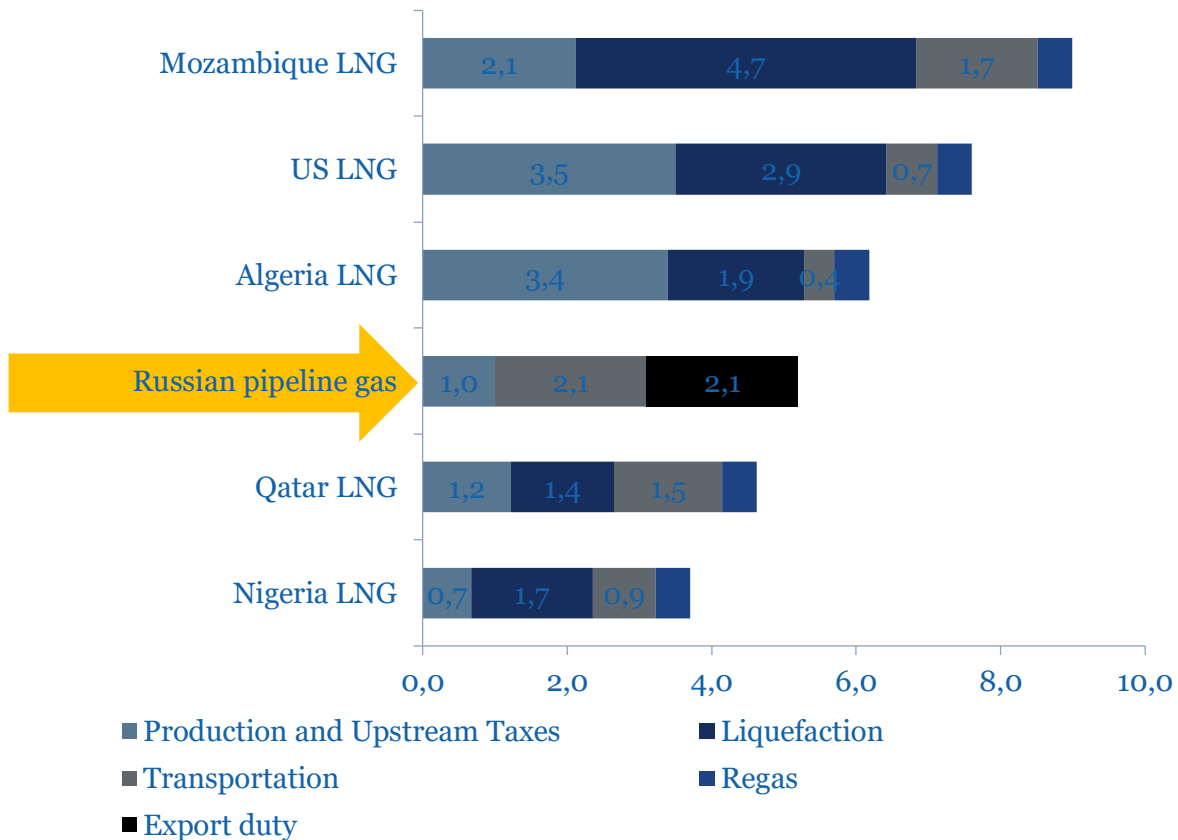
Sources: Nexant WGM 2017, IEA World Energy Balances 2017, IEA Natural Gas Information 2017
 * Europe-41 without Turkey

RUSSIA HAS THE LARGEST CONTRACT PORTFOLIO, WHICH GUARANTEE IT AT LEAST 120 BCMA SUPPLIES

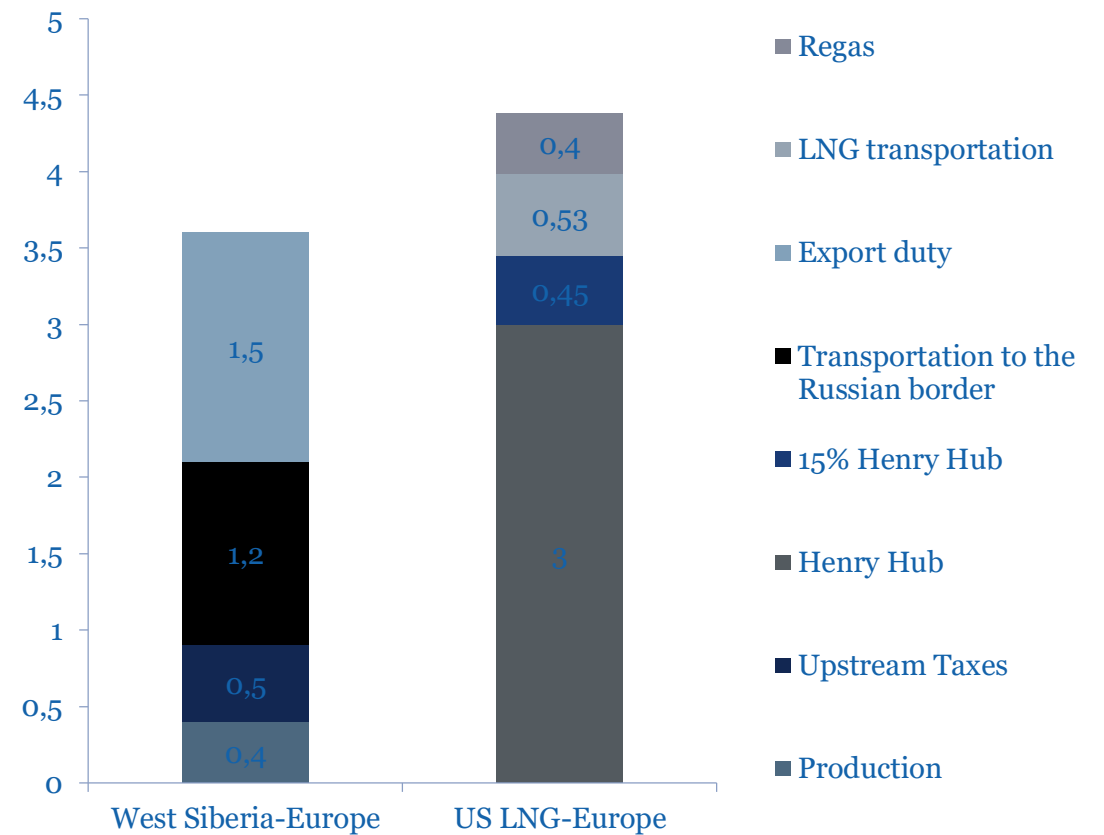


PIPELINE GAS IS WELL PLACED IN EUROPE TO COMPETE ON SPOT WITH LNG

Long run marginal supply costs to Europe (Russian pipeline gas and US LNG)



Short run marginal costs to Europe (Russian pipeline gas and US LNG)



GLOBAL OIL PRICES AND ASIAN GAS DEMAND WILL DEFINE EUROPEAN GAS MARKET SITUATION

European scenario matrix

	Low oil price	High oil price
High Asian demand (no LNG glut)	<p>Low LNG availability</p> <p>Gazprom expanding gas exports</p> <p>NO CHANGE</p>	<p>Increasing competition for LNG with Asia/ Further contract revisions by Gazprom</p>
Weak Asian demand (LNG glut)	<p>Increasing competition between pipeline gas and LNG</p> <p>Gazprom voluntarily decreasing contractual prices</p>	<p>Tough competition between pipeline gas and LNG</p> <p>PRICE WAR (voluntarily increasing supply in order to drop prices and crowd away competitors)</p>

EVOLUTION OF NATURAL GAS MARKETS AND ENERGY SECURITY CONCERNS

Features	Local	National	International	Transcontinental/ Global
Main product	Pipeline gas	Pipeline gas	Pipeline gas, LNG	Pipeline gas, LNG, hydrogen
Infrastructure	Few unlinked gas pipelines between producer and consumer	National gas supply systems	Development of huge long-distance cross-border pipelines and bilateral LNG supply	LNG and pipeline gas supply from several countries, development of international pipeline systems
Market volume	Few BCM	10-10 ² BCM	Few hundreds BCM	More than TCM
Institutional gas market structure	Local vertically integrated monopolies	National vertically integrated monopolies, independent gas production companies	Bilateral international contracts between two national companies, intergovernmental agreements	Multiply contracts between many companies, transnational vertically integrated energy companies
Competition	No	In certain conditions competition in gas production is possible	Competition between domestic production and imports	Competition between domestic production and multiply import sources
Aspects of energy security	Physical Investment	Physical Investment Price and volume	Physical Investment Price and volume Geopolitical	Physical Investment Price and volume Geopolitical Transit
Mechanisms of transaction costs reduction	Local monopoly, super-long-term contracts	National monopoly, Long-term contracts	National monopoly, long-term inter-governmental agreements	Multilateral international agreements, swaps of assets, consortiums

WHAT`S NEXT? NEW BUSINESS MODELS?

- Shorter contracts, higher flexibility, “uberization”, new trading platforms
- Portfolio optimization (aggregators with cheap capital)
- Demand creation
- Enhanced vertical integration (cost control in the upstream supply chain, integrated complex solutions for the final consumers)
- “Green gas” (hydrogen, bio-methane)
- Small-scale LNG
- Integrated gas-to-power solutions and distributed energy
- New trading platforms