

Russian gas: why new pipelines to Europe are needed

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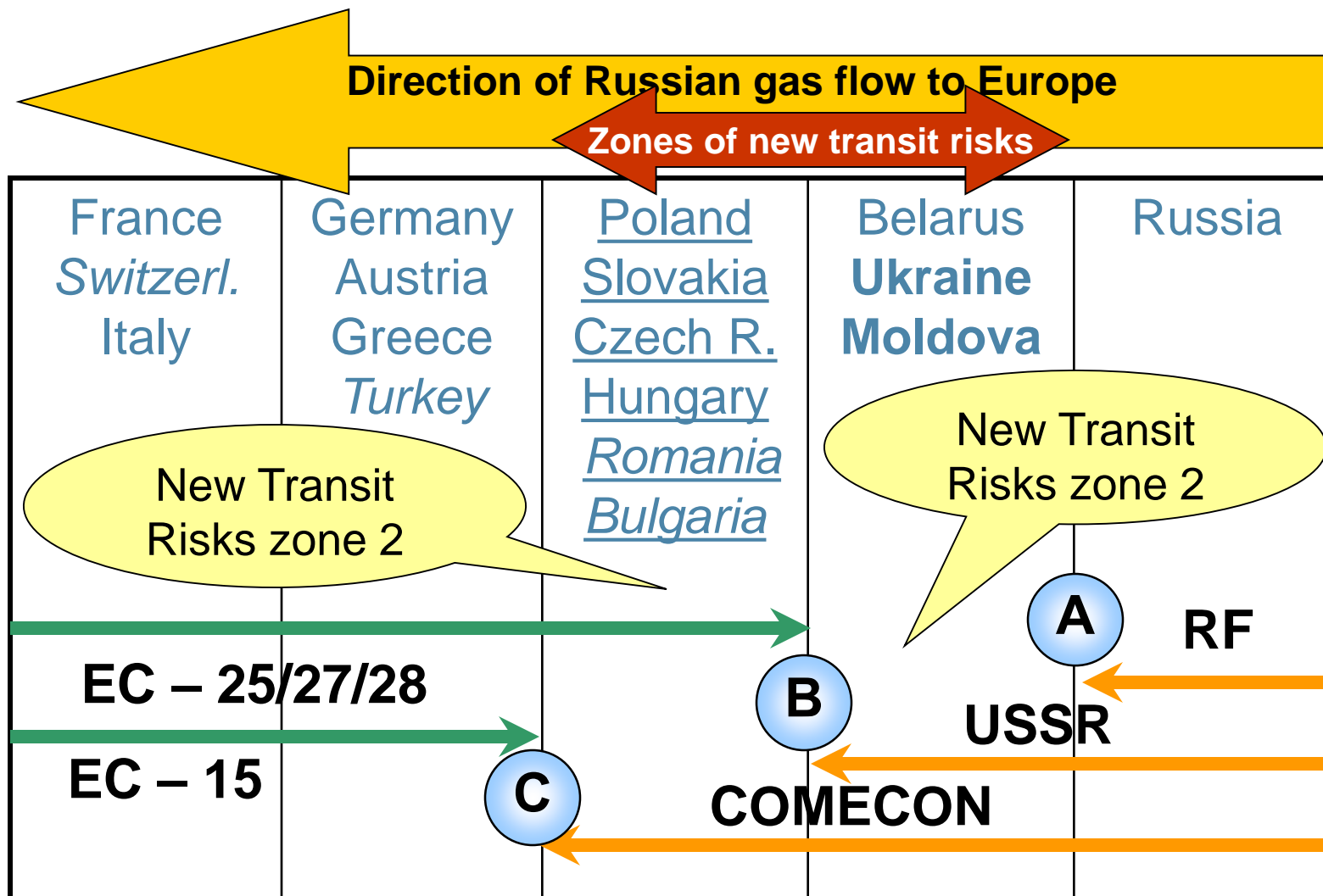
Co-chair Work Stream 2 “Internal Markets”, Russia-EU Gas Advisory Council

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Moscow, 10 April 2018**

Topics to be addressed

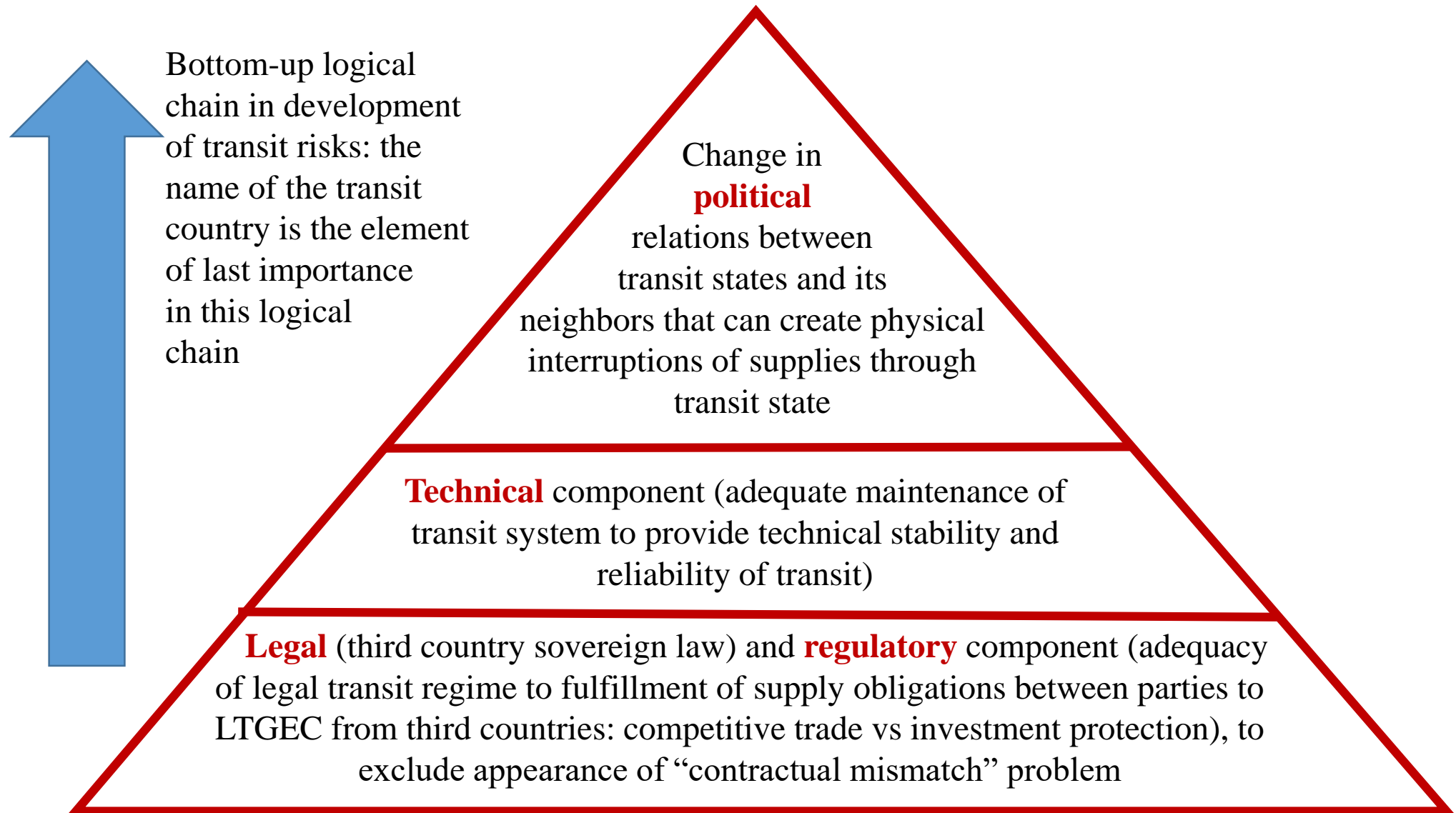
- 1) General Russian concept (energy strategy) for new pipelines: why new pipelines to Europe are needed?
- 2) Whether bypassing Ukraine is politically or economically motivated?
- 3) Why opposition to Russian bypasses from some forces in the EU and USA?
- 4) What can be (and could have been) set against attacks on Russian alternative pipelines?

Russian Gas Supplies to Europe: Zones of New post-USSR Risks for Existing Supplies Within Russia's Area of Responsibility Under Its LTGEC



Italic – non-EU countries; New EU accession states: underlined – since 01.05.2004, underlined + italic – since 1.01.2007; **Bold** – FSU states members of Energy Community Treaty; A, B, C – points of change of ownership for Russian gas and/or pipeline on its way to Europe

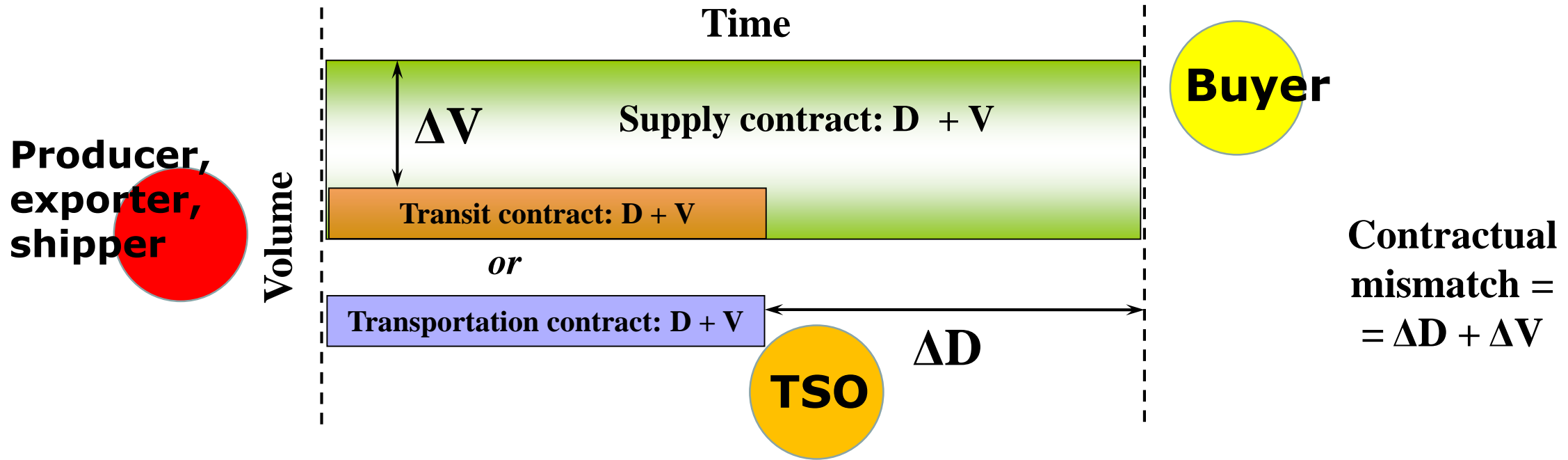
A.Konoplyanik's vision of the nature and three major components of transit risk in a cross-border gas value chain



Russia-EU common interest in & mechanisms for minimizing transit risks

- Prior to dissolution of COMECON/USSR:
 - Delivery points at COMECON-EU border, de facto no transit via COMECON, producer/exporter had full operational control on gas value chain from wellhead to delivery point
- After dissolution of COMECON/USSR:
 - New sovereign independent states between producer/exporter (Russia) and EU => producer has lost control on transit part of gas value chain => transit risks => “contractual mismatch” problem!!!
 - To minimize transit risks for importer & exporter = to diversify:
 - For importer: multiple sources of supply, **routes** (+suppliers)
 - For exporter: multiple markets, **routes** (+ importers)
 - => diversification of routes = common interest for producer/exporter & importer => to exclude transit totally or alternative pipelines (by-passes)

“Contractual Mismatch” Problem – a Regulatory Issue



Mismatch: between duration/ volumes (D/V) of long term supply (delivery) contract and transit/transportation contract as integral part to fulfill the delivery contract => risk of non-renewal of transit / transportation contract => risk for fulfillment of supply contract delivery obligations.

Core issue: guarantee of access to / creation of adequate transportation capacity for the duration of long term contracts, especially in the unbundled markets.

- Nord Stream project pipelines
- Yamal pipelines
- Ukrainian transit flows
- South Stream project pipelines

— Yamal pipelines

— Ukrainian transit flows

■ South Stream project pipelines

Nordstream 1

Greifswald

Mallnow

OPAL

Gazelle

St. Katarina

Waidhaus

Baumgarten

Tarvisio

**South
Stream
onshore**

South Stream offshore

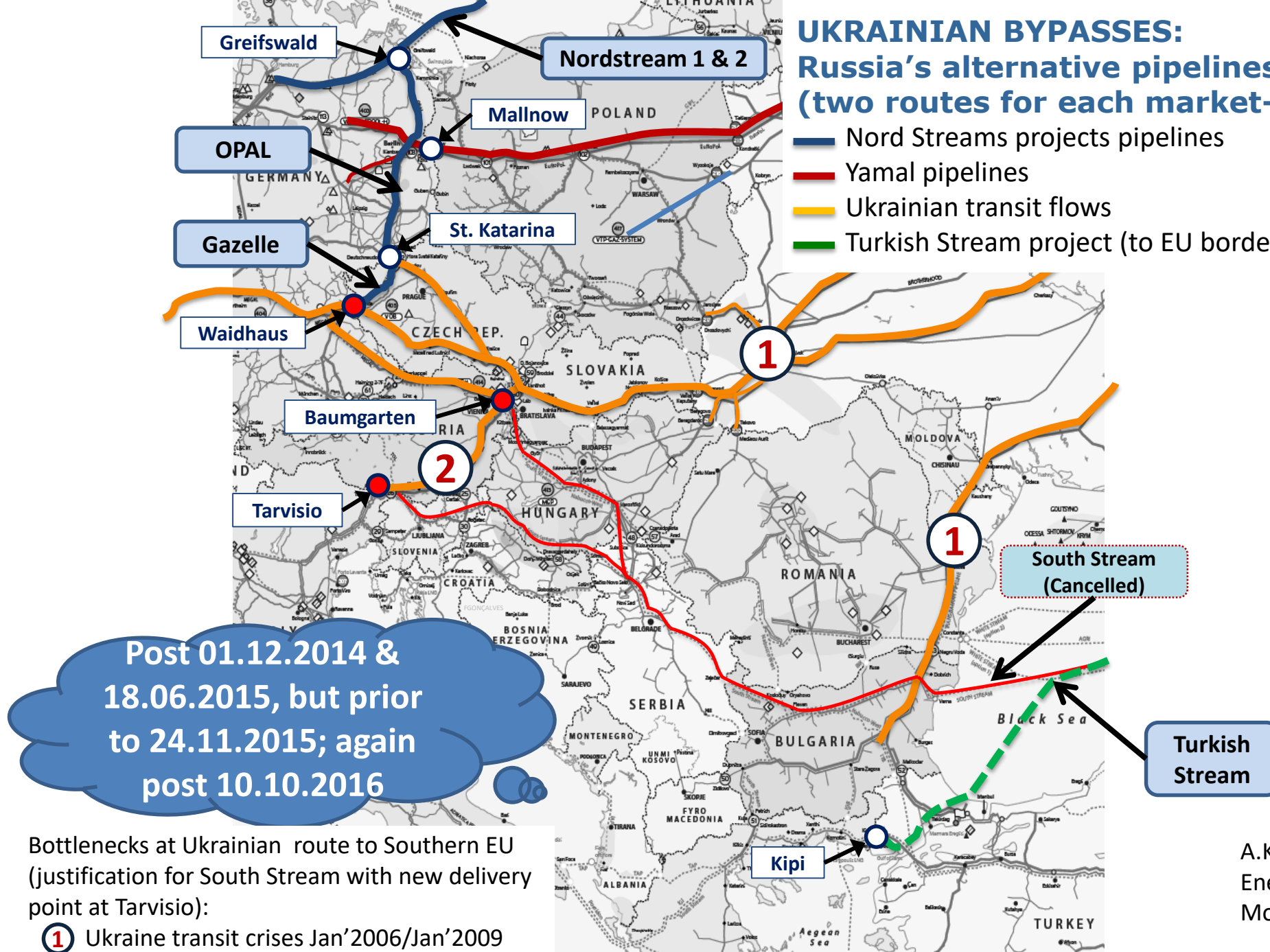
1 Ukraine transit crises Jan'2006/Jan'2009

2 TAG auctions Dec'2005/May'2008

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Energy Committee,
Moscow, 10.04.2018

UKRAINIAN BYPASSES: Russia's alternative pipelines (two routes for each market-2)

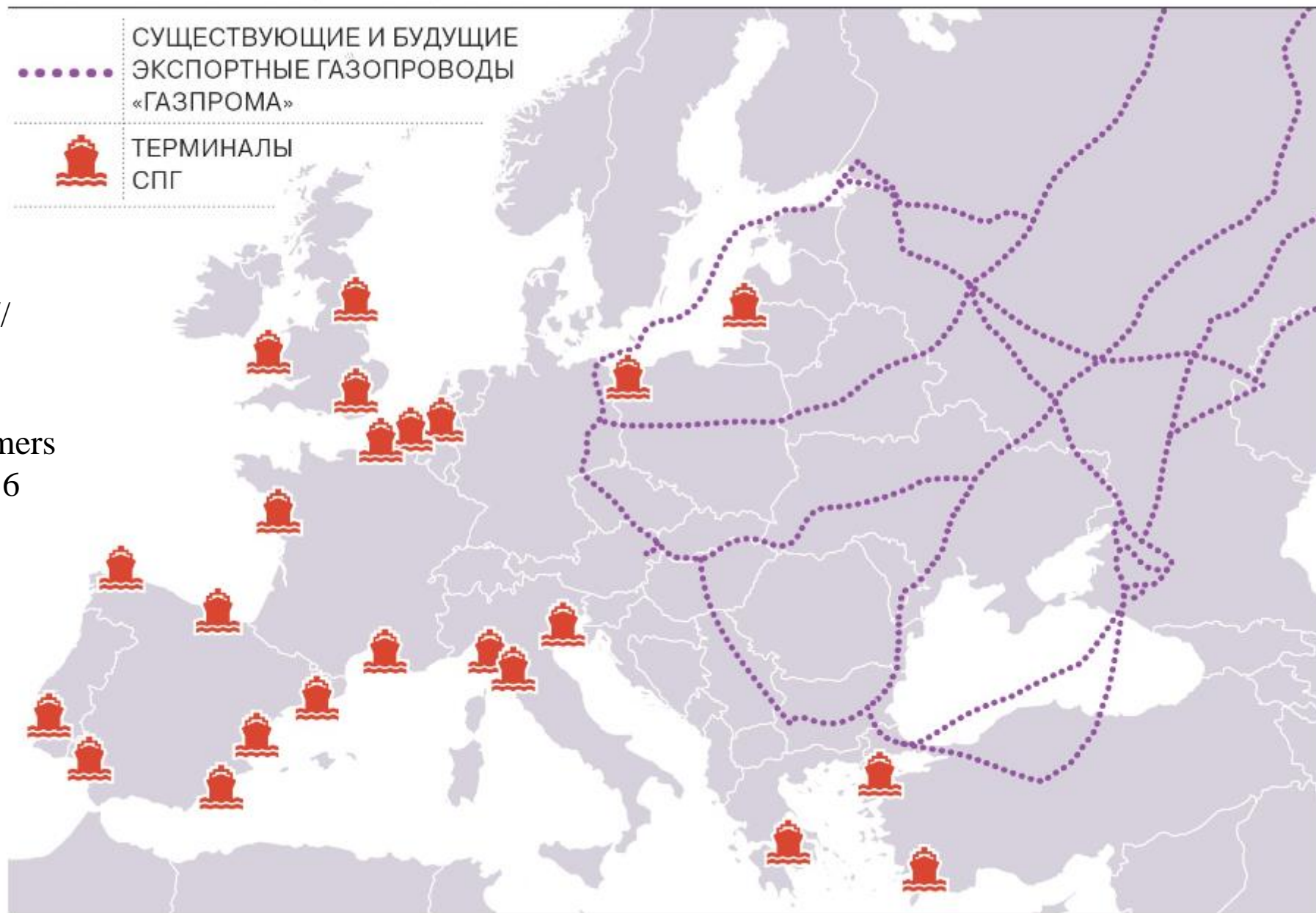
- Nord Streams projects pipelines
- Yamal pipelines
- Ukrainian transit flows
- Turkish Stream project (to EU border)



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ЭКСПОРТНОЕ КОЛЬЦО «ГАЗПРОМА» И ТЕРМИНАЛЫ СПГ В ЕВРОПЕ

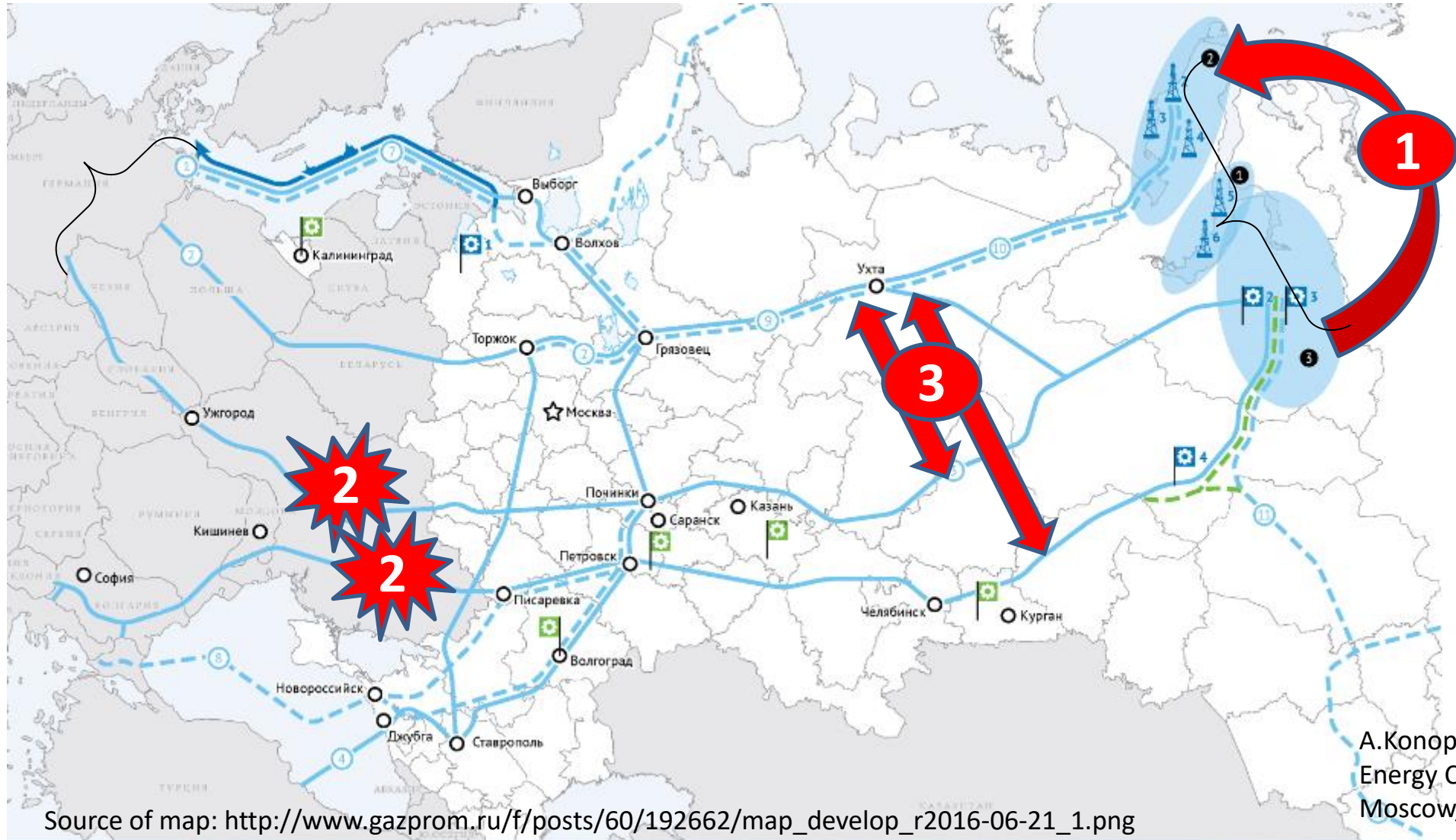
ИСТОЧНИК: «ГАЗПРОМ», ENTSG, GNIIGNL.



Источник: США
пытаются отсечь
российский газ. //
«Коммерсантъ»,
30.03.2018,
<https://www.kommersant.ru/doc/3587636>

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Committee, Moscow,
10.04.2018

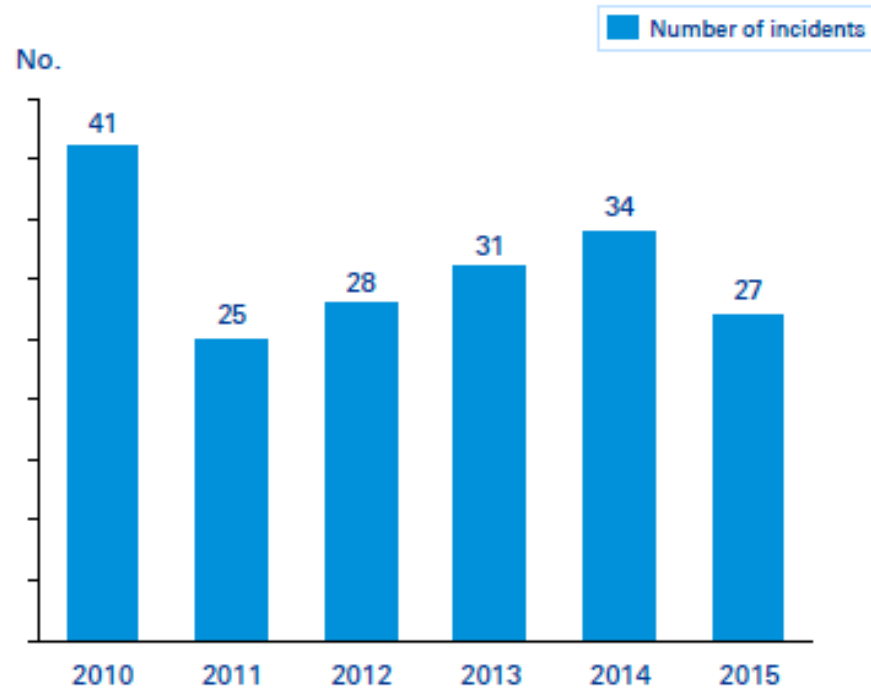
Russia's existing/new supplies to Europe (to the unbundled EU gas market): (1) resource base moves from Nadym-Pur-Taz to Yamal, (2) Ukrainian transit risks & costs increases, => (3) modernization existing (since end-60's) infrastructure vs new construction transportation route



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Ukrainian transit: technical aspects

There was a slight improvement in 2011, but since then the number of incidents has been increasing

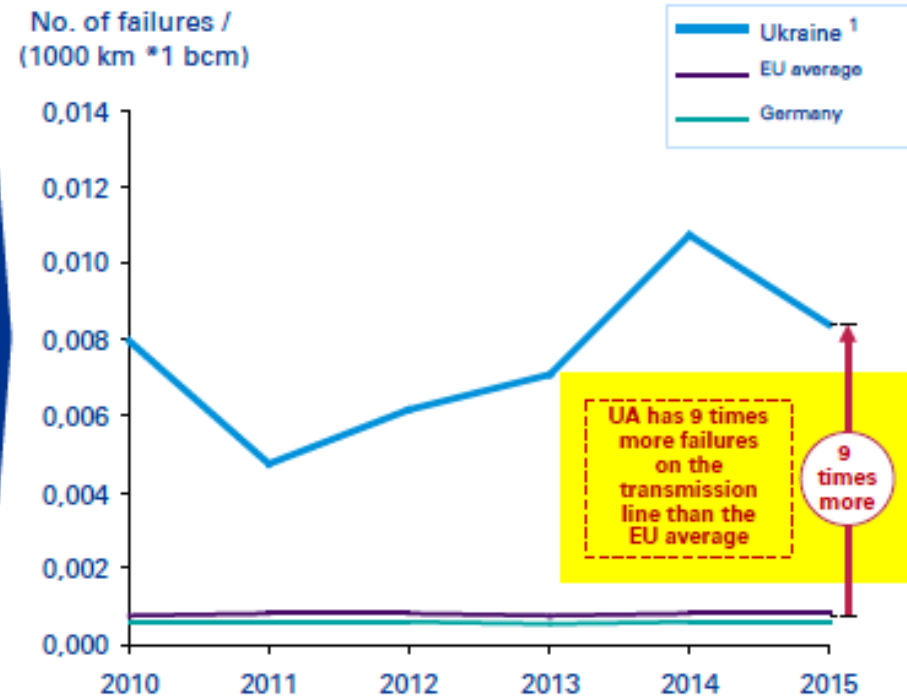


KPMG calculation methodology for failure index (No. of failures/(1000 km *1 bcm)):

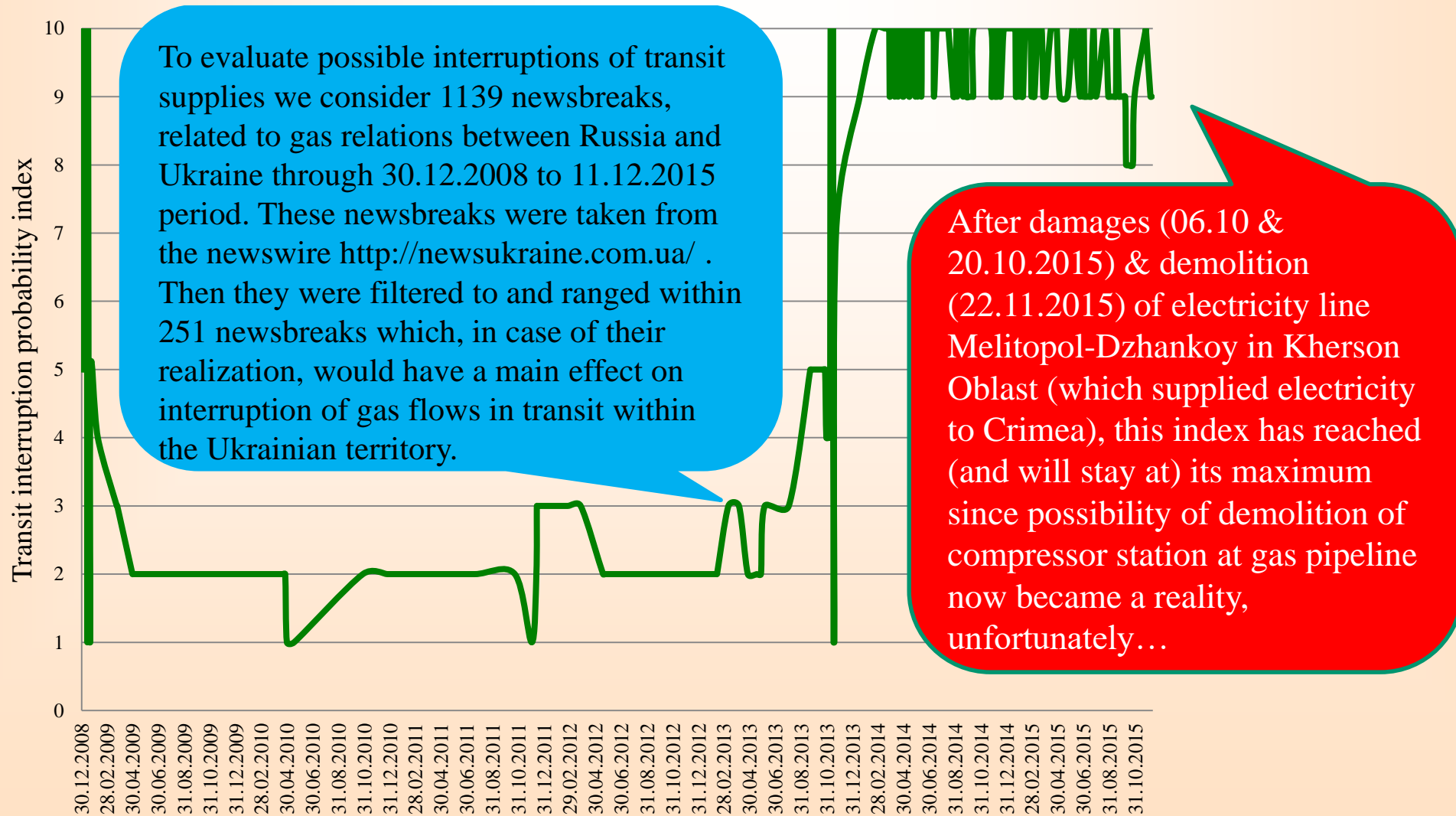
- (1) Ukraine: Calculated on the basis of number of failures (published by Ukrtransgaz, 2015) and 38.5 th km long transmission system and sum of transit and net imports from Russia were taken into account.
- (2) EU average: Number of incidents per 1000 km from EGIG 2015 report and quantity of imports from Eurostat Statistical Dashboard.
- (3) Germany: Number of incidents per 1000 km from DVGW 2011-2015 statement and quantity of imports from Eurostat Statistical Dashboard.

Source: Ukrtransgaz Publication on Incidents on the transmission system („У 2015 році кількість відмов на магістральних газопроводах України зменшилась на 21%“ Published on 2016.06.15), 9th Report of the European Gas Pipeline Incident Data Group on period 1970 – 2013 (2015); Sicherheit von Gasfernleitungen – das Technische Regelwerk im Licht der aktuellen Rechtsprechung (2011; 2013; 2015)

Compared to the international benchmark, Ukraine has the most failures per 1000 km times natural gas throughput



Ukraine: “transit interruption probability” index (2009–2015)



Calculated by M.Larionova, Russian Gubkin State Oil & Gas University, Chair “International Oil & Gas Business”, Master’s programme 2013-2015, on methodology, jointly developed with A.Konoplyanik, based on principles of credit ratings evaluation by major international credit agencies

	Yamal-Greifswald	NPTR-UA-Waidhaus
Pressure, bars	120/90	75/55
Distance between CS, km	240	120
Inner coating	Yes	No
Efficiency GCU	Twice high	18-25%
Gas-compressor units capacity, MWt	32, 25	12, 16 (new/UA)

Compiled from public sources, incl.: С.Правосудов. Почему Газпром не доверяет украинской трубопроводной системе. // «НГ-Энергия», 16.01.2018

	Yamal – Germany routes	km
1	Yamal – Greifswald:	4166
	Yamal – Ust-Luga (within RF)	2977
	Ust-Luga – Greifswald	1189
2	Yamal – NPTR – UA - Waidhaus:	6051
	Yamal – Sudja (within RF)	3987
	Sudja – Waidhaus	2064

Comparison of length & some other parameters for different gas routes from Yamal to Germany

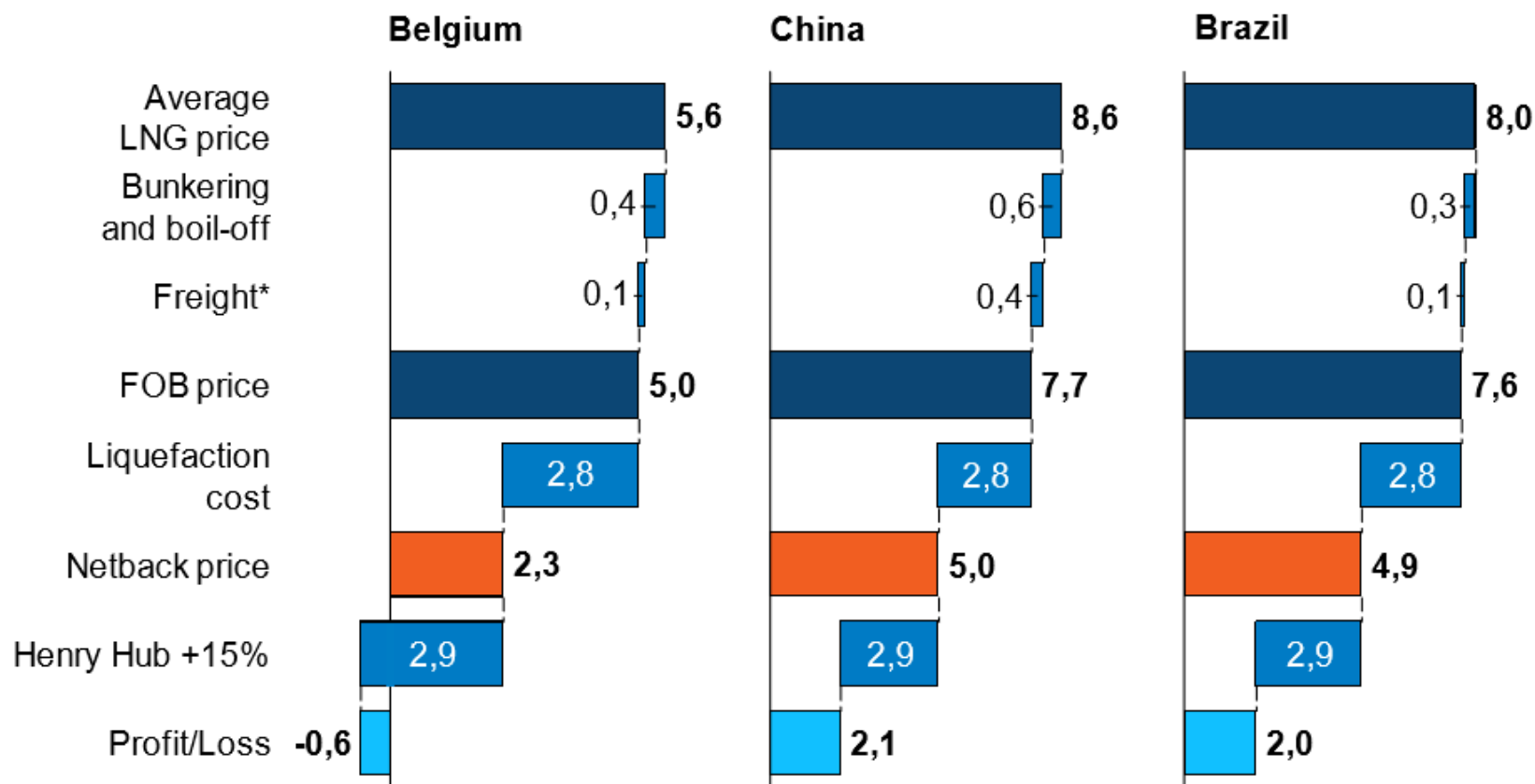


Reminder: Since 2nd EU Gas Package supplies to the individual EU MS = supplies to the EU !

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Length of the route via Nord Stream is 1885 km shorter than through UA GTS, incl. that within Russian territory the distance is shorter by 1010 km. Route via Ukraine is 45% longer than via Nord Stream.

Economics of US LNG exports



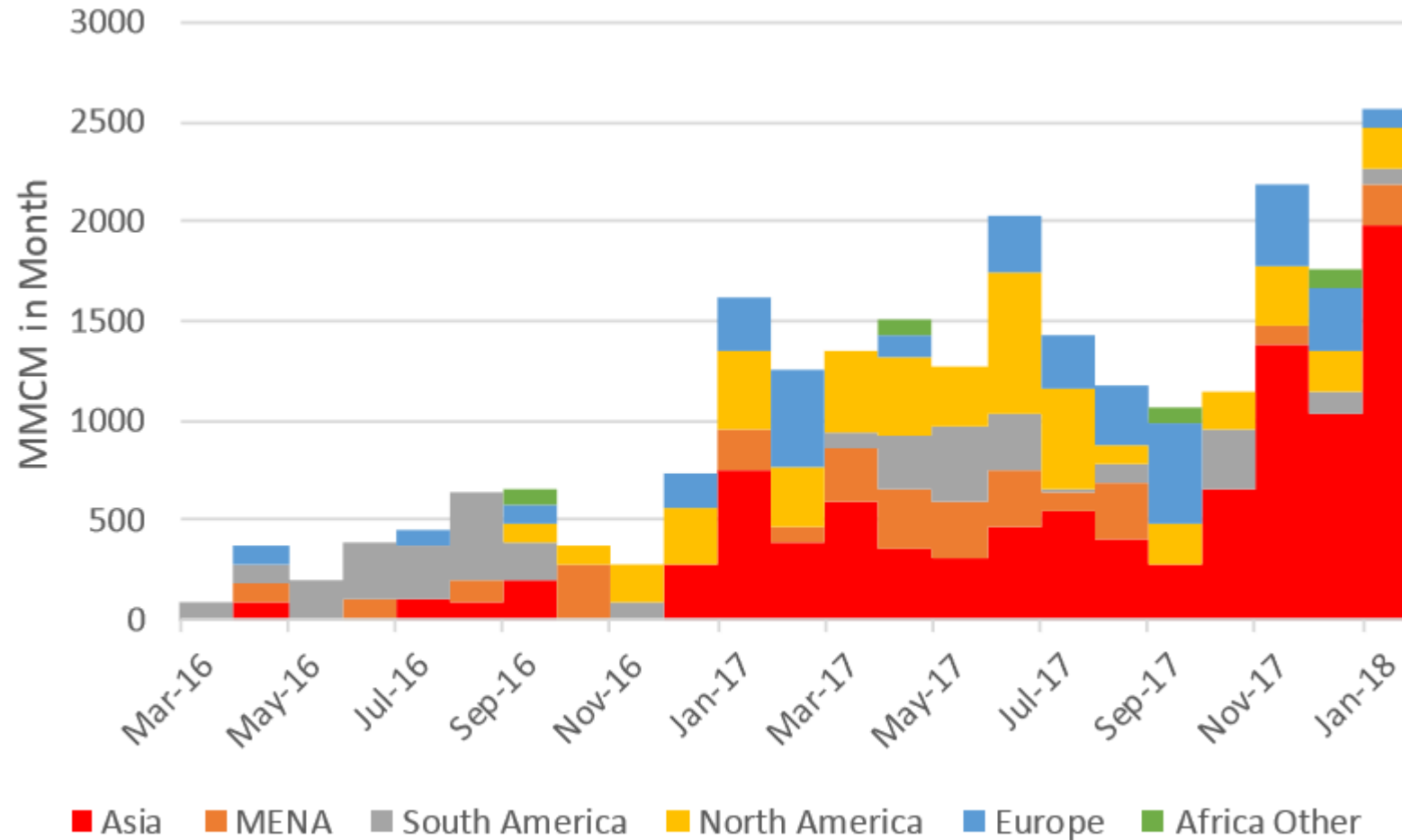
Note: export netback is calculated as an average selling price of LNG to the final market less transportation and liquefaction costs.

Figure 4. Changes in netback factors of US LNG delivery by country in 2016, \$/MMBtu

Source: EIA, FERC, VYGON Consulting

Source: M. Belova and E. Kolbikova. US LNG Competition Evaluation and Export Prospects. - Oil, Gas & Energy Law Intelligence (OGEL), Vol. 15 - issue 4, November 2017, p.7

Destination markets for US LNG, 2016 and 2017



Platts Monthly LNG Data Service

Source: Howard Rogers. Panama Canal and LNG: Congestion Ahead? – OIES, Oxford Energy Insight: 33, April 2018, p.10

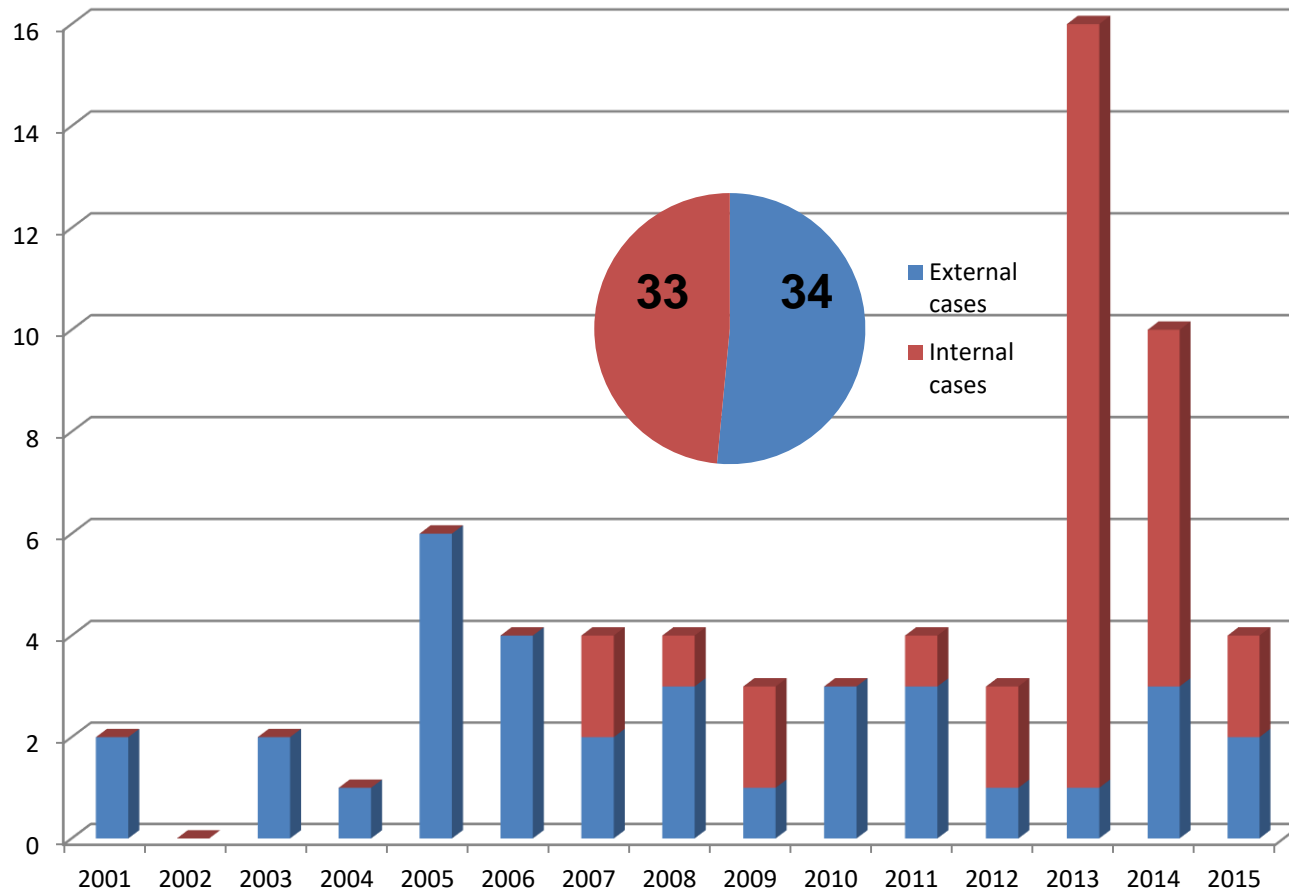
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Fight against NS2: multilayer task for EU & US

- To force Russia to continue large-scale gas transit to EU via UA post-2019 => Russia's transit fees to UA instead of financial support of UA from EU/US public funds => to slow down (if not to prevent) NS2 construction/start-up
- **EU**: proposed anti-NS2 TEP amendments or RF-EU negotiations on special NS2 treatment (EU acquis, incl. MTPA, at NS2 starting point in Russia)
 - Create competition between Russia's gas suppliers (Gazprom vs Rosneft), incl. political dimension
 - BUT: Negative consequences on NS2 investment already made => Art. 13, 26 ECT
- **US**: CAATSA(*) Art. 232, 257 => “to kill the competitor” as an instrument for “America First” & “US Global Energy Dominance” doctrines:
 - Step 1: to improve competitiveness of US LNG in Europe against Russian pipeline gas
 - Step 2: to improve US global non-energy competitiveness, incl. against its allies (EU)
- Joint EU/US fight against NS2 is in favour of the US, not of the EU

(*) Countering America's Adversaries Through Sanctions Act, 02.08.2017

Increasing number of 'investor-state' disputes based on ECT Art.26 from investors of EU Member-States against EU Member-States



For the period since 2001 (since the first 'investor-state' claim based on ECT Art.26) till 21.04.2015 – total of 67 such claims, incl. 33 claims (half of the total) is from investors of the EU Member-States against the EU Member-States, notably, within the EU (internal cases) – de facto against EU “liberalization risks

Source: У.Руснак, А.Конопляник. Эволюция модели энергобезопасности. Россия и ДЭХ: не остаться на обочине. // «Нефтегазовая Вертикаль». 2015, №10, с.4-12 (7).

Based on: <http://www.energycharter.org/what-we-do/dispute-settlement/all-investment-dispute-settlement-cases/>

Thank you for your attention!

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