

What next after cancellation of South Stream, decision on Turkish Stream & announcement on Nordstream-2. Gazprom's plans, possible EU reaction & way forward

Dr., Prof. Andrey A. Konoplyanik,

Adviser to Director General, Gazprom export LLC,
Professor, Chair "International Oil & gas Business",
Russian State Gubkin Oil & Gas University

Co-Chair, Work Stream 2 "Internal Markets", Russia-EU Gas Advisory Council /
Rus.side Coordinator, Russia-EU Informal Consultations on EU Regulatory issues

**Lecture at GDF Suez training/cooperation programme,
07 September 2015, Gazprom's Corporate Institute, Moscow, Russia**

Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)**
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. Specificity of Russia's "multiple pipelines" concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed

Preconditions for new Russian gas supply model to Europe (1/2)

1) Changing contracting structures & pricing mechanisms – operation within new EU gas market architecture:

- a. From the **chain of three consecutive LTC** with supply and transportation contracts (first bundled, then unbundled, but to be mutually correlated) - to the system of “**entry-exit**” **market zones** with VTP (hubs) within unbundled commodity and capacity markets
- b. Unbundled **commodity** market: mature & oversupplied (either contractually or physically) market, “gas-to-gas” competition, two market segments – contractual & spot – in competitive coexistence
- c. Unbundled **capacity** market: supplier as a shipper only; capacity allocation: (i) auctions by default, (ii) more than 2 IPs/cross-border pipelines, conditional booking of new capacity by shipper – “open seasons” (Art.20(d))

Preconditions for new Russian gas supply model to Europe (2/2)

2) Diversification of routes/means of supplies: from GOSPLAN's (single pipe/corridor to export market) to "multiple pipelines" concept (at least two pipes / corridors or means of supply to each export market):

- a. Change of concept of risk assessment/minimization: from (cheaper) central planning & direct control on each export route through to delivery point – to (more costlier) competitive choice among few routes/means of supply (taking into consideration comparative costs & risks)
- b. Economic justification of new pipelines/means of supply to mature markets: not new gas, but transit risk mitigation & liquidation of transit monopoly

Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)
 - a. **Adaptation within new EU gas market architecture (new supply flexibility)**
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. Specificity of Russia's "multiple pipelines" concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed

New model for EU: Evolution of gas value chain & pricing mechanism of Russian gas to EU (1)

Past (Pre-2009) – growing EU market



Nowadays (Post-2009) – oversupplied (in NWE segment -?)
EU market with not yet clear future trends

Gazprom as price-taker from OIL market



Request for hub-indexation both *where hubs are relatively liquid (NWE)* & *where there is no hubs or they are not yet liquid at all (CEE/UA)* (f.i. under threat of arbitration)

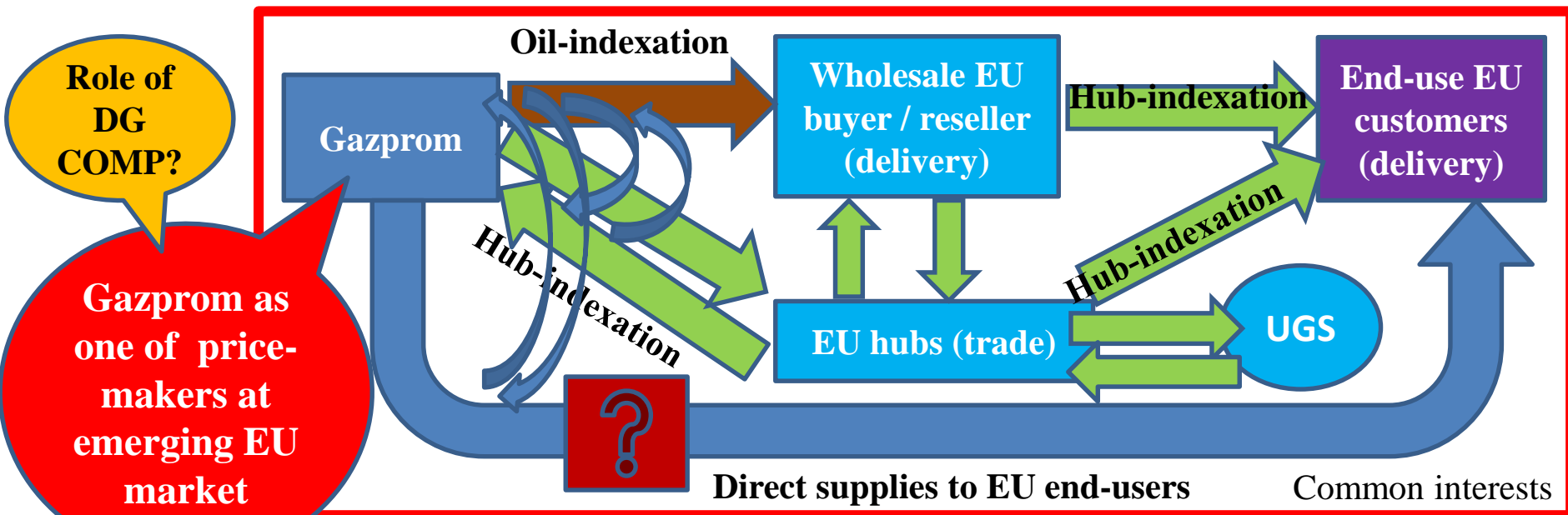
New model for EU: Evolution of gas value chain & pricing mechanism of Russian gas to EU (2)

Future (“NO GO” contractual scheme under any (?) supply-demand scenario)

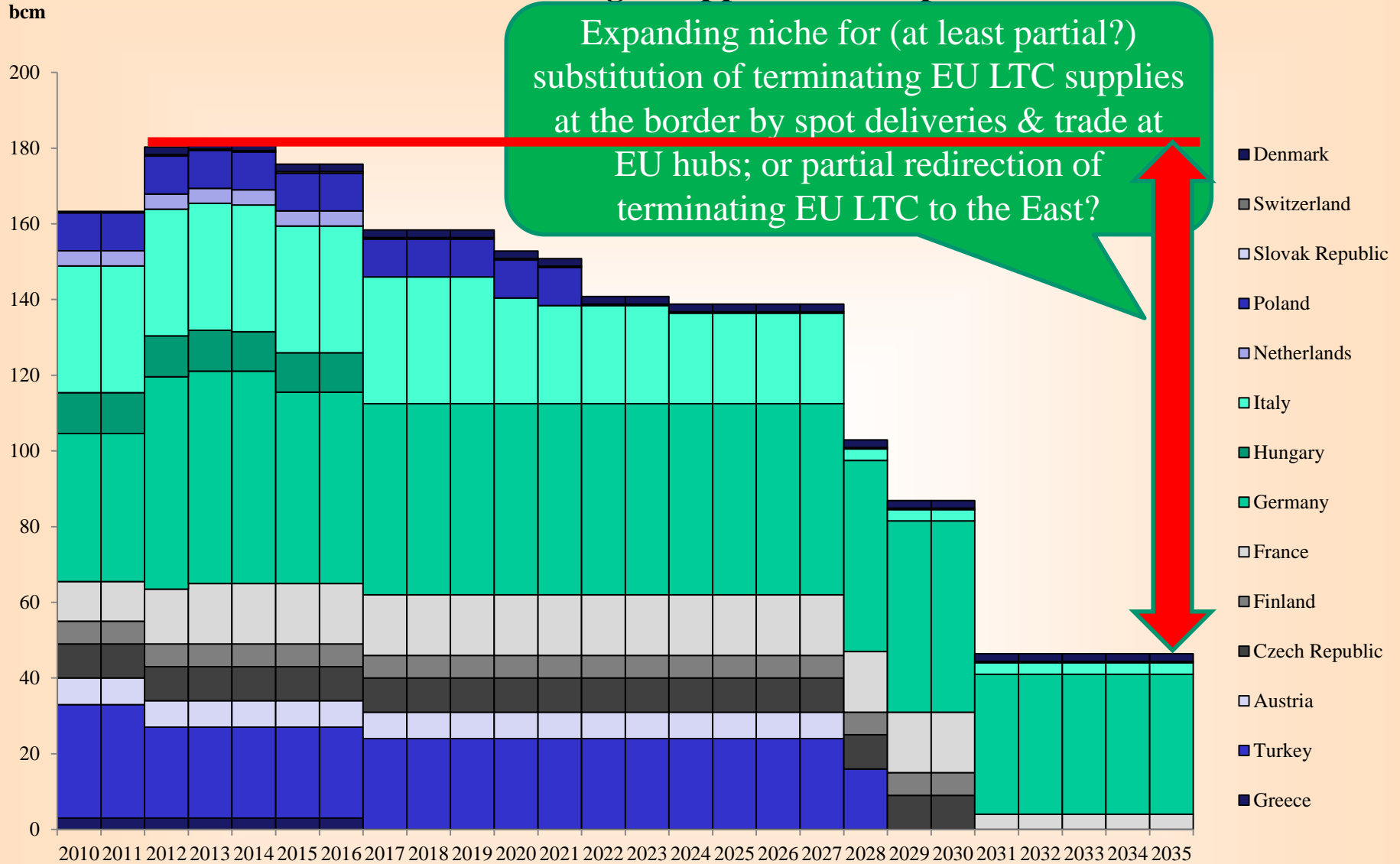


Gazprom as price-taker from GAS BUYER'S market (with no participation on it)? => NO GO

Future (what competitive niche for oil-indexed LTC & spot deliveries & trade to/within EU?)



Contracted volumes of Russian gas supplies to Europe

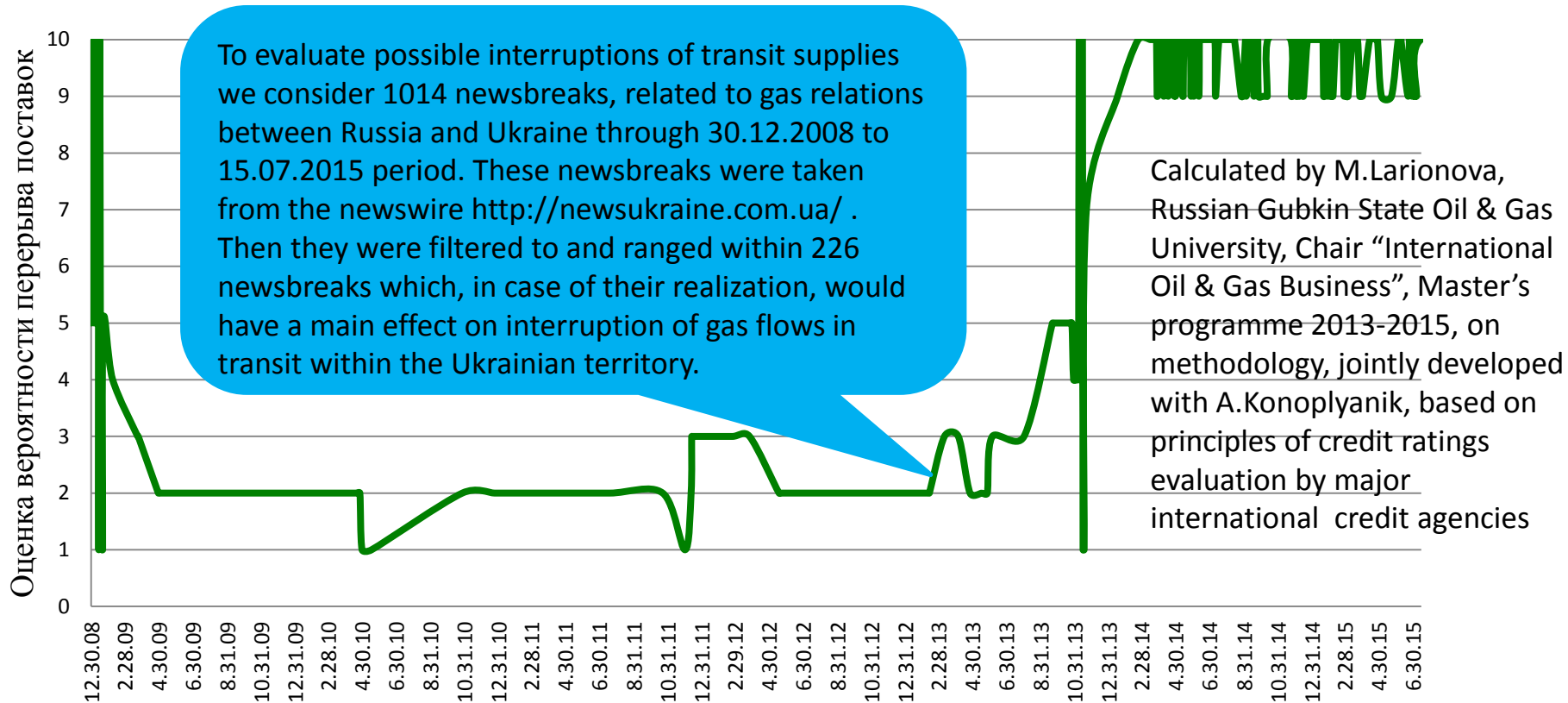


Source (primary chart): ERI RAS (T.Mitrova), reproduced in & taken from «The Russian Gas Matrix: How Markets Are Driving Change», Ed. by J.Henderson & S.Pirani, Oxford University Press, 2014, Fig.3.1/p.53.

Table of contents

- 1) Russia's respond to new realities: diversification
=> flexibility (exporter's angle)
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes (“multiple pipelines” concept)**
 - c. Specificity of Russia's “multiple pipelines” concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed

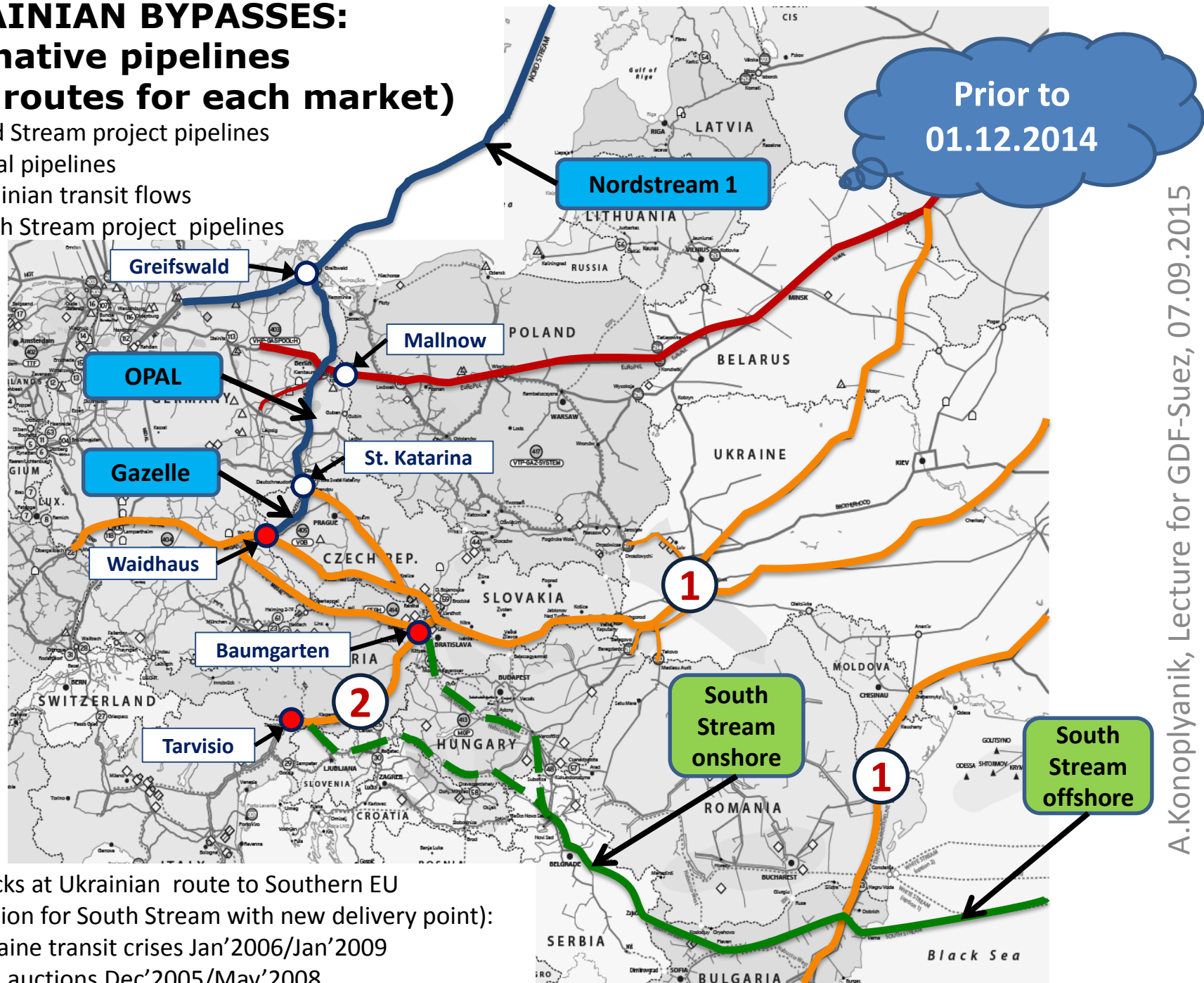
Ukraine: "transit interruption probability" index (2009–2015)



(1) Very fact that Russia & Ukraine cannot solve issues between them bilaterally; at least one of them (UA) demands 3rd party (EU) as mediator/conciliator for searching temporary compromises + files a case against Russia in SCC, means its systematic mistrust to contractual partner ; (2) UA is in state of civil war, but considers RF as invader => **permanent transit risk for supplier since it is his responsibility to provide timely delivery of contracted volumes to delivery points** deep inside the EU non-dependent his issues with third parties => **sovereign right of resource owner (Russia) or its agent (Gazprom) to evaluate such risk & undertake adequate measures for its mitigation (incl. by-passes)**

UKRAINIAN BYPASSES: alternative pipelines (two routes for each market)

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



Bottlenecks at Ukrainian route to Southern EU
(justification for South Stream with new delivery point):

- ① Ukraine transit crises Jan'2006/Jan'2009
- ② TAG auctions Dec'2005/May'2008

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

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



47BCM at 2019:
How to move from Turkish-EU border to existing DPs in EU acc.to EU rules?

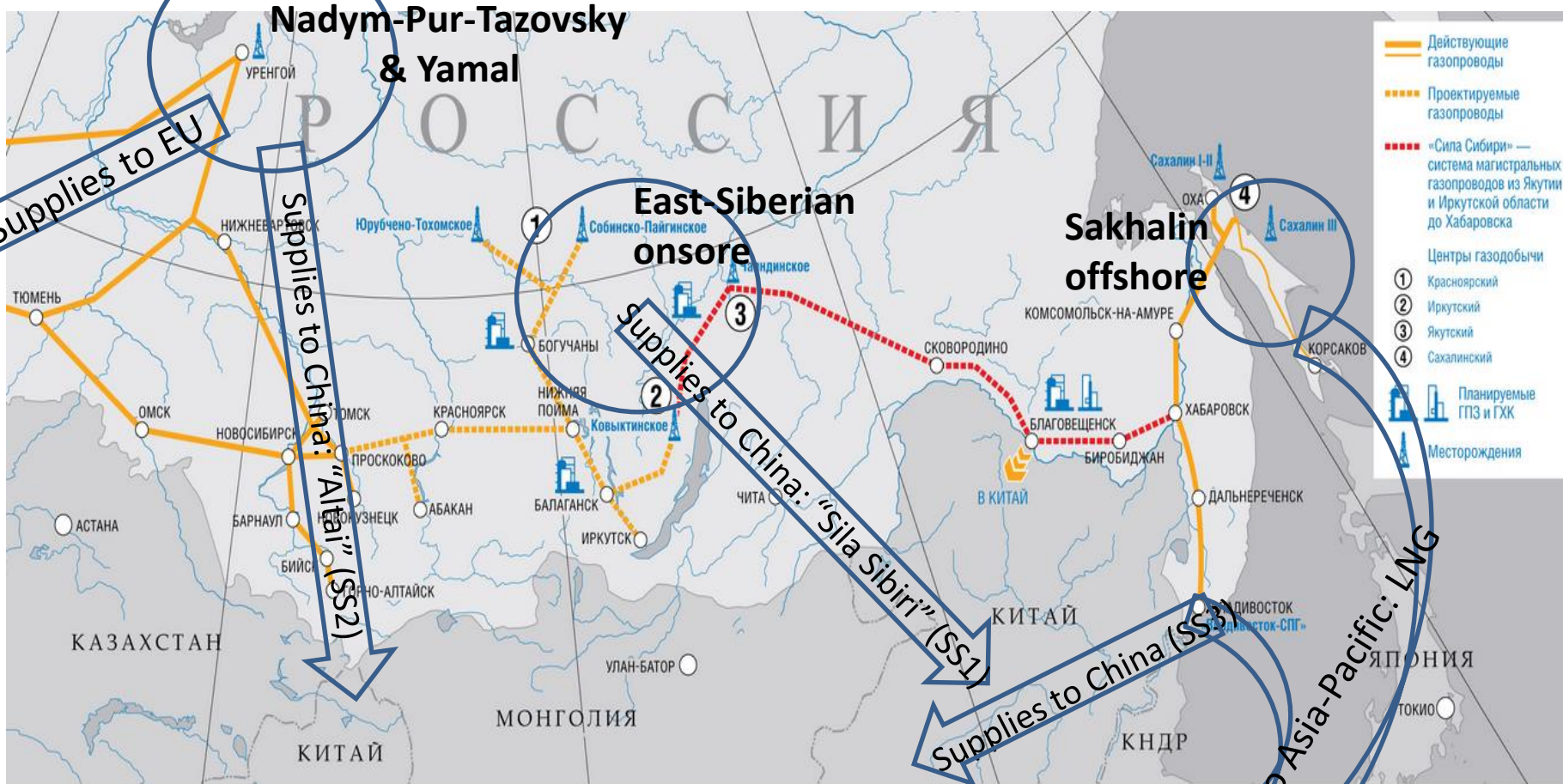
Bottlenecks at Ukrainian route to Southern EU (justification for South Stream with new delivery point):

- ① Ukraine transit crises Jan'2006/Jan'2009
- ② TAG auctions Dec'2005/May'2008

Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. **Specificity of Russia's "multiple pipelines" concept in Asia Pacific**
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed

Russia & Europe *in the past* vs Russia & Europe & Asia *in the future* (new factual Russia's gas export model)



Source of original map: <http://www.gazprom.ru/about/production/projects/pipelines/ykv/>

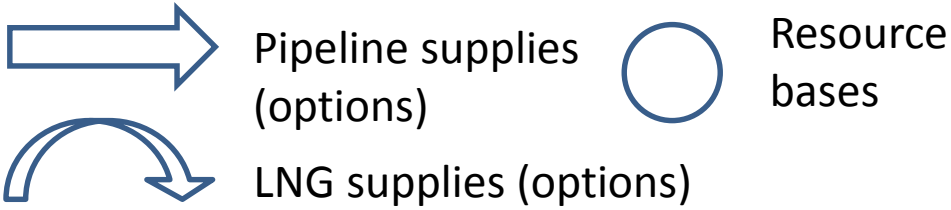


Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. Specificity of Russia's "multiple pipelines" concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure**
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed

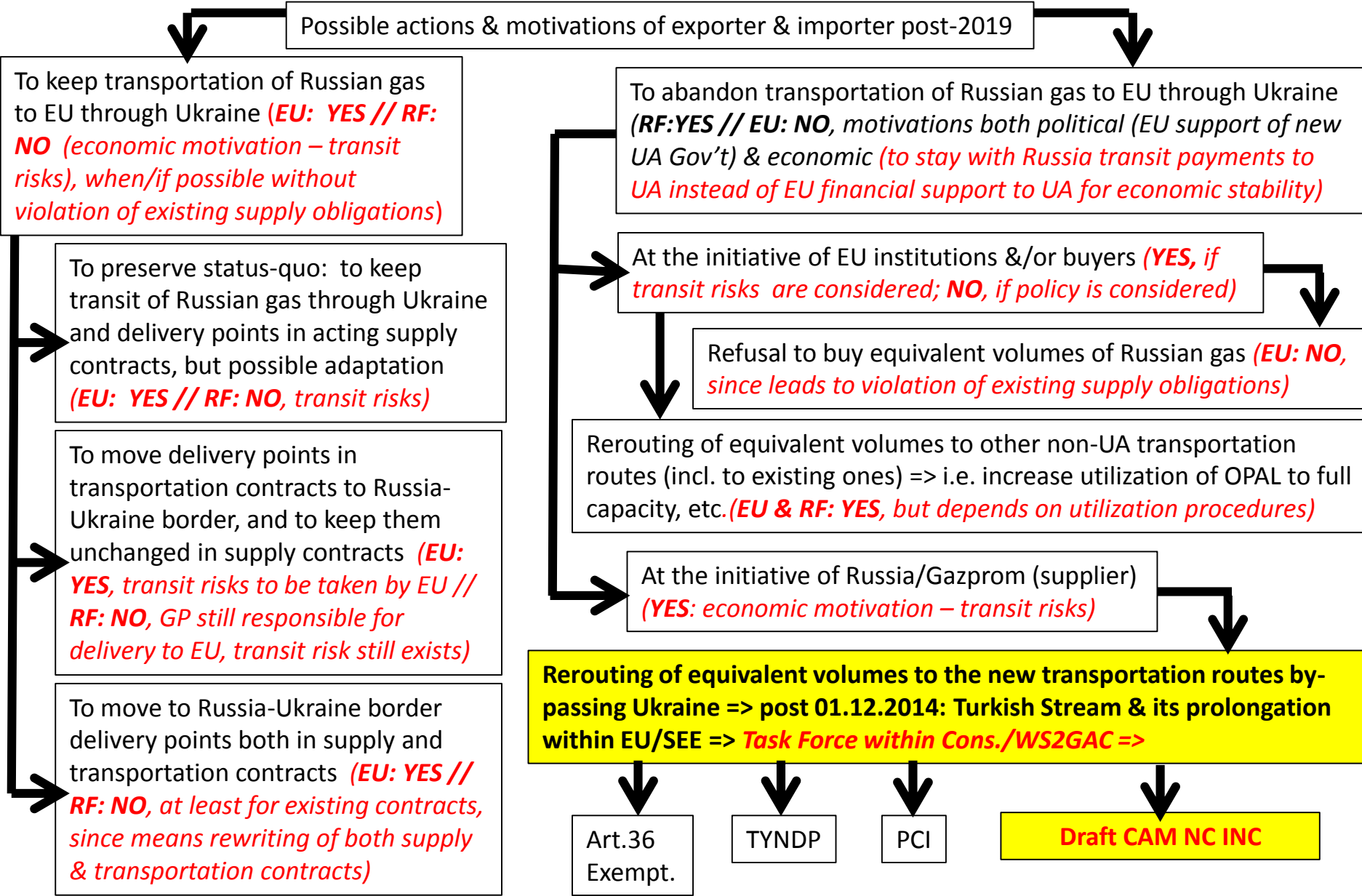
Some myths & wrong perceptions about Turkish Stream concept

- *As if* new delivery point for Russian gas at Turkish-Greek border..., but
 - Rerouting of existing supply contracts to EU (some last till 2035/2042)
 - Their delivery points stays deep inside EU (Baumgarten, etc.)
- *As if* liquid hub in Turkey at Turkish-Greek border..., but
 - What is “hub”? (see eg EIA terminology 1996)
 - No market, no diversified infrastructure, no UGS for liquid hub here yet...
- *As if* transit through Ukraine will stay post 2019..., but:
 - Each sovereign state has its sovereign right:
 - **Importing** state (e.g. EU) has its sovereign right to define its targeted fuel mix, level of state support for alternative fuels (e.g. RES), architecture of its energy markets, etc. thus changing risks & uncertainties for other players within cross-border gas value chain,
 - **Resource-owning** state-energy **exporter** (e.g. Russia) has its sovereign right to define end-market-related (to EU) &/or transit-state-related (via Ukraine) risks & uncertainties (like e.g. non-delivery risk) in respond to evolving risks & uncertainties in other segments of cross-border gas value chain
 - In unbundled gas world no obligation for exporter to stay with same transportation/transit route for given supply contract after expiration of its transportation/transit component
- *As if* Turkish Stream concept competes/conflicts with EU Southern Gas Corridor, but...

Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. Specificity of Russia's "multiple pipelines" concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. **Turkish Stream & Ukrainian transit**
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed

Russia-Ukraine transit contract to EU will expire in 2019. What then? Possible scenarios & motivations for exporter & importer



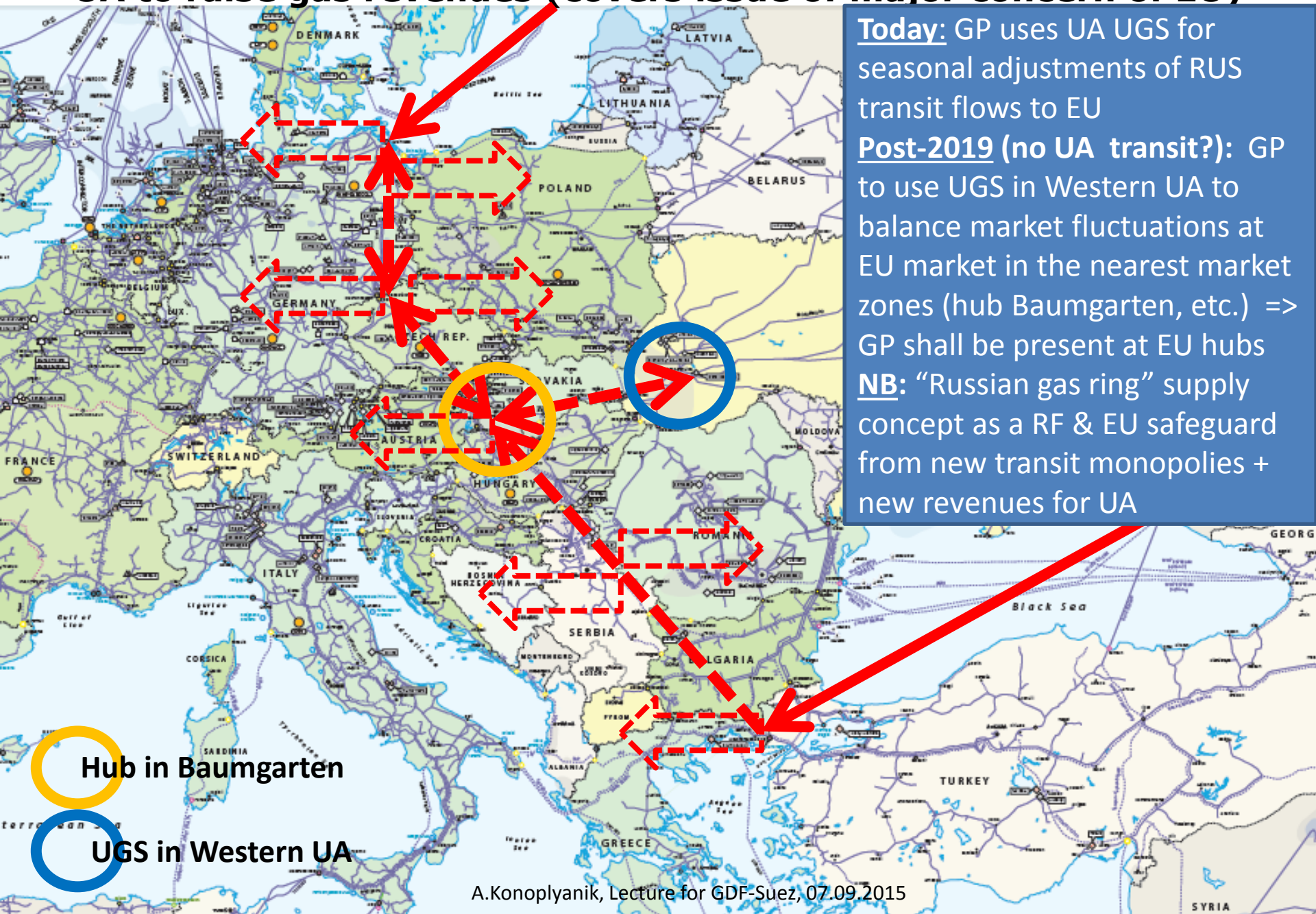
EU support for transit via Ukraine: the end or the means? (1)

- EU has multiply stated its support for continuation of RUS gas transit via UA post-2019 => (it seems that) this is why EU opposes redirection of RUS gas supplies to new transportation routes to EU post-2019
- But (it seems that) EU (CEC) support for existing & future transit of RUS gas via UA is not the end, but just the means; the real goal is:
 - to provide UA with steady financial flow of transit revenues from RUS supply contracts to EU via UA (with currently “unfriendly” to RF political regime in UA) – instead of donating corresponding EU financial aid to UA, and
 - financing/guaranteeing pay-back of UA-EU-USA GTS consortium (acc.to UA Law 4116a) in modernization of US GTS (*RUS participation in consortium forbidden by UA law, but transit of RUS gas is the only way to make consortium financeable*):
 - either under existing supply formula (RUS supplies directly to inside EU through UA) => RUS will continue taking transit risk via UA,
 - or by newly EUC proposed formula: delivery of RUS gas at RUS-UA border, in which case:
 - either EU companies will take the transit risk via UA by themselves (*which they are not willing yet*),
 - or there might be possible role for de facto EU *Single Purchasing Agency* mentioned in the Energy Union Package ? [*“options for voluntarily demand aggregation mechanisms for collective purchase of gas during a crisis and where Member States are dependent on a single supplier”*] ?

EU support for transit via Ukraine: the end or the means? (2)

- Whether EU will change its opposition to US by-passes if alternative means for UA to earn money are presented instead of gas transit revenues?
- An idea: “Russian gas circle” with expanded trade at the hub (Baumgarten) which requires regular use of UGS => role for UA UGS ? =>
- UGS in Western UA to be used not for seasonal adjustment of RUS transit flows to EU, but to adjust market fluctuations at the hub (Baumgarten),
 - this will also make Mr.Shevkovich happy since Slovak system will be fully utilized for direct &/or reverse flows both for supplies and UGS use
 - UA will be further integrated into EU energy system

Russian gas ring diminishes UA transit risk + a non-transit way for UA to raise gas revenues (covers issue of major concern of EU)



Today: GP uses UA UGS for seasonal adjustments of RUS transit flows to EU

Post-2019 (no UA transit?): GP to use UGS in Western UA to balance market fluctuations at EU market in the nearest market zones (hub Baumgarten, etc.) => GP shall be present at EU hubs

NB: "Russian gas ring" supply concept as a RF & EU safeguard from new transit monopolies + new revenues for UA

Hub in Baumgarten

UGS in Western UA

Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. Specificity of Russia's "multiple pipelines" concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor**
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed

EU Southern Gas Corridor: two visions

Narrow vision

- **Source:** Azeri gas [+ Turkmen + Iraqi ???]
- **Infra:** TANAP + TAP
- **Rules:** Art.36 exemption (*offer of capacity*)

Broad vision

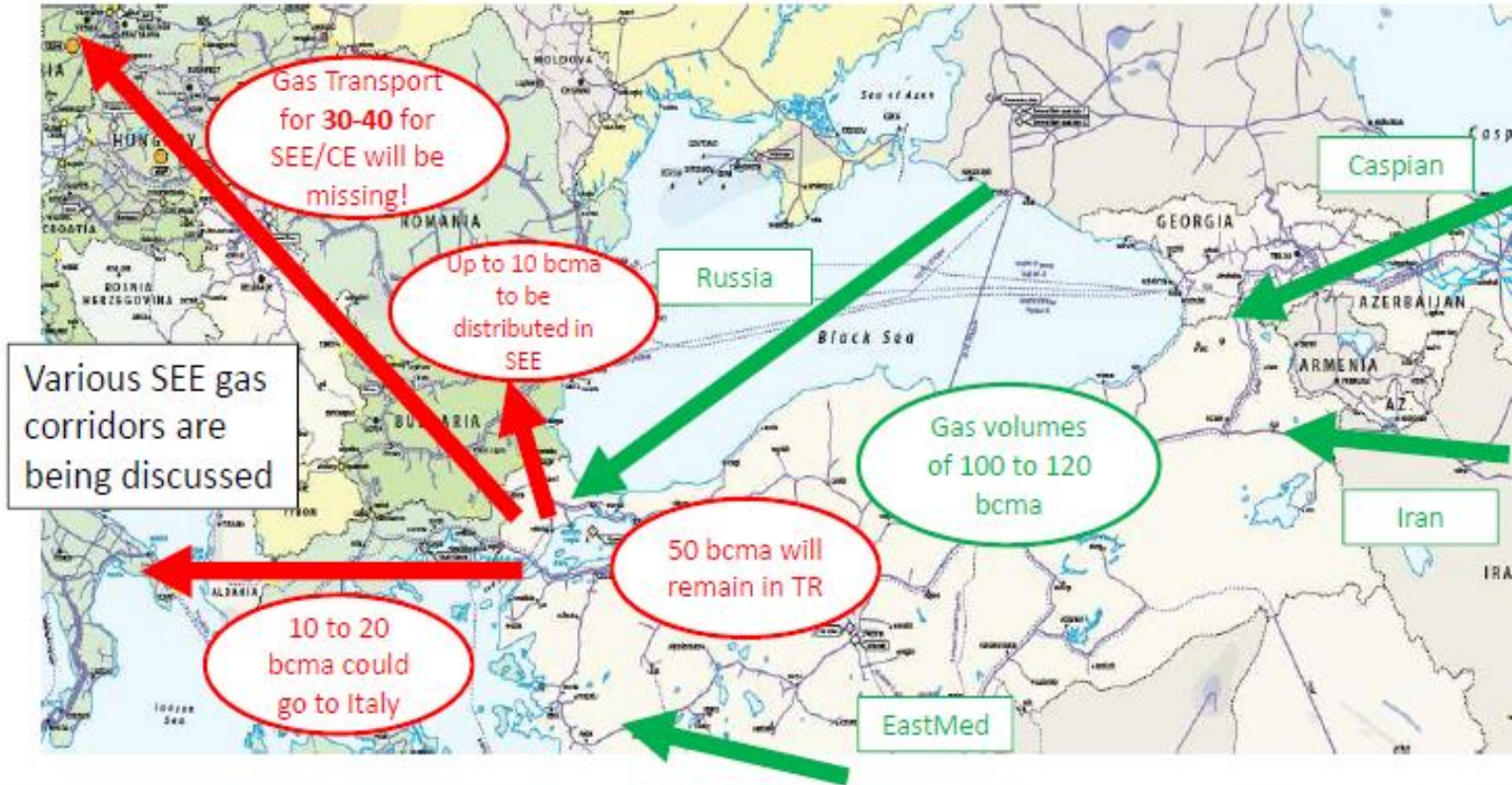
- **Source:** all available gas sources coming to EU via Turkey:
 - **Azeri** (new): yes, EU the only target market
 - **Turkmen** (new): no, target markets in Asia
 - **Iranian** (new): maybe, target markets can be both EU & Asia dependent on...but LNG as a target, not pipeline
 - **Iraqi** (new): yes, EU the only target market (but Kurdistan?)
 - **East Med** (new): yes, EU the only target market (if pipeline)
 - **Russian** (existing): maybe, but EU market is mature & stagnating with not-friendly rules for LT supplies which are obligatory for LT CAPEX into huge RUS reserves of conventional gas & its long-distant large-volumes transportation (economy of scale) to EU
- **Infra:** EU TSOs to decide on best effective composition of existing available & new capacity inside EU from EU-Turkish border (*demand for capacity*)
- **Rules:** for multiple sources, routes, suppliers rules shall be standard, multiplicity of exemptions is not commercially financeable (Amended draft Reg.984/2013)

(i) EU consumers, (ii) non-EU gas producers aimed to EU & (iii) transit states (Turkey) have common interest: that EU rules for new infra are financeable & manageable => only then:

- non-EU producers (who have such choice) will prefer to aim their gas to EU, not elsewhere,
- Turkey – will receive its transit fees from supplies destined to EU,
- EU will receive its gas from diversified sources, routes & suppliers from non-EU

Southern Gas Corridor & its prolongation within the EU: EU industry view (OMV)

South Stream is canceled or frozen
Turkish Stream has been announced



Source: R.Mitschek. "Lessons from past EU pipeline projects: Why projects need to be commercially viable and legally / regulatory sound". – Presentation at 15th WS2 RF-EU GAC meeting / 22nd round of Informal RF-EU Consultations, Vienna, E-Control, 11 May 2015

Turkish Stream is an economically justified part of EU Southern Gas Corridor in its broader vision !!! Financeable & Manageable investment rules are needed by all prospective pipelines nondependent their origin

Turkish stream & its prolongation inside EU: given realities as a starting point (Gazprom plans - summary)

- Rerouted existing supply contracts from UA transit
- Demand for capacity at Turkish-EU border = $(63 - 16) = 47$ BCM at 2019
- Gazprom as a shipper after new entry point inside EU
- No intention from Gazprom to ask for Art.36 procedure (he is just a shipper)
- Third Energy Package standard rules on new infrastructure to act (CAM NC INC being developed)
- EU to define standard procedure for development of new capacity (yet under approval/in the making)
=> it shall be financeable & manageable => CAM NC INC Art.20(d)

Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. Specificity of Russia's "multiple pipelines" concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream**
- 4) Why Russia-EU cooperation needed

EU: fragmented approach? (1) Central East South Europe Connectivity - CESEC

CESEC – Projects in the region



An Overall Plan
Sofia, 9 February 2015

Directorate General for Energy



	Projects	Status	Capacity	Commissioning date
1	Reinforcement of HU network	PCI	Up to 10bcm/a	2019
2	New pipeline in RO	PCI	Up to 10bcm/a	2019
3	Krk LNG terminal	PCI, PECE	Up to 6bcm/a	2019
4	Pipeline Zlobin – Slobodnica	PCI, PECE	11bcm/a	2019
5	BIH – HR Interconnector	PECE	Up to 5bcm/a	2019
6	HR – SB Interconnector	PECE	6-7bcm/a	2023
7	Interconnector Bulgaria – Romania	-	1.5bcm/a	2015
8	Interconnector Bulgaria – Serbia	PCI, PECE	Up to 3bcm/a	2017
9	Reverse flow on the Trans-Balkan	PCI	Up to 27.5bcm/a	2018
10	Reinforcement of the BG network	PCI	-	2019
11	Interconnector Greece - Bulgaria	PCI	Up to 5bcm/a	2019
12	Compressor station in Kipi	PCI	Up to 12bcm/a	2020
13	Trans-Adriatic Pipeline	PCI	Up to 20bcm/a	2019
14	LNG terminal in Greece	PCI	Up to 11bcm/a	2016

Energy

EU: fragmented approach? (2)

Some South East Europe Pipeline Projects in public debate



- Eastring – Route A
- Eastring – Route B
- Tesla
- TAP
- ➔ Direction of flow

- Eastring – governments of Slovakia, Hungary, Romania and Bulgaria signed Declaration at Riga Summit 21st May 2015, supporting new interconnections. Proposal by Eustream – Slovak TSO
- Tesla – no details but supposedly as if Gazprom project (Euractiv 30th April 2015)
- TAP – secured exemption 2013. Exemption expires if construction not started by 16th May 2016, and not operational by 31st December 2020

EU: fragmented approach? (3)

Basic components of the Vertical Corridor (IENE)

THE VERTICAL CORRIDOR FROM THE AEGEAN TO THE BALTIC



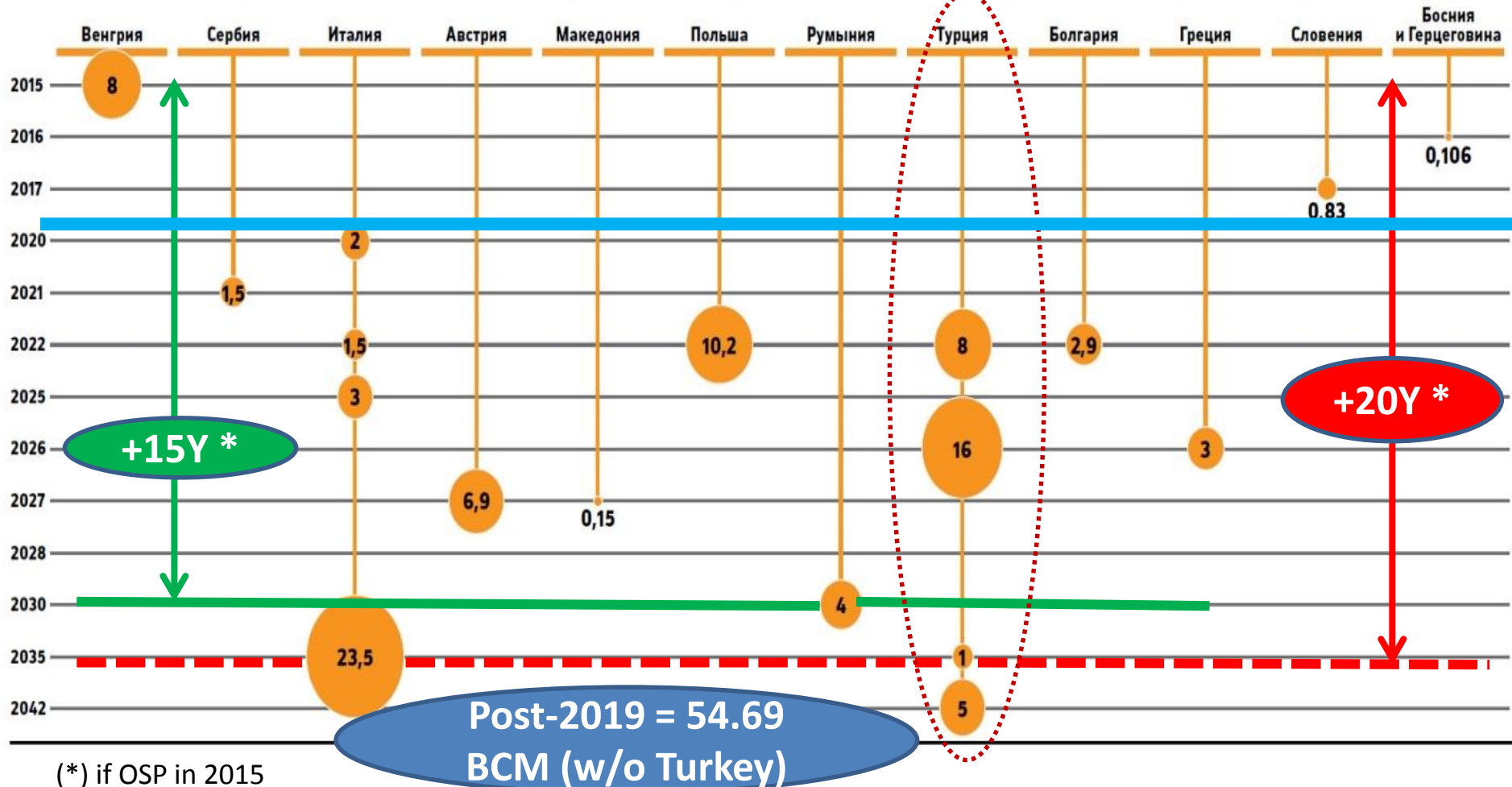
Source: THE “VERTICAL CORRIDOR” FROM THE AEGEAN TO THE BALTIC. - An IENE Study Project (M26), May 2015, Athens, p.33 (Figure 7)

Table of contents

- 1) Russia's respond to new realities: diversification => flexibility (exporter's angle)
 - a. Adaptation within new EU gas market architecture (new supply flexibility)
 - b. Diversity of pipelines routes ("multiple pipelines" concept)
 - c. Specificity of Russia's "multiple pipelines" concept in Asia Pacific
- 2) Some myths & realities on Turkish Stream & new EU infrastructure
 - a. Turkish Stream & Ukrainian transit
 - b. Turkish Stream & Southern Gas Corridor
- 3) EU: fragmented respond to Turkish Stream
- 4) Why Russia-EU cooperation needed**

Termination dates of RUS gas supply contracts to EU with UA transit component: what composition of rerouted 47BCM?

Сроки окончания российских газовых контрактов в «украинозависимых» европейских странах, млрд кубометров



(* if OSP in 2015)

Source of basic graph: "Gazprom is rest upon Ukraine . Turkish stream will not solve transit problem of Russian monopoly". – RBC-daily, 08.06.2015, p.12-13 (<http://www.rbcdaily.ru/industry/562949995501331>) - based on : "Turkish stream": Scenarios of by-passing Ukraine and barriers of European Commission". Vygon Consulting, June 2015 (fig.4, p.30).

Why NPV of 47 BCM contracted volumes of Russian gas supplies to Europe differs => why Russian participation is a must

bcm

200

180

160

140

120

100

80

60

40

20

0

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035

Expanding niche for (at least partial?) substitution of terminating LTC supplies at the border by new EU LTC & spot deliveries & trade at EU hubs

$\sum V1 = \sum V2 = 47 \text{ BCM}$

$\sum V2 = \sum V1 = 47 \text{ BCM}$

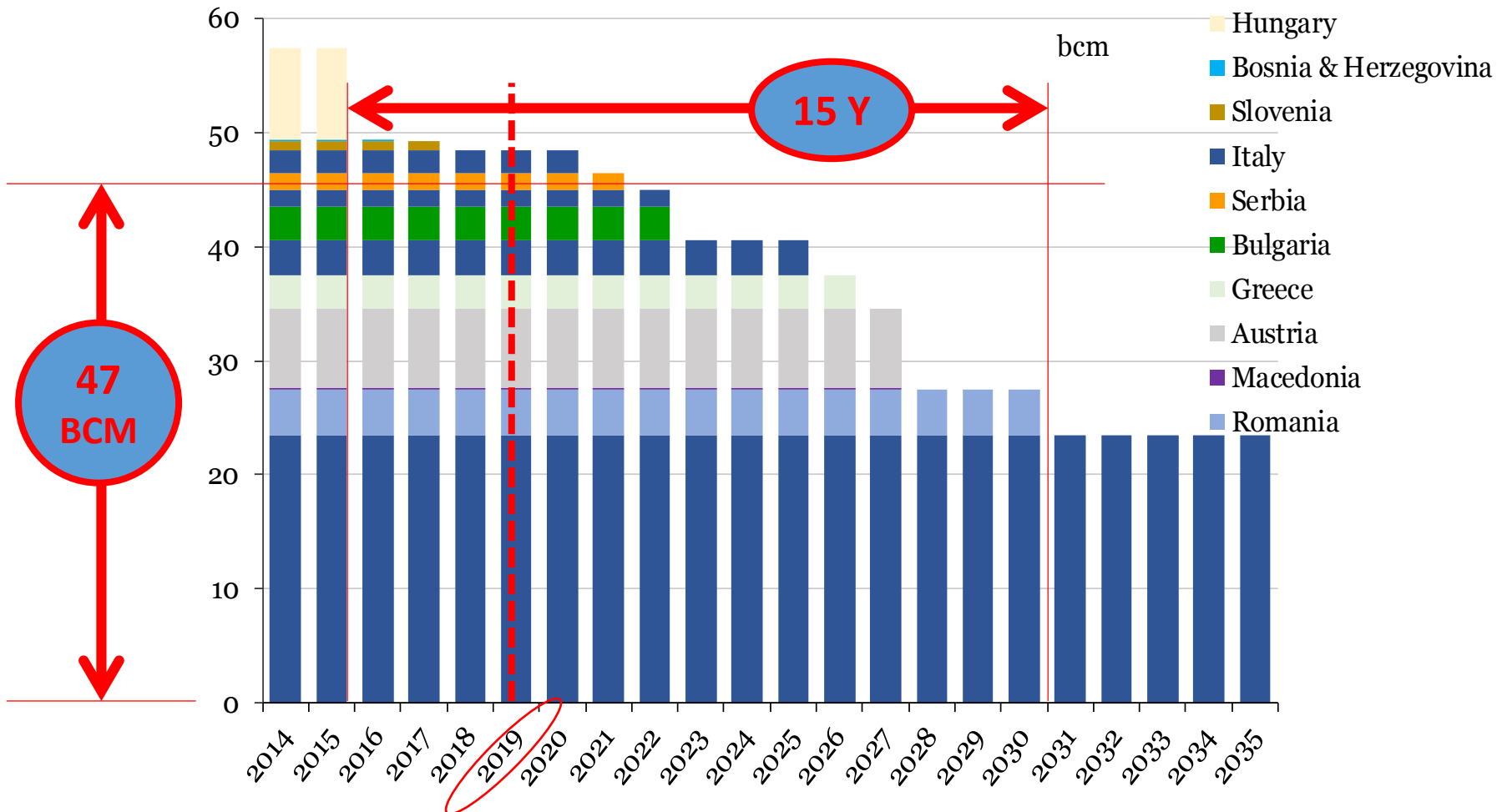
NPV1 < NPV2

NPV2 > NPV1

- Denmark
- Switzerland
- Slovak Republic
- Poland
- Netherlands
- Italy
- Hungary
- Germany
- France
- Finland
- Czech Republic
- Austria
- Turkey
- Greece

Source (primary chart): ERI RAS (T.Mitrova), reproduced in & taken from «The Russian Gas Matrix: How Markets Are Driving Change», Ed. by J.Henderson & S.Pirani, Oxford University Press, 2014, Fig.3.1/p.53.

Russian gas supply contracts to Central & South-Eastern EU with UA transit till 2035 = 100% security for TSO project financing of new capacity



Source: calculated by E.Orlova (FIEF) based on based on: "Turkish stream": Scenarios of by-passing Ukraine and barriers of European Commission". Vygon Consulting, June 2015 (fig.4, p.30).

Thank you for your attention!

www.konoplyanik.ru
andrey@konoplyanik.ru
a.konoplyanik@gazpromexport.com

Disclaimer: Views expressed in this presentation do not necessarily reflect (may/should reflect) and/or coincide (may/should be consistent) with official position of Gazprom Group (incl. Gazprom JSC and/or Gazprom export LLC), its stockholders and/or its/their affiliated persons, and are within full personal responsibility of the author of this presentation.