

In search for new equilibrium (economic rationale for development of new infrastructure for Russian gas supplies to the EU within evolving internal EU gas market & its neighbourhood)

Prof. Dr. Andrey A. Konoplyanik,

Adviser to Director General, Gazprom export LLC;

Professor at the Chair “International Oil & Gas Business”,

Russian State Gubkin Oil & Gas University;

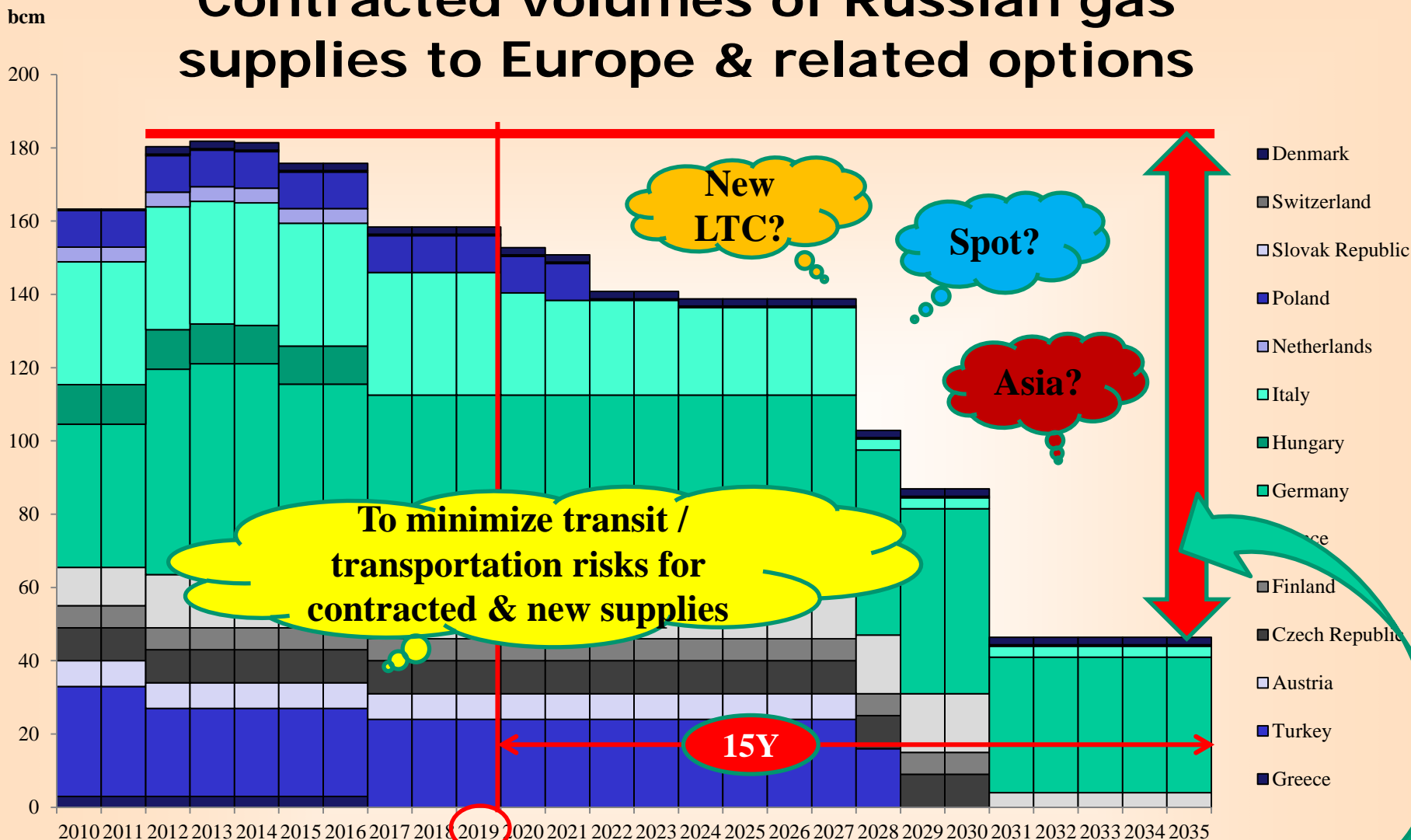
Co-Chair Work Stream 2 “Internal Markets” Russia-EU Gas Advisory Council

(disclaimer in the end of presentation)

Presentation at the 7th Central European Gas Congress,

Bratislava, Slovakia, 26-27.04.2016

Contracted volumes of Russian gas supplies to Europe & related options



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

Expanding niche for (at least partial?) substitution of terminating EU-destined LTC supplies at the border by new (adapted) LTCs, spot deliveries & trade at EU hubs; or partial redirection of terminating EU-destined LTCs to the East?

Table of content:

1) How to minimize new risks for existing contractual obligations of Russian gas supplies to Europe?

a) Ukrainian risks

b) Turkish risks

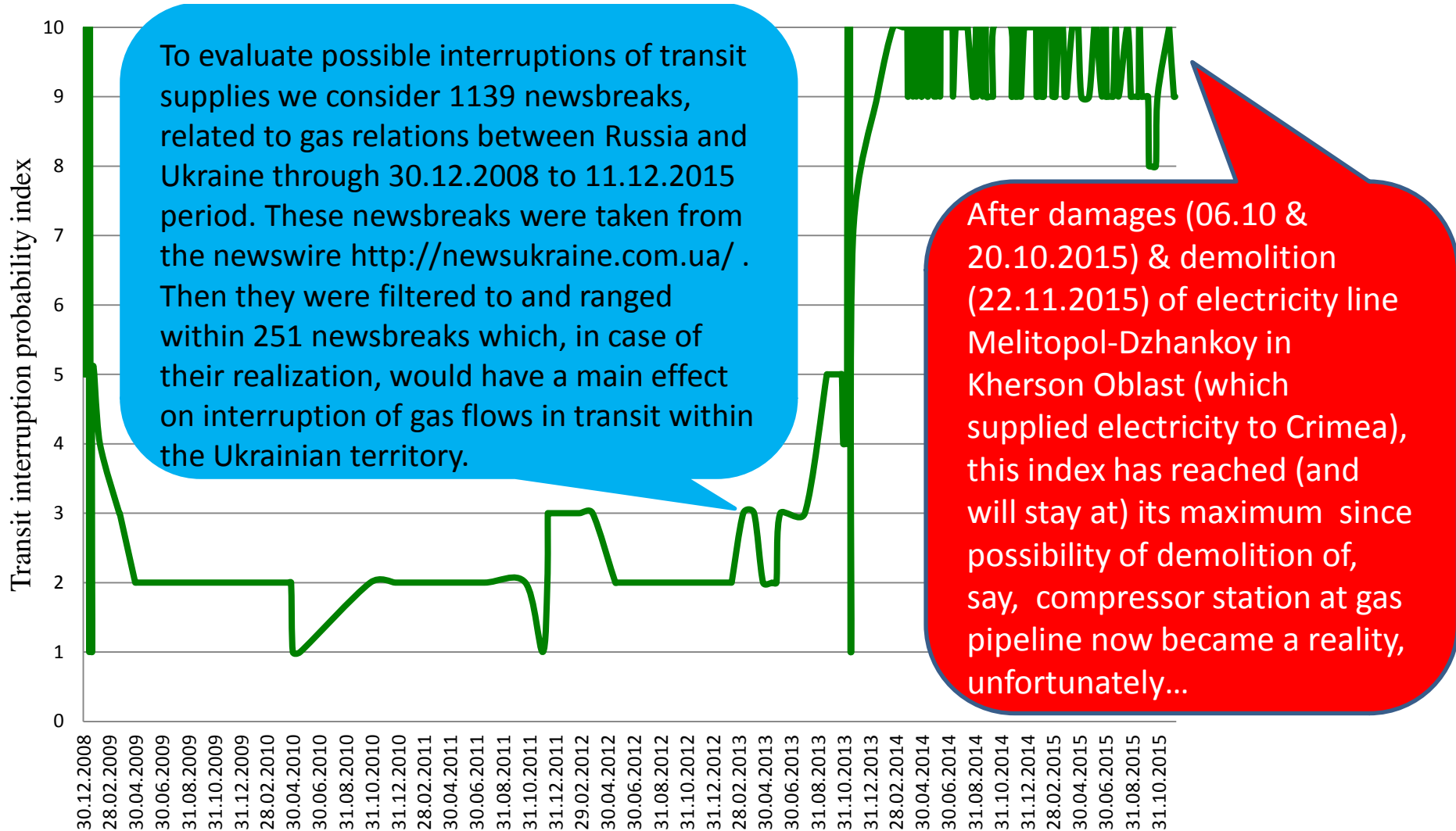
Legal & economic motivation for alternative (risk-avoidance) pipelines

- Russia: **from** historical USSR GOSPLAN's "**single pipeline**" concept (one market – one pipe) **to** current "**multiple pipelines**" concept (one market – two pipes)
- Legal motivation: Sovereign right for producer/exporter to evaluate supply/transit risk since:
 - it is **exporter responsibility** to timely deliver contractual gas volumes to delivery point/customer (Groningen LTC concept)
 - "Sovereignty" means that development of natural resources "*must be exercised in the interest of their **national** development and of the well-being of the people of the State concerned*" (Res.1803 UN GA of 14.12.1962) (*international demand vs national supply*)
- Economic motivation: EU unbundling (since 2nd EU Energy Package 2003) predetermines **free choice for supplier to choose least risky transportation route**, if he considers it to be necessary, to fulfill its continued supply obligation, incl. **after expiration of existing transit/transportation contract** while supply contract continues

Ukraine: transit risks & costs

- **Transit risks:**
 - “transit interruption probability” index at maximum,
 - nevertheless EU insists on continuation of transit, why?
- **Transit costs:**
 - From “distance tariff” to “entry-exit tariff” => UA NRA / Naftogas demand for immediate (as of 01.01.2016) increase by (at least) 25-35% of acting transit tariffs for Gazprom, but:
 - “Pacta sunt servanda” = current transit tariffs governed by 2009-2019 Gazprom-Naftogas transit contract (UA TSO = Ukrtransgas)
 - What means “European methodology”? If E-E tariffs, then:
 - How CAPEX in modernization & development of UA GTS were calculated (ingredients of tariff to cover the costs/pay back investment)?
 - Whether cumulative debt of NAK “Naftogas of Ukraine” was (or was not?) included in “investment” part of tariff?
- Why Gazprom shall continue with UA transit after 2019 if it is **more risky & more costly?**

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



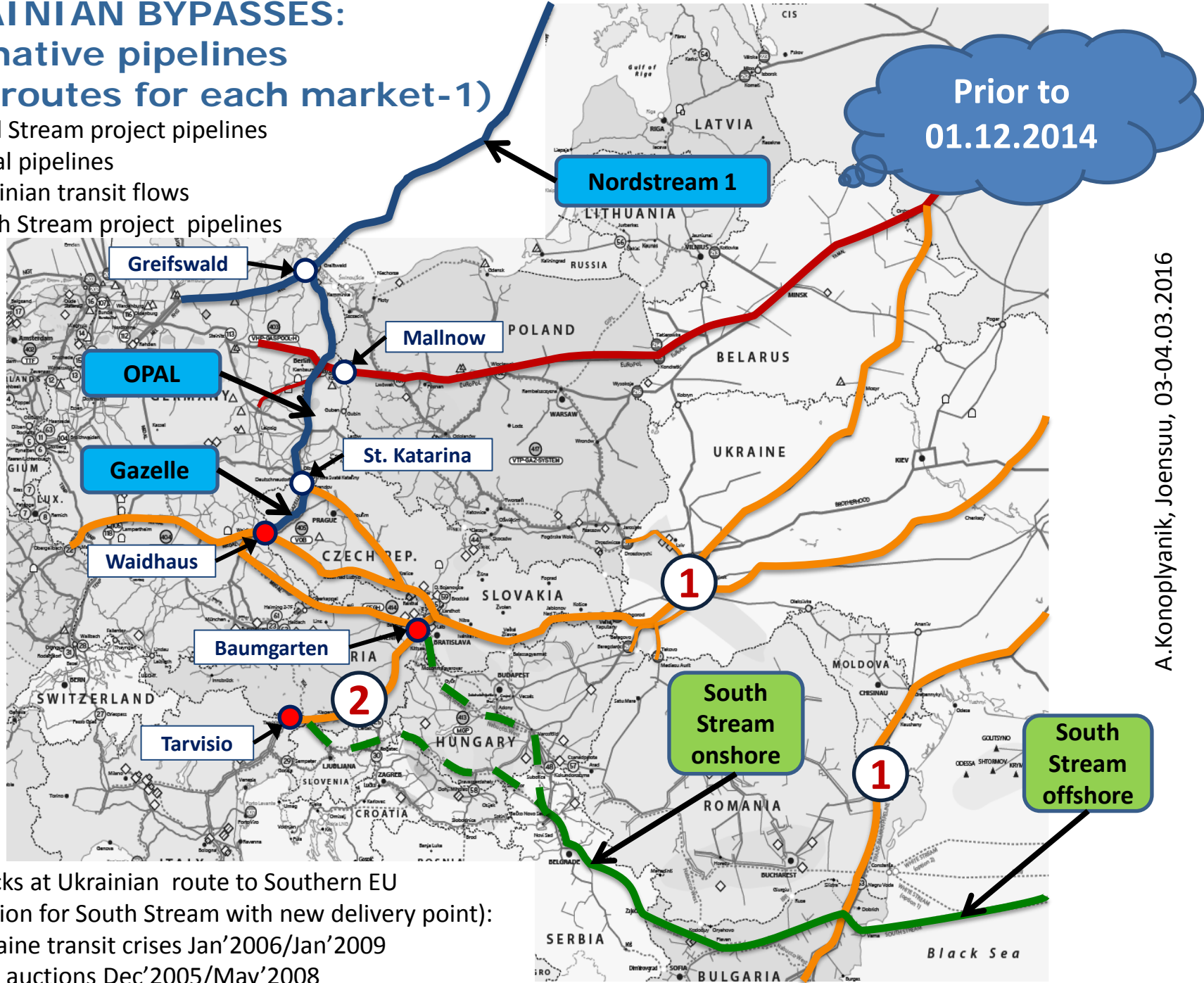
Calculated by M.Larionova, Russian Gubkin State Oil & Gas University, Chair “International Oil & Gas Business”, Master’s programme 2013-2015, on methodology, jointly developed with A.Konoplyanik, based on principles of credit ratings evaluation by major international credit agencies

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 & opposes redirection of RUS gas supplies to new non-UA transportation routes to EU post-2019 => why?
- 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 – instead of donating corresponding EU financial aid to UA, and
 - to finance/guarantee pay-back of potential investment of UA-EU-USA GTS consortium (acc.to UA Law 4116a) in modernization of US GTS (*NB: continued transit of RUS gas is the only way to make consortium financeable*):
 - either under existing formula of RUS supply to EU (RUS supplies directly to inside EU through UA) => RUS will continue taking transit risk via UA,
 - or by new CEC 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”*]

UKRAINIAN BYPASSES: alternative pipelines (two routes for each market-1)

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

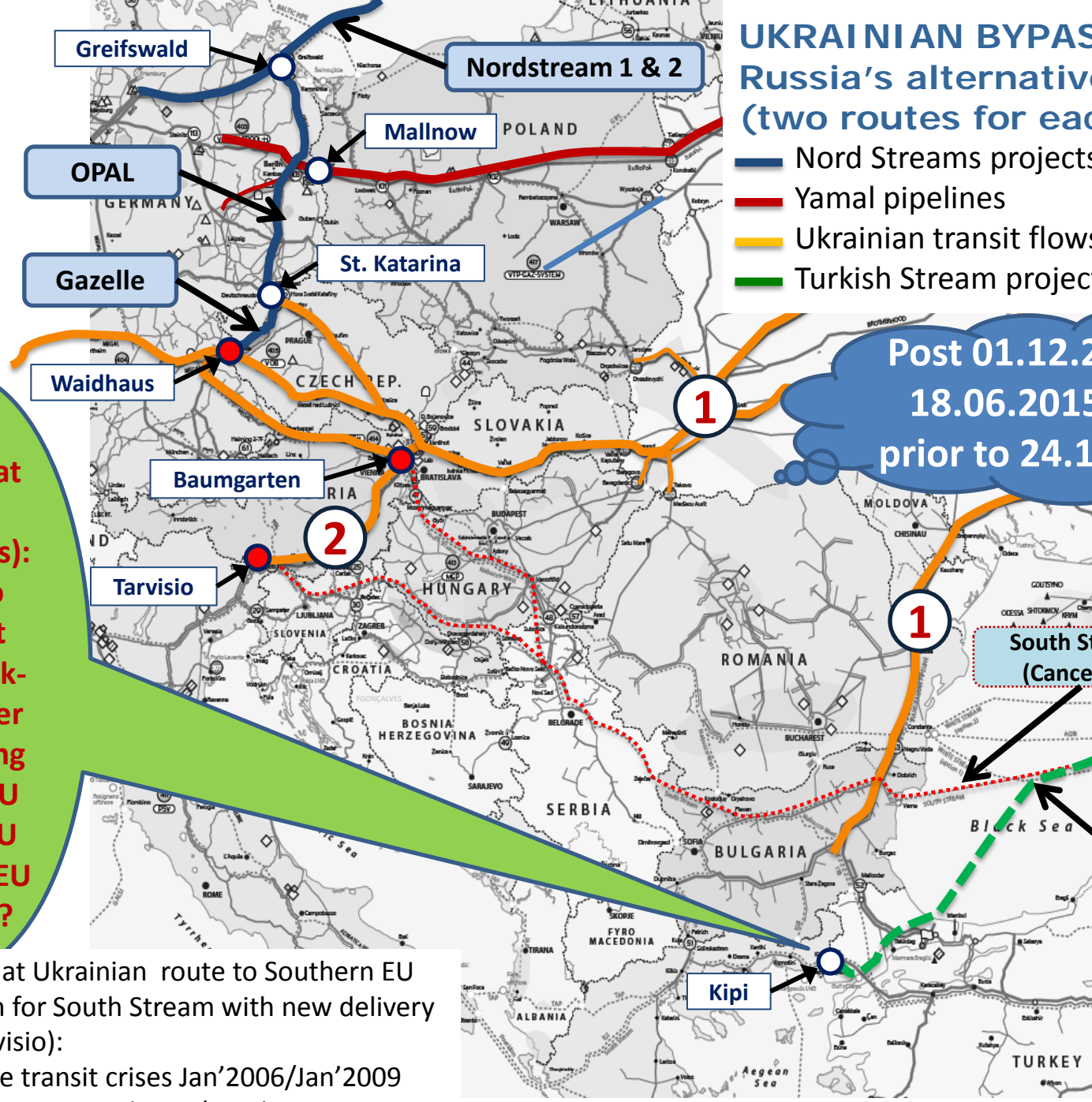


Bottlenecks at Ukrainian route to Southern EU
(justification for South Stream with new delivery point):

- 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-2)

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



Post 01.12.2014 & 18.06.2015, but prior to 24.11.2015

First 47BCM at 2019 (then less): How to move it from Turk-EU border to existing DPs in EU acc.to EU rules by EU entities?

South Stream (Cancelled)

Turkish Stream

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

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

Russian gas supply ring for Europe? (proposal for discussion/consideration/evaluation)



Nordstream 1 & 2

First South Stream, then Turkish Stream, then ...

Hub in Baumgarten

UGS in Western Ukraine

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

- Whether EU will change its opposition to UA by-passes if alternative means for UA to earn money are available instead of gas transit revenues?
- An idea: “Russian gas circle” with expanded trade at the hub (Baumgarten) => this requires regular use of UGS (to provide flexibility from the market (UGS) under spot deliveries instead of contractual flexibility within LTGEC) => role for UGS in West.UA ?
 - Today: GP uses UA UGS for **seasonal adjustments** of RUS LTC transit flows to EU
 - Post-2019 (after GP-Naftogas transit contract is over): *maybe* GP can use UGS in Western UA to **balance market fluctuations** at EU gas market in the nearest market zones (hub Baumgarten, etc.) => then GP **shall** be present at EU hubs, incl. wider presence in spot segment

“Russian gas supply ring” for Europe?

- “Russian gas supply ring” concept for Europe:
 - a mutual RUS & EU safeguard from new transit monopolies +
 - new revenues for UA (a way for UA to raise gas-related revenues without transit of RUS gas) =>
 - addresses issue of major concern for EU (how to finance UA economy without/with minimum involvement of EU money) +
 - solve the issue of utilization of Slovak GTS (M.Sefcovic)
- Redirection of existing Gazprom’s supply (sales) contracts to new routes within EU = 100% financeable way for development of new transportation capacities in full compliance with Third EU Energy Package provisions (Art.13.2 Third Gas Directive => CAM NC INC Art.20(d)=> AAM):
 - Joint ENTSOG-managed “Reality check” (for Comitology)

Table of content:

- 1) How to minimize new risks for existing contractual obligations of Russian gas supplies to Europe?
 - a) Ukrainian risks
 - b) Turkish risks**

**What to do
after
24.11.2015?**

Turkish Stream: no news at Gazprom site (as of 25.04.2016)



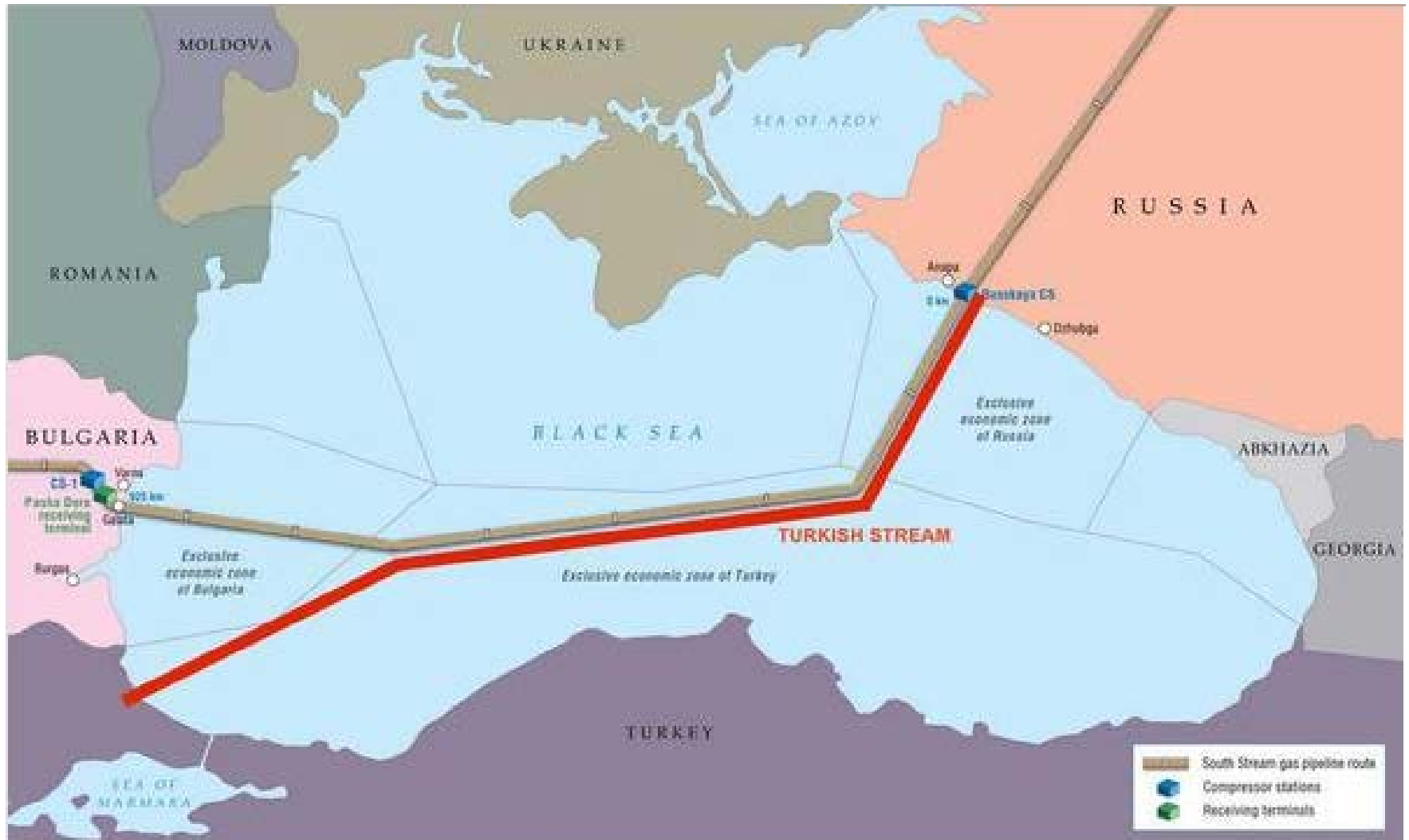
Route: 660 km of the offshore pipeline route will be laid within the old corridor of South Stream and 250 km – within a new corridor towards the European part of Turkey. The onshore gas pipeline section will stretch for 180 km from the Black Sea coast of Turkey to the border between Turkey and Greece.

Capacity: The annual gas pipeline capacity will total **63 BCM**. The offshore gas pipeline will consist of **four strings** with the capacity of **15.75 BCM each**. Gas from the first string is intended exclusively for the Turkish market.

Project history: On **December 1, 2014** Gazprom and Turkish company Botas Petroleum Pipeline Corporation signed the Memorandum of Understanding on constructing the TurkStream gas pipeline. In **February 2015** the key reference points of the route and technical solutions for the gas pipeline in Turkey were approved. **On May 8, 2015 Gazprom moved on to the construction stage of the TurkStream offshore gas pipeline.** Gazprom will be solely responsible for the construction of the offshore section. Turkish gas transportation facilities will be built jointly. **The first string is forecast to be constructed by December 2016.**

Source: <http://www.gazprom.com/about/production/projects/pipelines/turk-stream/>

Turkish Stream: why such complicated route? To by-pass (former) Ukrainian EEZ... but...



Source: <http://middleeastnewsservice.com/tag/turkish-stream/>

...Turkish stream: also risks & uncertainties

- From 01.12.2014 till 24.11.2015:
 - Turkey:
 - Immediate “packaging” of decision on Turkish stream (*capacity market*) with price discounts on RUS gas supplies to Turkey (*commodity market*)
 - Government crisis in Turkey – no possibility for decision-making (delays – time consequences for “solution post-2019”)
 - From bilateral decision-making on the whole project (*enabling economy of scale*) to intended granting unilateral project permissions on string-by-string basis (*killing economy of scale*)
 - Russia:
 - Initial misconception of “liquid hub” at Turkish-Greece border
- From 24.11.2015 onwards:
 - All activities frozen – time-consequences for “solution post-2019”
- In practice: substitution of UA risks by Turkish risks
- => Whether it is possible to exclude transit risks at all at southern route?

Black Sea delimitation prior to and after reunification of Crimea with Russia



600 foot depth contour



Source: Lamont-Doherty Earth Observatory of Columbia University

<http://www.liveinternet.ru/users/3616936/>

The new reality:
Turkish &
Ukrainian EEZs
do *not* interlock
anymore

Map source:

http://img1.liveinternet.ru/images/attach/c/0/113/415/113415843_large_16012_102020_54593033675_5644072863940384821_n.jpg

Black Sea delimitation prior to and after reunification of Crimea with Russia: consequences for risk-avoidance offshore pipelines

- South Stream (via Turkish EEZ)
- Turkish Stream
- Possible “New” Stream (?) (via new / expanded Russian EEZ)

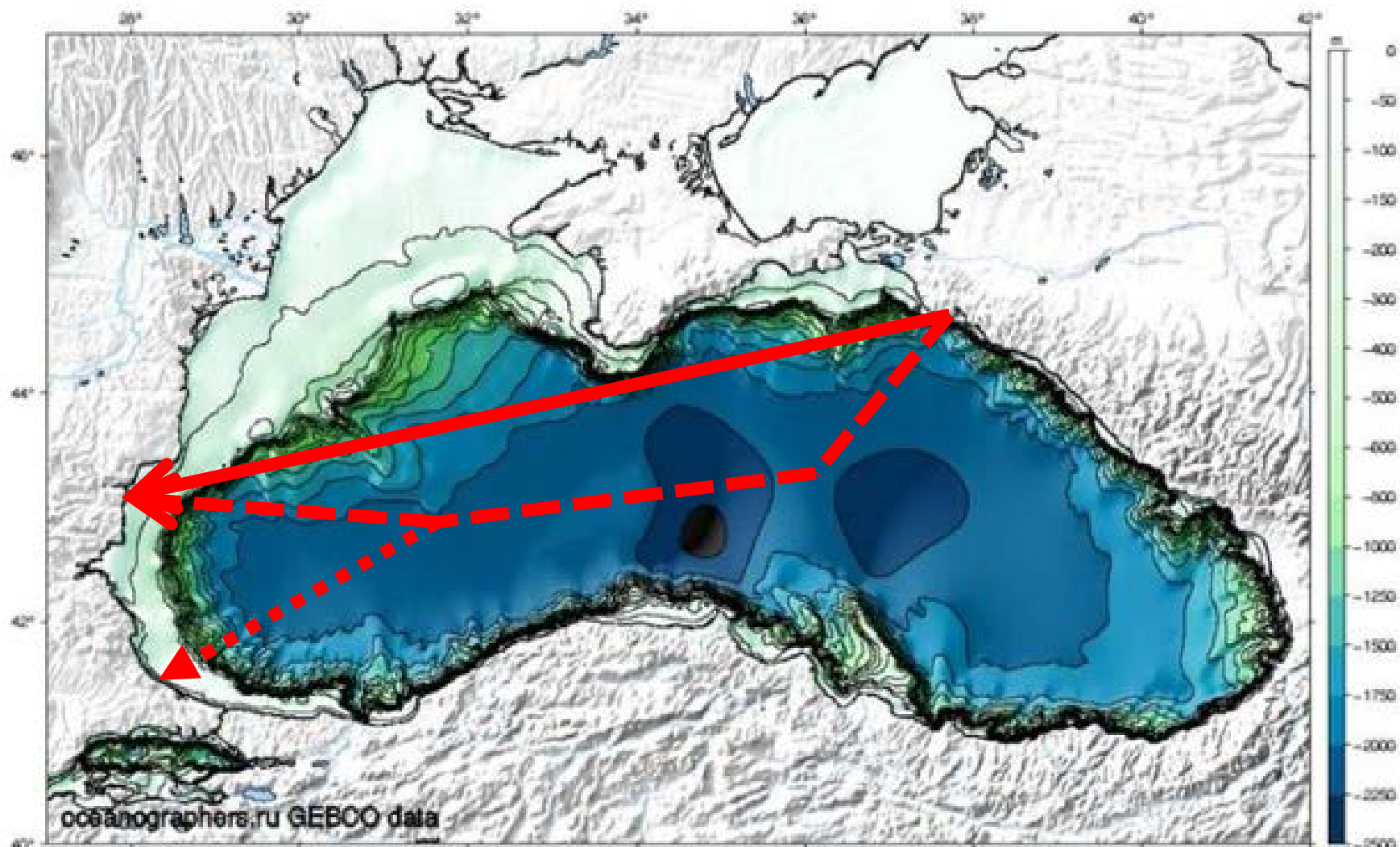
Reunification of Crimea with RF opens opportunity (& 24.11.2015 incident & event afterwards votes for its use) to avoid Turkish transit => My proposal: offshore pipeline route to Bulgaria/Varna directly via new (expanded) RF EEZ in Black Sea, now by-passing both Ukrainian & Turkish EEZs, with all its positives: shorter line via shallower waters => benefits to both RF & EU



Source: Lamont-Doherty Earth Observatory of Columbia University
<http://www.liveinternet.ru/users/3616936/>

Map source:
http://img1.liveinternet.ru/images/attach/c/0/113/415/113415843_large_16012_102020_54593033675_5644072863940384821_n.jpg

Black Sea: map of water depths & offshore routes



Map source:
<http://www.perekop.info/black-sea-history/>

- ← - - - - South Stream (via Turkish EEZ)
- ← ····· Turkish Stream
- ← Possible "New" Stream (?) (via new/expanded Russian EEZ)

What after 24.02.2016?

24.02.2016 Gazprom, DEPA and Edison signed Memorandum of Understanding

- Memorandum of Understanding on natural gas deliveries **across the Black Sea from Russia via third countries** to Greece and from Greece to Italy in order to establish **a southern route** to deliver Russian natural gas to Europe.
- In working towards that goal, the parties are committed to take advantage of the work done by Edison and DEPA within the **ITGI Poseidon project** to the fullest extent possible.
- The potential development of a new supply route is planned to be implemented **in full compliance with EU laws**.
- **Note:** **ITGI** (*Interconnector Turkey – Greece – Italy*) is a natural gas pipeline project proposed in the framework of the Southern Gas Corridor from Turkey to Italy via Greece. **Poseidon** is a construction project for the ITGI offshore section across the Ionian Sea to connect gas transmission systems of Greece and Italy. Edison and DEPA are equal partners to IGI Poseidon S.A.

Source: <http://www.gazprom.com/press/news/2016/february/article267671/>

What is ITGI Poseidon project

- **ITGI:** part of “Southern Gas Corridor” => 15 BCMY from Caspian, East Med &/or Middle East to Italy & Europe through Turkey & Greece.
- **Turkish grid:** will be upgraded to enable transit of gas for Italy & Greece
- **ITG:** in operation since Nov’2007, transport capacity 11.5 BCMY
- **IGI:** transport capacity 12 BCMY. IGI will be 800 km long & includes:
 - **IGI Onshore:** 600 km onshore pipeline in Greek territory (to be developed by Desfa, Greek Transmission System Operator);
 - **IGI Poseidon:** 200 km offshore pipeline across the Ionian Sea (under development by IGI Poseidon SA, a joint venture between Edison and Greek company Depa).
- **IGB:** The pipeline (appr. 180 km long) is designed to transport 3 to 5 BCMY, will connect Komotini in Greece to Stara Zagora in Bulgaria. The project is subject of EU financial support through the European Energy Program for Recovery (EEPR) to the amount 45 million EUR pursuant to Commission Decision C(2010) 5813, as amended by Decision C(2012) 6405.
- **ITGI** is a **Project of Common Interest** as it was included among the Southern Gas Corridor Projects in the European Economy Recovery Plan with a 100 mln Euros financing. Italy-Greece section of the ITGI pipeline was granted 25 years TPA Exemption (Art. 22 of Directive 55/2003)
- Among “Key benefits of the ITGI project” indicated that “Since the project is not sponsored by main gas producers, different sources of supplies could be transported.” => **AK: Gazprom (RUS gas) as one of such “sources”**

Source: <http://www.edison.it/en/itgi-pipeline> (dated 30.07.2015);

<http://www.edison.it/en/igb-pipeline> (dated 20.01.2016) (as of 25.04.2016)

30 July 2015

ITGI Pipeline at website of Edison

ITGI pipeline



— IGI Poseidon
— IGI Onshore } IGI (under development)

— IGB (under development)

— ITG (in operation)

— Turkish Grid (in operation)
and/or TANAP (under development)

— Existing interconnections

--- Under evaluation

Source: <http://www.edison.it/en/itgi-pipeline> (as of 25.04.2016)

ITGI Pipeline at website of Edison - & what can go further

30 July 2015

ITGI pipeline



My proposal of new offshore route directly to Varna by-passing (between) Ukrainian & Turkey EEZs in Black sea



— IGI Poseidon } IGI (under development)
— IGI Onshore }

— IGB (under development)

— ITG (in operation)

— Turkish Grid (in operation)
and/or TANAP (under development)

— Existing interconnections

--- Under evaluation

Source of original map: <http://www.edison.it/en/itgi-pipeline> (as of 25.04.2016)

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, or any Russian official authority, and **are within full personal responsibility of the author of this presentation.**