

South east Europe gas security: suppliers, routes & EU policy initiatives

**Dr Katja Yafimava
Senior Research Fellow,
Natural Gas Research Programme, OIES
IENE conference, Athens, 12 November 2015**

Russian gas supplies via Ukraine and (potentially) through Turkish Stream

South east European dependence on Russian gas

- South east Europe depends on Russian gas on average for 77% of 9.3 bcm demand (excluding Turkey) and for 58% of 54.94 bcm demand (including Turkey) whereas Europe overall depends on Russian gas for some 25-28% of demand
- **Bulgaria, Greece, Slovenia** did not meet the N1 standard in 2013
- **Bulgaria (69.5), Greece (35.7)** had their Supplier Concentration Index (SCI)>30 in 2012; **Serbia (56.47), Bosnia & Herzegovina (100), FYROM (100), Turkey (38.36)** had their SCI>30 in 2013

Europe overall is well diversified but South East Europe (as the Baltic region and Central Europe) is highly dependent on Russian gas. This is problematic, irrespectively of whether viewed from commercial or geopolitical point of view

Gas demand projections for south east European countries (highly dependent on Russian gas)

South east European countries	Gas demand, bcm	Russian gas imports, bcm	End of contract	Gas demand projections			
				2013	2013	2015	2020
Bulgaria	2.59	2.67	2022	2.89	3.03	3.14	3.29
Greece	3.84	2.39	2016	4.32	4.10	3.85	3.64
FYROM	0.16	0.09	nd	0.12	0.12	0.12	0.12
Bosnia & Herzegovina	0.19	0.18	nd	0.26	0.27	0.29	0.30
Serbia	2.52	1.84	2021	2.3	2.3	2.3	2.3
TOTAL	9.3	7.17		9.89	9.82	9.7	9.65
Turkey	45.64	24.57	2027, 2028	49.56	59.26	65.58	70.62
GRAND TOTAL	54.94	31.74		59.45	69.08	75.28	80.27

Source: adapted from Stern (ed) Reducing dependence on Russian gas (OIES, 2014)

South east European countries' (excluding Turkey) gas demand is expected to increase only by 0.4 bcm during 2013-2030 whereas Turkey's gas demand is expected to increase by 25 bcm

The pipelines carrying Russian gas to Europe



Natural gas transit via Ukraine to the EU, other European countries



Ukraine still carries around half of Russian gas exports to Europe. Security of transit across Ukraine remains at risk as no sustainable solution has been achieved to both Ukraine's security of supply and security of transit problems

European countries, which receive their Russian gas imports via Ukraine

- European countries, receiving all of their Russian gas imports exclusively via Ukraine:
 - Austria, **Greece**, Italy, **Bosnia & Herzegovina**, **Bulgaria**, **Croatia**, Czech Republic, Hungary, Romania, **Serbia**, Slovakia, Slovenia, **FYROM**
- European countries, receiving some of their Russian gas imports via Ukraine (while receiving the rest via other corridors e.g. Yamal-Europe, Blue Stream, Nord Stream):
 - France, Germany, **Turkey**, Poland

“Winter Deal” 2015/16: ‘work in progress’?

- **Russia/Gazprom obligations:** sell up to 3 bcm over Q4 2015 and Q1 2016 with a discount to the contractual price to be decided quarterly by the Russian government in the amount sufficient to bring the discounted price on par with that of e.g. Poland but not if the contract price equals spot price (Q4=\$227.37/mcm)
- **Ukraine/Naftogaz’s obligations:** to secure gas transit to the EU, including via injecting 2 bcm of natural gas into storage still in October 2015
- **The EC obligations:** to arrange provision of \$500 mn before the end of 2015 to finance purchase of gas

The “Winter Deal 2015/16”: the protocol was initialled but not signed. Naftogaz has made prepayments for Russian gas in Q4 2015 and Gazprom has re-started supplies to Ukraine

Will Ukraine have enough gas in storage for ensuring secure transit to Europe & how much is 'enough'?

- Naftogaz needs to purchase gas to refill its storages enable its own 2015/16 winter consumption and secure transit, but accurate estimate of how much gas is needed in storage is fraught with difficulties (17-20 bcm)
- Naftogaz had delayed gas purchases (injection rates declined sharply in Q3 2015) due to lack of money & waiting for a lower price
- Ukraine has received \$0.5 bn from the EIB (under the WB guarantee) and \$0.3 bn from the EBRD (approved Sep 2014) (the latter for purchases of 'reverse flow' gas)

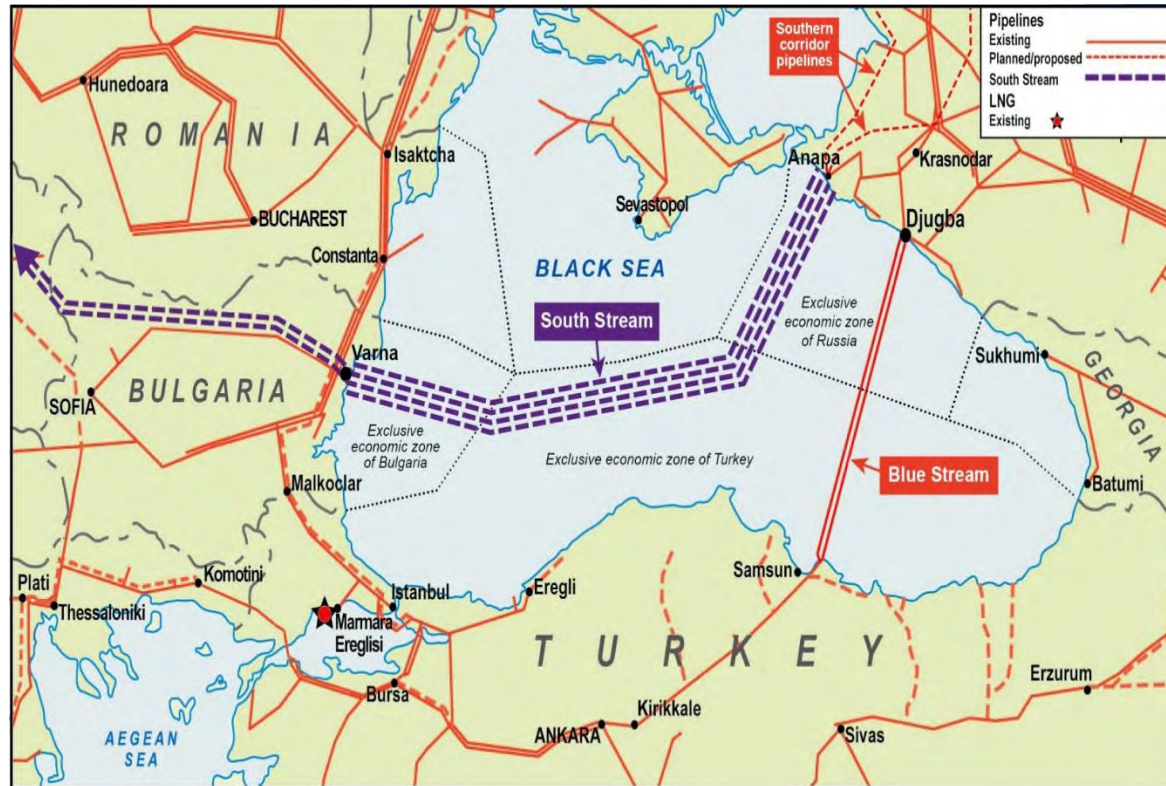
By 1 October 2015 Naftogaz accumulated 15.7 bcm (1 bcm less compared 1 October 2014) but increased it by 1.3 bcm (as opposed to 2 bcm as committed under the Winter Deal) to 17 bcm by 1 November 2015. This volume might not be sufficient under cold winter, with potential shortages in Q1 2016

The new Ukraine transit crisis in 2015/16 (and beyond) is not imminent but possible

- **Remaining risk of short- % mid-term Ukrainian transit breakdown, happening against the background of a (near complete) breakdown in Ukraine-Russia political/security relationship**
- **The EC will have to play an increasingly important role by brokering the Ukraine-Russia gas relationship and underwriting security of Ukrainian transit both politically & financially**
- **South east Europe security of supply will remain a function of Ukraine's timely payments for imports from Gazprom, Europe's willingness to provide continuous financial assistance, and Ukraine's political/security relationship with Russia**

Transit across Ukraine is associated with political, regulatory, commercial risk that will need to be mitigated with the EC involvement until 2020 and possibly beyond

The South Stream Pipelines (cancelled in 2014)



Source: OIES

South Stream 1 was expected to start deliveries in Q4 2015 but construction was cancelled due to unresolved TEP regulatory issues which became increasingly difficult to resolve post the 2014 Ukraine crisis

The Turkish Stream Pipelines pre-2020



Source: OIES

Pre-2020: one string (connect to Turkey) and possibly second string (connect to Trans Balkan ‘reverse’) are likely to be built

Turkish Stream pre 2020: regulatory challenges

- **Reverse flow on the (existing) Trans-Balkan pipeline:**
 - **Gazprom could use capacity in the Trans Balkan pipeline capacity (already booked under long term contracts underpinned by IGAs) in 'reverse' mode to transport gas delivered by Turkish Stream (2) but usage in 'reverse' mode might necessitate conclusion of new contracts (in line with the TEP and Network Codes)**
- **Use of the Turkish Stream on-land section in Turkey**

Regulatory hurdles are to be expected for all options. EC and Turkey's consents are crucial

The Turkish Stream Pipelines post 2020



Source: OIES

Post-2020: third (TAP connect) and fourth (potentially a new CE and SE Europe pipeline connect) strings of Turkish Stream are increasingly unlikely but will depend on Nord Stream 2 progress

Turkish Stream post 2020: regulatory challenges

- Use of the Turkish Stream on-land section in Turkey
- Possible use of (yet to be built) alternative capacity:
 - Gazprom could use TAP or ITGI to transport the gas delivered via Turkish Stream (3) to Italy
 - Possible use of (future) Eastring/Tesla/etc capacity to(wards) Baumgarten
- Use of the Turkish Stream on-land section in Turkey

**Regulatory hurdles are to be expected for all options.
EC and Turkey's consents are crucial**

The Nord Stream Pipelines



Source: OIES

Nord Stream 1 (first string Nov 2011, second string Nov 2012) is operational (55 bcm but OPAL use is restricted). In September 2015 Gazprom, EON, BASF, Shell, Engie & OMV signed a shareholders agreement to build Nord Stream 2 (third and fourth strings) (55 bcm) (~2019).

Nord Stream: regulatory challenges

- **Gazprom cannot use more than 50% in OPAL:**
 - The EC did not approved the negotiated compromise solution, which would allow Gazprom to use more capacity should no 3rd party want it
- **The fact that very little gas with delivery via OPAL was sold at the Gazprom's auction (Sep 2015) showed the lack of 3rd parties' interest in OPAL**
 - thus making the EC refusal to lift the cap look increasingly political rather than regulatory

OPAL resolution is crucial for Gazprom to be able to reduce transit across Ukraine and proceed with Nord Stream 2 (European buyers have supported the case for Nord Stream 2 onshore extensions exemption)

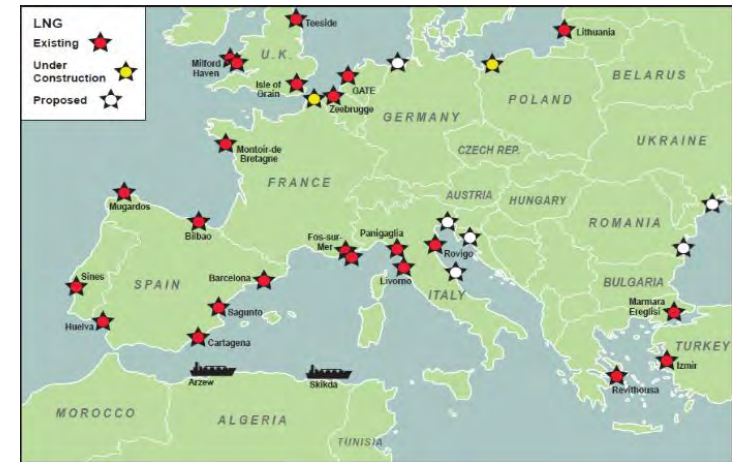
**Alternative (non-Russian)
gas supplies:
'Southern Corridor' gas and LNG**

Alternative gas supplies: pipeline & LNG*

- **Pipeline gas supplies**
 - **Southern Corridor gas: Azerbaijan: 24.4 bcm max by 2020 (50/50 Turkey/Europe), possible increase to 27 Bcm post-2023 but 2015 request for imports from Russia suggests questions about export volumes. Middle East/Central Asia possible post 2030**
 - **LNG supplies from various sources**
 - **Availability of new LNG supply, which is due to start arriving from 2015 onwards, will be determined by Asian gas demand and prices, North American gas prices & willingness of European buyers to compete internationally**
- * Source: Stern et al, OIES 2014

The main alternative source is LNG & the main increase in pipeline gas imports will be from Azerbaijan by 2020 (projections up for 2030 are very speculative). Russian gas will be highly competitive throughout the period to 2030

South east Europe access to LNG



- Should the existing Greek LNG terminal (5.3 bcm) be expanded (to reach 7.3 bcm) it will have enough capacity to cover Greece & Bulgaria demand (with domestic pipelines reinforcements)
- The yet to be built Croatian FRU terminal would allow the region's countries, esp the Balkans, to source small quantities of LNG (with domestic reinforcements and interconnections)
- Usage of (potentially underutilised) Italy's significant LNG regas capacity would also strengthen access to LNG

Pipeline gas via the Southern Corridor



Source: BP

The 2015 version of the “Southern Corridor”: TAP + TANAP + South Caucasus pipeline expansion. Timing is unfortunate given recession & liberalisation in Europe: 10 bcm is only a “lane” that might (or might not) become a “corridor” post-2025. Despite large reserves in potential exporting countries, the only gas which could be contracted was from Shah Deniz phase 2 (Bulgaria and Greece contracted 1 bcm of Azeri gas each)

Southern Corridor: regulatory issues

- TAP, TANAP & Trans Caspian are all included into the 1st EU List of Projects of Common Interest
- TANAP legal/regulatory framework (non-EU/non-EnCT):
 - Turkish-Azeri IGA & MoU
 - Dispute resolution jurisdiction – Turkish law
- TAP regulatory framework: EU TEP exemption granted in May 2013 for 25 years (and subsequently prolonged)
 - TPA – for the initial capacity (10 bcm)
 - Tariffs – for initial (10 bcm) and expansion (≤ 10 bcm)
 - Unbundling – for the entire project

Southern Corridor is the major element of the EU supply diversification (route and source) /security policy since the late 1990s and enjoys favourable EU regulatory treatment and political support

South east Europe: reducing dependence on Russian gas

- South east Europe's ability to access non-Russian supplies is limited by infrastructure constraints but this is changing and...
- with the (to be expanded) Greek LNG terminal and (to be built) Croatia terminal, potential utilisation of Italy's LNG terminals and with more domestic reinforcements and interconnections to access LNG & Azeri pipeline gas, south east Europe could reduce and even eliminate dependence on Russian gas by 2020 if it wants so
 - This would be less difficult for 'outer' countries e.g. Greece, Bulgaria, Croatia but more difficult for 'inner' countries e.g. Serbia, Bosnia & Herzegovina, FYROM
- But this would entail new investment and hence cost – which would have to be met by taxpayers – and significant impact is unlikely until the early 2020s

Russian gas will be price competitive with all alternatives

The EU energy policy initiatives: an impact on south east Europe gas security

The “Energy Union”: an attempt to increase EU resilience in a crisis & reduce dependence of its highly dependent small markets e.g. SEE on Russian gas

- The Energy Union concept is effectively **a call for more intensive and urgent IEM/TEP implementation:**
 - **more powers for the EC and/or ACER** to ensure that TEP & NCs are implemented and IGAs are TEP complaint ex ante
 - **extra funding for new infrastructure (e.g. interconnections and LNG terminals)** enabling most vulnerable countries to diversify their gas imports **subject to regional cooperation**
 - *but no new pipelines e.g. Tesla or Eastring were included into the List of priority projects developed under the 2015 CESEC initiative while only interconnections and reinforcements of existing networks have been included*
 - **more restrictive approach towards third countries’ activities**

The EC attitude towards (all?) new Russian export pipelines and Russian gas supplies

- The EC position appears to be that it expects Gazprom to meet its contractual obligations while only using existing export pipelines
- Significant resistance towards new Russian gas export pipelines might be expected on part of the EC on both political and regulatory grounds (these becoming increasingly intertwined)
- Given that capacity of existing export pipelines is not sufficient for delivery under Gazprom's existing contracts without using the Ukraine corridor, its ability to deliver depends on security of the Ukrainian transit – but can it be guaranteed?

EU rules for construction and utilisation of new pipeline capacity

- **CAM Incremental NC**
 - Auctioning or alternative mechanism, designed by TSO on case by case basis if the need for conditional bids demonstrated & subject to NRA approval
 - Construction of significant new cross-border pipeline capacity before/by 2020 appears unrealistic
- **Exemption (Art. 36) from the TEP's TPA, Tariffs & Unbundling provisions**
- **Project of Common Interest (TEP compliant)**
- **Intergovernmental Agreements (IGAs) (TEP compliant)**

If any new significant cross border pipeline capacity is to be built in Europe by 2020 it might not be possible to do other than under exemption regime

Conclusions

- **South east Europe's gas security will continue to depend on security of Russian gas transit across Ukraine at least until 2020**
 - The EC wants to preserve significant transit across Ukraine provided that Ukraine reforms its gas market in line with EU rules
 - Russian alternative new export transit avoidance pipelines planned to be built by 2020 likely to face the EC political & regulatory resistance
- **South east Europe could reduce (and even eliminate) its dependence on Russian gas by 2020 by replacing it with LNG and Azeri gas if cost of new infrastructure, enabling access to these alternatives, is met by EU taxpayers & with no guarantee that these alternatives will be cheaper than Russian gas**

South east Europe will remain vulnerable at least until 2020

THANK YOU!

Katja.Yafimava@oxfordenergy.org



OIES Natural Gas Research Programme

WE ARE:

- A gas research programme at a Recognised Independent Research Centre of Oxford University, specialising in fossil fuel research
- Probably the only European academic research group focussed on natural gas.

WE PRODUCE: independent research on national and international gas issues

WE ARE FUNDED BY: sponsorship by 20 companies and governments in gas producing and consuming countries

WE ARE NOT:

- consultants, sellers of exclusive, high price business reports

Information about our Institute, our Programme and its publications can be found on our website:
<http://www.oxfordenergy.org/gas-programme/>