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THE FUTURE OF EU-TURKEY RELATIONS:
MAPPING DYNAMICS AND TESTING SCENARIOS

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Extended FEUTURE Voice

Expanding the capacity of the Southern Gas Corridor and the future of EU-Turkish gas cooperation

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ABSTRACT

This paper first analyzes the current comparative significance of the Southern Gas Corridor within the larger context of EU Gas Security Strategy and its evolving dynamics. It then assesses the alternative sources of supply and additional infrastructure needs for the expansion of the SGC capacity in both a medium-term and long-term perspective. It argues that until at least the 2030s any additional volumes transiting the SGC to the EU will most likely emanate from Azerbaijan and possibly Iran. These volumes are most probable to flow through the second phase of the TAP pipeline and will not exceed 10 bcm/y. The paper concludes by analyzing the impact of increased gas flows through the SGC on the energy cooperation between Turkey and the EU.[1]

[1] This Paper has been prepared within the context of the FEUTURE Policy Challenge Meeting "EU-Turkey Relations: What Policy Challenges. Energy and Security' organized by ELIAMEP in Athens on 21 February 2019.

CONTENT

Introduction

The question of European Energy Security and the need to diversify Europe's natural gas suppliers focused attention on the strategic significance of Southeastern Europe as a transport hub for natural gas from the Caspian region, and potentially the Middle East and the Eastern Mediterranean (EastMed). In order to meet increasing natural gas demand as the countries of the region move towards a cleaner energy mix and to reduce the overwhelming dependence of Eastern and Southeastern Member States of the European Union (EU) on Russian gas imports, European authorities have been keen to promote projects that contribute to supply diversification.

In this context, the Southern Gas Corridor Strategy (SGCS) plays an increasingly important role since it offers simultaneous supply and transit diversification to those EU Members States, like Bulgaria and Greece, that mostly need it, while opening another supply gateway to Italy and via Italy to the Central EU markets. Despite the initially overambitious goals of the SGCS, which aspired through the defunct Nabucco project, to transport up to 31 billion cubic metres per year (bcm/y) to Austria, the opening of the Southern Gas Corridor (SGC) in 2020 will constitute a notable success of the external dimension in the EU's Gas Security Strategy. The SGC supplies gas from sources of new origin that had never been tapped for EU consumption, transporting non-Russian gas via non-Russian routes to the core EU network, however at very limited volumes.

Although in 2011 European Commission planners overoptimistically expected SGC volumes to cover "roughly 10-20 percent of EU estimated gas demand by 2020"[2] the actual availability of SGC supplies, limited to 10 bcm/y by 2022, correspond to just 2,14% of the 2017 EU demand, or 2.73% of 2017 EU net imports, given the latest commercially available data.[3] The importance of the SGC supplies, however, does not currently lie in the volume of initial exports but in the establishment of a non-Russian controlled corridor. In this regard, it is important to note that over the last 15 years no other major source of new gas supply has emerged in a way that is dedicated to meet the long-term needs of the EU gas market.

To the contrary after 2011 – as a result of the political upheaval in North Africa – Libyan gas supplies have become very unstable and have been cut by half compared to their pre-war levels of 9,75 bcm/y,[4] while Egyptian exports, which may resume in notable volumes by early 2020, have all but disappeared. In the decade to come SGC supplies, therefore, will make up for the losses in Libyan and Egyptian exports in the 2010s. However, at least in its original phase to 2025, the SGC will not rise to the same level of significance as Algeria or Norway. Since 2013, when the Trans-Adria Pipeline (TAP) was selected as the main export option for Azeri gas to the EU, Norwegian

[2] European Commission, *On security of energy supply and international cooperation – 'The EU Energy Policy: Engaging with partners beyond our borders'* COM (2011) 539, 07/09/2011, p. 5.
[3] BP Statistical Review of World Energy 2018, (BP: June 2018), p.29 (for EU Gas Demand) and pp.29-30 for EU net import calculation. All data are for 2017.
[4] BP Statistical Review of World Energy 2011, (BP: June 2011), p.29. All data are for 2010.

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and Algerian exports have also increased without being able to balance off the steady expansion of Russian gas exports over the last five years. Algeria and Norway remain the two principal alternative corridors that supplement Russia's indispensable position as the core gas supplier to the EU.

The SGC volumes would need to expand to approximately 40-60 bcm/y for the region to emerge as a serious alternative to Russian gas exports to the EU, as the Union is also supporting the evolution of new supply Corridors from the EastMed that will operate independent from the SGC, either through a combination of new regional pipelines and existing Liquified Natural Gas (LNG) facilities in Egypt or through the construction of a major dedicated pipeline such as the ambitious East Med Gas Pipeline project.[5] Although the potential for the expansion of the Corridor's capacity exists, it is highly unlikely that such an expansion will more than double its existing 10 bcm/y transit capacity before the early 2030s. Moreover, most of future additional supplies during the 2020s are more likely to come from Azeri gas fields rather than new sources of supply such as Iran, Iraq, Turkmenistan or for that matter the Eastern Med.[6]

This paper first analyzes the current comparative significance of the Southern Gas Corridor within the larger context of the EU´s Gas Security Strategy and its evolving dynamics. It then assesses the alternative sources of supply and additional infrastructure needs for the expansion of the SGC capacity in both a medium-term and long-term perspective. It argues that until at least the 2030s any additional volumes transiting the SGC to the EU will most likely emanate from Azerbaijan and possibly Iran. These volumes are most probable to flow through the second phase of the TAP pipeline and will not exceed 10 bcm/y. Apart from the important contribution to the EU's gas security the Southern Gas Corridor Strategy always had an important geopolitical dimension that highlighted the importance of Turkey's cooperation with the EU. Turkey would use its considerable regional influence – especially vis-à-vis Georgia and Azerbaijan – in order to facilitate the implementation of the Southern Gas Corridor even though that would contradict with the deepening of its strategic cooperation with Russia.

Turkey's aspirations moved beyond its evident role as an important transit state – especially after it negotiated, in October 2011, a unified transit-tariff regime for the entire length of the Nabucco project, extending from the Turkish–Georgian border to Baumgarten, Austria's Central European Gas Hub. Turkey was already a major importer of Azeri gas from Phase 1 of the Shah Deniz field,

[5] For an assessment of alternative export scenarios from the East Med region and its development as a new Corridor policy independent from the existing SGC strategy, T. Tsakiris, S. Ulgen, & A. K. Han, *Gas Developments in the Eastern Mediterranean: Trigger or Obstacle for EU-Turkey Cooperation?, FEUTURE, Instituto Affari Intenazionali,* (IAI: May 2018), pp.5-7 and pp.20-25 and T. Tsakiris, "The Strategic Significance of the Mediterranean Sea for the EU's Natural Gas Security Policy", in *M. Ciola and A. Cozzi (eds.), New Energy Corridors in the Mediterranean Sea,* Mediterranean Affairs (Spring 2018), pp.5-14.

[6] S. Pirani, *Let's not exaggerate: Southern Gas Corridor prospects to 2030,* (Oxford Institute for Energy Studies: July 2018).

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consuming up to 6.6 bcm annually since 2007, and aspired to secure an additional 6 bcm per year from SD2 at privileged prices.

Becoming an important transit country, through the construction of TANAP (the Trans-Anatolian Pipeline) and TAP (the Trans-Adriatic Pipeline), was not the only, or even the most important, priority for Turkey's gas strategy vis-à-vis Europe's SGC strategy and Ankara's allies in Transcaucasia. As Gulmira Ryzayeva put it, "Turkey's greater involvement would make Ankara more self-assertive in the regional political scene and increase its negotiating power vis-à-vis the EU and its accession talks".[7]

The link to Turkey's accession talks is also attested by several statements on the part of senior Turkish policy makers. As highlighted by Turkish Deputy Undersecretary for Energy and Natural Resources Yusuf Yazar, the "energy corridor" role has strengthened Turkey's position in the accession period. In terms of European vital interests, the EU must shorten and ease the accession period to guarantee both the realization and operation of this "energy corridor".[8] In 2009 Turkish Prime Minister Recep Tayyip Erdogan even threatened to reconsider his country's support for the Nabucco project, if the EU did not open the energy chapter in its accession talks with Turkey noting that "If we are faced with a situation where the energy chapter is blocked, we would of course review our position [on Nabucco]."[9] Accordingly, former Turkish Minister of Energy Taner Yildiz even claimed that "with Nabucco, we believe we deserved [to be a member of] the EU".[10] Turkey's expanding friction with Cyprus over the latter's offshore hydrocarbons exploration, its expanding strategic cooperation with Russia and its democratic regression following the 2016 coup have neutralized most of the geopolitical gains Ankara secured vis-à-vis the EU and most EU Member States.

The potential impact of these gains though on Turkey's accession talks might have been exaggerated by Turkey's political leadership in the first place. Having said that, it is important to note that Turkey remains the EU's quintessential partner in the Southern Gas Corridor Strategy. Turkey's support in the expansion of the Corridor's capacity especially vis-à-vis countries like Turkmenistan where Ankara yields significant influence, will prove an important asset for EU efforts to enlarge the significance of the Southern Corridor as a major alternative source of its gas imports that could limit its dependence on Russia.

As Turkey-EU relations become more aggravated due to the continued democratic regression of President Erdogan, Turkey's illegal activities in the EEZ of the Republic of Cyprus and its expanding relationship with Russia, a Turkish-EU cooperation on the expansion of the Southern Gas Corridor

[7] Nona Mikhelidze, Nicolò Sartori, Oktay F. Tanrisever, Theodoros Tsakiris, The Moscow–Ankara energy axis and the future of EU–Turkey relations, *FEUTURE, Instituto Affari Intenazionali-IAI & University of Cologne,* (IAI: September 2017), p.11.
[8] Ibid, p.11.
[9] Ibid, p.12
[10] Ibid, p.12

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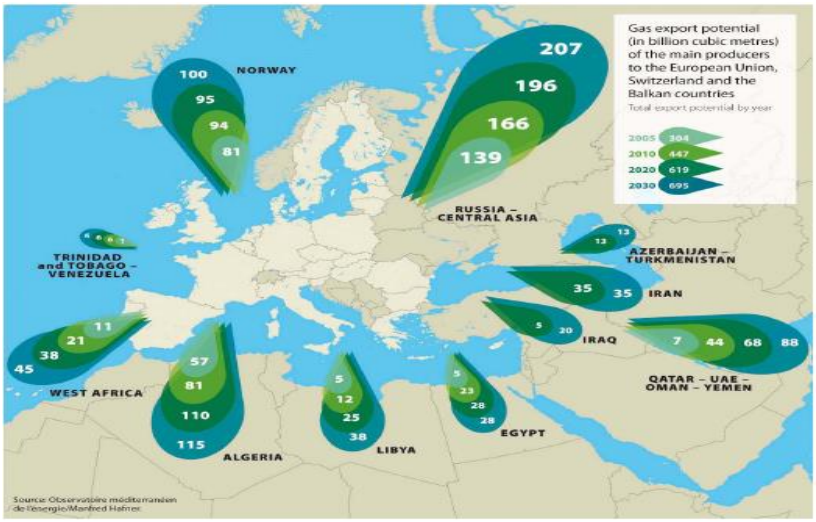
may offer a positive note in the overall negative dynamic of Turkey-EU relations that would decrease the possibility of further deterioration and may lead to the revocation of Turkey's status as a candidate member state. That is why this paper will conclude by analyzing the impact of increased gas flows through the SGC on the energy cooperation between Turkey and the EU.

1. The relative significance of the SGC for the EU's Natural Gas Security Strategy

In late 2008, the Directorate General for Energy & Transport of the European Commission prepared a study that underlined the importance of improved interconnectivity for the future of EU gas import security which highlighted the *then* as well as the projected flows of gas exports to the EU for 2009, 2010, 2020 and 2030 (see Graph 1). The results of the study were incorporated into the EU's 2008 Strategy for Trans European Energy Networks (TREN)[11] and constituted a part of the background paper that underpinned the Commission's EU Security of Gas Supply Regulation (R.994/2010).[12]

Graph 1: Gas Export Potential to the European Union[13]



That regulation was the first serious attempt to organize an EU-wide response to serious natural gas supply interruptions like the one the Union faced in the winter of 2008-2009 caused by the

[11] European Commission, Directorate General for Energy & Transport, *Interconnecting Europe: New Perspectives for Trans-European Energy Networks*, Brussels, (Office of the Official Publications of the European Communities: 2008).

[12] European Union, (2010), *Regulation No 994/2010 of the European Parliament and of the Council of 20 October 2010, concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC*, Brussels: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX: 32010R 0994&from=EN

[13] European Commission, *Interconnecting Europe,* 2008, ibid, p.7.

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conflict between Russia and Ukraine. The regulation attempted to forge a unified and comprehensive reaction on the Union level that was based on energy solidarity, improved physical infrastructure connectivity and the promotion of parallel prevention and emergency action plans among the various Member States at a regional basis. One of the principal conclusions of R.2010/994 was that although the EU's net import dependency would increase due to the projected drop in domestic supply, the Union would be able to cope with future risks, if it increased its interconnectivity, completed the integration of its gas markets and improved the diversification of its import sources and routes.

Additionally, it advocated the production of more LNG import terminals to accommodate the expected flow of additional LNG imports. These were considered to be safer and more flexible – from a security point of view – than piped gas, which has to cross through the terrain of several transit countries.[14] These conclusions are still valid today. In the ten years since the last serious EU energy supply crisis both internal interconnectivity and market integration have improved in the Union, boosted by the Commission's Energy Union strategy presented in 2014.[15]

New pipelines and LNG import terminals were constructed particularly in the Eastern Member States, like the Klapeida and Świnoujście facilities, that markedly improved the import diversification of respectively Lithuania and Poland. Market integration of Member States ameliorated thanks to the expansion of physical interconnectivity as hub-based gas pricing also expanded across EU markets helping to decrease the arbitrary indexation of gas sales to crude oil and oil product prices that were imposed to EU consumers by gas exporters, including Gazprom.[16] What has not improved, though, is the level of its net import dependency and the associated political risk of this dependency as negative projections of a reduction in future indigenous supply materialized at a much quicker pace than originally anticipated. In the 2014 EU´s Energy Security Strategy the Commission projected an increase in the Union's net import dependency years from around 62% of demand in 2010 to 65% in 2020 and 72%-73% in 2030.[17]

Unfortunately, the collapse of domestic EU gas supply has been much steeper. According to data processed from the *BP Statistical Review of World Energy* over the last five years, what was the projected level of Net Import Dependency (NID) for 2030 was reached in 2016. More importantly, the EU's NID continues to expand as the latest available commercial data for 2017 suggest (see

[14] I. Dreyer & G. Stang, *Energy moves and power shifts: EU foreign policy and global energy security*, Paris, (EU Institute for Security Studies: 2014).
[15] T. Raines & S. Tomlinson, *Europe's Energy Union Foreign Policy Implications for Energy Security, Climate and Competitiveness*, (Chatman House Press: 2016).
[16] G. Stang, Securing the Energy Union: Five pillars and five regions, Paris, (EU Institute for Security Studies: 2017).
[17] European Commission, *Communication from the Commission to the European Parliament and the European Council: European Energy Security Strategy*, SWD (2014) 330 final}, Brussels, (Office of the Official Publications of the European Communities: May 2014), p.13.

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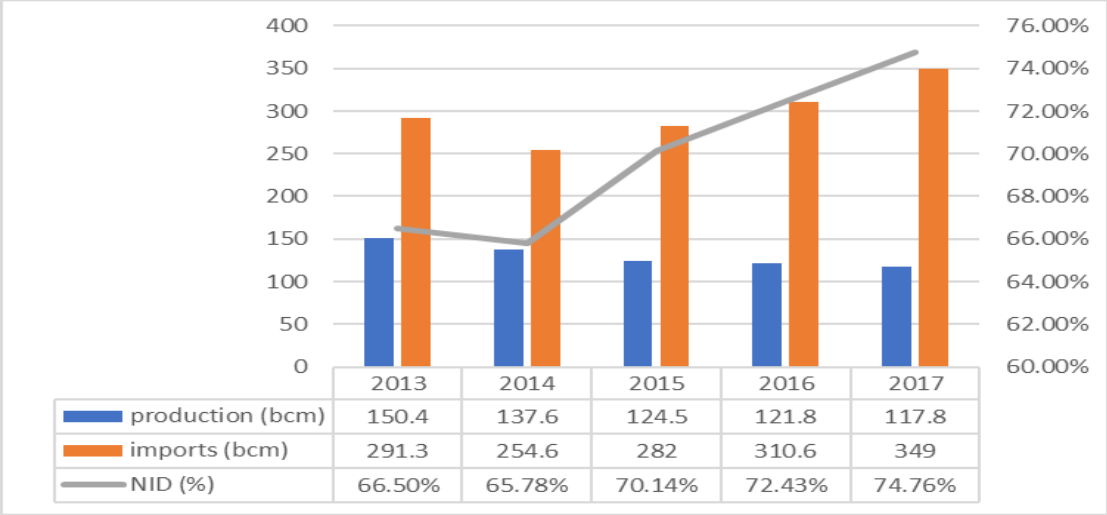
Graph 2).[18] Despite the expansion of United States of America´s (US) LNG exports to isolated EU markets, most notably in the Baltic region and Poland, that have markedly improved their import diversification by securing Qatari and US LNG supplies, the Union's reliance on LNG has been decreasing steadily since 2010. LNG imports have dropped from a high of 22% in 2010 to a low of 15.6% in shares of total EU imports estimated at 48,7 bcm/y in 2017 according to data compiled by the European Commission, IHS Market, and BP.[19]

The drop in LNG imports has compounded concerns over the political risk of gas supplies to the Union. LNG is the most flexible source of gas imports since importers have a far greater portfolio of potential exporters to choose from compared to pipeline gas, which corresponds to 87% of total EU imports. These 87% is essentially controlled by an oligopoly of only three principal suppliers, Russia, Norway and Algeria.

Graph 2: Rise of EU Natural Gas Net Import Dependency[20]



	2013	2014	2015	2016	2017
production (bcm)	150.4	137.6	124.5	121.8	117.8
imports (bcm)	291.3	254.6	282	310.6	349
NID (%)	66.50%	65.78%	70.14%	72.43%	74.76%

Moreover, the EU's strategic objective of diversifying away from its core supplier, Russia, and its gas pipeline export monopoly, Gazprom, has been undermined i) by the fact that Russian gas remains very competitive when compared to newer alternative supplies, and ii) by the construction of viable alternative export routes that directly linked Gazprom with its primary EU markets in Central Europe via the Nord Stream pipeline system that bypasses Ukraine.[21] These bypasses have reduced the cost of transit for Russian gas to traditional EU markets and eliminated the political risk of transit through Ukraine.

[18] BP Statistical 2018, ibid, pp.28-29.
[19] European Commission, *European Energy Security Strategy*, ibid, p.47 and BP 2018, ibid, pp.28-29 and p.34.
[20] BP 2018, ibid, pp.28-29.
[21] J. Henderson & J. Sharples, *Gazprom in Europe,* (Oxford Institute for Energy Studies: 2018).

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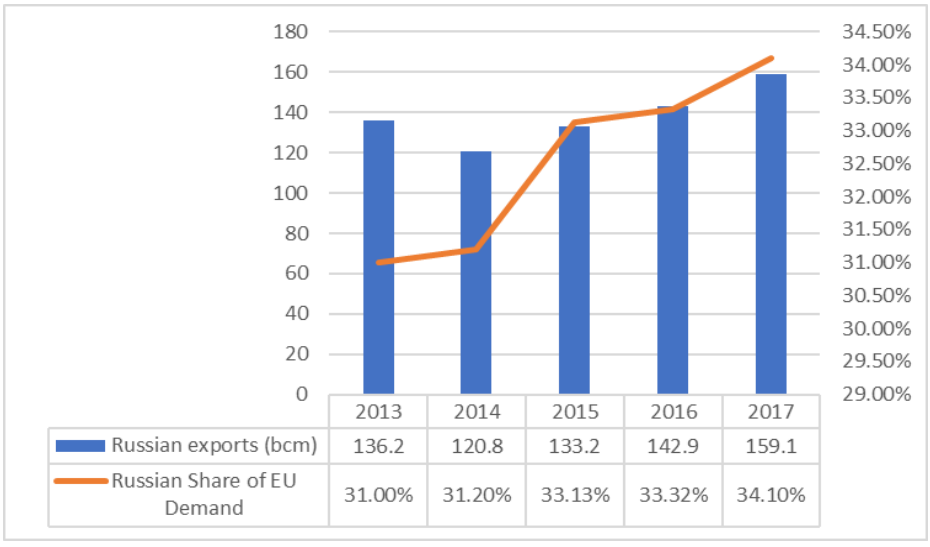
The absence of Nord Stream 1, which was commissioned between 2011-2013, would only have increased the possibility of a major energy supply crisis for the EU, given the two supply/transit interruptions of 2006 and 2009 and the deteriorating relations between Russia and Ukraine following the annexation of Crimea and Russia's support for the Donbass secessionist movements after 2014. Despite the worsening of EU-Russian political relations, the gas trade between the two sides is booming and appears to have been insulated from the geopolitical contentions over Ukraine.

It is important to note that EU sanctions passed in 2014, specifically refrained from targeting the Russian gas sector and have no retroactive powers. In any case both US and EU sanctions imposed in the aftermath of Moscow's annexation of the Crimean Peninsula failed to curb Russian oil and gas production which keeps expanding, reaching record highs every consecutive year for last five years.[22] The emergence of Germany as the preeminent transit country for Russian gas in the EU has stabilized the existing EU-Russian gas partnership on a long-term basis but has also created the potential for additional Russian gas exports to the EU, especially after the projected completion of the second Nord Stream pipeline network in late 2019.

This potential is already materializing. As indicated by Graph 3, despite EU efforts to diversify away from Gazprom, Russian gas exports have been steadily increasing since 2013 in both absolute and relative terms. The significance of Russian exports for EU gas security is further illustrated by the fact that Norwegian, Algerian and Libyan exports combined, barely match Gazprom's EU market share.

Graph 3: Russian Gas Exports to the EU[23]



[22] B. Coote, *Impact of Sanctions on Russia's Energy Sector,* Washington D.C., (The Atlantic Council Press: 2018).
[23] Data adapted by author from the BP Statistical Reports of World Energy 2014-2018

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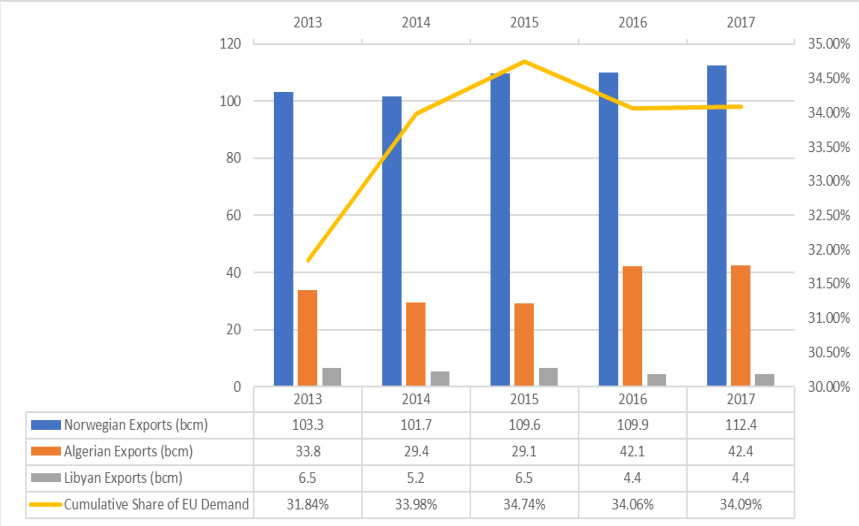
As illustrated by Graph 4 Norwegian and Algerian supplies expanded between 2013-2017 at a slower pace compared to Russian exports, adding 17.7 bcm/y to their cumulative supply. This represents 77% more than what the SGC will offer to the EU´s security of supply throughout the 2020s. Exports from Libya have halved compared to 2010 and Egyptian supplies were all but eradicated as a result of the heightened political instability and related economic crisis that ensued the collapse of the Mubarak and Qaddafi regimes.

Graph 4: Norwegian, Algerian and Libyan Gas Exports to the EU[24]



	2013	2014	2015	2016	2017
Norwegian Exports (bcm)	103.3	101.7	109.6	109.9	112.4
Algerian Exports (bcm)	33.8	29.4	29.1	42.1	42.4
Libyan Exports (bcm)	6.5	5.2	6.5	4.4	4.4
Cumulative Share of EU Demand	31.84%	33.98%	34.74%	34.06%	34.09%

Russian net exports increased by 23 bcm/y between 2013-2017, more than double the 10 bcm/y of Azeri gas the EU expects to import throughout the 2020s from the SGC route through the Trans Anatolian (TANAP) and Trans Adriatic (TAP) pipeline system, which connect Azeri offshore gas reserves in the Caspian Sea to Italy via Turkey, Greece and Albania. These 23 bcm/y of additional Russian gas exported over the last 5 years surpass the final technical transit capacity of the entire TAP project estimated at 20 bcm/y. TANAP/TAP along with the expanded South Caucasus Pipeline (SCP) system connecting Baku to Erzurum constitute the three legs of the SGC system.

As it has already been noted, the 10 bcm/y of TAP's Phase 1 is a far cry from the initial expectations that projected the importation from the region at more than 50-60 bcm/y. Such a scenario would have required the export of Iranian, Iraqi (Kurdish) and/or Turkmen gas through Turkey and the commensurate expansion of transit infrastructure through the doubling of TANAP's initial 31 bcm/y throughput capacity.

TAP's phase 1, that will accommodate the entire net export capacity of the second phase of the Shah Deniz field, will suffice to cover merely half of TANAP's existing transit capacity. Even if Azeri

[24] Data adapted by author from the BP Statistical Reports of World Energy 2014-2018

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gas was available today, Norwegian, Algerian, Libyan and Azeri exports combined would account for only 34% of EU demand in 2017. Gazprom alone currently accounts for 34.1% of net EU consumption. (see Graph 4) The need for new sources of supply diversification remains of critical importance, as crucial as it was ten years ago, when the 2009 Ukrainian crisis galvanized the EU's efforts to secure the materialization its SGC Strategy through the promotion of the Nabucco project.

This goal was only partially achieved in 2013 through the commitment of around 16 bcm/y of Azeri gas to the TANAP/TAP pipelines of which only 10 bcm/y will reach EU markets by the early 2020s.[25] What the EU will gain up to 2025 from a diversification point of view through tapping into the reserves of Shah Deniz 2, it has already "lost" due to the curtailment of Libyan exports and the loss of Egyptian supplies in the 2010s, both of which fell victims to the region's structural destabilization in the aftermath of the 2011 Arab revolutions. This is the measure of the SGC's significance as far as TAP's Phase 1 is concerned when viewed within the greater context of the EU´s Gas Security Strategy.

Even TAP's initial achievement has its own serious limitations. Turkmen dependency on China, continued Turkmen-Azeri geopolitical frictions and commercial divergences, competing maritime claims between Turkey and Cyprus, the persistent irresolution of the Cyprus Question, Turkey's geopolitical rivalries with both Israel and Egypt, widespread instability in Northern Iraq and the steady deterioration of US-Iranian relations after President Trump's new sanctions on Tehran in November 2018, will seriously limit the availability of non-Azeri gas exports to the SGC over the next decade as we will analyze in detail in the second chapter of this paper.

2. Scenarios for expanding the capacity of the SGC: Assessing alternative sources of supply and additional infrastructure requirements to 2030

In order for the SGC strategy to fulfill its declared potential the transported volumes need to increase by several orders of magnitude going beyond the maximum technical transportation capacity of the TAP which is limited to 20 bcm/y. Given the fact that half of that potential will be covered as a result of already contracted exports from Shah Deniz Phase 2, only 10 bcm/y remain for additional supplies to the EU.

Doubling the net exported volumes of gas through the existing SGC infrastructure to 20 bcm/y sometime in the next decade will constitute a notable improvement of the Corridor's contribution to EU´s Energy Security amounting to around 4,2% of the Union's gas demand in 2017. It will still be though, a far cry from the Corridor's planned goal, which was supposed to account for at least

[25] D., Koranyi, *The Southern Corridor: Europe's lifeline?* (Instituto Affari Internazionali: 2014).

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10% of EU demand by 2020. This was and remains an overoptimistic target, which underestimates the political and economic/financial impediments that currently curtail and will continue to impede the rapid expansion potential of the SGC, despite the relative geographic proximity of Turkey and TANAP to major sources of alternative supply in the Caspian Sea, the EastMed and the Middle East. Therefore, it is important to follow a staged approach when assessing the future potential of the SGC by distinguishing between a medium term (to 2030) and long-term (beyond 2030) phase:

(i) The medium-term phase would aspire to double by 2030 the current SGC capacity to 20 bcm/y through primarily the existing infrastructure, namely TANAP Phase 2/TAP Phase 2, and from primarily the same suppliers, namely offshore Azeri gas deposits. This option would not require the emergence of major new infrastructure, other than the construction of a new Transcaucasian pipeline that would run parallel to the South Caucasus Pipeline which currently connects Shah Deniz reserves from the Sangachal terminal in Baku with the TANAP network in the Turkish-Georgian border. SCP after its expansion in 2020 will have a technical throughput capacity of 23,46 bcm/y of which around 8,8 bcm/y are already committed in order to serve the needs of Georgia (1,4 bcm) and Turkey (6 bcm) from the first phase of Shah Deniz production.

Once Shah Deniz Phase 2 production reaches its optimum level of 16bcm/y by 2022, SCP's transportation capacity will be maxed out.[26] Given that the construction of the original 7,4 bcm/y pipeline cost $1,1 billion[27] to which one should add another $4 billion for the tripping of its export capacity under the SCP expansion (SCPX) project[28], a new SCP-type pipeline able to carry 16 bcm/y to EU markets via TANAP/TAP Phase 2 would cost an estimated minimum of $2-3 billion. The doubling of existing throughput capacity in TANAP and TAP to respectively 31bcm/y and 20bcm/y, may double the overall cost for upgrading the transportation capacity of the SGC system by another estimated $2-4 billion but such costs are by far inferior to the capital costs required to implement the more ambitious longer-term option described below, which would require the construction of multiple new pipelines from Northern Iraq, Turkmenistan and potentially Iran. (see Map 1)

(ii) A longer-term objective could be achieved in the 2030s and beyond that timeline, through the importation of additional supply sources from Turkmenistan, Northern Iraq, Iran and maybe even the EastMed. This would require the doubling or tripling of TANAP's export capacity through one or more new parallel lines (+32/48 bcm/y) and the construction of new dedicated pipelines, which will be able to transport these additional volumes from the Middle East (Iraq, Iran) and Central Asia (Turkmenistan) to Turkey and from Turkey to central EU markets. This seems only feasible

[26] http://www.socarmidstream.az/project/scp/#technical-parameters
[27] Ibid.
[28] "$4 bln spent on South Caucasus Pipeline Expansion project", 04/04/2018, https://report.az/en/energy/4-bln-spent-on-south-caucasus-pipeline-expansion-project/.

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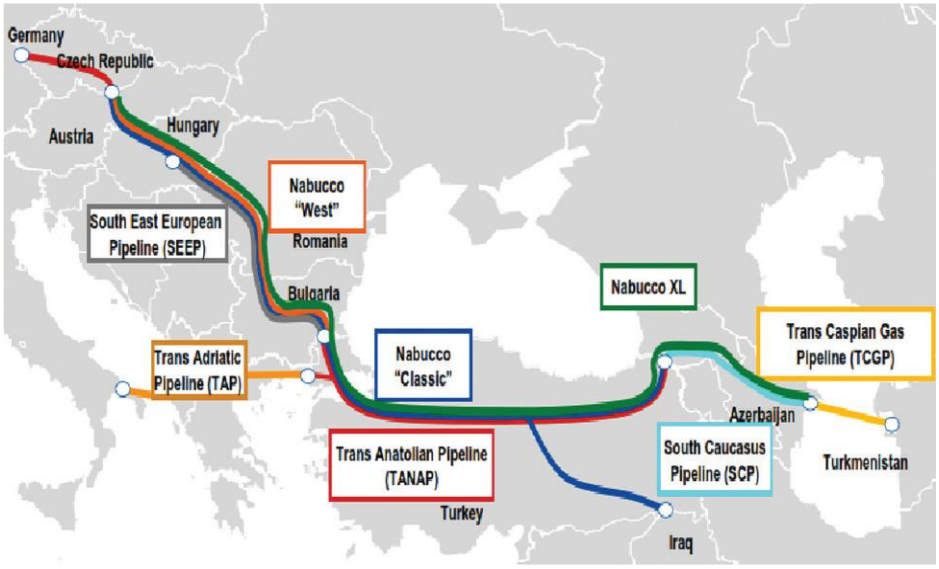
through the "resurrection" of the Nabucco West pipeline project, which was eliminated by TAP in the run-off for the selection of the SD2 main export pipeline in June 2013.

Map 1: Alternative Pipelines for the Southern Gas Corridor Phase 1[29]



Alternatively, the defunct Nabucco pipeline project, could even replace the need for building a second TANAP pipeline. In this scenario the "reloaded" Nabucco pipeline project, which was scaled down to its Nabucco West "edition" in 2012 in an attempt to improve its economic viability, would operate independently from TANAP, as a multi-sourced pipeline with alternative points of entry in Eastern Turkey along or close to the Turkish-Georgian, Turkish-Iraqi and Turkish-Iranian border.

This scenario would require tens of billions of USD just for the midstream sector of the strategy in order to build new pipelines that would carry an additional estimated 30bcm/y-40bcm/y to Turkey, across Turkey and from Turkey to their final EU destinations over the next 10-25 years. Regardless of how the potential construction of such abstract mid-stream projects will be phased, new gas resources will first have to be explored, confirmed and developed with the aim of eventually being exported to the EU.

As late as 2016, Azeri officials – including former Energy Minister Natiq Aliev – noted that the SGC can be scaled up to 60 bcm/y.[30] The European Commission appears to be even more (over)optimistic noting that "given the potential supplies from the Caspian Region, the Middle East and the East Mediterranean, the EU aims to increase SGC supplies to 80 or 100 bcm of gas per year in the

[29] G.Ryzayeva & T. Tsakiris, *Strategic Imperative: Azerbaijani Gas Strategy and the EU's Southern Corridor,* SAM Center for Strategic Studies, (Baku: 2012), p.14.
[30] Pirani, p.7.

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future".[31] Neither Minister Aliev nor the European Commission of course clarify what is their definition of the "future" or what are the impediments, which we would need to overcome in order to multiply the SGC's transportation capacity.

Some of the theoretical suppliers to an expanded SGC are not even producing gas for their own domestic needs at this point (i.e. Cyprus, Kurdish Iraq) whereas others have marginal net export capacity (Iran, Egypt). Only Israel and Turkmenistan have significant and readily available net export capacities that could be tapped for an expanded SGC. It is therefore important to first evaluate the current and future net export capacity of alternative potential SGC suppliers and then identify the commercial and geopolitical parameters that encourage or discourage their potential contribution to an expanded SGC.

2.1. Iran and Northern Iraq

Azerbaijan is the most obvious candidate for any future supply additions to the SGC. Azerbaijan's offshore hydrocarbon potential remains significant and TAP's as well as TANAP's Phase 2 are primarily linked to and dependent on the prospective expansion of Azeri net export capacity. There is a total of nine prospective[32] areas offshore Azerbaijan that include a series of proven as well as undiscovered reserves in various phases of pre-exploratory and exploratory activities.

As of early 2019 from all these prospective fields only the Total-led Absheron consortium is in a relatively mature phase that will allow for the beginning of production in 2020. Absheron Phase 1 is expected to produce 1,5 bcm/y but its second phase, still under negotiation between Total and SOCAR, will more than double its output adding 4 bcm/y by the mid-2020s.[33] Absheron's both phases will reach their optimum production capacity (plateau production) sometime in the mid-

[31] https://ec.europa.eu/energy/en/topics/energy-security/diversification-of-gas-supply-sources-and-routes, (accessed 19/03/2019).

[32] These prospective areas are: 1) Azeri-Chirag-Guneshli AGC, non-associated gas production, 2) Absheron, 3) Karabagh, 4) Ashrafi, 5) Dan Ulduzu, 6) Umid, 7) Babek, 8) Shafag-Asiman, 9) D230 Block. The Karabah, Ashrafi and Dan Ulduzu fields represents a cluster of small gas fields that may cumulatively produce 1,5 bcm sometime in the 2020s that will be most likely directed to the Azeri market. Block D230 is under a joint exploration & production agreement by a consortium set up by SOCAR and BP signed in April 2018, but no exploration is yet scheduled to take place. There are not even preliminary pre-drilling estimates of the field's potential reserves, "BP Strikes PSA for D230 Block", *News Base,* 02/05/2018, https://newsbase.com/topstories/bp-strikes-psa-d230-block, (accessed 19/03/2019).

[33] "Total talks terms of receiving first gas from "Absheron"", Azernews, 04/09/2018, https://www.azernews.az/oil_and_gas/137064.html, (accessed 19/03/2019).

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2020s, will be able to boost Azeri export capacity by 4 bcm/y since Absheron's Phase 1 will be absorbed by the Azeri domestic market.[34]

This does not necessarily mean that all these exports will move towards the EU given the fact that the production of the first phase of Shah Deniz (SD1) is expected to decline in 2024 – if Enhanced Recovery Techniques are not applied. Of the 10 bcm/y currently under production 2-2,2 bcm/y are exported to Georgia and another 6,6 bcm/y to Turkey through a long-term contract with Botas, expiring in 2021.

It is unclear whether Botas will renew the SD1 contract, but after the mid-2020s Absheron's 4 bcm/y may be used as a replacement for the decline in SD1 volumes to Georgia and Turkey leaving no gas for the SGC. Only if both Georgia and Turkey find alternative suppliers to replace their SD1 imports, a much easier prospect for Turkey than Georgia, will Absheron's output be committed to the SGC. It is quite improbable to assume that Absheron's entire capacity will be "allowed" to flow via the SGC given the fact that the most likely alternative to both Georgia and Turkey is Russia's Gazprom.

It is highly unlikely that a future Georgian government will allow itself to become once again dependent on Russian gas imports to facilitate the expansion of the SGC. If the limited future volumes of SD1, which are projected to drop to 4,2 bcm/y by 2030, are not directed to the Azeri market (or only partly directed) then SD1 will suffice to cover Georgia's long-term gas demand. In that case, it would depend on Turkey and whether it would absorb Absheron's Phase 2 output or find competitive alternative supplies from Iran, Northern Iraq, or the global LNG markets to replace its SD1 contract by 2025. If Turkey does replace its SD1 contract, then Absheron's entire export capacity could be directed to TANAP and via TANAP to TAP Phase 2.

Apart from Absheron, additional production in the 2020s is expected to come from the SOCAR-Nobel Upstream developed Umid-Babek fields. In May 2017, SOCAR established a consortium with British based Nobel Upstream for a Risk Service Agreement for the exploration and development of the 600 bcm in situ reserves of the Umid-Babek fields. Although exploration has not yet started, the consortium expects that the field will produce an output of 3-4 bcm in the 2020s, which will be directed both to the Azeri domestic market and to the SGC.

[34] "Total will extract gas at Azerbaijani Absheron field in early 2020", *Energy Market Price,* 21/02/2018, https://www.energymarketprice.com/energy-news/total-will-extract-gas-at-azerbaijani-absheron-field-in-early-2020, (accessed 19/03/2019).

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The latest announcements[35] by the project companies do not clarify how the output will be divided between the two market options apart from noting the production will begin from Umid.[36] Simon Pirani of the Oxford Institute for Energy Studies estimates the combined output of Umid-Babek at 4,5-6,5bcm/y, although it is difficult to project when in the next decade such output will become available since there has not been any exploration in Babek, which holds more than 2/3 of the unconfirmed reserves, still.[37]

Even if the combined output of Babek and Absheron Phase 2 would result in a cumulative export potential of 8 bcm/y that could become available sometime around or after the mid-2020s, it still may not be enough to guarantee the doubling of TANAP's existing transportation capacity by another 16 bcm/y. Since TANAP Phase 2 is linked to the expansion of TAP, securing additional supplies that could financially underpin the expansion of TANAP's capacity is vital to the expansion of TAP itself. Two additional Azeri offshore gas fields, Shafag-Asiman and the non-associated gas deposits lying under the Azeri-Chirag-Guneshli (ACG) oil field, constitute two potentially major contributors to the SGC whose timely development will allow Azerbaijan to double or even triple its existing exports to the EU sometime in the next decade or beyond. Unfortunately, both fields are too immature at this point to guarantee that additional volumes to the SGC will become available sometime in the 2020s.

ACG non-associated gas deposits refer to pockets of gas reserves that are located in deeper strata of Azerbaijan's principal oil field whose production peaked at 0,82 million barrels per day (mbpd) in 2010 and has been declining ever since reaching a low of 0,58 mbpd in 2017 and 2018.[38] Gas production from the ACG associated gas deposits started in 2005. Most of the existing gas output, which reached 12,5 bcm/y in 2018,[39] is reinjected into the oil fields in order to provide the pressure which is necessary to sustain the current level of oil production.

In 2017, seven years prior to the contract's expiration, the Azeri government and the shareholders of the BP-led ACG consortium extended their Production Sharing Agreement (PSA) to 2050. The renewed agreement does not clarify whether or how the field's non-associated gas will be monetized. Although there is a general understanding that monetization would eventually proceed, negotiations on the potential 5 bcm/y of the field's non-associated gas production are still ongoing.

[35] http://caspianbarrel.org/en/2018/04/nobel-upstream-completes-rsa-with-socar-over-umid-babek-gas-condensate-field/, (accessed 19/03/2019).
[36] "Expected volumes of gas production from Azerbaijan's offshore gas project named", *Azernews,* 31/05/2018, https://www.azernews.az/oil_and_gas/132843.html, (accessed 19/03/2019).
[37] Pirani, ibid, p.5.
[38] For 2010-2017 figures, http://www.caspianpolicy.org/special-brief-on-the-azeri-chirag-guneshli-acg-contract-us-companies-get-16-percent-share-in-azerbaijan-oil-deal/, For 2018 figures, https://www.bp.com/en_az/caspian/operationsprojects/ACG.html, (accessed 20/03/2019).
[39] "Oil Production at ACG Block Decreased by 0.6% in 2018", http://caspianbarrel.org/en/2019/01/oil-production-at-acg-block-decreased-by-0-6-in-2018/, 18/01/2019, (accessed 20/03/2019).

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By early 2019 there is still no timetable is in sight that would clarify a specific development plan for the estimated 300 bcm of gas reserves in place.[40]

The Shafag-Asiman area represents the most promising prospect for a future Azeri gas contribution to the SGC after Shah Deniz. A PSA on the exploration and eventual development of the field was signed between SOCAR and BP in October 2010 but no exploration well has been drilled nearly nine years after the original PSA. The field is estimated to hold around 500 bcm of gas in place, a preliminary estimate which in the absence of drilling remains to be confirmed. In January 2019 Gary Jones, BP's Regional President for Azerbaijan, Georgia and Turkey suggested that the processing of BP's 3D seismic data collected over Shafag-Asiman indicate that the field may eventually be as large as Shah Deniz that contains 1,2 trillion cubic meters. In early 2019, BP committed to conduct a total of six exploratory drilling in acreage under its control centered around Shafag-Asiman by the end of 2020.[41]

Even if the exploratory drilling program confirms the more conservative estimate of a 0,5 tcm *in situ* reservoir by late 2020, a clear commitment on the part of BP to monetize the field by linking it to the SGC would be able to facilitate its development and allow for the beginning of commercial production in the second half of the 2020s. In February 2018, Jones publicly stated that the field's future production "will be exported to the world markets through the Southern Gas Corridor (SGC)".[42] SOCAR's executives seem to be less optimistic regarding the field's timely development and its projected output which is estimated to plateau at 8 bcm/y. SOCAR's Vice President for Geology and Geophysics Bahram Huseynov noted in 2017 that the expected date for the *beginning* of production is 2030.[43]

If Huseyon's estimate proves accurate, it would be highly unlikely that Azerbaijan will have more than 8 bcm/y to commit to the expansion of the SGC throughout the 2020s and that an additional major source of gas will have to be committed to flow via Turkey in order to secure the doubling of TANAP's capacity by 16 bcm/y and the concomitant doubling of TAP's transportation capacity by another 10 bcm/y. Alternatively, neither infrastructure is likely to be developed in the 2020s thereby delaying the expansion of the SGC with Azeri gas to the early 2030s.

[40] V. Socor, "Beyond Shah Deniz: Azerbaijan's next-generation gas", *Eurasia Daily Monitor,* Vol.11/Iss.18, (January 2014), https://jamestown.org/program/beyond-shah-deniz-azerbaijans-next-generation-gas/, (accessed 20/03/2019).

[41] L.Mammadova, "BP could find new gas giant offshore Azerbaijan", *Azernews,* 11/01/2019, https://www.azernews.az/oil_and_gas/143850.html, (accessed 20/03/2019).

[42] http://caspianbarrel.org/en/2018/02/gas-from-shafag-asiman-to-be-exported-through-sgc/, 19/02/2018, (accessed 20/03/2019).

[43] http://www.caspianpolicy.org/bp-socar-to-begin-exploratory-drilling-in-shafag-asiman-gas-field-in-caspian/, 16/01/2019, (accessed 24/03/2019).

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As Simon Pirani notes "the 15 bcm/y of gas for Europe that would be the strongest economic underpinning for a second string of TANAP – the form of Southern Corridor expansion regularly mooted by Azerbaijani ministers and SOCAR managers – will be available only after 2030, and even then only if the most optimistic forecasts for production growth are realized and if economic logic does not divert too much of it to Turkey".[44]

2.2. Iran and Northern Iraq

Iran by merit of the size of its reserves and its production would constitute an obvious candidate for the expansion of the SGC. Iran, which – despite the imposition of severe international sanctions on its economy managed to almost double its production over the last decade[45] – is Turkey's second largest supplier and has been covering around 16% of Turkish demand in 2016.[46] The 25 years long-term gas sales contract signed in 1996 calls for a supply of 9,6 bcm/y, but the flow of Iranian gas to Turkey varied since 2001 between 4-9 bcm and has been fraught with repeated disagreements over pricing, contract violations and unpaid arrears, leading the two countries to the international court of arbitration twice over the last decade.[47]

The rather acrimonious history of Turkish-Iranian gas relations would put into question the desirability and credibility of an Iranian gas transit via Turkey, or an Iranian contribution to the SGC, even if the current major political impediment of unilateral US Sanctions on Iran did not exist. Ironically enough, Iran was considered as a major potential contributor to the Nabucco pipeline project up until 2009 and the then Turkish Prime Minister, Recep Tayyip Erdogan had tried – in vain – to convince the US and the other Nabucco partners that Iran's inclusion as a major gas contributor to the project would improve its financial viability.[48]

In 2008, Turkey and Iran had signed a memorandum of understanding (MoU) to construct a 3300 km pipeline connecting Iran's South Pars reserves in the Persian Gulf with the SGC via TANAP by 2014. However, the project was halted in 2012 and has not regained traction[49] despite the 2014

[44] Pirani, ibid, p.11.
[45] US Energy Information Administration, *Country Analysis Executive Summary: Iran,* (US Department of Energy: January 2019), pp.5-6, https://www.eia.gov/beta/international/analysis_includes/countries_long/_Iran/pdf/iran_.exe.pdf, (accessed 24/03/2019).
[46] IEA, *Energy Policies of IEA Countries: Turkey 2016 Review*, (IEA:2016), p.104.
[47] O. G. Austvik & G. Rzayeva, "Turkey in the geopolitics of energy", *Energy Policy,* 107 (2017), pp.539-547, p.544.
[48] M. Skalamera, "Revisiting the Nabucco Debacle: Myths & Realities", *Problems of Post-Communism,* 65 (1), 2018, pp.18-36, p.21. On Turkish efforts in favor of Iranian participation in Nabucco, T. Tsakiris & C. Stambolis, *The Energy Security Policy of the Islamic Republic of Iran,* Institute of Energy for Southeast Europe, (Athens: 2009), pp.78-87.
[49] D. Ala'Aldeen, K. Palani, G., Babunashvili, J. Balisdell, *EU and Turkish Energy Interests in the Caspian and Middle East Region*, FEUTURE Online Paper #13, (February 2018), http://www.feuture.eu/publications, p.13.

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Russian-Ukrainian crisis and despite the Joint Comprehensive Plan of Action (JCPOA) reached between Iran and the members of the UN Security Council in 2015. The withdrawal of the US from the 2015 Iran nuclear deal framework by President Donald Trump in May 2018 and the draconian extraterritorial US sanctions that forcibly ensued most EU oil traders severely limiting or even eliminating their Iranian crude oil imports despite the EU's vehement opposition. Given the inability of the EU to protect European energy companies and banks from retaliatory US sanctions in case of trading with Iran, seriously debating the possibility of an Iranian contribution to the SGC appears to be rather futile at the moment.[50]

Moreover, Iran is likely to remain a marginal gas exporter over the long-term, which still prioritizes domestic gas use over exports, to maximize its oil exports and sustain its existing oil output through the reinjection of up to 18% of its gross gas production.[51] It is important to note though, that even if US sanctions were lifted, Iran would be more likely to focus on developing primarily with the help of Chinese companies its significant LNG potential in order to tap into Asian markets[52] or expand its regional gas pipeline trade focusing on the doubling or tripling of its 5bcm/y 2018 exports to neighboring Iraq.[53]

An expansion of Iranian exports to Turkey by the mid-2020s though, through the existing 16 bcm/y capacity pipeline connection, might entice Turkey to not replace its SD1 contract with additional Azeri imports from Absheron or Shafag-Ashiman, thereby "freeing up" capacity on TANAP for EU destinations via TAP phase 2. This maybe the most realistically attainable contribution of Iranian gas to the SGC in the absence – *ad minimum* – *of* a comprehensive détente between Iran and the USA.

The Kurdish Region of Northern Iraq (KRNI) is another potential supplier to Turkey and the SGC, although geopolitical impediments particularly due to the complex political relationship between Turkey and KRNI and between KRNI and Baghdad. Turkey has always been torn between the prospects of entrenching its influence in the KRNI and tapping into its oil and gas reserves without accepting or facilitating its *de jure* independence. Turkey is also cognizant of the risk of alienating the Shia' led government of federal Iraq in Baghdad too much, which views the activities and presence of Turkish energy companies in the KRNI as a challenge to its own authority and considers any foreign oil company's presence in KRNI illegal if it does not have its "seal of approval".

[50] L. Morrison, "Southern Gas Corridor: The geopolitical and geoeconomic implications of an energy mega-project", 2018, *The Journal for Energy & Development,* 43 (1-2), 2018, pp.251-291, p.264.
[51] EIA, ibid, p.5. and Ala'Aldeen, Palani, Babunashvili & Balisdell, ibid, pp.11-12.
[52] Morrison, ibid, p.265, Austvik & Rzayeva, ibid, p.545.
[53] Pirani, ibid, p.18.

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Part of the reason for Ankara not wanting to become too hostile towards Baghdad is the fact that it needs Iraqi federal support in order to effectively avert the possibility of a formal KRNI independence, an issue where the interests of Ankara and Baghdad are aligned. This ambiguity is expected to hinder the prospects of a rapid monetization and exportation of KRNI gas reserves towards Turkey without some form of revenue sharing mechanism in place between Erbil and Baghdad to which Ankara may have to concede in order to neutralize Iraqi (and Iranian) opposition to the full scale development of the Genel Energy controlled Miran and Bina Bawi fields which represent the most important Turkish natural gas asset in the KRNI. In 2013, Ankara and Erbil signed a series of energy agreements, which were guaranteed to secure the ire of Baghdad (and Tehran) that envisioned, inter alia, the construction of a scalable 10 bcm/y capacity pipeline.[54] It will link the Miran and Bina Bawi fields with the Turkish pipeline system in southeastern Turkey over a distance of 485km, if realised. The agreement also offers a sales and purchase guarantee to the KRNI on behalf of the Turkish government for the importation of 10-20 bcm/y just from Genel's assets.[55]

The fields located 300km from the Turkish border are estimated to contain around 320 bcm of *in situ* natural gas reserves that could provide an overall technically retrievable output of 240 bcm. The cost of their development has been estimated by Genel at almost $5,4 billion.[56] The tendering process on the 185km Turkish part of the pipeline, which is expected to cost around $2,5 billion, started in 2016[57] but due to the threat posed by Daesh no tangible progress has been made to move forward with either the upstream or the midstream part of this project.

The still open wounds left in the KRNI from the war against Daesh the military re-occupation of most of Kirkuk city and its adjacent oil & gas fields by federal Iraqi forces in October 2017, the continued regional destabilization emanating from the incessant Syrian civil war all indicate that the region is still far from stable enough to allow for multi-billion $ investments in the KRNI's natural gas reserves especially if one would consider that there is no gas export infrastructure in place. Moreover, the expanding role of Rosneft after 2017, which is unlikely to facilitate the flow of non-Russian gas to the SGC, does not augur well for the prospect of major KRNI contributions to the SGC although the potential is clearly there from a technical point of view. If the situation stabilizes and a compromise modus vivendi is reached between Erbil and Baghdad, then a relatively rapid monetization process could result in the export of Bina Bawi's initial production output by the mid-2020s, if one would include at least a three years development period for the gas field

[54] Ala'Aldeen, Palani, Babunashvili & Balisdell, ibid, p.8.
[55] Genel Energy, KRI Development, https://www.genelenergy.com/operations/kri-development/, (accessed 25/03/2019).
[56] J. Roberts, "Turkey and the Kurdistan Region of Iraq: Strained Energy Relations", *Turkish Policy Quarterly,* 17(3), (November 2018), pp.99-109, http://turkishpolicy.com/files/articlepdf/turkey-and-the-kurdistan-region-of-iraq-strained-energy-relations_en_4471.pdf, (accessed 25/03/2019).
[57] Austvik & Rzayeva, ibid, p.545.

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to reach its initial production target. Bina Bawi Phase 1 is estimated by Genel to produce 3,09 bcm/y[58], but it is unclear when a Phase 2 will follow or what would be its output. What appears to be clearer, though, is that, at least over the next decade, most of KRNI produced gas is more likely to be absorbed inside Turkey rather than flow via the SGC.

2.3. Turkmenistan

Apart from Azerbaijan, Turkmenistan is the most important potential contributor to an expanded SGC. Contrary to Iran, Iraq or EastMed producers, *Turkmenistan already has untapped net export capacity, in the order of 20bcm/y-30 bcm/y*, that could be directed towards the SGC, provided a 300km Trans-Caspian Pipeline (TCP) to Sangachal is built across the bottom of the Caspian Sea. Turkmenistan exported to Russia and Iran a total of 50 bcm/y as late as 2008 when Russia-Turkmen relations collapsed, clearing the way for the drastic increase of Chinese influence in the landlocked Central Asian republic that holds 10% of global proven gas reserves, the world's 4th largest.[59] Turkmen exports to both Russia and Iran primarily emanated by older, soviet-era, reserves centered on the Dauletabad gas field.

Between 2008 and 2015, Turkmen exports to Russia dropped from a high of 40 bcm/y to a low of 10 bcm/y in 2015 before being eliminated by Gazprom altogether latter that same year. Iranian exports which varied around 6-8 bcm/y until 2015-2016 were phased out and eventually stopped in August 2017 following a series of price disputes, delayed payments and the construction of another 14,6 bcm/y intra-Iranian gas pipeline which brings gas from the Persian Gulf fields to the northern, densely populated part of the country. This new Iranian pipeline essentially removes the economic basis for any Iranian imports from Turkmenistan making the possibility of their resumption highly unlikely at least in the short- to medium-term.

The rise of exports to China substituted only for parts of the pre-2008 Turkmen exports which were limited to under 32 bcm/y in 2017. Exports to China emanate from a different cluster of fields centered around the massive Galkynysh field area that is among the world's five largest fields, estimated to contain 4-14 trillion cubic meters. The Galkynysh cluster of gas fields is under the exclusive development of the CNPC China National Petroleum Company(CNPC) which exported through the three lines of the Central Asia to China (CAC) Pipeline System 35 bcm in 2018.[60]

[58] Genel Energy, KRI Development, Bina Bawi, https://www.genelenergy.com/operations/kri-development/bina-bawi/, (accessed 25/03/2019).
[59] BP 2018, ibid, p.26.
[60] "CNPC talks its investments in Turkmenistan", *Azernews,* 23/11/2018, https://www.azernews.az/region/141440.html, (accessed 25/03/2019)

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The Turkmen economy has suffered by its loss of market diversification as the monopsony power of CNPC – combined with lower oil prices after 2015 – compressed Turkmen gas export revenues that represent more than 90% of all exports in the recluse post-soviet republic. Ashgabat's unilateral overdependence on China has made it more – not less – difficult to diversify towards the SCG or other regional markets, including Russia, Iran and Southwest Asia.[61]

Estimated prices to China dropped from a high of $300 per million m^3 (mcm) in 2013 to $165mcm in 2016 and $185mcm in 2017 producing deficits of $10,3 billion between 2015-2017 by estimates of the International Monetary Fund (IMF). By 2018, the economic situation was dire enough for the Turkmen government to deny its permission for the publication of the IMF's annual report on the Turkmen economy.[62] Turkmenistan's overdependence on the Chinese market is only set to expand as plans are under way to construct the fourth line of the CAC system, set to nearly double its existing export capacity. Intergovernmental agreements to build the fourth 30 bcm/y capacity pipeline across a distance of 1,000km to China through Uzbekistan, Tajikistan and Kyrgyzstan, have been signed since 2013 but there has been no tangible progress. The project's deadline has been already pushed back twice, initially to 2016 and then 2020, however, it seems highly unlikely that the pipeline would be commissioned before late 2022.[63]

The loss of the Iranian and Russian markets in combination with the very limited progress made on an "exotic" pipeline to India via Pakistan and parts of Taliban-controlled Afghanistan, should have provided the necessary incentive for Ashgabat to be knocking on the door of the SGC. Ashgabat´s restraint is illustrative, not only of the deficiencies in the EU´s external energy policy[64], but also of the political-economic influence of Beijing and the various geopolitical obstacles impeding an otherwise straightforward Trans-Caspian gas pipeline link. This link could – theoretically – more than double the SGC's currently limited export potential within the next decade.

To be fair, the European Commission tried to mediate between Turkmenistan and Azerbaijan in 2011 and 2012 through the Caspian Development Company (CDC) initiative that aspired to aggregate the potential EU demand for Turkmen gas via the SGC and negotiate a bilateral gas sales treaty on behalf of EU Member States, that would pave the way for the financing of the TCP system.[65] The initiative failed due to high transit costs for final EU consumers, the unwillingness of

[61] Y. Lee, "Opportunities and risks in Turkmenistan's quest for diversification of its gas export routes", *Energy Policy,* 74 (2014), pp.330-339.
[62] Pirani, pp.11-12.
[63] M. Lelyveld, "China nears limit on Central Asian gas", *Radio Free Asia,* 25/06/2018, https://www.rfa.org/english/commentaries/energy_watch/china-nears-limit-on-central-asian-gas-06252018100827.html, (accessed 25/03/2019).
[64] M. Siddi, "The EU's Botched Geopolitical Approach to External Energy Policy: The Case of the Southern Gas Corridor", *Geopolitics,* 24(1), December 2017, pp.124-144.
[65] M.B. Olcott, *Turkmenistan: Real Energy Giant or Eternal Potential?,* James Baker III Institute for Public Policy, (Rice University: 2013), pp.20-22.

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the Turkmen government – under Chinese influence – to allow international oil companies other than CNPC access to its onshore reserves. Further, the persistence of geopolitical obstacles that related (and continue to relate) to Russian dominance in the Caspian Sea as well as bilateral Azeri-Turkmen disputes over maritime boundaries and the ownership of the Serdar/Kyapaz field contributed to the failure of the CDC initiative.[66]

The failure of the EU and the US to resolve the Azeri-Turkmen disputes effectively sealed Nabucco's fate, which was quickly replaced by TANAP as the main Turkish transit option for the Shah Deniz developers and Azerbaijan. Despite its initial disappointment in attempts to resolve the Caspian conflict, the European Commission – heartened by the initial opening of the SGC – appears willing to reengage both, Caspian states and Turkey, in order to encourage the materialization of the TCP.

In May 2015 Maros Sefcovic (Vice President of the European Commission responsible for the promotion of the Energy Union), Yagshygeldi Kakayev (Director of the State Agency for Management and Use of Hydrocarbon Resources at the President of Turkmenistan) as well as Natig Aliyev and Turkey Taner Yildiz (Energy Ministers of Azerbaijan) signed the Asghabat declaration. The declaration reconfirmed the European Commission's support for the TCP whose environmental impact assessment study it partly financed.[67]

The declaration did not spell out any concrete steps for moving the project forward although it called for first gas to be delivered to the EU by late 2019 – which is an entirely unrealistic proposition.[68] Some practical steps were made, though, in an attempt to push things forward. The TCP was included as a project of common interest in the Ten-Year Network Development Plan (TYNDP) of the European Network of Transmission System Operators for Gas (ENTSOG), which made it eligible for financial support through the Connecting Europe Facility (CEF) instrument. In 2017 the TCP consortium led by the British based *W-Stream Caspian Pipeline Company Ltd.* secured €1,875 million from the CEF – which amounted to 50% of the entire project costs – in order to conduct a detailed pre-Front End Engineering Design (FEED) – to show the technical feasibility – and reconnaissance survey of the TCP route, expected to be completed by March 2019.[69]

The project company envisions a 30-32 bcm/y pipeline system consisting of two parallel lines or equal transportation capacity. The first line is projected to be commissioned by late 2021 with an

[66] Rzayeva & Tsakiris, ibid, pp.20-27 and A. Bohr, *Turkmenistan: Power, Politics, and Petro-Authoritarianism, Chatham House*, (Royal Institute for International Affairs: 2016), pp. 86-89.
[67] European Commission, "Ashgabat Declaration", https://ec.europa.eu/commission/commissioners/2014-2019/sefcovic/announcements/ashgabat-declaration_en, (accessed 25/03/2019).
[68] Siddi, ibid, p.131.
[69] European Commission, Directorate General for Energy, Connecting Europe Facility, *Pre-FEED, Reconnaissance Surveys and Strategic and Economic Evaluations of the Trans-Caspian Pipeline*, https://ec.europa.eu/inea/en/connecting-europe-facility/cef-energy/7.1.1-0007-elaz-s-m-17, (accessed 25/03/2019).

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initial throughput capacity of 8bcm/y that could be subsequently scaled up as more Turkmen gas becomes available. Existing associated and non-associated gas production from Turkmenistan's offshore oil and gas fields may flow through the TCP if Ashgabat would permit existing developers led by *Petronas* and *Dragon Oil* to proceed with such an export option.[70]

The apparent resolution of the regional dispute regarding the legal status of the Caspian Sea in August 2018 has removed a significant obstacle for TCP's materialization as it secured the public endorsement from both, Russia and Iran. However, this was never the most influential obstacle impeding the construction of an underwater pipeline through the international waters of the Caspian Sea. Neither Iran nor Russia could have legally impeded the construction of the $5 billion TCP, even before a comprehensive agreement was reached.[71] As is accurately noted by Ilgar Gurbanov:

> "Even before the Convention was signed, Azerbaijan and Turkmenistan asserted that only the concerned sides need to agree on the pipeline's route. In an interview to *Tass*, Azerbaijan's President Ilham Aliyev stated that the unsettled status of the Caspian Sea does not affect bilateral cooperation between the Caspian states".[72]

Despite reaffirming its support for the prospect of a TCP system during meetings with the Turkmen Prime Minister Rashid Meredov in October 2018,[73] neither the European Commission nor any other signatory of the Ashgabat declaration, is ready to commit to the project's materialization since the main political issues between Baku and Ashgabat blocking the TCP route in the early 2010s remain unresolved.

Regardless of public attestations of support, Azerbaijan may be far less keen on promoting a TCP option – especially if it is not translated to practical political gains for Baku in its continuing dispute with Turkmenistan over the Kyapaz/Serdar fields and the limits of territorial waters in the Caspian Sea. Baku as well as Ashgabat understand that the EU seeks to mediate between them in order to help the TCP regain traction. It wants to disassociate the TCP from the maritime boundary dispute in order to get it built. The Azerbaijanis and the Turkmens, however, want to use the EU´s mediation attempts to get the best possible deal in their non-TCP related disputes.

[70] The TCP-A project of common interest, http://www.w-stream-transcaspian.com/the-project/, (accessed 25/03/2019).
[71] M. Karayianni, "Is the Trans-Caspian Gas Pipeline really important for Europe?", *New Europe,* 08/02/2018, https://www.neweurope.eu/article/trans-caspian-gas-pipeline-really-important-europe/, (accessed 25/03/2019).
[72] I. Gurbanov, The Perspective of Trans Caspian Gas Flow to Europe", *The Central Asia-Caucasus Analyst,* 25/10/2018, https://www.cacianalyst.org/publications/analytical-articles/item/13538-the-perspective-of-trans-caspian-gas-flow-to-europe.html, (accessed 25/03/2019).
[73] "Turkmenistan welcomes EU's investment interest in Trans-Caspian pipeline project", *Azernews,* 24/10/2018, https://www.azernews.az/oil_and_gas/139685.html, (accessed 25/03/2019).

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Moreover, it is important to note that, Baku would have little incentive to facilitate the transit of Turkmen gas through the SGC, even if – a rather dubious prospect – the Kyapaz/Serdar dispute was resolved in its favor, unless and until Azerbaijan maximizes its own export volumes to Turkey and the EU. From the Azerbaijani perspective the TCP project is a *long-term option, not a medium-term necessity,* linked to the political resolution of its outstanding Caspian disputes with Turkmenistan. Without pressure on Azerbaijan to facilitate the construction of TCP and until and unless Turkmenistan decides to realistically balance its monopsonist dependence on CNPC, the TCP will not acquire any tangible momentum. As Morena Skalamera notes:

> "Even if the legal status of the Caspian Sea were finally settled and Russia and Iran ceased to oppose the Trans-Caspian pipeline, which is unlikely, there would still be the naked instrumentalism of Azerbaijani foreign policy. In the words of Richard Morningstar: "if you are Azerbaijan, do you really want all this gas from Turkmenistan transiting your country and competing with your own gas in Europe?"[74]

2.4. The Eastern Mediterranea

In recent years, the EastMed has also been proposed as a potential contributor to the EU's SGCS through the construction of a pipeline from Cyprus and/or Israel to Turkey that will link EastMed gas reserves to TANAP.[75] In view of the persistent irresolution of the Cyprus problem, the possibility of Cypriot gas exports to Turkey are entirely hypothetical to merit further consideration. This is not necessarily the case for a Turkish-Israeli pipeline that could bring to Turkey gas from the second Phase of Leviathan which will be available in 2025. This scenario calls for the construction of a Turkish-Israeli pipeline through the Cypriot Exclusive Economic Zone (EEZ) independently of the resolution of the Cyprus problem and the consent of the Cypriot government. Such consent is unlikely to be secured, if no major tangible incentives – such as i.e. the return of the closed city of Varosia to the Greek Cypriots – is offered to Nicosia.

In the absence of any meaningful *quid pro quo* between Ankara and Nicosia, Israel is highly improbable to jeopardize its strategic relationship with both Nicosia and Athens by building a pipeline through the Cypriot EEZ. The latter would be tantamount to the recognition of the self-proclaimed Turkish Republic of Northern Cyprus (TRNC), which is recognized by none other than Turkey. Moreover, given the current "Cold War" relationship between Ankara and Tel Aviv, having withdrawn their respective ambassadors since May 2018,[76] Israel is unlikely to proceed with the

[74] Skalamera, ibid, p.22.
[75] M. Bryza, "Eastern Mediterranean Natural Gas: Potential for Historic Breakthroughs among Israel, Turkey, and Cyprus", in S. Andoura & D. Koranyi (eds.), *Energy in the Eastern Mediterranean: Promise of Peril?,* Egmont Institute & U.S. Atlantic Council, (Academia Press: May 2014), pp.39-46.
[76] https://www.aljazeera.com/news/2018/05/turkey-recalls-ambassadors-israel-united-states-180514200635590.html

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de facto recognition of the TRNC. Even at the apex of its strategic alliance with Turkey during the second half of the 1990s, when it planned to construct oil, gas, and water pipelines in order to connect to Turkey, this de facto recognition was not considered. Further, there are serious non-political impediments limiting the possibility of an Israeli gas transit to the EU via Turkey. Given its depth (1,500-1,800m), length (500-550km) and projected cost ($2-$4 billion),[77] a Leviathan–Ceyhan Gas Pipeline (LCGP) would need a minimum gas contract of 10 bcm/y over a period of 15 years, a nominal gas commitment of up to 150 bcm, in order to become financially viable. Israel commits 60% of its known reserves to cover domestic demand by regulation, and thus has only 360 bcm available for exports.

From these 360bcm one should deduct existing long-term export contracts Israeli producers have signed with Jordan's National Electric Power Company (NEPCO) (45 bcm) and Egypt's Dolphinous (64 bcm).[78] Tel Aviv would have to sign off to an export license committing 60% of its remaining export capacity to a single market, through a single export route, to a country with which it barely has any diplomatic relations. A 10 bcm/y LCGP would provide around 15% of Turkish demand – expected to reach around 65 bcm in 2023, according to projections by the Turkish Energy Ministry.[79] In case a new geopolitical conflict flares up between Israel and Turkey, Ankara – already very well diversified in terms of alternative importers – would find it much easier to replace Israeli exports through importing additional volumes from Russia, Azerbaijan and Iran, or for that matter Qatar, Algeria and the spot LNG market.

Israel would have far more difficulties to find alternative buyers for 60% of its available exports. That is a market power imbalance Tel Aviv needs to seriously consider before committing to such a long-term gas relationship. Turkey's private gas traders – who, led by Turcas Petroculuk, are lobbying for the project – may even offer a higher price to Israeli producers than Egyptian importers in order to improve the pipeline's commercial attractiveness. Targeting Turkey's domestic market makes economic sense for Israeli exporters; an attempt to transit via Turkey to the EU does not, though – something that is basically admitted even by the leading Turkish developers of the LCGP.[80] Albeit, claims persist, that Israeli and/or Cypriot gas could merely transit to Europe

[77] Hedy Cohen, "Gas execs see Israel-Turkey gas deal by 2017", *Globes,* 28/06/2016, http://www.globes.co.il/en/article-gas-execs-see-israel-turkey-gas-deal-by-2017-1001135479

[78] S. Udasin, "Israel to supply gas to Jordan in $10 billion deal", *Jerusalem Post,* 26/09/2016, S. Gorodeisky & A. Barkat, "Delek, Noble Sign $15 bn gas deal with Egyptian Co.", *Globes,* 19/02/2018, https://en.globes.co.il/en/article-delek-noble-sign-15b-egyptian-gas-deal-1001224485 & "Delek-Noble Energy announces $500m deal to allow Israeli gas exports to Egypt", *Times of Israel,* 27/09/2018, https://www.timesofisrael.com/delek-noble-energy-announces-500m-deal-to-allow-israeli-gas-exports-to-egypt/

[79] G. Rzayeva, *Natural Gas in the Turkish Domestic Market: Policies and Challenges,* OIES Paper#82, Oxford Institute for Energy Studies, (Oxford: February 2014), p.9.

[80] As *Platts* noted in an interview with Batu Aksoy(CEO of Turcas, the leading developer of the Leviathan-Ceyhan consortium on the Turkish side): 'While previous reports have said that if Israeli gas was brought to Turkey, the

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through Turkey via the TANAP/TAP system. However, the proponents of a Turkish transit option for EastMed gas fail to take into account that:

(i) there is no connection between TANAP and the Ceyhan region; a new dedicated pipeline transporting the gas from southern Turkey to the central Turkish Pipeline grid or TANAP would be required,

(ii) TANAP is fully booked for the transportation of Azeri gas exports from Shah Deniz 2 amounting to 16 bcm/y (by 2022) and from other Azeri fields in the Caspian Sea amounting potentially to another 10 bcm/y (from 2025), approximately at the same time Leviathan Phase 2 gas will become available. That leaves only 5 bcm/y of unreserved capacity in TANAP, which can be booked more easily and cost effectively by Iranian gas exporters,

(iii) there is no free capacity in TAP for East Med gas for the same reasons. Azeri-based producers from the Shah Deniz consortium will give priority access to their own gas to cover the additional 10 bcm/y of TAP's Phase 2,

(iv) there is no pipeline system presently available to carry the gas from the Turkish-EU border to its final EU market destinations through Baumgarten hub, unless the Nabucco West project is resurrected and the Nabucco-West pipeline constructed from scratch,

(v) under current political conditions, given the deterioration of the overall Turkish-EU relationship, the EU has nothing to gain from increasing its transit-gas dependence on Turkey, which will only increase if SGC volumes expand and TurkStream 2 carries additional Russian exports to Southeastern Europe. The EU's transit overdependence on Turkey is partly why the Union has refrained from encouraging a Turkish option to carry gas from the EastMed, but publicly offered tangible support for the EastMed Gas Pipeline bypassing Turkey.

Based on the intensive research in the FEUTURE Work Package 5 on "Energy and Climate Drivers" of EU-Turkey relations including a comprehensive review of Turkish-EU energy cooperation prospects, Contaloni and Sartori noted regarding the potential implementation of the TurkStream 2 pipeline project: "Turkey will further strengthen its role as a transit country with relevant cooperation implications for its energy partnership with the EU. However, Turkey could take advantage of its energy transit status to exert stronger political influence over the EU".[81]

bulk of it would be transited on to Europe. In moderate to high growth cases, most of the gas to be imported to Turkey may be for local Turkish consumption', European Gas Daily, 21/04/2016, p.2.

[81] L.Contaloni & N.Sartori, *Synthesis Paper WP 5 "Energy and Climate Drivers",* FEUTURE, (April 2018), IAI, p.8. For more research papers on "Energy and Climate Drivers", visit feuture.eu.

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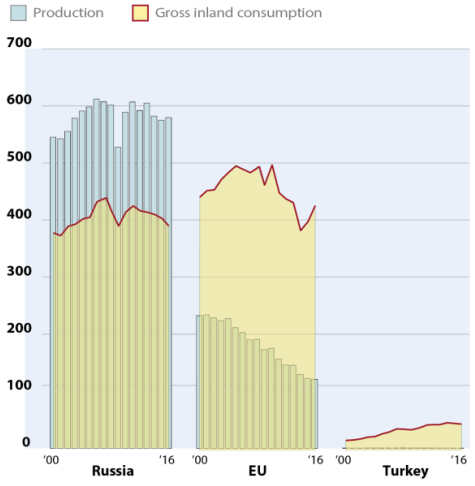
Graph 5: Overview of EU-Turkey Energy Relations

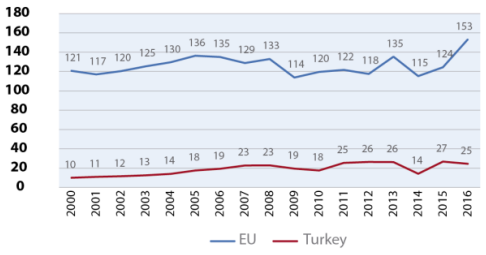
THE NEEDS OF THE PARTIES ARE VERY COMPLEMENTARY...
Natural Gas, domestic production and consumption, 2000 - 2016



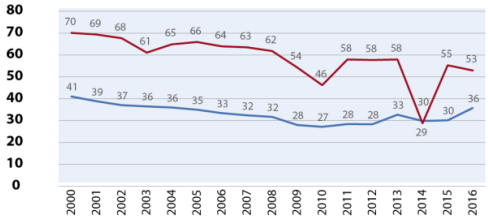
Created by CIDOB for the FEUTURE Project. Sources: EUROSTAT, BP Statistical Review, International Energy Agency (EIA), Gazprom.

... AND EU AND TURKEY ARE INCREASINGLY DEPENDANT ON RUSSIAN ENERGY

Natural Gas, Flows from Russia to the EU and Turkey (bcm)



Natural Gas import dependency (percentage value)



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Conclusions: Expanding the SGC – The impact on EU-Turkish Energy Cooperation

The opening of the SGC – expected to be completed by 2022 when Shah Deniz Phase 2 will reach its full production capacity – has been one of the most notable successes in the EU's Gas Security Strategy after the end of the second gas/transit crisis between Russia and Ukraine in the winter of 2008/2009. Despite the replacement of Nabucco by TANAP and the non-participation of any Turkish company in TAP, Turkey remains the quintessential SGC transit state for the European Union.

The collapse of the Nabucco project for lacking sufficient gas supplies to justify a 31bcm/y integrated pipeline system from Erzurum to Baumgarten, shattered the over-optimistic estimates regarding the actual contribution of the SGC to the EU´s Energy Security. At the time of its commissioning, gas arriving to EU markets corresponds to merely to 2,1% of the Union's 2017 demand. Yet looking forward into the next decade and beyond the contribution of the SGC is almost certain to expand as new gas reserves are tapped in Turkey's immediate geographic proximity to serve the Union's progressively increasing gas demand.

Although this does not guarantee *per se* the emergence of a Turkish gas hub, especially if one notes the stalemate of internal market liberalization, the enhancement of Ankara's transit role is all but certain. What is uncertain is the timetable within which this enhancement will take place although there will be no expansion of the SGC within the timeframe of the FEUTURE project, that is 2023. Therefore, the medium-term potential for further cooperation between the EU and Turkey remains significant at a time when bilateral frictions are more likely to grow in the short-to-medium term as tensions continue to increase in the EastMed and as Turkey is further deepening its strategic convergence with Russia to the point of emerging, via TurkStream 2, as the most important state for the transit of Russian gas to Europe after Germany.

The European Commission continues to cultivate somewhat unrealistic expectations regarding the speed at which the transit of gas via the SGC would multiply. A case by case analysis of potential regional gas contributors to the SGC indicates that the upgrading of TANAP to a 32bcm/y system, which is the necessary precondition for the doubling of TAP's capacity, is likely but not certain to happen after the mid-2020s. This will depend on whether new Azeri gas fields come on stream on time to financially underpin not only the doubling of capacity in the existing infrastructure but also the construction of a new dedicated Southern Caucasus Pipeline to Erzurum.

The other major precondition, and this is an area of potential friction, if not conflict, between Turkey and the EU, is for Turkey to not divert to its domestic market significant volumes of otherwise SGC-bound gas from Azerbaijan's post Shah Deniz gas fields, namely Absheron Phase 2, Umid-Babek and Shafag-Asiman. If all these fields would cumulatively produce around 15 bcm/y of avail-

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able net export capacity by 2030, there would still be 5 bcm/y available to satisfy Turkey's domestic needs, as a substitute to Botas' Shah Deniz 1 contract that expires in 2021, and another 10 bcm/y which could transit via TANAP/TAP to EU market destinations.

The problem with this scenario is that Shafag-Asiman may not reach its projected 8 bcm/y capacity target before the early or middle-2030s thereby making the expansion of TAP impossible in the second half of the 2020s *unless* Turkey declines to divert any of the EU-bound gas for its internal needs. This potential conundrum might be resolved by the 2020s by increasing EU-Turkish energy cooperation, if Turkey manages to cover its expanding domestic demand via Kurdish Iraqi gas or more Iranian imports, a prospect that will -alas- put Ankara at loggerheads with respectively Baghdad and Washington D.C. Neither of these options is likely to materialize before the mid-2020s but beyond that timeframe their probability increases far more significantly if compared to extremely low probability of EastMed gas exports via the SGC.

The key to unlocking the potential of the SGC lies in the eastern side of the Caspian Sea, in the isolated Central Asian republic of Turkmenistan. Turkmenistan is the only one, of the SGC's prospective suppliers, which has readily available untapped export potential. This potential is off limits due to its unresolved maritime disputes with Azerbaijan, Azeri gas export strategy, the opposition of Russia to the SGC and – even more importantly – the monopsonist control China currently exercises over Turkmenistan's gas export strategies and options.

Given Ankara's relative geostrategic closeness to both, Baku and Ashgabat, Turkey may prove instrumental in facilitating the normalization of Azeri-Turkmen relations to the point of making a TCP pipeline system far more feasible. Such a prospect will increase the strategical importance of Turkey as a transit state for EU´s Energy Security further, thereby enhancing the cooperative dynamic in Turkish-EU relations at a time of increasing frictions, tensions and mutual estrangement.

As Turkey-EU relations become more aggravated due to the continued democratic regression of President Erdogan, Turkey's illegal activities in the EEZ of the Republic of Cyprus, its worsening relationship with Greece and its deepening partnership with Russia, a Turkish-EU cooperation on the expansion of the Southern Gas Corridor may offer a positive note in the overall negative direction of Turkey-EU relations that would decrease the possibility of further deterioration; a deterioration that may lead to the revocation of Turkey's status as a candidate member state

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ABOUT FEUTURE

FEUTURE sets out to explore fully different options for further EU-Turkey cooperation in the next decade, including analysis of the challenges and opportunities connected with further integration of Turkey with the EU.

To do so, FEUTURE applies a comprehensive research approach with the following three main objectives:

1. Mapping the dynamics of the EU-Turkey relationship in terms of their underlying historical narratives and thematic key drivers.
2. Testing and substantiating the most likely scenario(s) for the future and assessing the implications (challenges and opportunities) these may have on the EU and Turkey, as well as the neighbourhood and the global scene.
3. Drawing policy recommendations for the EU and Turkey on the basis of a strong evidence-based foundation in the future trajectory of EU-Turkey relations.

FEUTURE is coordinated by Prof. Dr. Wolfgang Wessels, Director of the Centre for Turkey and European Union Studies at the University of Cologne and Dr. Nathalie Tocci, Director of Istituto Affari Internazionali, Rome.

The FEUTURE consortium consists of 15 renowned universities and think tanks from the EU, Turkey and the neighbourhood.

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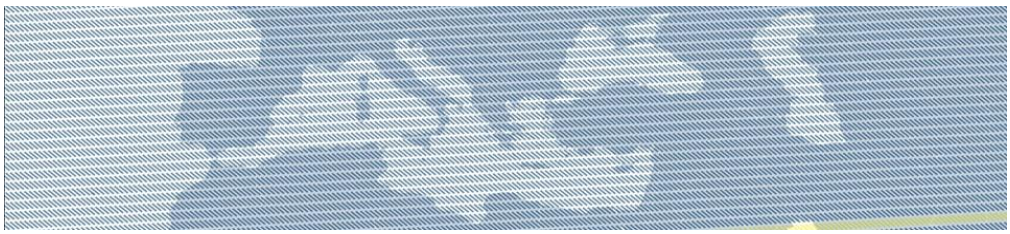

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