European Southern Gas Corridor Survey

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South Stream map: http://south-stream.info/fileadmin/pixs/sotrudnichestvo/3d_map/south_stream_europe_big_eng_final.jpg
Preface
The inspiration to develop a short survey to explore the aspects of Nabucco and South Stream stems from my own frustration in reading conflicting news stories and analysis. The viability of both projects, along with the smaller gas transit projects, all seem to be questionable on one hand while actually meeting a long term need for Europe’s energy consumers. It was my intent at the start to target the questionnaire at energy sector professionals and answer some basic straight forward questions.
Together, I reasoned, we can all gain a better understanding of why and/or if any of these projects will be built. I had originally thought I would conduct some interviews for this analysis, but due to my own time constraints I will not be carrying out this second phase of the study. Instead, I think the results presented here are informative enough to give us all a more robust understanding of the motivations and potential impact on security of gas supply in the Central Eastern and Southeast European region. It is necessary to thank all the participants, because it is their donation of time that enabled the survey to be a success.

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Southern Gas Corridor Survey

DEFINITION OF EUROPEAN SOUTHERN GAS CORRIDOR: A transit route for gas coming from the region of the Caspian Sea, Middle East and Russia to supply mainly Central Eastern and Southeast European countries, although this includes Italy and storage facilities in Austria. Routes traverse Turkey or the Black Sea.

Introduction

This short analysis presents the results of a questionnaire focused on the European Southern Gas Corridor. The results expose some of the underlining reasons and the impact the proposed gas transit projects will have on security of supply in the countries of the Central Eastern and Southeast region of Europe. Consideration is also given to Austria, Greece and Italy which are also beneficiaries and participants in these projects.

The results demonstrate that both Nabucco and South Stream are viewed as effective projects that offer more security of supply for the CEE and SEE region. Respondents had differing views over the ultimate reason, whether economic or political, for constructing these transit pipelines. The chances that each of these projects will be built was viewed about equal. The opinions expressed for the smaller projects like, the Azerbaijan–Georgia–Romania Interconnector (AGRI), the Interconnector-Turkey-Greece-Italy (ITGI) and the Trans Adriatic Pipeline (TAP), indicated less was known about these although their impact would be minimal for improving regional security of supply. Politics and geopolitics emerge as central elements in gas route diversification. Perceptions of the benefits of LNG facilities are highly noticeable in the results. It should be noted that the AGRI, is partially reliant on LNG transport. Diversification of delivery technology and flexibility in sourcing is seen as central for boosting the regions security of supply. Finally, the impact that these projects will have on individual countries is most pronounced for those that suffered under the previous Ukrainian-Russian gas dispute in 2009.
Methodology

The online survey was conducted between November 2010 and January 2011. There was a total of 30 participants, but with 28 participants fully completing the survey. This number is not particularly high, but it is a sufficient amount to give a general basis for understanding perceptions from energy industry personnel. Caution should be used when citing the results due to the open internet format used and the small sample size. However, respondents in this survey do represent an effective cross section of experts and countries. Figures 2 and Table 1 demonstrate this broad participation of respondents. The high number of respondents in Hungary should be noted for their influence that may impact on some of the results, although it should be acknowledged that respondents, regardless of country, may not be nationals of the country they live in and vice versa. Sixteen company names were written and each of these represents a company active in the energy sector. Due to anonymity given to respondents at the beginning of the questionnaire, the companies will not be named. Taking into account the participation number, expertise of respondents and consistency in responses, the results do represent a sufficient level of reliability and validity for further discussion.

Figure 2 Number of respondents and their professional positions
Table 1 Countries of residence of respondents

<table>
<thead>
<tr>
<th>Country</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
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<tr>
<td>Bulgaria</td>
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<td>Slovak republic</td>
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</tr>
</tbody>
</table>
Results

Project perspective

A new gas transit route?
The necessity for a new transit route that will bring gas from, as defined in the questionnaire, the Caspian Sea, Middle East and Russia to supply mainly Central Eastern and Southeast European countries is viewed by respondents as important to increase the security of supply in the regions.

The overwhelming support shown by respondents does indicate the importance of the primary projects of Nabucco and South Stream. Results presented below, reflect on the perceived need for supply route diversification. The results also indicate the focus and purpose of this questionnaire are important and do serve to shed light on large infrastructure projects deemed important for security of gas supply in the European Union.

Figure 3 Necessity for a new gas transit route
**Likelihood of gas pipeline projects**

The two largest projects, Nabucco and South Stream emerge as the most likely projects that may be built through the Southern Gas Corridor. It was viewed as very likely by 27% of respondents that Nabucco will be built. This is compared to 15% believing it is very likely that South Stream will be built. The overall difference in affirmative opinions that both are likely to be built is closely equal. In contrast, the opinion on both is equal for ‘not likely’ and ‘very unlikely’ to be built, at 20% of respondents stating this.

The three remaining projects: AGRI, TAP and ITGI, are marked by a high percentage of uncertainty. Of the three, ITGI was viewed by 47% of respondents as ‘very’ to ‘likely’ to be built. For TAP, this was 35%. For AGRI only 19% viewed it as likely, making LNG crossing the Black Sea a very cold endeavor.

Overall, the perspective of respondents makes it clear that there is a higher level of uncertainty associated with the smaller projects and more certainty for the larger projects. This may not be unexpected considering the familiarity of respondents with these smaller projects.

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**Figure 4 Expected likelihood of projects being completed**

![Graph showing the likelihood of projects being completed through the European Southern Gas Corridor](image)
Perspectives and descriptions

This question was designed to identify and draw out ‘popular’ statements that are associated with each of the projects. The overall uncertainty expressed in relation to these transit projects can be associated with finance, politics and whether they are commercially viable projects. The results indicate that both Nabucco and South Stream, are politically motivated projects, according to respondents. AGRI, is also viewed as containing strong strands of political motivation in comparison with the smaller projects. Overall, the scores and perspectives indicate a high level of uncertainty or common frame of reference for the motivations of each of the projects. Nabucco and South Stream are almost tied for financial viability (26% and 31%).

There may also be limitations in this question due to respondents being able to choose more than one answer, allowing a few respondents to provide more extensive information over others that chose not to. Nonetheless, it still provides a snapshot of the perceived motivation behind each project.

Figure 5 Perspective of gas transit projects
Obstacles

Main Challenges

The challenges that must be overcome for these projects to actually have gas flowing through them currently receive the most attention. It is here, that the respondents’ answers correspond with more general discussions surrounding these pipelines. The large number of respondents that selected ‘don’t know’ for the three smaller projects is indicative of their smaller stature and the lesser known challenges.

Financing is comprehensively the largest challenge for all the projects, while geopolitical comes into play for Nabucco, South Stream and AGRI. Financing was an important issue with 30% to 50% of respondents identifying this as a main challenge for the projects.

An interesting response was that upstream gas supply, was perceived by 57% of respondents as a main challenge for Nabucco but not for the other projects.

Figure 6 Main challenges for each gas transit project
**Upstream Supply**

Securing gas supplies for the new pipelines is essential for their financial viability. The significant delay in actually securing gas sources remains an important factor in perceptions of these projects. The uncertainty is much higher for the three smaller projects while South Stream has the most possibility that sources can be secured (as can be assumed with Russian ownership). Nabucco, with more than a majority of respondents were optimistic that upstream sources will possibly be secured. Great certainty can be seen in South Stream’s ability to secure sources.

![Figure 7 Upstream supply availability](image)
Most economical

Nabucco vs. South Stream

The question had to be asked: A head-to-head question of which project was the most viable and effective for security of supply in the CEE and SEE region. Respondents favored Nabucco for providing the most realistic, cost effective with the ability to meet future gas demand in the region while providing a high level of security of supply.

It should be stated that the results are only about 10% apart. This still reflects a measurable but not significant difference in opinion about these projects and the impact they can have on security of supply in the CEE and SEE regions. This is important, because it is still not certain which project(s) will be built. Therefore, the fact that respondents were somewhat evenly split on the positive impact of these projects indicates the different perspectives and benefits they deliver.
**Security of Supply**

The building of gas transit pipelines through the Southern Corridor are meant to increase the security of energy supplies in the CEE and SEE regions. However, the pipelines are not the only large infrastructure projects that are expected to increase security of supply for consumers. As identified in this question in the survey LNG is seen as playing an important role in the gas supply portfolio.

Currently there are no LNG facilities in the countries that are being examined. Bulgaria, Croatia, Poland and Romania have plans to build LNG terminals, with Croatia and Poland appearing to be the most viable at the time of this publication. The most favored response was Nabucco and two unnamed LNG facilities. In comparison, South Stream and two LNG facilities received half the support. There is also noticeable support for a robust configuration of projects with the two large pipeline projects and four LNG facilities viewed as most adequately providing security of supply requirements and ability to meet future demand.

![Figure 9 Best configuration of projects](image-url)
**Cost and Security**

Consistent with the previous responses about security of supply, 68% of respondents viewed Nabucco as an important project that could provide an adequate level of security of gas supply with reasonable costs for consumers. Forty-six percent of respondents viewed South Stream, with its higher price tag, albeit with more capacity, as providing a reasonable balance between security of supply and cost. Importantly, for the Croatian LNG facility, just over a majority, 55% found this project providing this balance.

![Figure 10 Security of supply at reasonable cost](image-url)
Security of Supply

Interconnector capacity
The large transit gas pipeline projects are focused on delivery gas from distant fields directly to consumers in Europe. Building alternative pipelines can boost security of supply. Another option, to increase security of supply is by building interconnections between national gas network systems. Both methods should be seen as complimentary in terms of elevating the level of security of supply.

A slight majority of respondents felt there was not enough investment occurring in the CEE and SEE regions in interconnector capacity; while, 33% were unsure of whether enough was being spent or not. This is a significant percentage and may indicate, among the obviously explanations, that there is a lack of information or knowledge about the regional gas markets.

Figure 11 Sufficient gas interconnector investment levels?
Impact on Security of Supply

The questions in the first half of the survey were focused on the reasoning underlining each gas project, while the later half is focused on the impact that these will have. Here it can be identified that among respondents, for most countries where the transit gas pipelines will be traversing and terminating in, there will be positive benefits for supply security. Substantial improvement was cited for Hungary, Bulgaria, Serbia and Romania. This is important, as it is these countries that have a high dependency on current supply routes from Russia and have been most affected by supply crisis between Russia and the Ukraine. Those countries that have existing large capacity connections or alternative delivery routes, Austria, Greece and Italy, will benefit but not as substantially as the previously cited countries.
Conclusion
The results of the survey reflect a pool of respondents that are consistent in their answers while also demonstrating diversity in their perspectives on key issues of project motivation and the benefits that the various transit pipelines can deliver for the CEE and SEE regions. The respondents were uniformly supportive of the fact that these regions do need supply diversification through the Southern Gas Corridor. They also were clear that security of supply would increase with the building of one or more of the large scale gas projects, including LNG, that are currently planned.

The competition between Nabucco and South Stream emerges as fairly muted with respondents perceiving these in almost equal terms to the reason for building them and the benefits that each – or both – could bring to participating countries. The citation of both LNG and transit pipelines as important for security of supply should be indicative of the political effort that is necessary for these projects to be realized. The small, but valid sampling size of this survey does indicate that some caution should be used when citing the results. However, it is important that most respondents are professionals active in the energy sector, giving the survey a higher level of quality and reliability. For the pipeline projects, it will take the cooperation of all energy stakeholders to make these projects a reality. Therefore, all opinions must be considered and the best and the most financially prudent options should be pursued.
Marketing

Price
At the outset of this survey, it was the intent to determine some alternative ways to fund energy research projects. It was planned that by sharing our knowledge and resources a collective effort could help develop specific research projects. This question sought to determine whether respondents felt some basic research on current topics could be financed through various payment methods. While the majority of respondents stated the analysis should be free, an equal amount of 17% felt it should be donation based or a pricing structure reflecting the size of the firm using the information. From these results, some type of voluntary payment method could be used that could contribute to the research.
Appendix a

Description of gas transit projects:

**Nabucco:**
**Companies:** OMV, MOL, Transgaz, Bulgargaz, BOTAŞ, RWE

**Countries:** Austria, Hungary, Romania, Bulgaria, Turkey

**Possible gas sources:** Azerbaijan, Iraq, Kazakhstan, Turkmenistan,

**Length:** 3,300 kilometres (2,100 mi)

**Capacity:** 31 billion cubic meters per year

**Cost:** €7.9 billion

[1](#)

**South Stream:**

**Companies:** South Stream AG: Gazprom, Eni and Électricité de France

**National joint companies (partial list):** Gazprom with, Bulgargaz, Srbijagas, Hungarian Development Bank MFB, Geoplin Plinovodi (Slovenia), and other state supported development companies.

**Countries:** Russia, Bulgaria, Greece, Italy, Serbia, Hungary, Croatia, Slovenia, Austria

**Possible gas source:** Russia
Length: 900-kilometre (560 mi) long offshore section

Capacity: 63 billion cubic meters per year

Cost: €19—24 billion

Wikipedia link

**Azerbaijan–Georgia–Romania Interconnector (AGRI):**

**Companies:** Romgaz, State Oil Company of Azerbaijan Republic, Georgian Oil and Gas Corporation, MVM Hungary

**Countries:** Azerbaijan, Georgia, Romania, Hungary

**Possible gas source:** Azerbaijan

Length: Transport Azerbaijani natural gas to Romania. Natural gas would be transported by the pipeline from Sangachal Terminal in Azerbaijan to the at the Kulevi Terminal at the Black Sea coast of Georgia. In Kulevi, the liquefied natural gas export terminal (LNG plant) would be built. Liquefied natural gas will be transported by LNG tankers to the Constanța terminal in Romania. After regasification, natural gas will be delivered through the existing gas grid to Romania and other European countries.([Wikipedia](https://en.wikipedia.org/wiki/Azerbaijan%E2%80%93Georgia%E2%80%93Romania_Interconnector))

**Capacity:** 7 billion cubic metres per year

**Cost:** €4–6 billion

Wikipedia link

**Trans Adriatic Pipeline (TAP):**

**Companies:** EGL Group, Statoil, E.ON

**Countries:** Albania, Greece, Italy (uses existing and planned Turkish pipeline network)

**Possible gas source:** Caspian and Middle Eastern gas sources

**Length:** 520 kilometers (320 mi)

**Capacity:** 10 billion cubic meters per year

**Cost:** €1.5 billion

Wikipedia link

**Interconnector-Turkey-Greece-Italy (ITGI):**

**Companies:** Edison, Botas, Depa

**Countries:** Turkey, Greece, Italy
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**Gas source:** Azerbaijan

**Length:** 800 kilometers

**Capacity:** 8 billion cubic meters per year

**Cost:** €2.5 billion (unofficial)

[source](#)