



**DIRECTORATE-GENERAL FOR EXTERNAL POLICIES
POLICY DEPARTMENT**



**Nabucco
and South Stream:
An Economic and
Market Analysis**

FOREIGN AFFAIRS



DIRECTORATE GENERAL FOR EXTERNAL POLICIES OF THE UNION

DIRECTORATE B

POLICY DEPARTMENT

Nabucco and South Stream: An Economic and Market Analysis

BRIEFING PAPER

Abstract

The paper compares the difficulties that the South Stream and the Nabucco gas pipeline projects face. The paper argues that South Stream, despite significant media commentary to the contrary, is not actually a competitor to Nabucco in the sense that the former would merely switch existing demand from one set of pipes to another. The paper also analyses the impacts on consumer prices, possible delays of construction and financing difficulties, while the crucial aspect of gas supply from the Caspian region also gets special attention. The paper also looks at European commitment to Nabucco and also suggests a feasible alternative to ensuring access to Central Asian gas by building a Liquid Natural Gas (LNG) liquefaction plant located at the Turkish port of Ceyhan.

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EXECUTIVE SUMMARY

1. The Nabucco project, a EU Trans-European Network project would create an alternative pipeline network from the Turkish/Georgian to Austria, a distance of 3,300km providing an alternative route for Central Asian gas to reach Europe. The total gas capacity would amount to 31 billion cubic metres (bcm). This pipeline development would now appear to be threatened by the Russian counter-proposal-Southstream.

2. Over the last eighteen months Gazprom and the Russian Federation have gained significant support for the Southstream proposal, which would build a undersea pipeline 900km across the Black Sea from Russian territory to Bulgaria and then 1000km across Europe on two pipelines interconnecting with both Southern and Central Europe. The total gas capacity would amount to 30bcm. The Russian proposal has now gained support within and outwith the European Union from states along the route. At first sight it looks as if Southstream now has a significant edge on the Nabucco project.

3. However, on closer examination there are substantial reasons to doubt the success of Southstream.

i. The costs of building Southstream are significantly greater than those of Nabucco. The Southstream project involves laying pipes at depths of 2 kilometres on the floor of the Black Sea. By contrast, the depth of pipe laying involved in Nordstream is one-tenth of Southstream at just 200 metres. Aside from the technical difficulties there are serious knock on cost consequences. Whereas Nordstream's proposal involves providing two pipelines of 27.5 billion cubic metres each, the pressures at 2000 metres are such that Southstream's proposal involves four pipelines each with only a maximum of 8bcm each, delivering in all 30bcm. As the International Energy Agency has observed the cost consequences are significant, coming in at approximately €15 billion, as opposed to €7.9 billion for Nabucco.

ii. The cost of building Southstream will be passed on to consumers of gas in Southern and Central Europe, increasing their gas prices. One cost estimate suggests that gas prices could be as high as 30-40% more than Nabucco prices.

iii. A core point that is overlooked in the debate over Southstream is that it does not involve any new Russian gas. The Russian proposal really involves little more than switching gas currently sent along Ukrainian pipes and instead sending that gas via Southstream.

iv. Southstream therefore despite significant media commentary to the contrary is not actually a competitor to Nabucco as it is merely switching existing demand from one set of pipes to another (although fixing European consumers with an expensive price tag for gas as a result).

v. A further question concerns whether or not Gazprom or the Russian Federation can now afford to build Southstream. Gazprom already has huge investment commitments in relation to its opening up new gas fields and maintaining infrastructure. In the face of these commitments it is seeing a collapse in gas prices over 2009 as gas prices follow the oil price down. Equally, the Russian Federation is seeing its reserves bled by \$163 billion in 5 months due to the economic crisis making subsidy of Southstream much more difficult to contemplate.

vi. It is also open to question where Gazprom will have enough gas in the medium to long term to fill Southstream. There are sustained concerns that lack of investment in new gas fields combined with declining older fields could result in a gas crunch which could threaten European gas supplies.

vii. Given the need to obtain regulatory clearance from the Romanian and Ukrainian economic zones Southstream is likely to be subject regulatory delay.

4. This is not to say that Nabucco does not have its problems:-

i. While Nabucco is a more developed project, which is now getting close to execution stage there remaining continuing concerns as to the location of the 30bcm which will needed to actually fill the pipes. It is increasingly clear that not merely for geopolitical reasons, but also for a serious of economic and practical reasons, Iran is unlikely to be a source of gas for Nabucco. However, the development of the Azeri reserves and the confirmation of substantial reserves in Turkmenistan has brightened the prospects for Nabucco.

ii. While the prospects remain brighter for sourcing gas to Nabucco, the maximum current export capacity of the Azeri fields will fall short at 25bcm of what Nabucco requires. Even then there is likely to be significant Turkish offtake of Azeri gas. Arrangements will have to be made with Turkmenistan, and a means found of sourcing that gas across or around the Caspian Sea.

iii. There is also a concern that Turkish demands for greater control of the project could threaten to derail the ability of Nabucco to proceed. If non-discriminatory access to the pipeline is not permitted and a significant cheap gas offtake is required by Turkey Nabucco would be in difficulty.

iv. As with Southstream, Nabucco is likely to find it more difficult in the current economic climate to obtain funding. One question for the European Union is whether or support should be given on supply security and diversity grounds to the project if gas sourcing is assured.

v. Nabucco also faces a series of blocking tactics instituted by Gazprom and the Russian Federation from purchasing key assets along the route to tying up potential partners to seeking to buy outright all Azeri gas.

5. Given the problems that the Russians are having with Ukraine and the cost of Southstream is there not a practical argument in favour of two Nabucco pipelines, delivering Russian and Central Asian gas on the Nabucco route? A Russian Nabucco would provide a much cheaper Ukrainian avoidance route for Russia than Southstream.

6. For the European Union, there is a serious question of commitment to the Nabucco project. Are the Member States and the Union prepared to prioritise supply security and diversity by supporting Nabucco, assuming sufficient gas sources can be found? If not then it should look at other alternatives, such as seeking to access at least some Central Asian via developing a Liquid Natural Gas liquefaction plant located at the Turkish port of Ceyhan, and shipping gas to Europe.

1.0. Introduction

Over the last eighteen months significant support appears to have gathered around the Southstream project. The project has moved from an initial Memorandum of Understanding between ENI and Gazprom through establishment of specialised purpose company Southstream AG to deliver and manage the project to a number of EU Member States agreeing to partner the Southstream project in their countries. By contrast Nabucco appears to have been left in the cold, with questions remaining as to its gas supply, the contractual arrangements in respect of Turkish transit and concerns as to financing.

However, on closer examination and away from the headlines Southstream appears to be far less well developed than Nabucco. The Nabucco partners have moved much further along the pathway to execution of the project. Even the core issue of availability of gas supplies looks far more promising than hitherto.

By contrast, there are a number of growing concerns in relation to Southstream. Not least is the cost which the International Energy Agency (IEA) in its *Natural Gas Market Review 2008* estimated at €15 billion. In the context of the economic crisis it is open to question how easy it will be for Gazprom (whose own market capitalisation has fallen by 70% in 2008) and its ENI partner will find it to fund the project. By contrast Nabucco has a greater number of business partners and the costs at approximately €7.9 billion are significantly smaller.

This paper first examines the Nabucco project, then the Southstream project, subsequently it provides an analysis of both projects and then seeks to draw out a number of key conclusions.

2.0. Nabucco

Nabucco commenced with discussions between Austria's OMV and Turkey's Botas in February 2002. Given the size of the project and the number of territories it

crosses it is not surprising that the two initial participants looked for a number of additional business partners. In October 2002 a co-operation agreement was signed between OMV, Botas, MOL (of Hungary), Transgaz (of Romania) and Bulgargaz. A grant was obtained from the European Commission in 2003 for half the cost of the feasibility study¹. That study was completed in 2004. It concluded that 'the project is technically and economically feasible and financially bankable'². In 2005, the partners decided to go ahead with the project and head into the development phase. During this phase the technical, legal and financial issues are being dealt with the aim of then proceeding to construction during 2010. In February 2008 RWE joined the project as the sixth business partner³.

Nabucco Gas Pipeline International GmbH has been established in Vienna by the business partners to manage the project along with national subsidiaries in each of the territories over which the pipeline will cross, who will maintain and operate their local section of the pipeline⁴.

In all the pipeline will cover 3,300 kilometres from the Turkish/Georgian borders to Baumgarten in Austria. At full capacity it will deliver 31 billion cubic metres (bcm) of gas into Europe. The cost is estimated at €7.9 billion⁵

As a result of the feasibility study it was decided to construct the project in two major stages. The first construction phase currently slated to start in 2010 will construct the pipeline from Ankara to Baumgarten in Austria. This will involve in all the construction of 2000 km of pipeline. Thereafter for a period of two years existing pipelines between Ankara and in its eastern borders will be used to link up gas supplies with the Nabucco pipeline. The initial pipeline capacity for this part of the project is set at 8bcm.

¹ Nabucco is also obtained Trans-European Network status in 2003, Loskot-Stratchokta, *Nabucco vs. Southstream-Rivalry over Balkan Gas Pipelines*, CES Commentary, Warsaw (2008) 1.

² <http://www.nabucco-pipeline.com/project/project-phases-milestones/index.html>

³ *ibid*

⁴ NGPI however will operate a one stop shop principle whereby it will be the only contact with the gas shippers.

⁵ <http://www.nabucco-pipeline.com/project/project-description-pipeline-route/project-description.html>

The second stage of the project will run from 2013 to 2014. It will involve building a dedicated pipeline from Ankara to the Georgian and Iranian borders. A final stage, which will increase capacity to 31bcm will be to install additional compressor stations which will enable Nabucco's gas flow to be increased to maximum capacity.⁶

3.0. Southstream

Southstream commenced with a Memorandum of Understanding between ENI and Gazprom in June 2007. A co-ordinating committee was established in that year and in January 2008 a special purpose vehicle with a 50-50 Joint Venture Southstream AG, registered in Switzerland, was established between Gazprom and ENI⁷. And feasibility study was undertaken, which will report in late 2008 or early 2009

Throughout the autumn and early part of 2008 a number of headline deals were done to bring on partners to support the land based part of the pipeline project. These included agreements with the governments of Bulgaria⁸, Greece⁹ and Hungary¹⁰ and with the government of Serbia¹¹.

Although the final details of the route of the pipeline have not been confirmed the route of the undersea pipeline is reasonably clear. It will run approximately 900km under the Black Sea at a depth of 2km from the Beregovaya compressor station on the Russian Black Sea coast, which is currently utilised by the Bluestream pipeline, to the Bulgarian coast at Bourgas.

On land Southstream will cover approximately a further 1000km. It is as yet unclear as exactly where the routes will go. It is likely there will be a south-west branch from Bulgaria to Greece and then under the Ionian Sea to Italy. The northern route

⁶ <http://www.nabucco-pipeline.com/project/project-timeline/index.html>

⁷ <http://www.gazprom.com/eng/articles/article27150.shtml>

⁸ *Bulgaria ratifies Southstream gas project*, Reuters, 25th July 2008.

⁹ *Greece joins Russia's Southstream gas pipeline*, Reuters, 29th April 2008.

¹⁰ *Hungary joins Russia's gas pipeline*, Reuters 28th Feb 2008.

¹¹ *Russia and Serbia firm up gas pipeline deal*, Reuters, 25th Feb 2008.

is likely to go from Bulgaria to Serbia and Hungary and then via Austria or Slovenia into northern Italy¹².

The cost of building a project involving a 900km pipeline at depths of 2km is also unclear. The IEA in its *Natural Gas Market Review 2008* suggested that the project would be challenging and could cost approximately €15 billion.¹³

It is understood that a feasibility study was to be completed in late 2008 or early 2009.

4.0 An Economic and Market Analysis of the Nabucco and Southstream projects.

4.1. Is Southstream Competition for Nabucco?

It does appear initially that Southstream will significantly damage the commercial basis for the Nabucco project by capturing the demand that would have otherwise gone to Nabucco. There is a strong precedent of using such alternative Russian led pipeline consortia to derail pipeline proposals that would have led to greater energy diversity amongst the suppliers of gas to the Russian customers. For example, in the case of the Bluestream pipeline which takes Russian gas across the Black Sea to Turkey¹⁴ and which came into operation in 2005: This was proposed in part to deter the building of new Caspian sourced gas pipeline networks which would have supplied Turkey and eventually the European Union with gas.¹⁵

Bluestream was clearly effective in deterring the building of westward pipelines from Central Asia through Turkey in the late 1990s. With an ultimate capacity of 16 bcm Bluestream made it difficult for alternative supplies to enter the market. In fact there is a strong case to be made that in seeking to deter alternative suppliers

¹² Baran, *Security Aspects of the Southstream Project*, European Parliament (2008) 1.

¹³ IEA, *Natural Gas Market Review 2008*, (2008) 50. In the words of the IEA. 'South Stream is a challenging project, both because of its offshore length of 900 km, and depth (2 200m compared to an average of 200m in the Baltic Sea for Nord Stream). It will also be a costly venture, with estimates reaching USD 20 billion'.

¹⁴ From an underwater pipeline commencing at Arkhipo-Osipovka in the Krosdnar region of the Russian Federation across the Black Sea to the Durusu terminal near Samsun in Turkey.

¹⁵ Yakobashvili, *op cit*, 93.

Bluestream has been too successful, undermining the fundamental economic case for the pipeline. Although it has a design capacity of 16bcm it only delivered 9.8bcm in 2007 below the staged increases in capacity initially envisaged.¹⁶

While the Bluestream precedent suggests that Russian sponsored gas pipelines can be deployed to deter the development of alternative pipeline networks there is one crucial factor that is required for the deterrent to be truly decisive: additional gas. It would appear that Southstream by contrast does not involve the provision of additional gas to EU markets rather the *switching* of gas from the Ukrainian pipeline system to the Southstream pipeline. To quote the recent National Energy Security Fund paper,

“It is so far unclear what exact fields will become the principal source for supplies of natural gas, yet if one takes a look at the map of the Unified Gas Supply System of Russia, one can see that the gas pipeline is most likely to be filled with gas from Urengoy or Yamburg fields or that transported from Turkmenistan, Kazakhstan, and Uzbekistan. Given such an approach, **South Stream becomes an alternative to the Ukrainian route.**”¹⁷

This view is reinforced by the literature on the Russian gas deficit, which suggests that the double impact of lack of investment in new fields and the depletion of the old supergiant fields will put Gazprom under tremendous supply strain.¹⁸ This was recently reinforced by a presentation given by former Deputy Russian Energy Minister Vladimir Milov in New York, where he pointed out that Gazprom’s production in 2007 had actually fallen by 6bcm while at the same time rising gas demand had left underground storage actually dried out in early 2008. Furthermore, that beyond the South Russkoye field which was began flowing

¹⁶ National Energy Security Fund, *Energy War for Southern and Central Europe, the Caspian Sea and Central Asia*, Moscow (2008), hereafter NSEF, 33-34,

¹⁷ NESF, *ibid*, 35.

¹⁸ Riley, *The Russian Gas Deficit: Consequences and Solutions*, CEPS, Brussels 2006; Fredholm, *Gazprom in Crisis*, Conflict Studies Centre, UK Defence Academy, Shrivenham 2006; Stern, *The Future of Russian Gas and Gazprom*, OUP, 2005, 8 and International Energy Agency, *Optimising Russian Natural Gas: Reform and Climate Policy*, Paris, 2006, 29.

recently there are very few additional gas fields that can be readily developed to combat the twin problems of depletion and growing demand.¹⁹

If therefore Southstream is only switching gas supplies it is difficult to see how the mere existence of a new pipeline network of itself can be a threat to Nabucco.

4.2 Is there enough gas for Nabucco?

The most serious objection to the Nabucco project is that there is simply not enough gas available to support 31bcm of gas deliveries. This it is argued is particularly so because of the lack of resolution of the legal status of the Caspian Sea makes it very difficult to see how a pipeline can be built across that Sea permitting transshipment of the admittedly significant gas reserves of states such as Turkmenistan and Kazakhstan²⁰. Worse still Gazprom appears in any event to have contracted most of the available gas from Turkmenistan.

It is far from clear that Iran will be able to provide gas to Nabucco. Iran's large population has a growing demand for gas which is likely to make it extremely difficult for Iran to export gas even if the US sanctions legislation were revoked. Despite having the second largest gas reserves in the world Iran is a net importer, and has been since 2006²¹. Iran's need for gas for domestic purposes has in fact recently led to Iranian and Azeri discussions regarding the importation of Azeri gas to Iran. In addition the existing gas infrastructure is fully deployed supplying Iran's existing needs. As a consequence even if there were any Iranian gas available for Nabucco that it would require expensive new infrastructure to be built to carry the gas to the border.²² For the foreseeable future it is difficult to see how Iran can provide a gas supply for Nabucco.

¹⁹ Milov, *Russian Energy Outlook: Implications for Strategic Investments*. New York Energy Forum, May 2008, NYC.

²⁰ Janusz, *The Caspian Sea; Legal Status and Regime Problems*, Chatham House (2005).

²¹ Fredholm, *The World of Central Asian Oil and Gas: Power Politics, Market Forces and Stealth Pipelines*, Asian Cultures and Modernity, University of Stockholm (2008), 53. (hereafter Fredholm 2)

²² Norling, *The Nabucco Pipeline: Re-emerging Momentum in Europe's Front Yard*, 127, 133 in in *Europe's Energy Security: Gazprom's Dominance and Caspian Supply Alternatives*, eds, Cornell & Nilsson, Silk Road Studies Program, The Central Asia-Caucasus Institute, Paul H. Nitze School of Advanced International Studies (2008).

However, recent exploration and audit developments in the region suggest that the prospects of obtaining significant gas sources for Nabucco have brightened considerably²³. Discoveries in the Shah Deniz field now suggest that there will be 9bcm available in Phase I and as much as 16bcm in Phase II²⁴. This suggests that there will be approximately 25bcm available for export.²⁵

In addition, rapprochement with Turkmenistan may also permit the development of the Caspian Sea border offshore fields of Kyapar/Serdar.²⁶ This gas could be piped through to the Azeri side of the Caspian and on into the Nabucco pipeline. This prospect has been increased by the audit of Turkmen reserves by Gaffney Cline Associates. This audit suggests that rather than Turkmenistan has significantly greater reserves than have been supposed. In an initial audit of the South Yolotan-Osman fields alone Gaffney Cline confirmed that there were between 4 and 14 trillion cubic metres of gas (tcm). This compares with the total national reserves estimated by the BP statistical review of approximately 2.67 tcm²⁷.

With such significant gas reserves Turkmenistan should be able to deliver on all the contracts it has with Gazprom, while also being able to provide gas to the European and Chinese markets. Clearly these audits can have no overnight impact. Significant investment would be required to open up gas fields, and this would take some time to both organise and then implement the investments. There is also a question mark, hanging over the Turkmen reserves of the willingness of the Turkmen government to actually sanction their development²⁸. Nevertheless, the

²³ Loskot-Stratchokta also points out that there is now a far greater reality to the delivery of gas from the Caspian into the European Union and the Turkey-Greece Interconnector, with a capacity of 7bcm, is now delivering quantities of gas piped via the SCP into the Greek market. She also points out additional possibilities of gas from the proposals for an Arab Gas Pipeline linking up with Nabucco at the Turkish border sourcing potentially Iraqi and Egyptian gas, as well as possibilities from further afield on the other side of the Caspian. Loskot-Stratchokta, *op cit* 2.

²⁴ As Fredholm comments Shah Deniz is 'estimated to be one of the world's largest natural gas discoveries of the last 20 years'. Fredholm 2, *op cit* 28.

²⁵ Barysch *Turkey and European Energy Security*, Energy Security Meeting, Centre for European Reform, March 2008. Some of that 25bcm will be committed to Georgia and Turkey directly.

²⁶ Norling, *op cit*, 131-137.

²⁷ *Turkmenistan Gas Field is One of the World's Largest*, Wall Street Journal 16th October 2008.

²⁸ Fredholm 2, *op cit*, 23-27. Fredholm doubts the willingness and capacity of the Turkmen government to significantly develop its gas reserves and indeed believes that Turkmenistan will not be able to deliver on all its existing contractual obligations.

Turkmen reserves in the medium to long run make a significant difference to the potential of Nabucco.

The potential of Turkmenistan and potentially other Central Asian States to provide gas has also been recognised by Russian sources.

“If the natural gas production growth rates are preserved in Turkmenistan, Kazakhstan, and Uzbekistan, the export of gas from that region will reach 100 billion cubic metres by as soon as 2011–12. On the one hand, this guarantees that the above states will meet their obligations with reference to the gas export to Russia (supplies of gas to Russia totalled some 60.7 billion cubic metres in 2007), while on the other hand, creates a resource of readily available gas in the region and thus attracts the attention of potential gas users (first of all China, the EU, and Iran) to the region. Accordingly, this improves the chances for the successful implementation of projects aiming to create export routes to deliver Central Asian gas round Russia. For at the moment it is exactly the absence of a sufficient resource of readily available gas that makes implementing such projects economically unprofitable and void of any economic sense.”²⁹

While gas contracts have not yet been signed for Nabucco it does appear in principle that there is a significant amount of gas that could be available which could be sufficient for Phase I and there looks like there will be sufficient Azeri gas to significantly assist in filling Phase II, with the prospect at least of sourcing some additional offshore gas from Turkmen fields in the medium to long term. Against this there is the question of how much gas would be required by Turkey from the Nabucco project³⁰.

4.3. Turkish Transit Concerns

The issue of Turkish interests lead to a further concern for the Nabucco partners. Turkey clearly wants to be more than a transit state for the delivery of gas to Europe. It wants to benefit from its strategic location through keeping control of the Turkish part of the Nabucco pipeline, by for instance selling and re-selling the gas at either border and perhaps taking a significant offtake at good prices. The

²⁹ NESF, *op cit* 38.

³⁰ Fredholm 2, *op cit*, 27-29.

difficulty with this approach is that it would undermine the financing of the entire project. The other partners are likely to insist on EU principles of non-discriminatory access to be applied to the regulatory regime.³¹

However, the Turkish government also needs greater foreign investment for the energy sector. There is also therefore an incentive to move down the road toward a neutral and non-discriminatory regulatory regime from which Nabucco might be able to benefit.

In any event the Nabucco partners and the EU need to be able to agree with Turkey a regulatory regime which while neutral does recognise Turkish interests if Nabucco is to be delivered.

4.4 Financing

While the Nabucco partners can undertake the planning and development phase the financing is only likely to be secured if the gas supplies are contracted. As explained above there are increasing possibilities of obtaining gas for Nabucco. However, gas has yet to be actually contracted.

In addition, the economic crisis may well make it more difficult for Nabucco to raise the funds for the project even if a significant amount of gas can be committed. There is a question therefore as to whether the Union can assist in providing funds so long as there is a commitment of gas deliveries.

There is an argument for the proposition that there is an EU objective of diversity of supply which has to be put in the balance along side purely commercial considerations. The January 2009 gas crisis if nothing else demonstrates the importance of supply diversity in protecting the energy security of the Union³².

³¹ Barysch, *op cit*, and Loskot-Stratchokta, *op cit*, 3.

³² It could be argued that Southstream also provides supply diversity. It does provide pipeline diversity, and would avoid the disputes between Ukraine and Gazprom. However, the source of gas is the same, and indeed the same gas as would have likely gone through the Ukrainian pipes.

Funding could either be by direct grants or through loans provided through the European Investment Bank.

4.5. Blocking Nabucco

A further concern for Nabucco are the attempts by Gazprom and Russian Federation to tie up potential energy routes and assets. This can be seen in the successful attempt of Gazprom in January 2008 in obtaining 51% of NIS, the Serbian national energy company, which could have taken part in the Nabucco route. More glaringly, in the same month Gazprom announced that it has purchased 50% in OMV natural gas hub at Baumgarten, the distribution point for Nabucco.³³

This blocking policy can also be seen in the attempts to sign up as many Nabucco partner states and corporations to Southstream as well, with the aim to crowd out Nabucco.

A further blocking move, from the other end of the project, was the attempt in July 2008 of President Medvedev and Gazprom Chairman Alexi Miller to seek to buy all Azeri gas at European market prices³⁴.

As explained above as no new gas is available from Gazprom for Southstream, therefore it is open to question how far this blocking policy can work. Nabucco can re-orientate its routes, and as long as it has access to Baumgarten the project can proceed. However, there is a danger that the attempt to sign up 'Nabucco' states may see those states seeking to choose between the two projects and in effect supporting Southstream, while downgrading support and commitment to Nabucco.

³³ Norling, *op cit*, 133

³⁴ Fredholm 2, *op cit* 34. There are series of interesting questions around this move by Gazprom and the Russian Federation. It is first far from clear how all the Azeri gas could be moved into the Russian UGGS system unless new pipelines were laid down connecting Baku with the main UGGS pipeline network. It also raises a significant question about Turkish extraction from Nabucco. This offer may well have the effect of putting a benchmark on Turkish pricing for gas from Nabucco.

4.6. Impact of the Cost of Southstream to Consumers

Turning to Southstream the impact of the cost of the project on consumers is often lost in the Southstream debate. What Gazprom and ENI are proposing to do is build four very deep pipelines at depths of 2km for 900km along the floor of the Black Sea. The costs are difficult to calculate. However, to give some sense of the expense and difficulty, Southstream pipes will be laid at a depth ten times as deep as that of Nordstream³⁵. Furthermore, while Nordstream needs only two pipes to deliver 55bcm, Southstream needs four pipes to deliver a maximum of 8bcm each because of the intense pressure at the sea floor.³⁶ This is by no means the cheapest way to deliver gas to European consumers. The cheapest way would be to continue to deliver the gas via the amortised Ukrainian pipes. From the perspective of European consumers Southstream is about the most expensive way to deliver gas. Nabucco would be by contrast 30-40% cheaper than gas delivered by Southstream³⁷.

In other words one of the major problems faced by Southstream for the project is to gain momentum is than as the electorates in those states that have agreed to support Southstream realise that they will be taking on a very significant economic hit if the project proceeds.

It is of course correct that the fall in oil prices and the knock-on effect in the gas sector, will reduce demand and therefore prices for steel and energy services, such as undersea pipe laying equipment. However, Nabucco will also benefit from the new pricing environment for infrastructure developments. Furthermore, because of the very nature of the project costs will remain high and certainly significantly higher than those of Nabucco.

4.7. Impact of the Economic Crisis on the Southstream Partners to Deliver the Project.

It is clear that the financial profile of Nabucco is far stronger than that of Southstream. The cost of Nabucco is shared by a far greater number of partners

³⁵ IEA, *op cit*, 50.

³⁶ Baran, *op cit*.22.

³⁷ Baran, *op cit*, 20.

and the overall costs of the project are significantly lower than that of Southstream. Given the impact of the economic crisis it is open to question how easy it is going to be for ENI and Gazprom to fund the project. Gazprom in particular has seen its market capitalisation fall 70% since January 2008,³⁸ its revenues will be severely cut later this year as gas linked oil prices fall from up \$500 per thousand cubic metres (thcm) to approximately \$250 thcm for its main EU customers. In addition, Gazprom has at least \$28 billion of debt on its books³⁹ and a major need for new investments upstream to ensure gas will continue to flow. It is difficult therefore to see how Gazprom can simultaneously afford to fund both Southstream, Nordstream and fund vital upstream investments, while maintaining its infrastructure maintenance and refurbishment programme in an era of declining revenues.

One answer to the problem would be for the Russian state to pay directly for Southstream. However, despite the substantial reserves that have been accumulated while oil prices have been high the economic crisis has already significantly dented those reserves. The cost of protecting the rouble and bailing out banks and corporations has already cost \$163 billion since August. Official figures put the Russian reserves now at \$435 billion, with private estimates putting the reserves as low as \$300 billion.⁴⁰ There is a real concern that the cost of the defence of the currency and further bailouts to banks and corporates over 2009 will bleed those reserves dry. In such circumstances it is difficult to see how the Russian state could subsidise the cost of delivering Southstream.

Clearly the oil price will recover once the recession is over. Particularly because of Chinese structural demand the oil price is likely to reach again \$100 a barrel or more post recession. At that point the Russian state could afford to subsidise Southstream. However, the world is currently facing the greatest economic crisis since the 1930s. For the first time since 1945 there is likely to be a contraction in

³⁸ Crooks, *Gazprom battles to restore its reputation*, The Financial Times, 8th January 2009.

³⁹ Victor, *Gazprom: Gas Giant Under Strain*, Programme on Energy and Sustainable Development, Stanford University, Working Paper 7 (January 2008) 37.

⁴⁰ Aslund, *Crisis Puts Putinomics to the Test*, Russiaprofile.org 26th December 2008,

global growth in 2009. It is therefore very unlikely that global energy prices will recover in short order and certainly not before the Russian international reserves are substantially depleted.

4.8. Russian Gas Availability

A further concern highlighted above is the question of whether Gazprom can deliver 30 bcm to the Southstream project. As the gas deficit literature indicates there are significant medium to long term supply concerns with regard to Russian gas supplies. Lack of investment in new fields and declining supergiant gas fields in the Nadym Pur Taz region should raise questions in the minds of European policy makers as to Gazprom's ability to deliver gas supplies.

The question of gas availability reinforces the view that Southstream will at best see gas being switched from the Ukrainian to the Southstream pipes with no actual delivery of new gas supplies.

4.9. Regulatory Delay from Economic Zone Requirements of Ukraine and Romania.

An additional concern for Southstream flows from the need to subject the project to regulatory approval of the economic zone regimes of Ukraine and Romania. While Ukraine and Romania cannot automatically block the project they can at least considerably delay Southstream⁴¹.

Clearly considerable number of legitimate economic and environmental issues can be raised in respect of the project given the environmentally sensitive nature of the Black Sea and its key commercial importance for both states⁴².

It is also not possible to ignore the reality of the interests of Ukraine and Romania to seek to delay the project⁴³. Ukraine clearly has a major incentive to seek to delay

⁴¹ Socor, *Gazprom's Southstream Project can be halted in the Black Sea*, Jamestown Foundation, 6th March 2008.

⁴² For an overview of the environmental problems facing the Black Sea, see *A Joint Commitment to Saving the Black Sea* at <http://www.grid.unep.ch/bsein/tda/files/preface.htm>

the project due to the fact that Southstream will result in a significant loss of transit fee revenue and leverage in the international gas trade. Romania also has a significant interest in delaying the project as the cost of Southstream sourced gas for Romania is likely to be significantly higher, because of the costs of building Southstream than gas sourced via Ukraine or Nabucco.

4.10 The Liquid Natural Gas Alternative

Given the costs of Southstream and the some of the problems facing Nabucco there is an argument for looking at other solutions to bring Azeri and other Central Asian gas resources to Europe. One possibility is to consider extending the South Caucasus Pipeline (SCP), which runs from Baku to Ezurum in Turkey via Georgia drawing gas from the Shah Deniz field, to the Port of Ceyhan. At Ceyhan an LNG liquefaction could be built which would allow the transshipment of Central Asian gas to the LNG gasification terminals now being built across Europe.

The difficulty with this proposal in the past is that the costs and demand for new plants have been very high. However, with the recession demand has fallen and pricing has weakened. A feasibility study would have to look closely at the volumes of gas necessary to justify the investment and the availability of LNG carriers. It is however, probable that the cost of this LNG solution would be greater than that of building and operating Nabucco.

An extension of the SCP and a liquefaction plant at Ceyhan would however have the advantage of side stepping some of the difficulties facing Nabucco. It would for instance render all the Gazprom and Russian Federation blocking strategies otiose and would involve in far fewer state participants to deliver.

5.0. Conclusion

Any overall assessment of the Nabucco and Southstream projects has to conclude by accepting that both projects have their problems. However, of the two

⁴³ It is noteworthy that Estonian and Sweden have successfully used environmental objections to delay construction of Nordstream, Barysch, *op cit*, 2.

Southstream is clearly the weaker project. It is less mature; it would involve significantly higher costs for the partners; it would increase consumers energy costs significantly; it only switches gas from one pipeline to another and does not fundamentally provide additional gas for European consumers. The supplier remains Gazprom as before.

By contrast Nabucco is a far more mature project, which is far further along the path to execution. It will cost significantly less to develop than Southstream and it involves the supply of new gas sources, increasing the amount of gas actually available to Europe.

Given the discussion above the cost of Southstream, particularly in the current economic climate is prohibitive and given the difficulties Gazprom and the Russian Federation have had with transiting gas across Ukraine⁴⁴ one alternative solution for Moscow is in fact Nabucco. Building a second Nabucco pipeline alongside the proposed pipeline would give Gazprom a cheaper non-Ukrainian access to EU markets.

For the European Union and its Member States, the most significant issue that has to be faced is one of will and political commitment. Are the Member States and the Union willing to take real and effective steps to increase to the supply diversity and enhance energy security or not? Will the Union and the Member States really consider supporting Nabucco by prioritising the project over Southstream? Will the Union consider assisting Nabucco with financial help, such as an EIB loan?

If the Member States and the Union are not prepared to take such steps then the principal, although probably more expensive alternative would be to back Turkey in extending the SCP and building a liquefaction plant at Ceyhan.

⁴⁴ The difficulties of transmitting gas across Ukraine, together with the failure of the Orange power elite to reform Ukraine's energy sector are eloquently and extensively discussed, in Elkind and Chow's *Where East Meets West: European Gas and Ukrainian Reality*, Washington Quarterly January 2009.

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