

THE TURKISH GATE: ENERGY TRANSIT AND SECURITY ISSUES

This paper sets out Turkey's current and potential role in the supply of gas to Europe, starting with the EU's need for gas, the geography of global gas disposition and Turkey's importance as a natural funnel through which the EU can access gas from many of the world's leading gas suppliers. It also places Turkey's role in the context of EU reliance on Russia as its largest single supplier of gas. It deals with the existing and potential pipeline infrastructure for gas supplies to Europe via Turkey and discusses what role the EU is already playing, and might be expected to play in the future, with regard to ensuring its energy security by means of pipeline development to carry gas to the EU market via Turkey.

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Turkey's role as a gateway through which gas can enter the European Community is becoming increasingly important as the European Union grapples with the interrelated problems of ensuring energy security and the provision of energy supplies from multiple sources at competitive prices.

A net energy importer, and itself a major market for regional producers, Turkey's importance lies in its ability and willingness to develop major transit systems for gas as well as oil, thus enabling hydrocarbon resources to access European markets by pipeline from such diverse regions as the Caspian, Central Asia, the Gulf, and the Eastern Mediterranean.

This paper sets out Turkey's current and potential role in the supply of gas to Europe, starting with the EU's need for gas, the geography of global gas disposition and Turkey's importance as a natural funnel through which the EU can access gas from many of the world's leading gas suppliers. It also places Turkey's role in the context of EU reliance on Russia as its largest single supplier of gas. It deals with the existing and potential pipeline infrastructure for gas supplies to Europe via Turkey and discusses what role the EU is already playing, and might be expected to play in the future, with regard to ensuring its energy security by means of pipeline development to carry gas to EU market via Turkey.

Gas is the prime focus of the paper. Although oil security is of obvious importance to the EU and Turkey is a major transit country for oil supplies, essentially the problem of ensuring oil security for the EU is, in geographical terms, a global one. This is essentially a consequence of the fungibility of oil. Oil issues are therefore covered in an appendix. Gas deliveries, however, remain an essentially regional issue.

Regional Gas Disposition

Turkey lies adjacent to countries or regions possessing some 71.8 percent of the world's proven gas reserves (111.88 trillion cubic metres out of total world proven reserves of 155.78 bcm) and some 72.7 percent of the world's proven oil reserves (762.7 billion barrels out of total world proven reserves of 1,047 bn barrels)¹ But such figures are somewhat misleading, essentially for two reasons. Firstly, gas is a very different commodity compared to oil; secondly, some producers, notably Russia, have comparatively little interest in utilising Turkey as a transit country. In this context, the most relevant element might be that as many as 10 current producers, collectively possessing 35.5 percent of global proven gas reserves, either have, or might reasonably be expected to have, an interest in directing exports to Europe via Turkey.

Perhaps surprisingly, Turkey's current or potential role in oil transportation is considerably less important than its current or potential role in gas transit. There is no doubt that oil pipelines across Turkey do play, and will play, a major role in the global energy market but their role can best be defined as *useful* and

¹ According to the BP Statistical Review of World Energy, June 2003.

important rather than *vital*. Oil is essentially a fungible commodity; it is more flexibly transported than gas (notably by sea) and Turkey's role in this context is one that concerns the global energy supply system rather than that of the European Union alone. Gas, however, is a different matter: it is more complex and, in a strictly EU context, Turkey's role, both current and potential, is much greater. The issue of oil is therefore dealt with in a separate appendix. This paper essentially concerns Turkey's role as a country through which gas can reach Europe from Central Asia, the Caucasus, the Gulf and Northeast Africa.

Gas Transit Issues

The European Union is already the world's biggest gas import market while it is also one of the world's fastest growing energy markets. It possesses a variety of energy import sources – notably Russia and Algeria – but is naturally seeking to diversify supplies. Turkey's role is potentially extremely important in that it furnishes a natural corridor through which gas from a wide variety of suppliers in an arc from the Caspian through the Middle East and the Gulf to Egypt can access the growing EU market by pipeline. With the EU already in receipt of large volumes of gas from three main sources – Russia, the North Sea and North Africa – Turkey's goal is to become Europe's fourth main artery. "Turkey will in the near future constitute the fourth artery of Europe's energy supply security" is the current Turkish energy mantra.²

The EU's Gas Balance to 2030

The European Union is already looking to Turkey as a potential import route, while Turkey is very much looking to the EU as a market for gas transitting through Turkey. This relationship is fuelled by Europe's prospective demand for gas imports and the availability of supplies to meet much of this demand in countries adjacent or close to Turkey.

The International Energy Agency (IEA) estimates that the EU's primary gas demand is expected to grow by 2.9 percent per year from 2000 to 2010 and by 1.6 percent from 2010 to 2030. It anticipates that demand will increase in all end-use sectors, but most dramatically so in power generation.³ In this case, it appears to be defining the EU as meaning the EU-15, the 15 members of the Union prior to its enlargement on 1 May 2004. In contrast, various other projections for the EU are based on an EU-30, which includes all the current EU member states plus the three current candidate states of Romania, Bulgaria and Turkey and two other countries observing EU energy principles, Norway and Switzerland.

According to recent projections, the EU-30 are expected to consume almost 700 bcm/y of gas by 2030.⁴ The International Energy Agency acknowledges a massive dependence on imports. It envisages imports rising from 187 bcm in 2000 to 632 bcm in 2030, a 449-bcm/y increase (see Figures 1 and 2.)

² Hakkı Akil, Deputy Director General of the Turkish Foreign Ministry, has said this on a number of occasions in early 2004, as has Alev Kılıç, the Ministry's Deputy Undersecretary (Author's notes).

³ International Energy Agency, *World Energy Outlook 2002*, Paris, 2002, p. 189.

⁴ Presentation by Dr. Fatih Birol, Chief Economist for the International Energy Agency, to the seminar on Natural Gas in South East Europe: Investment, Transit and Trade, in Istanbul, 5-6 May 2004.

Figure 1. EU-15 and EU-30 gas import dependence, 1998-2030 (percent)

	1998	2010	2020	2030
EU-15	49	54	62	71
Europe-30	36	42	51	60

Source: European Commission (2000), Green Paper on a European Strategy for the Security of Energy Supply, November.

Figure 2. EU-15 gas balance, 1998-2030 (in bcm)

	1998	2002	2030
Production	202.3	208.8	153
Consumption	349.1	385.6	506
Balance to be covered by imports	147.2	177.2	359
Import dependency	42.2%	46.0%	71%

Source: For 1998 and 2002 figures, *BP Statistical Review of World Energy 2003*; Projections for 2030 derived from percentages cited in European Commission (2000), Green Paper on a European Strategy for the Security of Energy Supply, November. Note the BP figures for 1998 reduce the apparent level of import dependence to 42.2 percent when set against the 49 percent level cited in the European Commission Green Paper, 2000.

These tables slightly overstate Europe's reliance on imports, since Norway, which in 2000 accounted for one quarter of EU imports and which is still expected to account for 17 percent of European imports in 2030, is firmly listed as an import source. In this context, however, the EU's supplies from Norway should more properly be considered as part of EU domestic production, in view of Norway's membership of the European Economic Area and its conversion of the EU's gas directive into domestic legislation.⁵ Indeed, the text of the European Green Paper of 2002, in asserting that Russia and Algeria occupy the two leading places as external suppliers of gas to the EU, effectively acknowledges Norway as an internal supplier. Even so, this still means that the EU will remain considerably dependent on imports. In a recent presentation, the IEA's chief economist, Dr. Fatih Birol, anticipated that the growth in imports to 2030 would likely be covered as follows:⁶

- An extra 79 bcm from Russia;
- An extra 51 bcm from Central Asia;
- An extra 157 bcm from the Middle East,
- An extra 136 bcm from West and North Africa; and
- An extra 18 bcm from the Americas (mainly Trinidad & Tobago).

⁵ Norway must abide by EU rules in exporting to EU countries, although it is not in itself an EU member state and has twice rejected EU membership in referenda. In July 2002, Norway agreed to incorporate the EU gas directive into Norwegian law, while Norway is also joined with the EU in membership of the European Economic Area. In 2000, Norwegian gas exports to the EU totalled 45 mtoe (47 bcm) and the IEA believes Norwegian gas exports to the EU "will probably plateau at around 75 bcm/y in 2005 or soon after."

⁶ Presentation to seminar on Natural Gas in South East Europe: Investment Transit Trade. Held in Istanbul, 5-6 May 2004.

This totals 441 bcm/y, possibly indicating a slight reduction in the IEA’s anticipated import requirements. In terms of distribution, the IEA has produced this assessment concerning the distribution of gas imports into the EU – or at least the EU-15 – for 2000 and 2030.

Figure 3. EU gas import distribution, 2000 and 2030 (percent)

	2000	2030
Africa	33.5%	28%
Norway	25%	17%
Transition economies	41%	33%
Middle East	Neg.	17%
Latin America	Neg.	5%
Other	1%	Neg.

Source: IEA, World Energy Outlook, 2002.

In terms of import flexibility, it should be noted that Libya is due to be directly connected to Italy by the ‘Green Stream’ pipeline (with first flows currently scheduled for early 2006,) adding to the variety of low cost gas imports from North Africa. In addition, LNG is also becoming increasingly important in the EU gas mix, with the IEA arguing that “LNG would become especially important if there turned out to be less Russian gas than expected.”⁷ LNG is already a significant factor in the energy mix of countries with Mediterranean or Atlantic coastlines, but has yet to make a significant mark in Northern and Central Europe.

Transport and Geography

Turkey’s proximity to gas producers is much more directly relevant to the question of EU energy security – and to the terms under which the EU can expect to secure gas from other producers, notably Russia. Gas is essentially transported by two methods: by pipeline and as liquefied natural gas (LNG). In the Turkey-EU context, pipelines are the more important issue, but their importance is obviously affected by the ability or willingness of the EU to increase LNG imports.

Because Russia has its own direct pipeline systems serving the EU market, it is not particularly interested in routes through Turkey, which it is likely to view in an essentially competitive context, even though the EU might argue that routes through Turkey are intended to complement, rather than compete with, Russian pipeline supplies. But Turkey is located close to a number of other gas producers which have had, or may have, an interest in assessing the prospect of accessing European markets by means of pipelines through Turkey. Countries currently studying prospects for delivery of their gas through Europe include Azerbaijan, Kazakhstan, Iran, and Egypt.

Countries with gas reserves that have previously considered the issue, and might reasonably be expected to do so again include Turkmenistan, Iraq and Qatar. In

⁷ International Energy Agency, *World Energy Outlook 2002*, Paris, 2002.

addition, Uzbekistan, Saudi Arabia and Syria have potential interests in tacking on their output to networks developed to serve their neighbours' exports. These ten countries collectively possess 55.34 tcm in proven gas reserves, equivalent to 35.5 percent of the world's total reserves of 155.78 tcm.

Figure 4. Reserve estimates for Turkey's gas-producing neighbours (in trillions of cubic metres – tcm)

Caspian/Central Asia	6.57
Azerbaijan	0.85
Kazakhstan	1.84
Turkmenistan	2.01
Uzbekistan	1.87
Middle East	47.11
Iran	23.00
Iraq	3.11
Qatar	14.40
Saudi Arabia	6.36
Syria	0.24
Northeast Africa	1.66
Egypt	1.66
Russia	47.57
World	155.78

Source: BP, Statistical Review of World Energy, London, June 2003.

With regard to Russia, Turkey is mainly, so far as transit is concerned, a competitor rather than a conduit. However there is one major gas line from Russia to Turkey that appears to have been built with at least a possible view to onward transfer of Russian gas to markets beyond Turkey. This is the 16 bcm/y Blue Stream line under the Black Sea opened in 2002 and which, in simple supply terms, could be used to ship gas to markets elsewhere in Europe. As of mid-2004, Gazprom has refused to entertain such ideas, although Turkey has raised the issue in repeated negotiations concerning the pricing of gas delivered through the line. However, periodically there have been various Russian suggestions that the Blue Stream line, or fresh connections through the Caucasus, might be used to supply Israel with Russian gas via Turkey. Gazprom was again reported to be pushing such a proposal in mid-2004, in view of Israel's estimated requirement of as much as 13 bcm/y in gas imports.

The Challenge from LNG

Pipeline is the more normal transportation method for gas but LNG offers an increasingly competitive alternative particularly over distances of 3,000 kms or more. Although it requires provision of expensive liquefaction plants, to convert the gas to liquid form so that it can be transported by sea, and the availability of

purpose-built tankers, in some cases it may even prove competitive with pipelines at distances of 1,000 kms. Egyptian plans for developing gas exports by means of LNG currently appear to be more advanced than recently revived plans for an extension of the recently constructed Egypt-Jordan gasline (now being extended to Syria and Lebanon) into Southern Turkey. Qatar has already invested heavily in LNG projects and while it did consider proposals for piped exports to Europe via Turkey in the 1980s, it is only likely to revive such proposals seriously if it becomes convinced that Turkey is indeed creating a new artery; that Iraq can offer a stable interconnection between the Gulf and Turkey, and that gas shipments to new European markets will not prove counterproductive to its existing LNG trade. At present, repeated attacks on Iraq's northern oil pipeline to Turkey make it highly unlikely that anyone will move to develop a parallel gas pipeline in the immediate future, although the issue is kept under constant technical review in Ankara.

The focus which Qatar, Abu Dhabi and Oman are placing on development of LNG exports almost certainly ensures that while Gulf reserves remain key to the global gas balance (states bordering the Persian Gulf account for 35 percent of world proven gas reserves) the prospect of major Gulf exports to Europe via Turkey is very much a second stage prospect. Iran furnishes an obvious exception to this in that it is actively seeking to export gas to the EU via Turkey. But whether its neighbours on the Arab side of the Gulf will follow suit will depend very much on the initial success of such projects as the Turkey-Greece gasline and the Nabucco project (see below).

Incoming Pipelines to Turkey

Whether Turkey can become the EU's 'fourth artery' very much depends on the completion or implementation of various projects designed to bring gas to Turkey, to transport it from Turkey, and to increase Turkey's own throughput capacity.

This is certainly Turkey's goal and, indeed Turkey already has one major important pipeline which might, in time, be used to ferry gas to European markets beyond Turkey itself: the 20 bcm/y capacity Tabriz-Erzurum line which opened in December 2001 and which now carries Iranian gas to Ankara and other parts of Turkey.⁸ In addition, in conjunction with BP, Statoil and other developers of Azerbaijan's giant Shakh Deniz field, it is committed to building the 1 billion USD South Caucasus Gas Pipeline from Baku to a connection with its own East-West Main Trunk Pipeline at Erzurum. The Baku-Erzurum line will initially have a capacity of around 7-8 bcm/y but is designed for expansion up to at least 16 bcm/y.

But Turkey's ability is to import gas from its neighbours, particularly with regard to subsequent transit of that gas to markets in Europe, is not limited to Iran and Azerbaijan alone (see Figure 5.)

⁸ "Turkey will in the long term become a junction for the natural gas pipelines originating from all neighbouring countries," according to Hakki Akil, Deputy Director General of the Turkish Foreign Ministry, Istanbul, February 2004.

Figure 5. Potential Eurasian gas suppliers to the EU market (by pipeline)

a. Supply potential as of 2010				
Country	Volume	Transit country	Potential by 2015	Existing system
Iran	10 bcm	Turkey	20-30bcm	3-10 bcm
Turkmenistan	13 bcm	Iran/Turkey	30 bcm	13 bcm
Turkmenistan	34-80 bcm	Russia	80 bcm	50 bcm
Turkmenistan	10-36 bcm	Russia/Ukraine	36 bcm	36 bcm
Azerbaijan	7 bcm	Turkey	20 bcm	6-20 bcm*
Iraq	10 bcm	Turkey	10 bcm	none
Egypt	4 bcm	Jordan/Syria	10-12 bcm	Link to Jordan**

* SCP system under construction, due to open 2006.

** Egypt-Jordan gasline has reached Syrian border.

b. Additional supply potential post-2015			
Country	Volume	Transit country	Existing system
Qatar	20-30 bcm	Kuwait/Iraq/Turkey	None
Egypt	10-12 bcm	Jordan/Syria	Link to Syria*
Saudi Arabia	10-20 bcm	Jordan/Syria/Turkey	None
Kazakhstan	10-20 bcm	Azerbaijan/Turkey	None
Turkmenistan	20-30 bcm	Azerbaijan/Turkey	None
Turkmenistan	30-36 bcm	Iran/Turkey	Limited connections**
Uzbekistan	5-10 bcm	Turkmenistan/Azer/Turkey	None

* This would be additional to the 10-12 bcm potential delivery before 2015.

** Turkmenistan's Caspian shore gasfields are already linked into the Iranian network via the 12 bcm/y capacity line from Korpedzhe to Kurt-Kui, but there are no significant connections to Iran from Turkmenistan's main central and southeastern gasfields.

c. Potential gas pipelines from Turkey to (other) EU countries			
Route	Initial	LT capacity	Comments
Turkey-Greece	0.75bcm	3-11 bcm	Due to open 2006
Greece Italy Interconnector	22 bcm	22 bcm	Under study. Possible opening 2008
Turkey-Austria (Nabucco)	3-5 bcm	20-25 bcm	Under study. Possible opening 2009
Greece-Western Balkans-Austria	??	10-20 bcm??	Preliminary proposal

Source: IEA, Methinks.

The South Caucasus Pipeline

Construction of the new Baku-Tbilisi-Erzurum line, officially called the South Caucasus Pipeline (SCP), is officially due to be completed in September 2006

at a cost of 953m. USD⁹ Curiously, whether construction work on this project has yet started remains a moot point. Because the sections of this line in Azerbaijan and Georgia use the same right of way as the better known 1.0 mb/d Baku-Tbilisi-Ceyhan oil pipeline, basic groundbreaking and site preparation work, particularly in difficult terrain, is being carried out for both lines simultaneously. With a similar stakeholding in the two lines, and with BP as operator of both systems, coordination of the two projects meant that as of mid-2004, the emphasis was on laying oil pipe. But as pipelaying for BTC ends in the second half of the year, pipelaying work on the gas line was expected to start in earnest.

The SCP will initially have a capacity of around 7-8 bcm/y, but documentation produced by BP in March 2004 showed an eventual planned capacity level of 20 bcm/y. This now appears to be the general long-term target for Azeri gas exports, the marketing of which is now being carried out by one of the major partner's in both SCP and Azerbaijan's giant Shakh Deniz gasfield, Norway's Statoil.¹⁰

The official timetable for delivery of Azeri gas to Turkey, which may well slip, envisages a starting rate of 2.0 bcm/y in 2006, rising to 3 bcm/y the following year, to 5.0 bcm/y in 2008, and then reaching its initial plateau level of 6.6 bcm/y in 2009. Although the initial 2001 sale and purchase agreement were apparently based on projected Turkish domestic usage of this gas, it is now clear that much or all of it will go straight to Greece. Norway's Statoil, which is responsible for securing export contracts for Azeri gas via the South Caucasus Pipeline, is actively assessing various European markets, starting with Greece.

Other Connections

Turkey is also pursuing discussions with various other potential suppliers (see Figure 5 for a list of potential Eurasian gas suppliers to the EU market.) The most important of these is, probably, Iran, since Tehran has already been discussing eventual deliveries of gas to Greece via Turkey, whilst EU officials have spoken of Iran as a long-term gas supplier to EU member states. Current agreements provide for Iranian deliveries to Turkey to plateau at 9.56 bcm/y in 2007, but as the line has the potential to handle double this volume, and as Turkey's own gas demand projections remain unclear, it seems likely that at least part of the line's capacity will be used to supply gas to the Turkish system that will subsequently be forwarded to other European markets.

As mentioned previously, Turkish officials also continue to discuss with their Iraqi counterparts what they call the 'Iraq Integrated Natural Gas Pipeline Project' by which they hope to see a Turkish-Iraqi consortium, embracing both the public and private sector, develop gasfields in northern Iraq and bring some 10 bcm/y into the Turkish system, again with a view to forwarding some of this gas to other

⁹ Mejid Kerimov, Azerbaijani Minister of Fuel and Energy, Istanbul, January 2004.

¹⁰ Azerbaijan's Kerimov, speaking in Istanbul in January 2004, said Shakh Deniz has a large capacity "so we must set up more pipelines to reach Northern Europe and the Balkan countries." He added: "I'm sure the gas reserve will yield 20 bcm/y."

European markets.¹¹ But while Turkish officials say they have current backing for this project, which was first mooted in 1996, from the Iraqi Ministry of Energy and from private Turkish companies, this is a project that cannot be undertaken until there is a substantial improvement in security conditions in Iraq.

Turkish officials are also continuing discussions with Egypt. But although Egypt is currently extending its gas system northwards though Jordan to Syria, so that it would easily be able to effect deliveries to southern Turkey by building a few hundred kilometres of extra pipeline, whether there is a market has yet to be ascertained. The pipeline could obviously supply gas to the industrial and petrochemical markets of Iskenderun and southern Turkey, but Turkish officials remain uncertain as to whether local demand justifies such an extension to the Egypt-Jordan-Syria line. What does seem clear is that in due course this line will reach the northern Syrian city of Aleppo, for which Iskenderun was long the traditional port. There is therefore a real prospect that a relatively small-scale local trans-border connection between Aleppo and Iskenderun might eventually form the basis of a more substantial connection. In considering whether this might happen, several factors have to be borne in mind. One is Egypt's own desire for new export markets. A small-scale entry into the Turkish market could prove the precursor of greater export sales – so long as these are competitive with Egypt's obvious alternatives: pipeline deliveries to Europe via a proposed connection to Libya and the Libya-Italy "Green Stream" line, and development of LNG export facilities.¹²

In addition, it is worth noting that Syria itself possesses significant gas reserves. But the most important factor of all is the fact that Saudi Arabia possesses major gas reserves in the northeast of the Kingdom, which could easily be connected to the Egypt-Jordan-Syria-Turkey line. Saudi Arabia is not publicly contemplating raw gas exports but the existence of a proven export route, albeit one which would need considerable expansion to serve Saudi interests, could prove highly advantageous as and when the Saudi authorities decide to revisit the gas export issue.

As for Turkmenistan, Turkey continues to consider that it has an effective sale and purchase agreement with Ashgabat (it signed a framework agreement for gas deliveries in October 1998) under which Turkmenistan would ultimately deliver as much as 20 bcm/y to the Turkish market. But since the Turkmens effectively decided in 2001 to reject a serious pipeline project that would have brought this gas to Turkey via Azerbaijan, the concept of large-scale Turkmen gas sales to Europe has, *de facto*, been in abeyance. Essentially, Turkmenistan President

¹¹ "Turkish companies are ready to realise gas projects in Iraq which will help substantially the reconstruction efforts in that country." Hakkı Akil, Istanbul, February 2004.

¹² "It's not just a question of welding up a pipeline. They are looking for markets for themselves." Senior Turkish energy official to the author, Ankara, April 2004.

Saparmurat Niyazov does not wish to see his gas pass through the terrain of a neighbouring state, Azerbaijan, which is both a rival gas producer in its own right and with which he has a serious maritime border dispute concerning a cluster of oilfields in the south-central Caspian. Although at least one Turkish official argues that, in time, the South Caucasus Pipeline from Baku to Erzurum “may also constitute the first part of the Turkmenistan-European route,” accomplishment of such a goal will almost certainly have to await the post-Niyazov era in Turkmenistan.¹³

Outgoing Pipelines from Turkey

Turkish Energy Minister Hilmi Guler, outlining his country’s policies in Istanbul recently, focussed on the massive oil and gas reserves of the Middle East and the Caspian, and then declared that Turkey’s objective “is to make sure that the oil and gas resources of the region are transferred to the European market via this country.”

Such thinking underpins both the 285-km Turkey-Greece pipeline, through which the Azeri or Turkmen gas should start to flow in late 2006, and the much larger Nabucco project, by which gas from a variety of sources could start flowing to the Balkans as early as 2009, and eventually to Austria and the EU’s main consumer markets in central, northern and western Europe.¹⁴

While it is important to note that Turkish officials view gas transit as a strategic objective which they are determined to address, the development of onward lines to Europe will obviously be shaped by commercial considerations as well as Turkish – or EU – strategic considerations.

The Nabucco Project

This is particularly true of the Nabucco project, which, if it is developed in the way its promoters envisage, would do most to establish Turkey as Europe’s fourth artery. However, it should also be noted that the EU’s consistent backing of a Turkey-Greece-Italy Interconnector (see below) has a strategic underpinning.

The extent of detailed planning and, in particular, its development by prospective gas importers makes it look increasingly probable that the next few years will see the development of at least one major pipeline system for delivery of Eurasian gas to Europe via Turkey: the Nabucco project. As much as 20-30 bcm/y would flow northwards to markets in central, northern and Western Europe by means of this project, currently being developed by Austria’s OMV in partnership with Turkey’s state pipeline company, Botas, Hungary’s MOL Transmission plc, Bulgaria’s Bulgargaz and Romania’s Transgaz.

Johann Gallistl, manager for international affairs at Austria’s OMV Erdgas, argues that the 3,400 km line, 4.4 bn EUR, Nabucco project offers a serious prospect for delivering Middle Eastern and Caspian gas to major European markets. The line

¹³ Direct communication to the author, Ankara, February 2004.

¹⁴ “In 2006, the Shakh Deniz project will start into life and the Shakh Deniz gas will start flowing to Turkey, Greece, Europe and the Southern Ring.” Alev Kılıç, Deputy Undersecretary at the Turkish Foreign Ministry, Istanbul February 2004. Kılıç also said the SCP will constitute the first leg of the Caspian-Turkish-European pipeline system.

is planned to have a capacity of 25-30 bcm/y as it crosses Turkey. The transit countries would themselves take around 8-10 bcm/y, so deliveries to Baumgarten would be around 17-22 bcm/y. The partners in the project have all agreed to meet at least part of their own domestic demand by means of Nabucco.¹⁵

In mid-2004, a new Vienna-based venture set up to coordinate the project, the Nabucco Company Pipeline Study GMBH, was incorporated, with gas companies in Austria, Turkey, Hungary, Romania and Bulgaria each holding a 20 percent stake – and with France’s Gasunie showing interest in becoming a member.. The new venture, he added, began on 5 May the technical process for choosing a financial adviser. By the end of the year it would receive the final drafts of both a full feasibility study and a financial assessment by the end of 2004 or around the start of 2005. These studies, Gallistl said, will present the group with “a complete basis for decision of our management to go ahead with this project – and we are very confident that this will happen.”¹⁶

Nabucco’s principals said in May that preliminary talks had been held “with Iran and some other interested parties” with a view to supplying gas for the system, but that formal negotiations with shippers would not start until the new joint venture had elaborated a general transportation contract. They added that work on formulating such a contract had already begun.

As of early May, the joint venture and its backers were awaiting an interim study on possible usage of existing grids along the pipeline route, part of an overall feasibility study being conducted by the Boston Consulting Group. The current timeframe for the project is for a detailed technical design and an environmental assessment study to be started in 2005 and ready by mid-2006. The construction phase would last from mid-2006 to end-2009. The start of operations would be in 2009.

Contractual conditions between suppliers and buyers will be crucial. The International Energy Agency (IEA) and the Energy Charter Secretariat (ECS) noted that what they termed non-price differentiation may be a key element in developing competition with existing sources. By this they meant structuring contracts in new ways that are more attractive to buyers, such as short- to medium-term contracts and the introduction of price indexation systems that are not dependent on oil prices. Non-price differentiation, the IEA and ECS said in their summary of their recent seminar on Natural Gas in South East Europe: Investment, Transit, Trade in Istanbul, “may be a determinant in attracting and securing gas importers which are increasingly evolving in volatile and competitive gas markets.”¹⁷

At the Istanbul seminar, it was clear that the IEA’s estimates for prospective EU gas import requirements served as an encouraging background for presentations concerning lines involving Greece and the major project to carry gas to the heart

¹⁵ Johan Gallistl, comments made to Istanbul seminar May 2004 and interview with the author.

¹⁶ Interview with Johan Gallistl, Istanbul 5 May 2004. See Platts International Gas Report, forthcoming.

¹⁷ Proceedings on . See Para 51.

of Europe, the Nabucco project.¹⁸ Moreover, there was no feeling that proponents of the Turkey-Greece-Italy Interconnector were in competition with backers of the Nabucco project to carry gas from Turkey through Bulgaria, Romania and Hungary to Austria's major gas terminal at Baumgarten. The two projects target quite different regional markets: Italy for the interconnector from Greece and Central and Western Europe for Nabucco. There was a widespread view at the invitation-only seminar that not only were producer countries providing an obvious push factor for such lines, but that the pull factor from consumers in Europe was becoming increasingly apparent. Since the development of pipelines from Turkey to the EU is overwhelmingly demand driven (whereas to a large extent the development of pipelines to Turkey is driven by a mixture of producer (supply) interests and availability of demand, and since the costs of such pipelines have to be spread between several potential purchasers, the development of gas importer consortia becomes crucial. In their own summary of the Istanbul seminar, the IEA and ECS clearly look forward to the creation of such consortia:

As the development of gas routes is demand driven and requires significant investment and financial capacities, the involvement of major European gas companies and new operators in buying and distributing the gas is essential. The transformation of isolated national markets operated by public monopolies toward an internal EU gas market with multiple operators will have a major impact on the gas import scene. Gas distribution companies, which will have to face increasing competition, will most probably create consortium(s) to secure import supplies and share the costs and the risks. All these elements combined will impact on the development and the implementation calendar of transit routes across South East Europe, at the earliest from 2006-2007.

OMV's Gallistl told the seminar: "We think that, especially in comparison with other new projects being discussed, that Nabucco is cost competitive."

The Turkey-Greece-Italy Interconnector

On 23 December, 2003, Turkey's state pipeline company Botas, currently still in possession of monopoly gas import powers, signed an agreement with its Greek counterpart, DEPA, concerning the commercial terms for a planned new 286-km gas pipeline between the two countries. Construction of the 36-inch line from Karacabey to Komotimi, costed at Euros 250m and including 17kms under water, is due to start later this year, with the line itself due to open at the end of 2006. The line will initially deliver 0.75 bcm/y but will then climb to 3 bcm/y. As and when further pipelines to carry gas beyond Greece become available, it will be able to carry up to 11 bcm/y.¹⁹

A feasibility study concerning a further interconnector, a 280-km line (with 224 kms offshore) between the southern Italian port of Otranto and a Greek terminal

¹⁸ Proceedings on . See Para 57.

¹⁹"This project will be ready in 2006 when the first phase of Shakh Deniz will be completed," Vassilios Tsombopoulos, director for strategy and planning at DEPA, the Greek gas authority, told the IEA/ECS Istanbul seminar in May.

at Stavrilimenas, was due to be ready in September 2004. The study should disclose the investment cost (within a range of plus or minus 20 percent); the investment requirements for the Turkish grid; a preliminary survey of the route; and the engineering of selected pipeline configurations. This project has long enjoyed EU backing, with the then EU External Relations Commissioner Chris Patten providing early vocal support and the Commission itself financing initial studies. The very concept of an interconnector is strategic, in that the line, as envisaged, would be able to carry gas from Italy to Greece and Turkey, or from Turkey to Greece and Italy. In other words, it would serve as a link between two main supply systems, increasing flexibility of supply.

The Karacabey-Komotimi line's capacity is also being designed so that it will eventually be capable of transporting a potential 8 bcm/y onwards to Italy, via the extension to Otranto, or northwards to the western Balkans. To this end, according to Nadir Bıyıkoğlu, Deputy General Manager of Turkey's Botas pipeline company, 6 compressor stations will be in place on the Komotimi line by 2010.

Hakkı Akil, Deputy Director General of the Turkish Foreign Ministry, described the Karacabey-Komotimi line as "the first step in reaching European markets". He also called the project "an important building block of the East-West Energy Corridor" saying it "will likely turn into the Interconnector Turkey-Greece-Italy in the near future."

The West Balkans Pipeline Proposal

In considering the Turkey-Greece-Italy interconnector in Istanbul, DEPA also said that a plan for a West Balkans line was "under consideration but is not mature yet." An agreement to study such the evolution and implementation of such a line was signed on 8 April 2003 between DEPA and Botas and the gas authorities of the Former Yugoslav Republic of Macedonia, Albania, Yugoslavia, Bosnia-Herzegovina, Croatia and Slovenia. A study by the Observatoire Méditerranéen de l'Énergie (OME), carried out for the European Commission's Synergy Programme and presented in Istanbul, compared the Nabucco and West Balkans options with the Greece-Italy interconnector. It concluded that "projects to connect Turkey to Austria either through Bulgaria, Romania and Hungary, or through Macedonia, Bosnia-Herzegovina, Croatia, Serbia and Slovenia (or possibly both) are more likely to see the light, but would still require substantial political backing."²⁰ However, these countries – with the notable exceptions of Romania and Croatia – have small gas markets. Moreover, they suffer from political and regulatory uncertainties and are mountainous. This proposal has therefore not attracted a real commercial interest and looks more like a long-term project. In terms of regional gas supply, such a line would play a significant role. But it is not of major concern with regard to overall European gas security unless it is specifically developed as a complementary system to the Nabucco project, linking

²⁰ Observatoire Méditerranéen de l'Énergie (OME), *Medsupply: Development of energy supplies to Europe from the Southern and Eastern Mediterranean Countries*, Chapter 2, "Transit role of the Mediterranean region for hydrocarbons coming from the Gulf and Caspian regions", Final Report, June 2003.

Turkey not only with the Balkans, but with a major European hub, such as Baumgarten.

Turkey's Pipeline Infrastructure

None of the various plans for Turkey to serve as a new major transit system for European gas deliveries can work unless Turkey's own pipeline network can handle the relevant volumes. Turkish officials appear bullish on the subject. Energy Minister Güler has said: "We have to establish a much bigger pipeline from east-to-west. We are planning this activity." Botas chief Biyikoglu has said: "Our East-West line is capable of carrying from Iran back to the West around 22 bcm/y. This may be increased by looping."²¹ However, there is as yet no concrete proposal for constructing a new parallel pipe to the existing line and little indication as to how such a project might be financed. Turkish officials have noted that, under Law 4646, anyone can construct transmission pipelines in Turkey. One official said: "The Iranians are thinking of constructing a pipeline to Europe themselves. EMRA (the Energy Markets Regulatory Authority) has told them anyone who wants to construct a pipeline, after getting a license from EMRA, can do so." However, the official added, there might be question marks concerning Iran's ability to raise the capital for such a project.

There may well be a role for the EU in general, and the European Investment Bank in particular, in financing construction of such a key element of the infrastructure required if Turkey is indeed to become Europe's fourth gas artery.

The Commercial Environment and Implications: The Role of Gazprom

The EU, Turkey and potential suppliers of gas to Europe by way of Turkey are not the only elements whose actions have to be taken into account.

Looming over the whole debate of European energy supply and security is Gazprom. It has been suggested that, should it so choose, "on a purely commercial basis, Gazprom is in a position to saturate the Balkans market and shut off any potential competitor."²² In a technical sense, this is true. But it is a move with consequences that even Gazprom would have to consider.

There are two main background elements to be considered in this regard: the overall state of the EU-Russian energy dialogue and Russia's own requirements for foreign investment, particularly in gas.

The EU Energy Dialogue

The fact that the European Union, the world's second biggest gas consumer, is located next door to Russia, the world's biggest gas producer, makes it eminently sensible for the two parties to determine how they can best serve each other's requirements. On 30 October 2000, following a summit meeting between the EU

²¹ Güler and Biyikoglu: Interviews with the author, Istanbul, February 2004.

²² OME, Medsupply. Chapter 2, op. cit.

and Russia in Paris, the Putin-Prodi initiative was launched. The EU said it had started work on developing an energy partnership, noting Russia's statement at the end of the summit that "it was prepared to work towards improving the Union's long term security of energy supply and, as President Putin stated, to put the emphasis on balance in relation to prices and quantities."²³ The EU added that, in turn, it was prepared to mobilise European technical assistance to facilitate European investments in transport and energy sector production. "Specific measures should be carefully studied whether they concern a precise legal framework for investments in the energy sector, questions relating to taxation or a guarantee mechanism for investments. These measures should be finalised within the framework of a cooperation and partnership agreement between the European Union and Russia," the Green Paper said.²⁴

Such an agreement has yet to be concluded. One reason for the delay would appear to be the failure by Russia to sign the Energy Charter's projected Transit Protocol, an agreement intended to ensure the smooth transit of oil and gas both between and across countries, essentially in accordance with open access principles. The protocol, if signed and implemented by Russia, would have helped considerably to open up access for Caspian producers to the Gazprom-controlled Russian pipeline system. Russia's reluctance – refusal might be a better word – to sign the agreement despite years of prolonged negotiation, means that the environment within which EU-Russian negotiations on cooperation in energy in general and gas in particular have changed.

In terms of where Turkey fits into this equation, it should be noted that Gazprom has not merely pursued a policy of eschewing involvement in the Energy Charter Transit protocol, but has actively developed a broad strategy which appears to be aimed at reducing the EU's ability to import gas from third countries without securing Gazprom's approval.

Gazprom has, in practise, developed a broad control strategy along the gas chain which directly conflicts with diversification routes in four main ways:

- Construction or control of cut-off routes; The most notable example of this is the Blue Stream project, which opened in 2003 and is due to deliver 16 bcm/y of gas to Turkey in around 2008. The West Balkans line to Turkey can also be viewed in this light as can Gazprom's proposal for a gas export system to Bulgaria and Italy.

- Trading; There are concerns at the way in which Russian companies, such as Itera and Eural Trans Gas, established offshore schemes in Hungary, Poland and Slovakia ahead of their accession to the EU. Transparency in gas sales is jeopardised. Both Itera and Eural Trans Gas, the latter a somewhat obscure company trading offshore, are scarcely renowned for their transparency, whether in terms of their ownership or their activities.

²³ Green Paper, Towards a European Strategy for the Security of Energy Supply. The European Commission. Brussels, November 2000. p. 74.

²⁴ Ibid.

- Acquisitions; Gazprom has purchased transit lines in various European countries, notably in Poland, Belarus, Ukraine and Slovakia.
- Distribution; Gazprom and other Russian companies have purchased distribution companies in Georgia, Turkey and Bulgaria.

The net impact is that Gazprom and other Russian gas trading companies (such as Itera, whose relationship to Gazprom still remains unclear) is already well-placed to use existing infrastructure to thwart deliveries by non-Russian suppliers, or to direct gas supplies from Caspian suppliers to European markets on terms essentially set out by Gazprom and/or Itera or Eural Trans Gas.

These themes were elaborated in the Istanbul paper produced by the IEA and the ECS. Paragraph 66 reads:

The actions of unregulated monopolies or large commercial entities serve as an impediment to supply diversification. This is facilitated by restrictive clauses in long term contracts and the strong competitiveness of Gazprom which inherited wholly amortised infrastructure as opposed to the heavy infrastructure requirements for alternative supplies and new routes. Gazprom's influence in transit infrastructure in transition economies and an unpreparedness to apply the principles embodied in the Energy Charter Treaty prevent other suppliers (in Russia and Central Asia) and buyers from gaining commercial access to pipelines.²⁵

Russia's investment requirements

The International Energy Agency, in its World Energy Investment Outlook, considers that “cumulative investment needs in the Russian gas sector are projected to total just over 330 billion USD, or 11 billion USD per year, over the period 2001-2030.”²⁶ Of this, the IEA adds, “one third of cumulative investment will be in projects for export to OECD countries.” The IEA report also notes that Russia's own national energy strategy postulates an investment requirement of between 170 billion USD and 200 billion USD for the period 2003 to 2020, with specific investment levels ranging from 9.4 billion USD to 11.1 billion USD a year.²⁷ The UK Government, in its 2003 White Paper, *Our Energy Future*, appears to have been drawing on such figures when it cited estimates that “investments of 170 billion USD may be required to develop gas production in Russia alone to 2020” – in effect, around 10bn USD a year.²⁸

Yet Russia is currently securing much less than this. Total foreign direct investment (FDI) in Russia between 1995 and 2003 amounted to just 26.13bn USD, while total investment in the country over this period amounted to just 57bn USD. And

²⁵ Proceedings on . See Para 66.

²⁶ World Energy Investment Outlook: 2003 Insights, International Energy Agency, Paris, November 2003.

²⁷ Ibid.

²⁸ UK Energy White Paper: *Our Energy Future – Creating a Low Carbon Economy*. From Chapter 6: “Energy Reliability”, London, HMSO, 2003.

although actual FDI has grown steadily on an annual basis throughout this period, so that it totalled 6.781 bn USD in 2003, the overall levels of investment fall well below Russian requirements.²⁹ Moreover, other core sectors, notably oil and a range of potential non-energy industries and projects, are also looking to secure both local and foreign investment. Thus Gazprom looks to face an uphill task in securing the investment in requires if it is to meet expectations in full concerning its own expansion and increased supplies to foreign markets. In strictly financial terms, this may help explain why Gazprom is seeking to lock up long term contracts for the import of Central Asian gas at relatively low prices whilst simultaneously holding out for much higher prices with regard to its own sales to European customers (see Issues concerning Caspian producers below.)

Indeed, while Gazprom itself enjoyed increased revenues from high oil prices in the first half of 2004, it was still suffering from major structural problems. Thus Vladimir Milov, the President of the Institute for Energy Policy in Moscow, commented in April 2004 that “today Gazprom is not operating without problems. The volume of the company’s debt is about to become as high as its proceeds.” Milov continued: “Such a situation isn’t necessarily that scary, but only as long as gas prices remain high. However, there are no guarantees that this trend will continue. And with 6 billion USD spent annually on debt repayment, the company cannot afford the serious investments required for its ambitious projects both at home and abroad.”³⁰

From an EU perspective, this means that one cannot assume that Gazprom will seek to jeopardise the flow of external investment in order to pre-empt non-Russian access to the Balkan market. Indeed, it can be argued that the risk of otherwise jeopardising external investment may yet play a significant role in inducing Gazprom to understand that it may have to operate in an increasingly competitive commercial environment inasmuch as its exports to the EU are concerned.

The Cost Issue

Supply costs to Europe vary considerably. The International Energy Agency, assessing likely import costs in around 2010-15, includes a range that starts at around one dollar per million Btu for Algerian gas deliveries to Spain to just over 3 USD per million Btu for projected Russian gas supplies from the Barents Sea via a projected new Baltic and North Sea pipeline to Germany and Britain.

In between come a variety of potential supplies to Turkey, with gas from Turkmenistan, Iran and Azerbaijan all costed at just over 1.50/Mbtu USD and gas from Iraq at about 1.10/Mbtu USD. In this context, however, it should be noted that these are costs to Turkey’s de facto gas hub in Ankara. By this stage (2010-2015), Turkey may or may not be en route to becoming a member of the EU, but it will by then be a part of the EU’s own South East Europe energy market and thus observing EU regulations (see Figure 6).

²⁹ The source for Russian investment figures is Boyko Nitzov, Senior Expert with the Energy Charter Secretariat.

³⁰ MosNews.com/Gazetu.ru. 15 April 2004. Gas Giant Threatens Russia’s Natural Wealth.

Issues Concerning Caspian Producers

For one Caspian producer, Azerbaijan, the issue is simply whether Statoil, currently in charge of securing export markets for gas produced from the Shakh Deniz gas field, can successfully utilise transit deliveries through Turkey to access new markets in Southern and Central Europe. The supplies are there, the infrastructure to get its gas market is being developed as construction of the South Caucasus Gas pipeline linking Baku, Tbilisi and Erzurum unfolds (see previous section.)

However, for the three gas producers on the eastern side of the Caspian – Turkmenistan, Kazakhstan and Uzbekistan – the issues are very different. All three remain dependent on existing Soviet-era pipelines which convey their gas to markets in or beyond Russia under terms controlled by Russia (which, effectively, means Gazprom.) Turkmenistan does possess additional pipelines so that it can export gas to Iran, but at present these play only a limited role in reducing the country's reliance on Russian routes. The biggest line, a 200-km, 12 bcm/y capacity line from Korpedzhe to Kurt-Kui, only serves the smaller gas fields on the Caspian in western Turkmenistan, rather than the main gas basins on central and south-central Turkmenistan. Some smaller direct connections to Iran have also been declared, but these appear to be purely local connections with no substantial export potential.

Most of the region remains fundamentally reliant on the Soviet-era network of pipelines that tie its exports to Russian control of export prices. For both the Caspian and the European Union, one key question is whether the EU will help the Caspian countries as a group by using its near-monopsonist position to secure a better deal for Caspian gas transitting the Russian system. For example, at present Turkmenistan supposedly receives 44 USD per thousand cubic metres (44 USD/tcm) for gas delivered into the Gazprom-controlled pipeline stem at the Turkmen-Uzbek border. This is gas destined for Ukraine, to be paid for half in hard cash and half in barter. US sources estimate that the barter component being so poor, in practice Turkmenistan is receiving the equivalent of just 29 USD/tcm in real terms. Moreover, the use by Gazprom of the somewhat obscure Eural Trans Gas has raised concerns of overcharge for customers as well as transparency issues.

Contrast this with Russian earnings at point of delivery. Turkish officials acknowledge that the country's state pipeline company, Botas, has routinely paid some \$130/tcm for Russian gas supplied via the western, Balkan route while one prominent Turkish analyst, Necdet Pamir, has calculated the true figure for this gas as totalling 133 USD/tcm in 2001.³¹ In an age in which Europe can be expected to receive gas from a variety of sources, such a striking disparity in prices shows both the strengths and consequences of Russia's virtual monopoly in terms of export pipelines from the countries on or near the Caspian's eastern shore – and the advantages that Azerbaijan should be able to reap by virtue of its direct gas connection to Turkey. This logic underpinned the PSG/Shell venture to construct a TransCaspian Pipeline from Turkmenistan and across Azerbaijan and Georgia to Turkey. Turkey still has

²⁵“Blue Stream and the Economic Dimension”, Private paper circulated by Mr. Pamir in August 2003.

a valid 1999 sale and purchase agreement to take delivery of up to 14 bcm/y of gas for its own use and to transport 16 bcm/y of gas to European markets by virtue of such a line. But Turkmenistan President Saparmurat Turkmenbashi effectively scuttled the project by demanding an upfront payment, variously put at 300m USD and 500m USD.³²

Turkey's Own Energy Balance

Turkey's drive to promote its role as a transit corridor dates back to the early 1990s. But in terms of gas it received a great boost as a result of the country's own over-eagerness to sign import contracts that in the opening years of the Century have caused Turkey to be significantly over committed.

Although Turkey has signed agreements under which it might be expected to import considerably more gas than it is currently expected to consume, Turkish appear to be taking a surprisingly relaxed attitude to the problem. They argue that Turkey is no longer facing a significant over supply problem since the volume of gas imports actually covered by take-or-pay agreements is lower than the agreed delivery volumes.³³ Indeed, the official focus is still on ensuring that Turkey does not face a supply shortage, with the government looking to assure itself of both the gas supplies required to feed a burgeoning power market and of the power stations required to provide the electricity. This is a problem that has bedevilled the Turkish energy sector for at least a decade, particularly as Turkey has sought to secure an almost exponential increase in gas supplies by signing contracts with Russia, Algeria, Nigeria, Iran and Azerbaijan for deliveries set to reach 58 bcm by 2009, against actual consumption in 2003 of just under 22.5 bcm and projected demand this year of at least 24.0 bcm. Botas is currently preparing revised figures for Turkish demand, but its existing projections, on which various government statements are based, argue that whereas Turkey consumed some 15.6 bcm in 2002, by 2020 consumption is expected to rise to no less than 82.8 bcm/y.

"To end of 2009, we face no surplus that would disturb us," says one of Turkey's most senior energy officials. "After 2011, we'll be in a minus position – we'll need gas."³⁴ This is because in that year the first of Turkey's major gas import contracts, by which it imports some 6 bcm/y from Russia's GazExport, comes to an end. In this context, the official added, Turkey was working on the theoretical assumption that the GazExport contract would not be renewed and that Turkey would turn to Azerbaijan instead to make up the 6.0 bcm. But in practice, the official added, he would be looking to renew the existing GazExport contract – and that Turkey would then onsell the gas from Azerbaijan to other European customers.

³² Both figures have been cited by corporate sources in private discussion with the author.

³³ "Contract values are higher than take-or-pay limits; that's usual," one senior Turkish energy official told the author.

³⁴ Interview with the author; Ankara, April 2004.

The Onselling Issue

This comment reflects a key issue in the debate over Turkish reactions to possible over supply. The Azerbaijani gas purchase agreement allows for onward resale of Azeri gas to other markets; whereas agreements for the purchase of Russian and Iranian gas lack resale clauses.

This might not prove too much of a problem with regard to eventual onward selling of Iranian gas, since Tehran is eager to see its gas enter European markets via Turkey. But Russia has its own direct gas export routes to Europe and would be expect to object vociferously to the idea that Turkey might resell Russian gas into markets that GazExport, TurusGaz and Gazprom, the three companies that currently supply Russian gas to Turkey via the western lines and Blue Stream, could access directly.

“It would be hard to sell Gazprom gas to a third party,” the high official acknowledged. But even he thought there might come a time when it was worth attempting to raise the subject with the Russian gas giant. “If you negotiate with Gazprom, you can try anything – if you can convince Gazprom it is in their interest! Nowadays we are not enemies with Gazprom. Our mutual interest serves both of us.” Whether this is the case remains to be seen. In the summer of 2004, Turkey’s Botas held negotiations with Gazprom on consolidating the various prices paid for Russian gas through the western and Blue Stream pipelines into a single tariff and in these discussions Turkey also raised the onselling issue. As of August 2004, there were some indications that Gazprom was showing a greater interest in the potential onselling of Russian gas to other countries in Europe via Turkey, but the terms and conditions for such transit trade remain very much in doubt.

Much will depend on whether negotiations on prospective Turkish entry into the EU are initiated in the near future, and on how quickly any such negotiations might lead to Turkey’s de facto adoption of the EU gas directive. Should Turkey become incorporated in a common gas market with the EU – even if it has not attained full EU membership by then – Gazprom would have to live with the prospect that some of the Russian gas supplied to Turkey might be passed through to other European countries. In such a case, Gazprom might seek to change its strategy and opt to make deliberate use of Turkey as a transit state.

Regardless, if Gazprom dreams of supplying gas to Israel via Turkey ever come to fruition, there may come a day when, the Russians might be happy to ease the terms on which they sell gas to Turkey. But for the moment, Turkey is thinking more about a pipeline that would bring Egyptian gas north to Turkey than the occasionally floated Russian ideas for a gasline that would head in the opposite direction to Israel.

EU Energy Security

The EU's own Green Paper on Energy Security, published in 2000, anticipates a 45 percent increase in gas demand for the EU's current 15 member states between 1998 and 2030. With 1998 gas demand touching 349 bcm in 1998, this would indicate a surge to around 506 bcm in 2030. Turkish officials, citing the Green Paper and their own discussions with Brussels, routinely talk of the EU requiring an additional 100 bcm of gas by 2020 in justification of proposals for their country to serve as a transit route for EU gas imports.

The Green Paper specifically anticipates that the current 15 members of the EU will be importing some 71 percent of their gas by 2030. And even if Norway were factored into the equation – as the EU does by postulating an “EU-30” group to include all the current confirmed new members, together with all the current applicant states and Norway and Switzerland as well – Europe would still remain dependent on external supplies for some 60 percent of its gas.

The EU is clearly looking for multiple supply sources and routes, and both EU and Turkish officials see an obvious synergy between them in this regard. Commenting on the Turkey-Greece pipeline, the then European Commission Vice President Loyola de Palacio said in January 2004 that the Commission was particularly pleased at the outcome of the Turkish Greek commercial negotiations, saying these “will not only bolster peace and stability in the region but will also make it possible to supply new gas resources from the Caspian Basin and Iran to the internal gas market of the enlarged European Union, and to the Balkans, thus improving security of supply for all stakeholders concerned by this infrastructure.”

In this context, the Green Paper notes that “adopting a policy of geopolitical diversification has not been able to free the Union from effective dependence on the Middle East (for oil) and Russia (for natural gas). Indeed, a number of Member States, and in particular the applicant countries, are entirely dependent on a single gas pipeline that links them to a single supplier country.”³⁵

Conclusion: What can the EU do?

In considering whether to open entry negotiations with Turkey, the issue of EU gas security is clearly relevant, Turkey that lies within the EU (and from early on is effectively a member of a common European gas market) brings with it a variety of means by which fresh sources of gas can be tapped and brought to market within the heart of the EU.

The EU's Green Paper, with its emphasis on diversity of supply, is relevant in this context. So is the question as to whether Gazprom itself might require diversity of competition in order to improve its own competitiveness in a non-monopolistic manner. The Energy Charter process and the efforts to develop a transit protocol in particular, have the same goal as the EU, namely diversity of supply, but

³⁵ European Commission Green Paper, p. 24

although the EU was a participant in the early stages of the Charter process, its support for Charter activities appears to have waned in recent years.

At least one major gas analyst, Jonathan Stern, Director of Gas Research at the Oxford Institute of Energy Studies, argues that there may yet come a time when monopolistic activities by Russian gas suppliers or traders with access to monopoly supplies and transit systems might come into conflict with the EU, and the EU seeks to establish an effective, regulated gas market in a 27-, 28- or 30-nation Europe. At such a point, Stern believes, the EU might feel compelled to turn to the Energy Charter process and the Transit protocol in particular as the basis for resolving outstanding issues – even though Russia has continued to oppose signing the transit protocol.³⁶

At the same time, it should be noted that while Gazprom accounts for well over 95 percent of Russian gas exports because of its monopoly of the Russian pipeline system, it only accounts for around 70 percent of Russian gas production. Actions that would serve to put Gazprom into a more competitive environment would also help to improve prospects for other Russian gas producers, most of whom are found in the country's main oil companies.

The development of transit lines through Turkey represents the obvious way by which Gazprom could face at least a degree of competitive challenge. There would be no idea of wholesale replacement of Russian gas imports with those via Turkey, merely of complementing them – and of presenting Gazprom with a more competitive environment.

In this context the EU should certainly look at the various Turkish-transit related pipeline projects under development and consider which of them might serve its energy security purposes and whether it might even wish to help fund infrastructure development. For such pipelines constitute strategic, as well as commercial, infrastructure. As mentioned earlier, this may well offer opportunities for the EU in general, and the European Investment Bank in particular. This is particularly relevant in considering the proposed West Balkans Pipeline. For while its immediate market, the states of the southern Balkans, are in a gas context of only limited concern with regard to overall European gas security, were they to be connected not only to Turkey but to a major European hub, such as Baumgarten, then the line would be able to function as a complementary system to the Nabucco pipeline.

Turkey very much wants to be at the centre of European efforts to develop alternative ways of accessing Caspian and Middle Eastern gas supplies. The sheer scale of Europe's drive for increased and diversified suppliers drives it on, even if Turkish officials are not quite sure how far their country can go in meeting European expectations. Thus Hakkı Akil, the deputy director general of the Turkish Foreign Ministry, is convinced that, in a gas context, "Turkey will in the near future constitute the fourth artery of Europe's energy supply security after Russia, Algeria and Norway."

³⁶ Jonathan Stern, address to the Third Annual Conference on the Geopolitics of Energy, Florence, 8-9 July 2004. Author's notes. Dr. Stern's paper has yet to be published.

Several factors favour attainment of such a goal:

- In geographical terms, Turkey is clearly increasingly well placed to serve as a central transit supplier for the anticipated major increases in European demand. To Dr. Fatih Birol, the chief economist for the International Energy Agency, the key question is whether Turkey will prove to be an economic way for Europe to secure gas supplies, in terms of being close to the European Union's market and close to Middle East supplies.

- A range of gas companies in central, southern and Southeastern Europe are actively working on ways to bring gas from the Caspian and the Middle East to European markets through fully commercial pipeline systems transitting Turkey and the Balkans.

- For the EU, development of Turkey as a transit route helps promote energy security through diversification of gas supply routes. The Green Paper of 2002 stated that "As long as the European Union's external supply of gas depends on 41 percent of imports from Russia and almost 30 percent from Algeria, geographical diversification of our supplies would appear desirable." It should be noted that this quotation actually ends with the phrase: "particularly in LNG" – a point that clearly refers not to Turkey but to African, Gulf and Caribbean suppliers.

- As Turkey's importance as a gateway grows, so it further increases European energy security by ensuring increased access to Caspian reserves on a commercial basis, as well as offering Middle East producers the option of transporting gas to Europe by pipeline as well as by LNG.

The greater the volume of gas supplies delivered to Europe via Turkey, the greater the pressure on Russia's Gazprom to operate on a commercial basis, rather than as a monopoly, in its dealings with the European Union. Indeed, by offering a competitive challenge to Gazprom, the promotion of increased flows of gas through Turkey may yet prove to be one of the most effective ways of promoting gas market reform in Russia. In this context, with Russia always likely to prove a very major supplier indeed of gas to the European Union, the placement of Russian gas development on a sound basis that is both commercial and competitive would go a long way to ensuring European energy security.

Overall, however, whether Turkey will actually become Europe's fourth artery will depend on a number of factors, both economic – since demand pulls gaslines; and political – in view of the importance of government and donor support in developing commercially supported projects. As the EU ponders the issues of its own energy security and of opening entry negotiations with Turkey, it has a window of opportunity. The next several months will see detailed financial and economic assessments of such projects as the Nabucco line and the Turkey-Greece-Italy interconnector. These may prove financial viable in their own right, but, at the very least, the EU would do well to scrutinise these projects carefully in the event that a strategic investment in infrastructure is required to ensure overall project commerciality.

APPENDIX

OIL TRANSIT ISSUES

1. BTC & Pipelines across Turkey

The existing Iraq-Turkey (IT) pipeline and the Baku-Tbilisi-Ceyhan (BTC) pipeline currently under construction both constitute important elements in the global oil trading network. With total world crude oil exports amounting to 33.5 bn barrels in 2002, the ability of a fully working IT line to carry 1.6 bn barrels of Iraqi crude, or for BTC to carry some 1.0 mb/d of Caspian crude, is evidently of great significance. But the importance of these lines, and of various potential “Bosphorus bypass” pipelines that might be built in the near future, lies in a global context.

The impact on the European Union, while important, is essentially indirect. This is because oil is more easily and flexibly transported, notably by sea. Once oil reaches a seaport, preferably a deep-sea port, it can be shipped anywhere in the world. In oil, on the supply side at least, European energy security is fundamentally a function of global energy security, because oil is such a fungible commodity. (On the demand side, Europe can of course take greater control of its own energy security issues, not least through stock building and price control).

In oil, Turkey’s importance essentially lies in these two major pipelines and particularly, in the way in which the BTC line opens up an alternative route for Caspian producers to those inherited from their former position as member states of the Soviet Union. Moreover, since so much production in the Caspian region is conducted by international companies, the BTC pipeline (along with other new export routes such as the CPC line from Kazakhstan to the Russian Black Sea port of Novorossiysk) will play a significant role in determining the commercial performance of a number of major private sector energy companies, notably BP.

In a global context, Turkey is certainly playing a major role in oil transit, but – in a strictly EU context – this is better defined as being useful and important, rather than vital. The Caspian producers are useful contributors to global oil supplies and BTC is almost certainly vital to their futures, while the line’s importance to oil companies is not disputed. But a world that can survive the loss of both Kuwaiti and Iraqi production (5.5 million barrels a day) in 1990-91 and which can discount the expected loss of Iraqi output while tackling an unexpected collapse in Venezuelan production (late 2002-early 2003) would appear to possess a sufficiently flexible structure that, in a crisis, it could do without the IT and BTC lines. Alternative ways to deliver Iraqi and Caspian crude to market could be utilised, although, in the Caspian case, this would require use of Soviet-era infrastructure passing through Russia, which would doubtless be to the financial detriment of the Caspian producer states.

2. The Bosphorus issue & pipelines past Turkey

In terms of EU and Turkish involvement in the issue of whether and how to develop alternative pipelines in order to reduce traffic through the Turkish Straits, this is again an energy issue of concern to the world as a whole. EU interests essentially focus on whether proposed “Bosphorus bypass” pipelines should fulfill other roles as well as those of simple bypasses. Some Bosphorus bypass projects offer a chance to further the development and/or reconstruction of various Balkan countries, notably Serbia, Croatia and Macedonia. Others can be seen as supply lines to southern and central Europe, as well as transit lines

to deepwater Mediterranean ports. This means that an issue of great concern to Turkey – the prospect of an environmental disaster in the Turkish straits – has significant repercussions for several European countries. But the Bosphorus straits issue is primarily an environmental rather than an energy issue. In this context, EU assistance and expertise in assessing the environmental risk of continued heavy use of the Turkish straits for transit by tankers and shippers of hazardous cargoes is clearly relevant. And, in the long run, the EU's environmental programmes for the Mediterranean as a whole may come to have a bearing on tanker traffic throughout the Mediterranean, and not just in one particularly congested entrance.

The Turkish Foreign Ministry says that some 134.6 million tonnes of hazardous cargo transited the Bosphorus in 2003. Other estimates put the level somewhat higher, at 144 mt. Both anticipate that such traffic will total around 144 mt this year. Such figures are up considerably on the 47.8 mt recorded in 1992. According to Cambridge Energy Research Associates, some 85 mt of hazardous cargo transited the Bosphorus in 2000; 98 mt in 2001; 117 mt in 2002; and 144 mt last year.

Such growth has largely been fuelled by a 60 mt increase in Russian Black Sea exports in recent years. Although Russian development of alternative export routes, notably the Baltic, have prompted analysts to pull back from previous assumptions that traffic might rise to as much as 190 mt in or around 2009, this change of assumption remains conditional on various developments. These include construction of at least one Bosphorus bypass pipeline within that timeframe, continued constraints on the Russian pipeline system entering the Black Sea and no use by Russia of the Odessa-Brody line to ship Russian crude south in to the Black Sea. Were that to happen – and current indications are that TNK bp will indeed use the line for pumping Siberian crude south to Odessa – Russian oil volumes being pumped into the Black Sea might grow by as much as 25 mt.

However, the impressive increase in such volumes suggests there could be a case for more than two pipelines.

Bosphorus bypass proposals

At present, at least eight proposed pipeline projects can be considered as Bosphorus bypasses. These are:

• Odessa-Brody

A 25 mt/y (500,000 b/d), 644-km line between the Ukrainian Black Sea port of Odessa and Brody in the northwestern Ukraine was completed in August 2001. The question is whether it will be used to convey Caspian crude northwards to Central Europe or Russian crude south to the Black Sea. For the line to function as envisaged, Ukraine needs to secure either a connection into Russia's Druzhba export system at Brody (the issue is one of permission, since a physical connection is easy) or construction of a further line at least as far as Plock in Poland, where it would enter the Polish system. Alternatively, the line could be reversed and used to carry Russian crude to the Black Sea, as favoured by Moscow and, increasingly by Ukrainian President Leonid Kuchma (who had initially ordered construction of the line with Caspian throughput in mind). At present, TNK bp is currently filling the line with Russian crude with the intention of shipping it out via Odessa and the Turkish straits.

For the Odessa-Brody line to work as originally envisaged, an extension would be required. Extension options include a 500-km extension to the Polish refinery at Plock; a connection to the Croatian port of Omisalj on the Adriatic by means of the existing system that carries Russian crude westwards via the Druzhba system, which would constitute the cheapest option since it would simply connect up existing infrastructure; an extension through Plock to the German Atlantic port of Wilhelmshavn (the most expensive option, provisionally costed at around \$2bn, since it would entail construction of 500kms of new line to Plock, utilisation/upgrading of existing line from Plock to Schwedt, and construction of 600 kms of new line from Schwedt to Wilhelmshavn. Odessa-Brody has many strengths but suffers from two major weaknesses: Russian refusal to let it connect to the Druzhba systems and the possibility that it will be used to carry oil into the Black Sea.

- **Adria-Druzhba integration**

There are various options for connecting Russia's Druzhba export pipeline system to the Adria pipeline and its loading terminus at the Croatian port of Omisalj in the Adriatic. Work on one link-up between the systems is currently in hand, starting at 5 mt/y (100,000 b/d) and then rising to 15 mt/y (300,000 b/d). This involves reversing the existing flow from Omisalj to the Croatian refinery at Sisak and the Hungarian refinery at Szazhalombatta, so that Russian crude, which currently flows through the Druzhba system to Szazhalombatta, could flow right through to the Adriatic. The length of the system would be 3,197 km. Principal works on the Omisalj-Sisak section are costed at \$20m to reverse the flow and expand storage. The reversed line is due to start functioning imminently while there are also good long-term prospects would be for an expansion of the entire system. This represents the best option for a direct Russian pipeline connection to the Mediterranean.

- **Constanza-Pancevo-Omisalj-Trieste (CPOT)**

This line, sometimes termed the South-East European Line - SEEL), would run from the Romanian Black Sea port of Constanza through Serbia and Croatia to Italy's northern Adriatic terminal at Trieste in Italy, where it would connect with the Trans-Alpine Pipeline. It would deliver crude oil to Serbia's refinery at Pancevo, near Belgrade, and to the Croat Adriatic terminal at Omisalj. The length would be around 1,310 kms (Constanza-Trieste) or 1,238-km (Constanza-Omisalj). The project is currently under active study with a feasibility study prepared by the US HLP Parsons Company adopted by officials from Serbia, Romania and Croatia in May 2004. This line will work if it can connect to the TransAlpine Pipeline at Trieste. Its weakness is that it may be viewed as a supply line for countries en route to Trieste.

- **Albania-Macedonia-Bulgaria Oil (AMBO) Pipeline**

This 913-km pipeline would run from the Bulgarian Black Sea port of Bourgas to the Albanian Adriatic port of Vlore. Planned capacity is 37.5 mt/y (750,000 b/d) with possible expansion to 50 mt/y (1.0 mb/d). Costs are put at \$850m to \$1.2bn. Extensive studies have been conducted including plans for financing based on one-third partner equity and two-thirds debt backed by bilateral and multilateral lenders. US TDA helped finance a feasibility study in 2002. A US-based Group, the AMBO Pipeline Corporation, is developing this proposal and went on to secure approval from Albania in December 2003 for its section of the route. Its strength is that it serves a genuine deepwater port, Vlore in Albania; its weakness is that the Bulgarian authorities appear to prefer Bourgas Alexandroupolis.

• **Bourgas-Alexandroupolis (Trans-Balkan Oil Pipeline)**

This 286-km line, costed at \$600m - \$700m, would run from Bulgaria's Black Sea port of Bourgas to the Greek port of Alexandroupolis in the Northern Aegean. Bulgaria, Greece and Russia signed an initial agreement on the line in 1997. Basic design work has been completed with initial plans for loading of 150,000 tonne tankers at Alexandroupolis replaced by plans for port expansion to enable loading of 300,000 tonne tankers. Projected capacity would be 30-40 mt/y (600,000- 800,000 b/d). The project's backers have put forward an ingenious proposal whereby there would be an equalisation of tariff, on a genuine average cost basis, for tankers using the Bosphorus and for shippers using the Bourgas- Alexandroupolis line. Since Bosphorus costs are, at present, indirect (indeed direct tariffs are illegal under the Montreux convention which governs traffic through the Turkish straits), such averaging would indeed lower the overall cost for pipeline throughput, at the expense of increasing it for the Bosphorus. But were all the Black Sea littoral nations and the shipping companies using the Bosphorus to agree, this would indeed help resolve one of the key Bosphorus bypass issues: how to overcome the gap that still exists – despite demurrage and other charges caused by routine tanker delays in the Bosphorus – between passage through the Bosphorus and a commercial rate for using a bypass pipeline. The project's main strength is its relative cost and length; its weakness is that it discharges into the Aegean.

• **Kiyikoy-Ibrikbaba**

There are at least two current proposals for constructing a pipeline along this route. Both essentially envisage a 198-km line from Kiyikoy on the Black Sea to Ibrikbaba on the Gulf of Saros in the Aegean Sea. Both claim to have made significant progress; both are still awaiting formal Turkish government approval while saying they have already secured personal support from Turkey's leaders. One is backed by Russia's Transneft, TNK-BP, and Tatneft. Capacity The other, Thrace Development Ltd, is backed by Turkish interests and headed by veteran US oilmen Howard Lowe and Jack Bowen. The strength of both projects is that they are proposing lines with massive capacity of at least 1.2 mb/d; their weakness is that they discharge into the Aegean.

• **Samsun-Ceyhan**

A Turkish company, Calik Enerji, is currently proposing a line from the Black Sea port of Ceyhan to the existing Mediterranean terminal at Ceyhan. Two alternatives are under study. Both would carry 50 mt to Ceyhan and provide an extra 5 mt to the refinery at Kirikkale near Ankara. The first option, a direct line from Samsun to Ceyhan with a spur to Kirikkale, would run 660-kms and would require three pumping stations and construction of a 5 mt/y capacity 180-km spur line to Kirikkale. Costs are put at \$1,060m. The second option, a single Samsun-Kirikkale-Ceyhan line, would run from Samsun to Kirikkale utilising the same rights-of-way as the Turkish onshore leg of the Blue Stream gas pipeline to Ankara. From Kirikkale to Ceyhan it would utilise the existing right of way of the pipeline currently carrying oil northwards from Ceyhan to Kirikkale. The length would be 770 kms and require four pumping stations. Costs are put at \$1,070m. The proposed project is currently at preliminary study stage and is awaiting formal Turkish government approval. The project's main strength is that it discharges into a deepwater port at an existing oil terminal; its weakness is that a bypass line within Turkey could be construed as putting too many eggs in a single basket.

• **Agva-Izmit: The Tupras refinery bypass**

The expectation earlier this year Russia's Tatneft would take a substantial stake in the Izmit Refinery on the Sea of Marmara raised the possibility of a limited supply line to serve the refinery, which lies just 40kms from Agva, the nearest point on the Black Sea and 75 kms southwest from the Sakarya river estuary on Turkey's Black Sea coast. The refinery has an 11.5 mt/y capacity and a local pipeline would therefore have the ability to remove this volume from Turkish Straits traffic, either by substituting Russian crude for its current Middle Eastern input or by using otherwise empty tankers to carry Russian crude on their return journey from Izmit through the Dardanelles. Tatneft has at least considered this idea but no progress can be expected until the Council of State, Turkey's highest court, finally rules on whether the privatisation of Tupras is to go ahead. On 23 June 2004 the court issued a preliminary rejection of a government move to enforce the sale of a 66% stake in Tupras to Tatneft and the local Zorlu group. The project makes eminent sense, but while it eases the Bosphorus problem it does not solve it.

A possible tariff comparison

The German pipeline consultants ILF have calculated an indicative range of possible throughput tariffs for various options. To enable comparisons to be made, in each case ILF assumed that the operational line possessed a capacity of 35 mt/y. Actual tariffs, of course, would reflect the fact that actual capacities would be different. The table is intended purely for comparative purposes.

Table A1. Possible tariff comparison

Odessa-Brody-Plock	\$14.5 per tonne
Odessa-Brody-Plock-Wilhelmshavn	\$20.00 per tonne
Constanza-Trieste	\$7.3 to \$15.5 per tonne, depending on choice of route and line construction/refurbishment issues
AMBO	\$9.50 per tonne
Bourgos-Alexandroupolis	\$5.00 per tonne
Kiyikoy-Ibrikbaba	\$4.51 per tonne
Samsun-Ceyhan	\$10.00 per tonne

Source: ILF.

Russian interest

There is increasing Russian, as well as Turkish, interest in developing a Bosphorus bypass. On June 8 the Ministry of Industry and Energy – at the initiative of President Putin – held talks with a cluster of leading oil Russian oil companies in Moscow on ways of bypassing the straits. The issue is also expected to head the agenda during President Putin's forthcoming visit to Turkey. For the EU, one key question is whether it can risk an environmental disaster in either the Turkish Straits or the Aegean; another is whether its own energy security is better served by maintenance of the existing concentration of oil tanker shipping through the Turkish straits or whether it would be better served by diverting a portion of that flow through one or more "Bosphorus bypass" pipelines.