The Great Game for gas in the Caspian

Europe opens the southern corridor

2013
Contents

2   The Great Game: Introduction
4   The scramble for oil
11  The scramble for gas
14  Shah Deniz: Opening the southern corridor
26  The implications for European gas markets
33  The implications for Russia, China and the US
39  The Great Game: Conclusion
The 19th century rivalry between the British and Russian empires over strategic influence of Central Asia was often dubbed the “Great Game”. This term was attributed to a British military officer but brought into the public mainstream by the Indian-born English poet and writer, Rudyard Kipling. Today, the term is often used to describe the strategic competition for access to oil and gas resources in the Caspian region since the break-up of the Soviet Union. This competition is now between Russia, the EU, the US and, more recently, China.

This report outlines the contours of the modern-day Great Game, and assesses the outlook for oil and gas in Azerbaijan, Kazakhstan and Turkmenistan. In doing so it will trace the initial interest from several players in the Caspian region’s oil resources to the more recent interest in the area’s abundant gas resources. It will also explore how the latest attempts to secure access to this gas are affected by shifting market dynamics since the middle of the past decade. Specifically, the report focuses on the Southern Gas Corridor concept: an EU strategy to facilitate the flow of Caspian gas to European markets, thereby reducing reliance on Russian supplies. The first, modest step towards realising this objective will feature gas from the Shah Deniz project in Azerbaijan which, thanks to a decision made by the Shah Deniz consortium in late June, will flow to Europe via the Trans Adriatic Pipeline (TAP), traversing Greece and Albania on the way to Italy.

Given the Shah Deniz consortium’s decision, this report will put the European attempt to secure Caspian gas into context by discussing, among other issues, the Southern Gas Corridor strategy in the light of China’s emerging role in the region’s energy resources; the slump in European gas demand brought about...
by the eurozone crisis; the US shale gas boom, which has raised prospects for unconventional gas development elsewhere; and Russia’s redoubled efforts to build direct pipeline routes that shore up its entrenched position in the European market.

The EU’s Southern Gas Corridor will initially, through TAP, bring only modest volumes of gas to Europe, and additional sources of supply from the Caspian—and perhaps the Middle East—will be required for the corridor to play a more far-reaching role in shoring up European energy security. As discussed in this report, however, this first step in the opening of the Southern Gas Corridor is still a significant one. But expanding the capacity of the corridor is a goal that will not be realised until the longer term.

The urgency felt in the middle of the past decade about diversifying its sources of energy supply has somewhat subsided; demand undershot expectations, while new sources of supply emerged. However, a continuing decline in European conventional gas production, and rising competition for gas from Asia, mean that in the long term the Caspian region will remain important to Europe (especially its south-eastern part). But given the complex geopolitics of the region and rising competition from China for Caspian gas, the EU’s challenge will be to unlock a greater share of the region’s resources for export to European markets in the 2020s and beyond. Game on.

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External interest in Caspian hydrocarbons was, initially, mainly about oil. The break-up of the Soviet Union resulted in the formation of new sovereign states in the Caspian region that had substantial under-explored oil and gas resources. Previously, these were virtually inaccessible to the world’s international oil companies. But some states in the Caspian region were keen to boost their energy production with the participation of foreign firms eager to access new energy frontiers and foreign governments keen to diversify their oil supplies.

In 2000 the EU relied on imports for 75% of oil needs; this proportion grew to 84% by 2010. Except for Norway, the region’s major suppliers were Russia and the OPEC states of Iran, Saudi Arabia and Libya. Cutting European dependence on Russian and Middle Eastern energy also became a key US energy-security objective during the administration of Bill Clinton. In the 1990s, his government sought to unlock the Caspian’s energy supplies by opening up export routes that traversed countries friendly to US interests—such as Turkey—and, more importantly, avoiding the territory of strategic adversaries like Russia and Iran. Estimates of the Caspian region’s oil reserves in the 1990s were exaggerated—with expectations that the region would be a new Persian Gulf—but the strategic priority of the US was to directly link Caspian oil to European markets. In this way, the US hoped to minimise Russian and Iranian influence over energy transport routes in the region.

American diplomacy thus helped to make the 1m barrels/day (b/d) Baku-Tbilisi-Ceyhan (BTC) oil pipeline a reality. This facilitates the export of the multi-billion-barrel offshore crude oil reserves of the Azeri-Chirag-Guneshli (ACG) field complex in the Azerbaijani Caspian Sea to European markets, passing more than 1,700 km across Georgia to Turkey. When the governments of Azerbaijan,
Georgia and Turkey signed an agreement in 1999 to build the BTC pipeline, the then US energy secretary, Bill Richardson, said: “This is not just another oil and gas deal, and this is not just another pipeline. It is a strategic framework that advances America’s national security interests. It is a strategic vision for the future of the Caspian region”. The capacity of the pipeline represented only a small portion of global oil demand (less than 1.5%), but the US had demonstrated that it was able to exert influence in a hydrocarbons-rich region. The EU, meanwhile, gained access to valuable new crude oil supplies that did not pass through Russia.

Since then, oil production growth in Azerbaijan and neighbouring Kazakhstan has been impressive. Yet the Caspian region has not quite lived up to expectations of becoming a new “Persian Gulf”. We estimate that combined crude oil production in Kazakhstan and Azerbaijan was around 2.6m b/d in 2012, up from 1.1m b/d in 2001, versus 9.5m b/d in Saudi Arabia alone. Oil production in Azerbaijan will grow only marginally this decade, but Kazakhstan will be a strong contributor to conventional non-OPEC oil supply growth (see Caspian oil: A tale of two producers). Kazakhstan’s oil production will approach 2m b/d by 2017, owing mainly to the start-up of production from the giant Kashagan field, which is scheduled to begin output later in 2013.

KAZAKHSTAN

Kazakhstan is the second-largest producer among states of the Former Soviet Union (FSU), behind Russia. The Economist Intelligence Unit believes that Kazakhstan has the greatest potential in the Caspian region to boost oil output over the next five years. Its proved reserves of oil have grown rapidly, from 5.4bn barrels in 2000 to 30bn barrels in 2011, largely owing to the Kashagan discovery (in 2000), the largest oil find of recent times. We estimate that Kazakhstan’s oil production will increase from 1.6m barrels/day (b/d) in 2011 to 2m b/d by 2017-18, while the Kazakh government is targeting output of 2.6m b/d by 2020.

In addition to Kashagan, two already productive fields will be key to Kazakhstan’s oil and gas output growth until 2020: the Tengiz oil field and the Karachaganak gas and condensates field. Located on the north-east shores of the Caspian Sea, the Tengiz oil field was discovered in 1979 and boasts recoverable crude oil reserves of between 6bn and 9bn barrels. Production began in the early 1990s, and Tengiz is now Kazakhstan’s largest oil field, producing around 528,000 barrels/day (b/d) in 2012. It is operated by Tengizchevroil, a consortium including the US’s Chevron (which owns 50%
of the field) and ExxonMobil (25%). Kazakhstan’s state-owned oil and gas company, KazMunaiGas (KMG, 20%), and Russia’s LukArco (a subsidiary of Lukoil, with 5%). Planned investment of US$20-25bn under the consortium’s Future Growth Project is designed to expand production by 250,000-300,000 b/d by 2018-19.
The Karachaganak gas and condensates field—one of the world’s largest—had total hydrocarbons output of 379,000 barrels of oil equivalent per day (boe/d) in 2011, of which nearly two-thirds was condensates. Karachaganak is Kazakhstan’s largest gas field, producing 45% of the country’s gas, and it also provides 16% of the country’s liquids supply (in the form of condensates). Recently, the Karachaganak Petroleum Operating (KPO) consortium, whose foreign partners include the UK’s BG Group and Italy’s Eni (29.25% each), Chevron (18%) and Lukoil (13.5%), concluded a deal with the Kazakh government by which KMG acquired a 10% share of the development. KPO is planning for Phase III of the field’s development, which aims to expand condensates output and double gas production.

Kashagan is expected to come on stream by the end of 2013 after several years of delays and cost overruns. A shallow-water field in the northern Caspian Sea, it is estimated to contain recoverable oil reserves of 11bn barrels. Initial production from Phase I of the development is projected at 110,000 b/d, rising to 400,000 b/d by 2020. The consortium developing the field, the North Caspian Operating Company (NCOC), comprises ExxonMobil, Royal Dutch Shell (UK/Netherlands), Total (France), Eni and KMG, each with a share of 16.81%, as well as ConocoPhillips (US, 8.4%) and Japan’s Inpex (7.6%). (In late 2012 ConocoPhillips announced that it would divest its share in Kashagan; negotiations are ongoing). Over the long term, the second phase of Kashagan would push the field’s production to 1.5m b/d—nearly equal to what Kazakhstan is producing now.
Achieving this will not be easy. The technically challenging nature of the reservoir has already contributed to delays (production was supposed to start in 2005) and costs that have escalated to nearly US$50bn. The reservoir is located more than 4,000 metres below the sea bed, in a high-pressure environment with significant quantities of toxic hydrogen sulphide. Making development even more challenging, a coating of ice several metres thick forms for several months of the year in this part of the Caspian Sea. The development is also environmentally sensitive, since the area is a breeding ground for the Caspian Sea’s fish population.

Crude oil from the first phase of Kashagan can be exported through Russia to China using existing pipelines, but proceeding with the second phase would require the construction of additional export capacity. Current plans, known as the Kazakhstan Caspian Transportation System, call for the construction of a 600,000-b/d domestic oil pipeline to a newly constructed oil terminal at Kuryk on the eastern shore of the Caspian Sea, and enlargement of the tanker fleet to transport the oil to an expanded Baku-Tbilisi-Ceyhan (BTC) pipeline. These developments are not expected to take place until the early part of the next decade, when the second phase of Kashagan should be completed.

At present, Kazakhstan exports its oil via several pipelines. The Caspian Pipeline Consortium (CPC) route to Russia’s Black Sea port of Novorossiysk has a capacity of 730,000 b/d, expected to increase to 1.4m b/d by 2015. Another major link to Russia is the Atyrau-Samara pipeline, with a capacity of 600,000 b/d. Kazakh oil is also transported across the Caspian Sea to Azerbaijan by tanker, where it joins the BTC crude oil pipeline. Meanwhile, the Kazakhstan-China oil pipeline, which began operating in 2009, is set to double capacity to nearly 400,000 b/d this year.

In 2011 approximately 200,000 b/d of Kazakh crude oil, or about 20% of Kazakhstan’s total oil exports, was exported to China. The Economist Intelligence Unit expects Kazakhstan’s relations with China to continue to solidify, and that China will become an increasingly important energy partner. The China National Petroleum Corporation (CNPC) already has equity in several Kazakh oil fields, including those that supply oil to the pipeline to China, and CNPC is expected to expand its equity participation in Kazakhstan. Apart from sales to China, Kazakhstan’s exports mainly go to European markets (via Russia).

Increased competition from China is not the only way in which the environment for Western oil majors operating in Kazakhstan has deteriorated. The oil and
gas sector opened to foreign investment in the 1990s, but the government is taking an increasingly interventionist approach. In 2005 it awarded itself the prerogative to exercise the first right to acquire oil assets put up for sale, which facilitated KMG’s purchase of a 10% equity share in Karachaganak. KMG now has equity stakes in each of Kazakhstan’s three big oil and gas projects. In 2007 the government also awarded itself the right to make retrospective changes to existing oil contracts, or even reneg on them if they are deemed to breach the country’s security interests. In 2008 it announced that production sharing agreements would no longer be awarded, and in 2010 introduced strict local content requirements for oil and gas contracts. The Kazakh government has in this way assumed a pivotal role in the country’s oil and gas sector.

AZERBAIJAN

Azerbaijan’s proved reserves of crude oil are estimated to be around 7bn barrels. Most production comes from the offshore Azeri-Chirag-Guneshli (ACG) complex, approximately 100 km from the Azerbaijani capital of Baku. ACG is operated by the UK’s BP on behalf of the Azerbaijan International Operating Company (AIOC), which also includes Chevron, the State Oil Company of the Azerbaijan Republic (SOCAR), Inpex, Statoil (Norway), ExxonMobil, TPAO (Turkey), Itochu (Japan) and Hess (US). Output began in 1997 and reached a peak of 823,000 b/d in 2010, but has since fallen to 684,000 b/d in the first half of 2012, according to Oil and Gas Journal.

Foreign Majors play a large role in Azerbaijan. Although the national oil company, SOCAR, participates in all of the international oil and gas consortia, it
accounts for less than 20% of Azerbaijan’s total oil production. Azerbaijan has a favourable tax regime for foreign energy investment, especially compared with its Caspian neighbours, and overseas oil and gas companies are permitted to enter into production sharing agreements.

After peaking at just over 1m b/d in 2010, total Azerbaijani oil production has edged downwards to an estimated 863,000 b/d in 2012. Now that the Azeri-Chirag-Guneshli (ACG) complex has been developed, we expect oil production to remain at around current levels until 2017.
In Azerbaijan and throughout the Caspian, the focus is shifting towards acquiring the access to, and influencing the transit of, the region’s substantial supplies of natural gas. Interest from Europe is particularly keen.

As with oil, so with gas. The EU depends heavily on imports for its gas supplies; amid declining domestic production and growing demand, between 2000 and 2010 the EU’s reliance on gas imports grew from 49% to 62% of demand. The bulk of these arrive via pipeline from Russia, Norway and Algeria. Liquefied natural gas (LNG) from North Africa and the Middle East gained market share among the EU’s gas imports in the 2000s. But continued dependence on a handful of gas suppliers, especially Russia, has spurred European policymakers to pursue the diversification of gas imports.

**Caspian region proved gas reserves**

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<tr>
<th>Country</th>
<th>1998</th>
<th>2011</th>
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<td>Kazakhstan</td>
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<td>Azerbaijan</td>
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<td>Uzbekistan</td>
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The discovery in 1999 of the Shah Deniz gas field off Azerbaijan in the Caspian Sea raised expectations that the Caspian region could become a lucrative region for gas exploration and development. Around the time that the field was discovered by the UK’s BP, the broad concept of a Southern Gas Corridor was being developed by the European Commission (EC). The EC identified the Caspian as a key region for its strategy to diversify energy supplies, and a series of initiatives and declarations ensued in the 2000s. These established the EC’s intent to link the gas reserves of the Caspian and Middle East to European markets, and in 2007 it appointed a special co-ordinator to promote a Southern Gas Corridor. In 2009 the EC published an “EU Energy Security and Solidarity Action Plan”, which stated that:

A southern gas corridor must be developed for the supply of gas from Caspian and Middle Eastern sources, which could potentially supply a significant part of the EU’s future needs. This is one of the EU’s highest energy security priorities.

The EC’s strategic initiative led to several pipeline proposals. In 2002 a number of European energy companies began talks about undertaking a pipeline project called Nabucco, which would link Caspian gas supply to Europe. With an annual capacity of 31bn cubic metres (bcm), the pipeline would stretch from the Georgian-Turkish border to Austria, through south-eastern Europe. Multilateral agencies, such as the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD) pledged to finance the concept, and the EC promised a €200m (US$260m) grant.

Source: Eurostat.
Alternatives also emerged, including the Trans Adriatic Pipeline (TAP), from Greece to Albania and then through the Adriatic Sea to Italy, and the Interconnector Turkey, Greece, Italy (ITGI) project. Other proposals, such as the White Stream and Azerbaijan–Georgia–Romania Interconnector (AGRI) projects, aim to transport Caspian gas across the Black Sea to Romania, from export facilities constructed in Georgia, through a pipeline or via LNG. As Europeans were devising ways to link Caspian gas directly to Europe, meanwhile, Russia was also seeking to bring its gas directly to Europe through pipelines circumventing transit countries. In Eurasian energy politics, the first decade of the 21st century was therefore the decade of the gas pipeline proposal.
Eventually, it became apparent that the initial source of supply for the Southern Gas Corridor would be Azerbaijan, and in particular Stage 2 of the Shah Deniz offshore gas development. Shah Deniz contains the vast majority of Azerbaijan’s proven gas reserves, which were put at 31trn cu ft (tcf) in 2012, and is the country’s main source of production. Stage 1 of Shah Deniz began in 2006, and output reached 6.8bcm in 2010. Thanks to Shah Deniz, Azerbaijan became a net gas exporter in 2007, with the bulk of its gas exports funnelled through the South Caucasus Pipeline (SCP) to Turkey via Georgia.

The consortium operating Shah Deniz—led by BP (which owns a 25.5% share) and partnered by Statoil (Norway, 25.5%), the State Oil Company of the Azerbaijani Republic (SOCAR, 10%), Total (France, 10%), Lukoil (Russia, 10%), the Naftiran Intertrade Company (a subsidiary of the National Iranian Oil Company, 10%) and the Turkish Petroleum Corporation (TPAO, 9%)—will develop Stage 2 of the field, part of the process of which was the selection of the pipeline route to export the gas to European markets.

Two pipeline proposals were selected to vie for the right to export Shah Deniz Stage 2 gas by the Shah Deniz consortium, which made its final decision in June 2013. With this decision on the pipeline route now completed, a final investment decision (FID) will be made on the Shah Deniz Stage 2 project by October 2013, with first production of gas expected to begin in 2018. Stage 2 of the Shah Deniz development will double Azerbaijan’s gas production once it is fully operational.

In a “knockout series” involving several stages, the Shah Deniz consortium grouped several pipeline proposals into two general routes—Mediterranean and South East European (SEE)—with the final proposal chosen from the winning proposals out of each group.
In February 2012 the consortium decided that the preferred proposal for a Mediterranean route was the Trans-Adriatic Pipeline (TAP) from near the Turkish Greek border to Italy, a 10bcm route devised by a consortium consisting of Statoil, the Swiss power company Axpo, and Germany’s E.On Ruhrgas. The TAP proposal begins in Greece—where it would connect with the pipeline system transporting Shah Deniz gas from Greece—and continue onshore to the Adriatic Sea through Albania. From there an offshore segment would be built to Italy, connecting to its gas transportation grid. The TAP proposal was successful against its competitor for the Mediterranean route, the ITGI proposal, sponsored by DEPA (the public gas corporation of Greece) and an Italian energy company, Edison.

The TAP proposal then competed, and ultimately triumphed, over the winner of the SEE group of proposals, Nabucco West. Nabucco West was a 10bcm pipeline proposal stretching from the Turkish-Bulgarian border to Austria, via Bulgaria, Romania and Hungary, and represented a scaled down version of the original 31bcm proposal. Competing against Nabucco West for the preferred Mediterranean route was the SEEP (South East Europe Pipeline) proposal, which was a late entry sponsored by the operator of Shah Deniz, BP.

In June 2012 Azerbaijan and Turkey agreed to construct a 16bcm pipeline—known as the Trans Anatolia Natural Gas Pipeline (TANAP)—across Turkey to receive Shah Deniz Stage 2 gas: supplying 6bcm for domestic Turkish use and transporting a further 10bcm to the Turkish border to either Bulgaria or Greece. SOCAR originally had 80% equity in the project, with TPAO and the Petroleum Pipeline Corporation of Turkey (BOTAS) controlling the remaining 20%. SOCAR has reportedly divested some of its equity in the TANAP project to its key Shah Deniz partners. BP and Statoil will reportedly each acquire 12% equity in the TANAP project, with Total acquiring a further 5%. SOCAR will keep its controlling share in TANAP, however, and provide the majority of capital for the project. The significance of the TANAP agreement between Turkey and Azerbaijan is that they have asserted influence over how Caspian region gas will be exported to European markets, by deciding to build the pipeline that will link the gas from Shah Deniz to the Turkish border. As a result both the TAP and Nabucco West proposals were modified to not include servicing the Turkish market, but rather to start in the south-east corner of Europe.
Beyond Shah Deniz

The consortia of the three pipeline proposals discussed in the previous section each highlighted the scalability of their projects to cater for additional supplies of gas beyond Shah Deniz: TAP from 10bcm to 20bcm, TANAP from 16bcm to 20-30bcm (and possibly even as high as 60bcm), and Nabucco West from 10bcm to 23bcm. However, the amount of gas that will be transported through the first plan to make the Southern Gas Corridor a reality—a combination of TANAP and TAP—will be 10bcm. This amounts to less than 2% of Europe’s gas demand in 2012, based on International Energy Agency (IEA) estimates. Nevertheless, TAP will represent an important first step in linking south-eastern European markets, and Italy, to Caspian energy supplies.

In addition to Shah Deniz Stage 2, Azerbaijan has other resources of natural gas that could supply the TANAP and European pipeline network in the long term. In September 2011 Total announced a major offshore discovery in the Absheron block, which could have reserves of 12tcf, although it is still too early to assess the field’s potential. In 2010 SOCAR discovered the Omid and Babek
offshore fields, with combined reserves that could add 14-21tcf. Another source of hydrocarbons is the Shafag-Asiman deepwater structure, an area that BP and SOCAR will jointly explore and develop. The IEA reported in its *Medium Term Gas Market Report 2013* that Azerbaijan’s gas production, thanks to the development of fields other than Shah Deniz, could reach 39-48bcm during 2025-30, of which 27-38bcm could be exported.

Thus, gas from Shah Deniz will be an important additional source of energy for Europe, but its contribution to overall European gas supply will be less than game-changing. Additional gas from Shah Deniz and other fields in Azerbaijan, other Caspian or even Middle East producers will be needed if Europe is to significantly reduce its reliance on Russian gas. In this respect Turkmenistan is crucial.

**TURKMENISTAN**

Owing to recent sizable discoveries of natural gas in its remote east, Turkmenistan is emerging as a Caspian energy power. It already exports gas to China, but could also potentially supply Europe and South Asia, if infrastructure and geopolitical obstacles are overcome. Among all the countries in the region, we believe that Turkmenistan has the greatest potential to ramp up gas production.

In 2006 Turkmenistan announced the discovery of the South Yolotan deposit, subsequently re-named Galkynysh (which includes other fields in the country’s east). An independent audit by UK-based consultancy, Gaffney, Cline & Associates, the results of which were announced in late 2011, found an estimated 463-749tcf of gas in place at Galkynysh, with a best estimate of 579tcf given in 2012. Further surveys and drilling will reveal more knowledge about Galkynysh’s resource potential: the 2011 assessment itself revised upwards a 2008 estimate, and could be raised still further.

Already, the Galkynysh gas field is rated the second-largest in the world, trailing only the Iranian-Qatari South Pars/North Field in the Persian Gulf. In addition, another field in the region, Yashlar, is estimated to hold 5-176tcf of gas in place. Turkmenistan has thus moved up the world rankings of reserve-holders of natural gas to fourth position—behind Russia, Iran and Qatar—according to the *BP Statistical Review of World Energy 2012*, with reserves estimated at 858tcf.

The Galkynysh field is being developed by Turkmenistan’s state-owned gas producer, Turkmengaz. Turkmenistan only permits foreign equity participation in offshore oil and gas blocks in the Caspian Sea—with the exception of the
China National Petroleum Corporation (CNPC), which develops the Bagtyiarlik field that supplies the pipeline to China. Turkmenistan reportedly borrowed US$8bn from China to finance the development of Galkynysh, and field service contracts were awarded to a drilling subsidiary of CNPC, South Korea’s Hyundai and LG, and a UK firm, Petrofac. Production at Galkynysh is expected to begin in 2013, with first stage production expected to reach 30bcm. The Turkmen government announced in late 2010 that it aims to reach national production of 250bcm of gas by 2030, the vast majority of which would be available for export.

Turkmenistan used to depend exclusively on gas export pipelines passing through Russia. However, it is seeking to reduce this reliance and opened up routes to China and Iran, in 2009 and early 2010, respectively. In 2009 Turkmenistan’s exports via Russia fell dramatically—largely because of a drop in European demand—and a dispute ensued with Moscow over the pricing and volume of the gas exported through the Russia-controlled Central Asia–Center gas pipeline system (some of this gas is re-exported from Russia to Europe). Turkmen gas production slumped, but has since largely recovered to pre-2009 levels, with modest volumes now exported to China and Iran.

**THE CENTRAL ASIA-CHINA GAS PIPELINE**

In December 2009 the Central Asia-China gas pipeline began bringing Turkmen gas through Uzbekistan and Kazakhstan and into China’s domestic West-East gas pipeline network. It consists of two parallel lines, Lines A and B, with a
combined capacity of 30bcm (which can be expanded to 40bcm). Line C is currently under construction, which will add a further 25bcm in capacity, raising total capacity to 65bcm. In 2010 China imported just 3.5bcm from Turkmenistan through the pipeline, but this rose dramatically to an estimated 14bcm in 2011—making China the largest export market for Turkmen gas—and further still to 22bcm in 2012. In November 2011 Turkmenistan and China agreed to increase gas exports to 65bcm, although no timeframe was given.

In addition, China has made agreements to receive 5bcm of gas from Kazakhstan and 10bcm from Uzbekistan, with supplies feeding into the Central Asia-China pipeline. In Kazakhstan, a pipeline is being built to link gas fields in the west of the country to the section of the Central Asia-China pipeline running through its east. According to industry media reports, CNPC is also seriously considering opening up another route: a pipeline running from Turkmenistan to either Uzbekistan or Afghanistan, and then through Tajikistan to western China.

**THE TAPI PIPELINE**
Turkmenistan has multiple other pipeline options, but each faces logistical and geopolitical obstacles. In late May 2012 it signed a sales purchase agreement with Pakistan and India to supply natural gas through the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline. Due to enter operation by 2018,
The pipeline will have a capacity of 33bcm: India and Pakistan will each buy 14bcm of the piped gas, while Afghanistan will receive 5bcm. This project, however, faces several hurdles. The largest of these is that TAPI would traverse two of the most conflict-ridden provinces in Afghanistan, Herat and Kandahar. With NATO troops scheduled to leave the country in 2014, the security environment is precarious. Security would therefore be an issue during the construction of the pipeline, and the route would need ongoing protection during operations. Cost is another, related obstacle. The Asian Development Bank (ADB) has pledged to partly fund the project, but at least some of the US$7.6bn price tag must be met by the individual states. As a result, the future of the TAPI proposal is uncertain, and at any rate it is unlikely to enter service until after 2020.

Counting in TAPI’s favour, however, is its strong backing from the US, which looks to the pipeline to enhance Afghanistan’s stability and provide Pakistan and India with an alternative to Iranian gas. Moreover, in public statements the Turkmen government appears more enthusiastic about the TAPI pipeline than the other main contender: a proposed pipeline to bring Turkmen gas to European markets.
THE TRANS-CASPIAN PIPELINE

The Trans-Caspian pipeline would transport Turkmen gas a short distance across the Caspian Sea to the Azerbaijani coastline. From there it would link to the system that will be developed to transport Shah Deniz gas to Europe. Expansions to SCP and TANAP, and to TAP, would accommodate volumes of Turkmen gas if the Trans-Caspian pipeline is built.

Accessing Turkmen gas through a subsea pipeline across the Caspian has been a central element of the EU’s Southern Gas Corridor strategy. In September 2011 the EU adopted a “mandate to negotiate a legally binding treaty between the EU, Azerbaijan and Turkmenistan to build a trans-Caspian pipeline system”. The EU’s energy commissioner, Gunther Oettinger, stated that “the trans-Caspian pipeline is a major project in the Southern Corridor to bring new sources of gas to Europe”.

At a length of approximately 300km, a trans-Caspian pipeline would not be as costly or technically challenging as other proposed routes in the region. It would involve connecting just two states, unlike other proposed pipelines that involve traversing several countries. On the surface, therefore, it appears a technically straightforward and logistically simple proposal. Moreover, Turkmenistan has expressed its willingness to supply gas through a trans-Caspian pipeline. The Turkmen president, Gurbanguly Berdymukhamedov, has reportedly stated that up to 30bcm could be supplied to European markets.

Yet after nearly two years, little progress has been made. In September 2012 Mr Berdymukhamedov refused even to meet Mr Oettinger when he was visiting the Turkmen capital, Ashkhabad. This was widely seen as a snub to the European diplomat, reflecting Turkmenistan’s lack of interest in pursuing talks with the EU on the proposal.

A sizable barrier to the project is Turkmenistan’s policy to leave the financing and construction of pipeline export routes to those that want its gas. While China was willing to assume this responsibility in developing the Central Asia-China gas pipeline, and it did so relatively quickly, the potential players involved in building a trans-Caspian route (the EU, European energy companies, multi-lateral agencies and transit countries) have not yet resolved how to deal with Turkmenistan’s policy.

Furthermore, the issues of volume, pricing and transit fees would need to be worked out between the supplying country (Turkmenistan), transit states (Azerbaijan and Turkey) and the eventual buyers of the gas in Europe. As
the Azerbaijani minister for industry and energy remarked in the Kyiv Post in February 2013:

Questions arise in this connection [trans-Caspian pipeline]. Who will build the gas pipeline for transporting Turkmen gas? Who will finance the construction? Who will deliver Turkmen gas to Azerbaijan? What company or consortium will buy this gas and effect its transit through Azerbaijan to Europe?

For its part, Azerbaijan may prefer that any expansion of the Southern Gas Corridor accommodates additional Azerbaijani supplies before it takes in gas from Turkmenistan. Furthermore, while a pipeline across the Caspian Sea may meet the EU’s political objectives, the project would need to be commercially viable for Western oil and gas companies.

There are also territorial and diplomatic hurdles to overcome. Turkmenistan and Azerbaijan share a nautical boundary in the Caspian Sea and both claim sovereignty over the Serdar-Kyapaz offshore oil fields. In 2012 Turkmenistan announced that it would seek international arbitration to resolve the dispute. More important, however, is that over two decades after the break-up of the Soviet Union, the five littoral states of the Caspian Sea (Russia, Kazakhstan, Turkmenistan, Iran and Azerbaijan) have not yet agreed on its territorial delimitation. Although it would stretch credulity for any other Caspian littoral state to claim the territory that a trans-Caspian pipeline would run through, Russia argues that any infrastructure project involving the Caspian Sea needs the approval of all Caspian littoral states. Iran takes a similar view.

After all, a trans-Caspian pipeline is not in the interests of Russia or Iran. The director of a Russian energy security think-tank recently went so far as to suggest that constructing the trans-Caspian pipeline would be like spitting in Russia’s face. Moscow may therefore try to dissuade Turkmenistan from committing supplies to the pipeline; for example, by cutting off Turkmenistan’s gas exports to Russia through the Central Asia-Center gas pipeline system.

Ultimately, it will be Turkmenistan’s own willingness, and the ability to reach agreements between potential partners, that determine whether a trans-Caspian pipeline is ever built. It is noteworthy that Turkmenistan has begun construction of a domestic east to west gas pipeline. This will connect the more heavily populated west of the country to gas reserves in the south-east, but also leaves open the option to develop a western export route via the Caspian Sea. While Turkmenistan has prioritised China as a market for its gas, and also views South Asia as a viable market, it is unlikely to have given up entirely on the idea
of a trans-Caspian pipeline. Mr Oettinger, meanwhile, has re-iterated the high priority Europe places on accessing Turkmen gas. The EU’s challenge though, is to make accessing the European market a high priority for Turkmenistan.

**RUSSIA: HAPPINESS IS MULTIPLE PIPELINES**

Russia has energy policy objectives of its own: maintaining influence over the Caspian; diversifying its energy markets; and reducing the role of transit countries (especially Ukraine and Poland) in transporting Russian gas to Europe, a key export market. Hence, it has undertaken two major pipeline projects. One, Nord Stream, has just been completed, while construction of the South Stream pipeline reportedly began on Russian soil in late 2012.

Nord Stream will not necessarily facilitate the flow of additional supplies from Russia to Europe, but it does achieve a re-direction of those flows, largely by diverting gas from Poland. The pipeline runs directly through the Baltic Sea to Germany, Russia’s largest European customer, although gas provided via the 55bcm-capacity link will also reach other European markets. A first line became operational in November 2011, and a second, parallel line officially came into service in October 2012. Nord Stream was completed by a consortium consisting of Russia’s Gazprom (with a 51% share) and four European energy firms: Wintershall of Germany (15.5%), E.ON Ruhrgas of Germany (15.5%), Gasunie of the Netherlands (9%), and GDF Suez of France (9%). In April 2013 Gazprom signalled that it was interested in doubling the pipeline’s capacity—by constructing two additional lines—in order to supply the Netherlands and the UK.

Just after Nord Stream’s second line became operational, Russia and Bulgaria signed bilateral final investment decisions (FID) on the South Stream project, which will pipe Russian gas directly to Europe under the Black Sea, thus bypassing Ukraine. The FID between Russia and Bulgaria finalised a series of bilateral FIDs between Gazprom and participating countries (also including Serbia, Hungary and Slovenia), as well as an FID on the Black Sea section of the pipeline. The project will have four parallel lines, each with a capacity of 15.75bcm, giving the project a total capacity of 63bcm. The first line is expected to begin operation in 2015, and Russian officials expect all four parallel pipes to be operational by 2019.

As with Nord Stream, Gazprom is partnering with several European energy firms on South Stream. South Stream Transport, which will construct the
The offshore section of the route, is a joint venture consisting of Gazprom (50%), ENI of Italy (20%), EDF from France (15%), and Wintershall (15%). For the onshore section Gazprom has 50:50 partnerships with domestic energy companies in each of the countries that the pipeline will cross.

At a cost of €29bn (US$37.6bn) the commercial viability of the South Stream project has been questioned. Like Nord Stream, it is intended to redirect existing Russian supplies to Europe, rather than to add significantly to the amount of gas Russia will export (although the latter could be a longer-term objective if the supplies from Russian fields becomes available). The combined capacity of the Nord Stream and South Stream pipelines—118bcm—is roughly equivalent to the amount Russia currently exports to EU markets. In 2012 Russia sold 105.5bcm of gas to Europe (excluding Turkey), yet existing and planned export capacity is more than three times that (377bcm). When fully developed, therefore, Nord Stream and South Stream will raise Russia’s total gas export capacity far beyond volumes that Russia is ever likely to sell to Europe.

Gazprom’s pipeline plans are a costly exercise in establishing direct gas export links to Europe. However, if South Stream is completed Russia will have little use for Ukraine as a transit country, while Nord Stream already provides Russia with a direct route to the heart of Europe. Expensive these projects may be, but for Russia there is a clear strategic objective in them: to cement its place in the European market and minimise the role of transit states. Furthermore, South Stream also aimed to stifle any attempt to open up the Southern Gas Corridor through the heart of south-eastern Europe, and therefore may have contributed to the demise of its direct competitor for markets in that region, the Nabucco West proposal.
### Existing and planned Russian pipeline capacity to Europe

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<th>Bcm</th>
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<tr>
<td><strong>Existing</strong></td>
<td></td>
</tr>
<tr>
<td>Nord Stream 1</td>
<td>27.5</td>
</tr>
<tr>
<td>Nord Stream 2</td>
<td>27.5</td>
</tr>
<tr>
<td>Yamal-Europe</td>
<td>33.0</td>
</tr>
<tr>
<td>Ukraine</td>
<td>140.0</td>
</tr>
<tr>
<td>Blue Stream (to Turkey)</td>
<td>16.0</td>
</tr>
<tr>
<td><strong>Total existing</strong></td>
<td>244.0</td>
</tr>
<tr>
<td><strong>Planned</strong></td>
<td></td>
</tr>
<tr>
<td>Nord Stream 3</td>
<td>27.5</td>
</tr>
<tr>
<td>Nord Stream 4</td>
<td>27.5</td>
</tr>
<tr>
<td>South Stream</td>
<td>63.0</td>
</tr>
<tr>
<td>Yamal-Europe 2</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Total planned</strong></td>
<td>133.0</td>
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</table>

Source: Platts
The initial supply of Caspian gas to Europe through the TANAP and TAP pipelines will be just 10bcm, and it will not begin flowing until 2018. At a later stage capacity can be added, but this depends on supply becoming available from other fields in Azerbaijan, Turkmenistan or even Iraq or Iran. Not until the long term, therefore, will a more significant volume of gas flow from the Caspian region (or the Middle East) to European markets.

**SOFT FUNDAMENTALS FOR GAS**

Five years ago, the prospect of only modest volumes of gas flowing from the Caspian to Europe by the end of this decade would have rung alarm bells in Brussels. That is less true today, however, owing to the changed dynamics of the European gas market.

First, demand. Between 1990 and 2010 Europe’s gas consumption nearly doubled and its dependence on gas imports grew rapidly. However, the global financial crisis of 2008-09 and the subsequent eurozone crisis plunged European economies into recession, and regional gas demand has slumped. According to our estimates, gas demand in Western Europe fell to 518bcm in 2012, from 588bcm in 2010, and is forecast to reach 520bcm in 2014. It will not rebound fully until the latter half of the decade.

The IEA is also not bullish on European gas demand growth. Last year it revised downwards its 2020 forecast for European gas demand in its World Energy Outlook 2012 report, from 627bcm to 585bcm. For the rest of this decade, European gas demand will experience only incremental growth, contained by poor economic performance, competition from cheaper coal and national policies to promote renewables.
Fundamentals have also softened on the supply side. Gas imports in the form of LNG have gained market share in Europe over the past decade to comprise about 25% of total gas imports. Most of Europe’s major LNG providers—which include Qatar, Algeria, and Nigeria, with smaller volumes arriving from Norway, Egypt, Libya and Trinidad and Tobago—have gradually increased supplies to Europe over that time. For instance, as Qatar’s gas production doubled between 2008 and 2012, it began selling additional LNG to European customers. Capacity expansions in Qatar and elsewhere had been motivated partly by the expectation that the US would become a substantial market for LNG as its conventional gas production declined. However, the boom in US shale gas production over the past five years removed the need for the US to import LNG, thus forcing LNG originally intended for the US to be re-directed to other markets, including Europe.

DON’T FORGET SHALE

Shale gas could yet deliver further twists for the European gas market. The US boom has raised hopes that European states could develop their own shale resources. In 2011 the US Energy Information Administration (EIA) estimated that Europe could have 646tcf of technically recoverable resources of the gas, largely concentrated in France, Poland and Norway. Policies towards shale gas differ widely between European states, however, ranging from active support in Poland to a ban on hydraulic fracturing in France. On balance, we believe it is unlikely that shale gas will develop as quickly in Europe as it has in the US, with any impact on domestic supply unlikely to be felt until the next decade.

Even then, at best European shale gas production will merely alleviate the continent’s import dependency. In some states, such as in Poland and the UK, unconventional gas could have an appreciable impact on domestic supply, reducing their gas import dependency. However, given the huge volume of gas that Europe imports, it is not likely that shale gas will eliminate Europe’s need to import gas.

This will not be the end of the shale gas story for Europe, however. The development of a substantial North American LNG sector—made possible by shale gas—will be directed towards Asian markets, where LNG prices are highest. This will have indirect benefits for European gas-consuming economies, as greater supplies of LNG become available for European buyers.

Asian gas demand growth—especially in China and India—is expected to be robust, as is growth in demand for LNG globally. A report by an accounting firm, Ernst & Young, states that the number of countries with the capacity to import
LNG will double by 2020, to 25. Exceptionally strong Asian gas demand growth will make it more difficult for Europe to compete with Asia for LNG cargoes, especially if prices for LNG in Asian markets remain at a considerable premium to European LNG prices.

One thing that would mitigate this is successful development of shale gas in China—which is estimated to have an abundant shale gas resource base—as this would reduce its need to import LNG. Successful development of shale gas in China would have a significant impact on the LNG supply-demand balance globally, a factor that would indirectly benefit European gas-consuming economies. However, this remains some years off. Even before this happens, though, North American, Australian, East African, and even East Mediterranean LNG will provide some European markets with the opportunity to diversify their gas imports.

EUROPE FLEXES ITS MUSCLES
Softened fundamentals have begun to change the way that gas is priced—to Europe’s advantage. In the last few years the European gas market has been a buyer’s market. Oil-indexed contracts are still the predominant formula for pricing in Europe, but the share of gas sales set by open trading on gas hubs has grown to about one-third of total sales. This has put long-term contracts indexed to the price of oil under pressure, as gas-hub based prices are lower. Norway’s Statoil has been the most flexible in shifting towards gas-hub pricing in its contracts with European buyers, but even Russia’s Gazprom has been forced to give discounts to some European utilities. In 2012 Norway’s pipeline gas exports to Europe exceeded that of Russia, a reflection of Norway’s greater flexibility on pricing than Russia.

Gazprom is also facing some pressure regarding how it operates in the European market. The EC has launched an investigation into Gazprom’s alleged anti-competitive practices in several central and eastern European gas markets. In a statement released in September 2012 the EC claimed that “Gazprom may have divided gas markets by hindering the free flow of gas across Member States . . . prevented the diversification of supply of gas [and] may have imposed unfair prices on its customers by linking the price of gas to oil prices”. The investigation reflects the fact that European policymakers are taking a more assertive stance towards the terms on which Russian gas is supplied to Europe, especially to markets in Eastern Europe.
SOUTHERN GAS CORRIDOR STILL IMPORTANT

Of concern to European policymakers, however, is that despite tepid demand growth, Europe’s import dependence will increase steadily as domestic output continues to fall. The UK, once the EU’s largest gas producer, has seen its gas production halve over the past decade. We forecast that it will fall to 41bcm in 2014, down from 57bcm in 2010. Output from the Netherlands, the EU’s other main gas producer, is also expected to show a moderate decline over the same period, from 70bcm to 65bcm. As a result, the gap between gas production and consumption in Europe (ex-Norway) will increase—from 375bcm in 2010 to around 450bcm by 2020, according to data in the IEA’s World Energy Outlook 2012 report. (If gas demand growth rates pick up, import dependence will rise more rapidly.) Meanwhile, gas output in non-EU Norway, which doubled over the past decade, is expected to stabilise for the rest of the decade, so a greater volume of imports will need to be sourced from further afield.

### Europe gas consumption and production 2010–2020

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2020</th>
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</thead>
<tbody>
<tr>
<td><strong>Gas demand</strong></td>
<td>569</td>
<td>585</td>
</tr>
<tr>
<td><strong>Gas production</strong></td>
<td>304</td>
<td>250</td>
</tr>
<tr>
<td><strong>Norway</strong></td>
<td>110</td>
<td>114</td>
</tr>
<tr>
<td><strong>Production-consumption gap (ex-Norway)</strong></td>
<td>375</td>
<td>449</td>
</tr>
</tbody>
</table>

Source: IEA World Energy Outlook 2012

Recent trends in the European gas market and the global prospects for shale gas do not imply, therefore, that the Southern Gas Corridor strategy is outmoded. Accessing Caspian energy remains important.

Geographically, Europe is within reach of some of the most prolific natural gas reserves in the world, including the Middle East and Central Asia, but tapping them is proving difficult. Above-ground factors such as political risk, logistics, security, access to finance, the commercial viability of pipeline projects and the availability of infrastructure, will determine the success of efforts to make the Southern Gas Corridor a key element of Europe’s gas supply.

The Middle East could also supply gas through the Southern Gas Corridor, but there are barriers here too. Iran has the second-largest gas reserves in the world, but the EU has imposed sanctions on Iranian energy exports. Unless there is a resolution to the stand-off between Iran and the West over Tehran’s
nuclear programme, resulting in the lifting of EU sanctions on Iranian energy exports, Iran will not be able to supply gas for the Southern Gas Corridor.

Iraq also has plentiful gas reserves that are historically under-utilised. The country’s gas sector is undergoing considerable development: it is reducing gas flaring, meaning more gas is available for sale, and Iraqi officials have expressed interest in supplying it to Europe. For now, however, Iraq’s main priority for its gas is to use it to supply the under-performing power sector. European attempts to access gas from Iraq’s Kurdistan Regional Government (KRG) will also meet opposition from the central government in Baghdad, although energy co-operation between Turkey and the KRG is strengthening.

For the Southern Gas Corridor to make a greater impact on Europe’s supply options, a breakthrough is essential in securing supply from Turkmenistan, or a major gas producer in the Middle East. Although this cannot be ruled out, it is only likely to be realised in the long term.

ACHIEVING EUROPEAN ENERGY SECURITY POLICY: HERDING CATS?
The ability of the EU to realise its external energy policy objectives—such as diversifying the sources of its supplies—is often constrained by the national interests of individual European states, as well by the commercial objectives of European energy firms. The EU is not in a position to make bilateral energy supply agreements and then mandate and finance the construction of a transnational pipeline, as China was able to do with the Central Asia-China pipeline, for example. Furthermore, individual states have pursued bilateral energy relationships with Russia.

**Russian gas exports to Europe, 2011**

Some large European states have developed co-operative energy ties with Russia. German, French and Italian energy companies co-operate with Gazprom on the Nord Stream and South Stream projects, despite the fact that the EU views the South Stream as doing nothing to contribute to its external energy objectives. In 2011 nearly 47% of Russia’s pipeline gas exports to Europe (excluding Turkey) were directed to Germany, Italy and France, three of the four largest economies in the EU. This makes them important customers for Russia, but they are less reliant on Russian gas as a share of their total gas consumption than is the case elsewhere on the continent.

Smaller central and eastern European states import far less gas from Russia in absolute terms, but are far more dependent on Russia in relative terms; Bulgaria and the Baltic states, for instance, rely on Russian gas to satisfy all of their gas consumption. There is often tension between these countries and Russia over how Gazprom prices its gas—sometimes resulting in interruptions to supply, as during Russian-Ukrainian price disputes in 2006 and 2009. It is therefore unsurprising that all the countries included in the EC’s investigations into Gazprom’s anti-trust activities are in central and eastern Europe, where dependence on Gazprom is highest—and where the drive to reduce this dependence is strongest.

The EU can have an over-arching strategy on meeting its energy security objectives, but within the union the interests of states can differ widely. This, in turn, can frustrate efforts to achieve a pan-European consensus on how the region can to meet its energy security objectives. For example, Germany and Italy are more comfortable about their energy relationships with Russia than many central and eastern European states. Furthermore, the EU views the South Stream pipeline as doing little to contribute to its external energy objectives, but some European states have been willing to co-operate with Gazprom at a bilateral level to bring the project to fruition.

To conclude, the dire economic circumstances in Europe have depressed regional gas consumption. This, in combination with the recent availability of additional LNG supply and global prospects for shale gas, appears to take pressure off Europe in meeting its gas supply needs compared with the pre-2008 period (when the global economy collapsed and the shale gas boom became evident). However, Europe still faces growing gas import dependency, owing to its declining output. Regional shale output will not eliminate the need for imports, and competition for LNG with Asian markets will be intense, despite additional supplies coming on stream. In the long term, European gas demand is likely to gain momentum.
These factors mean that the Southern Gas Corridor strategy remains important. However, the challenge for European policymakers is to facilitate the expansion of the capacity of this corridor after Shah Deniz Stage 2 gas starts flowing. If the Southern Gas Corridor strategy is to make an appreciable impact on European gas supply, securing additional sources of supply will be crucial. EU policymakers must also contend with the fact that states in the Caspian region are becoming more assertive and will make decisions about infrastructure and supply issues on their own terms. This is reflected in the decision by Azerbaijan and Turkey to co-operate on the construction of the TANAP pipeline, and Turkmenistan’s move to prioritise the Chinese, rather than the European, option to diversify its gas markets.
Contrary to public perception, Russia depends more on Europe as a market for its gas than Europe depends on Russia as a source of supply. The EU’s reliance on Russia for gas imports has in fact declined in recent decades. In the early 1990s Russia’s share of the total EU gas imports stood at more than 70% but by 2010 had fallen to 32%. This decline is largely the result of Norway’s growth as a major gas exporter and, more recently, the growth of LNG supplies from Qatar, Nigeria and elsewhere. Over the past decade, Russia’s share of EU gas consumption has remained stable, at around 25%.

**Russia’s market share of total EU gas imports, 2000-10**

Source: Eurostat.
On the other hand, European economies (excluding Turkey) accounted for 53% of Russia’s gas exports in 2011, with the rest going to Turkey (10.6%), Former Soviet Union (FSU) countries (29.9%) and LNG to Asia (6.6%). Stagnation in European gas demand, the growth in shale gas production in the US and the increased availability of LNG pose several problems for Russia to tackle in the coming years. Furthermore, the gradual erosion of oil-indexed pricing for gas and moves towards a more competitive and unified European gas and electricity system will diminish Russia’s influence in the European energy market.

That said, Russia is a key supplier of gas to Europe and will remain so. It is in close geographic proximity and its proved reserves of gas are the largest in the world. It also maintains close bilateral ties with key energy-consuming economies in Europe, such as Germany, and is in the process of building major pipeline projects to lock in direct routes to European markets. Although Russia will not become marginal to Europe’s gas needs, the volume of Gazprom’s exports to the EU has fluctuated at around the same level in recent years. Depressed demand and more competition from other suppliers pose challenges to Russia, and it may not be able to prevent a trans-Caspian pipeline from being built. The confluence of several trends is prompting Russia to look eastwards to find new markets for its gas, especially China. As far as Gazprom is concerned, if Europe seeks to diversify its sources of supply, Russia can seek to diversify its sources of demand.

Indeed, Russia and China have been negotiating for several years over the terms in which Russia would supply China with gas, but disagreements over pricing...
and routes have proved to be stumbling blocks to a deal being reached. In March 2013 a breakthrough was made. Gazprom relented on its pipeline route preference, the Altai route through western Siberia, and acceded to the Chinese preference for a route from eastern Siberia to eastern China. In addition, LNG will be supplied to China from the proposed Vladivostok LNG plant.

The March 2013 Russo-Chinese agreement was a Memorandum of Understanding (MoU) for a 38bcm pipeline project, but crucially the final price for the gas has yet to be agreed. However, it is significant that Russia has agreed to China’s request for the eastern Siberian pipeline route. Should the project go ahead, it would make China the second-largest gas market for Russia behind only the Ukraine (on 2011 figures), and the largest if the proposal to expand capacity further, to 68bcm, is realised. Faced with little capacity for growth in the European market—and greater competition from new and emerging LNG-exporting hubs—Russia has decided that securing markets in Asia, where gas demand is fast-growing, is a high priority.

On the European front, Russia objected to the trans-Caspian project, but whether it can effectively prevent it from being built remains to be seen. Russia has also not been able to exercise any influence in preventing Azerbaijan from supplying Europe with gas directly, but the construction of the South Stream pipeline can be viewed as an attempt to minimise the impact of the EU’s Southern Gas Corridor strategy. South Stream’s main purpose might be the re-direction of supply to Europe, but its route is aimed at the south and east European markets that the Southern Gas Corridor route would initially supply. In this respect Russia would be relatively satisfied with the Shah Deniz consortium’s decision to choose TAP rather than Nabucco West as the pipeline to transport Shah Deniz gas to Europe, as the latter represented more of a direct supply competitor to South Stream.

The EU does not view South Stream as meeting its energy security objectives. South Stream represents a diversification of routes, but not sources of supply. EU officials responded to the announcement that construction of South Stream has commenced by stating that no environmental impact studies related to the project have been made for them to consider. Furthermore, the EU has not awarded the South Stream consortium exemption from the third-party access requirement of the EU’s Third Energy Package (a set of laws requiring operators to open up access to the pipeline to other parties). An exemption was, however, awarded to Nord Stream. There are therefore unresolved issues facing the South Stream project, even though the first sod was turned on Russian soil in December 2012.
The energy relationship between Russia and Europe will remain an important one, although shifting market dynamics (such as LNG and shale gas), European efforts to access Caspian gas supplies and Russian efforts to find markets in Asia, reflect the fact that each side is seeking to become less reliant on the other.

**CHINA**

China has become a key player in the Caspian energy scene with the opening of an oil pipeline from Kazakhstan and a gas pipeline from Turkmenistan. Since the early 2000s, China’s growing energy demand has made it more dependent on imports to meet its oil needs and it will also become more dependent on gas imports. China’s gas consumption takes up only a small fraction of its total energy mix (less than 4%), but high reliance on polluting coal—which supplies more than 75% of China’s power generation—has compelled Chinese policymakers to adopt policies to encourage a shift to gas and renewables. A key element of this strategy involves securing gas imports from the Caspian region, especially Turkmenistan. In addition, China is also in talks with Russia about opening up an export route from eastern Siberia, while pipelines carrying oil and gas from Myanmar will begin operating this year. China also has ambitious aims to develop its own shale gas resources.

The IEA forecasts that China’s gas demand will nearly triple to 304bcm by 2020, from 110bcm in 2010. As a result, the Caspian will become an increasingly important region for China, and by 2020 that region’s gas exports to China could exceed 60bcm (about one-half of current Russian exports to the EU). Given that China’s gas consumption represents a tiny fraction of its energy mix, the potential for China to ramp up gas demand—especially to meet its electricity needs—is huge.

Although the EU identified Turkmenistan as a source for natural gas before China did, the ability of Chinese energy officials to negotiate directly with the governments of Turkmenistan, Uzbekistan and Kazakhstan on constructing the Central Asia-China gas pipeline, and to facilitate its rapid construction, has allowed China to access Turkmen gas first. In April 2006 China and Turkmenistan signed a framework agreement to build and supply the export pipeline, and construction began in August 2007. By December 2009 the project was completed.

Securing gas from Turkmenistan has also given China leverage in its gas supply negotiations with Russia. Like Europe, China seeks to diversify its sources of imported supply, as well as to develop its own unconventional sources. China’s
directly interventionist approach has enabled it to become an influential stakeholder in the Caspian region relatively quickly, a development about which Russia, the EU and the US have been able to do little. For the EU in particular, the impact is that Turkmenistan has found in China an alternative source of demand for its gas, making it less reliant on Russia. As a result, Turkmenistan does not feel the same sense of urgency to participate in a pipeline project to supply Europe as the EU does.

**UNITED STATES**

The US played a key role in development of the BTC oil pipeline, but is not as actively engaged diplomatically to promote the Southern Gas Corridor. US policy is that multiple pipeline routes from the Caspian region significantly enhance both European and American energy security interests. However, the administration of President Barack Obama has not been as forthright in promoting a direct gas link to Europe as the previous Democratic administration of Bill Clinton, which promoted the BTC oil pipeline in the 1990s.

The perceived lack of engagement by Mr Obama’s government was recently referred to by a US Senate Committee on Foreign Relations “Minority Staff” report (prepared by senators from the Republican Party) on Caspian energy issues. The report cited an unnamed foreign official lamenting that “there is a perception that US engagement is fading away” in the region. In particular, the report urged the US State Department to fill the position of special envoy for Eurasian Energy, left vacant by the departure of Richard Morningstar. It argued that leaving the position unfilled sent the message that the US was not properly engaged in Eurasian energy security issues.

The US sees Central Asia and the Caspian as a strategically important region, but the focus is more on that region’s relationship with South Asia. In 2011 it launched a “Silk Road Strategy” to promote investment and trade ties between Central Asian states and the South Asian states of Afghanistan, Pakistan and India. This includes active US support to promote the TAPI pipeline. In January 2013 the US assistant secretary for South and Central Asian affairs stated that “the TAPI project is one of the most important regional integration projects, because it will provide Turkmen gas for the growing Indian market, but it will also provide very substantial transit revenue for Afghanistan and Pakistan”.

US promotion of TAPI is not intended to exclude American support for the Southern Gas Corridor, but a high priority for the administration of Mr Obama is to ensure Afghanistan is stabilised following the withdrawal of NATO troops in 2014. Providing energy supplies and facilitating revenue from transit fees
for Afghanistan is one way in which the US hopes to realise this objective. Another priority for the US is to dissuade Pakistan and India from looking to Iran to supply their increasing gas needs. The US believes that supplying these states with Turkmen gas through the TAPI pipeline can contribute to this end (although Pakistan has commenced construction of the Iran-Pakistan pipeline project).

Finally, while recognising the importance of Europe opening up the Southern Gas Corridor, the US does not view this as Europe’s only option to realise its energy security objectives. Speaking at The Economist Investment Energy Summit in March 2012, Mr Morningstar stated,

> The most important thing that Europe can do—more so than any pipeline or any single gas field—is what Europe does itself with respect to liberalising its market, with respect to creating interconnectors between countries, by looking at alternative sources of energy, whether it be shale or renewables, by taking advantage of opportunities to improve energy efficiency, by increasing LNG facilities, by increasing storage facilities; doing all the things that are necessary for Europe to have its own balanced and diverse energy policy.

As with its domestic energy policy, the attitude of the administration of Mr Obama towards European energy security can be described as recommending an “all of the above” approach.
Conclusion

The first step in unlocking the Caspian’s gas resources directly to European markets has been made, albeit a modest one. By the end of this decade about 16bcm of gas will be flowing to Turkey and Europe. Additional supply for European markets can be secured from Azerbaijan, Turkmenistan, or perhaps the Middle East, but this is not likely to be realised until the 2020s. In the shorter term, therefore, the contribution of Caspian gas to European supply will be restricted to markets in the south east of Europe and Italy. Overall, the contribution from this first step of opening up a Southern Gas Corridor will be modest.

Since the mid-2000s the landscape of the European gas market has changed; characterised by a slump in demand, additional supplies of LNG becoming available, and prospects for the development of shale gas on the European continent. Over the past decade Russia’s share of the European gas import market has shrunk, from one half to one third. European gas demand is likely to continue to struggle for the next five years, facing competition from cheaper coal and the promotion of renewables, while also suffering due to poor economic performance. As a result, the sense of urgency in opening up the Caspian region’s gas supply to European customers—while still viewed as important—has somewhat dissipated. Nevertheless, it is still important for south-east European states, where dependence on gas from Russia is the strongest.

In recent years China has emerged as a key player in the Caspian region due to the securing of gas from Turkmenistan, despite the fact that European officials have sought Turkmenistan’s gas resources for over a decade. Russia, for its part, is ploughing ahead with expensive pipeline projects such as South Stream which aim to link Russian gas to Europe directly, avoiding transit states. Russia will
remain a key supplier to the European gas market, but it will not be the only one. With the European gas market becoming more competitive, Russia will step up its efforts to boost its market share in Asia, particularly by making an effort to supply the fast-growing Chinese gas market. However, as a result of China being able to secure gas from Turkmenistan, build additional LNG capacity, and in the longer term develop its own shale gas resources, Beijing is in a good position to negotiate gas deals with Russia on its own terms.

By the end of this decade Shah Deniz gas will be flowing to European markets. Despite changed dynamics regarding European gas supply the opening up of the Southern Gas Corridor remains a useful energy security objective. The challenge for the next decade is to expand its capacity so it can make a greater impact on securing Europe’s gas supply needs.
Economist Intelligence Unit
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