



# THE SOUTHERN GAS CORRIDOR

The recent decision of The State Oil Company of the Azerbaijan Republic (SOCAR) and its consortium partners to transport the Shah Deniz gas through Southern Europe via the Trans Adriatic Pipeline (TAP) is a key milestone in the creation of the Southern Gas Corridor.

This Briefing examines the origins, aims and development of the Southern Gas Corridor, including the competing proposals to deliver gas through it.

## Background

In 2007, driven by political incidents in gas supplier and transit countries, and the dependence by some EU Member States on a single gas supplier, the European Council agreed a new EU energy and environment policy. The policy established a political agenda to achieve the Community's core energy objectives of sustainability, competitiveness and security of supply.

There have been a number of proposals and legislative packages to achieve these objectives, including the EU Energy Security and Solidarity Action Plan that was outlined in the Second Strategic Energy Review published by the European Commission in November 2008.

The EU Energy Security and Solidarity Action Plan identified the development of a Southern Gas Corridor to supply Europe with gas from Caspian and Middle Eastern sources as one of the EU's "highest energy securities priorities". Azerbaijan, Turkmenistan, Iraq and Mashreq countries (as well as in the longer term, when political conditions permit, Uzbekistan and Iran) were identified as partners which the EU would work with to secure commitments for the supply of gas and the construction of the pipelines necessary for its development. It was clear from the Action Plan that the EU wanted increased independence from Russia. The EU Commission President José Manuel Barroso stated that the EU needs "a collective approach to key infrastructure to diversify our energy supply – pipelines in particular. Today eight Member States are reliant on just one supplier for 100% of their gas needs – this is a problem we must address".



In 2009 representatives of key Central Asian and Caspian countries, Turkey, and Egypt signed a declaration of support for the Southern Gas Corridor at the Prague Summit. The Prague Summit's official declaration considered the Southern Corridor concept as a modern Silk Road, interconnecting countries and people from different regions and establishing the adequate framework necessary for encouraging trade, multidirectional exchange of know-how, technologies and experience.

### Shah Deniz

The primary source of gas for the Southern Gas Corridor will be the Shah Deniz field, which was discovered in 1999 and is one of the world's largest gas-condensate fields, with 40 trillion cubic feet (over 1 trillion cubic metres) of gas in place. It is located on the deep water shelf of the Caspian Sea, 70km south-east of Baku, in water depths ranging from 50 to 500m. Shah Deniz is an unincorporated joint venture between the UK's BP, Azerbaijan's SOCAR, Norway's Statoil, Russia's Lukoil, France's Total, Iran's NICO and Turkey's TPAO. BP operates Shah Deniz on behalf of its consortium partners under a production sharing agreement entered into in June 1996.

Shah Deniz Stage 1 was developed over a period of seven years and included drilling the wells, building a platform, constructing an onshore terminal (Sangachal) and laying the 700km South Caucasus Pipeline (SCP) through Azerbaijan and Georgia to the Georgia–Turkey border. Since the start of operations in 2006, Shah Deniz I has exported over 40 billion cubic meters of gas and 85 billion barrels of condensate.

Shah Deniz Stage 2, or Full Field Development (FFD), includes two additional offshore gas platforms, sub sea wells and expansion of the gas plant at Sangachal, and will add a further 16 billion cubic meters per annum (bcma) of gas production. According to BP over US\$25 billion capital investment will be required to produce the gas and transport it to the Georgia-Turkey border.

From the Georgia–Turkey border, Shah Deniz gas will be transported through the new Trans Anatolian Pipeline (TANAP), which was agreed by intergovernmental treaty between the governments of Turkey and Azerbaijan, and in which SOCAR has taken a controlling stake (presumably to avoid, as far as possible, the situation that Russia and Ukraine found themselves in 2006 and 2009). The planned capacity of TANAP is 16bcma of gas at initial stage, but this can be

increased later to as much as 60bcma so as to transport additional gas supplies from Azerbaijan and, if the Trans-Caspian Gas Pipeline (TCP) is developed, from Türkmenbaşy in Turkmenistan. (TCP will connect with SCP in Baku.)

TANAP's route does not extend beyond Turkey's Western borders, so the key question was which of the various competing pipelines in Europe would transport the Caspian gas into Europe.

### Pipeline race

A number of pipelines were proposed for the European part of the Southern Gas Corridor, including Nabucco, the Interconnector Turkey-Greece-Italy pipeline (ITGI), the South East Europe Pipeline (SEEP) and TAP.

The Nabucco pipeline project was one of the first to be proposed. It is a consortium consisting of Austria's OMV, Hungary's MOL Group, Bulgaria's Bulgargaz, Romania's Transgaz, Turkey's BOTAS and Germany's RWE, with each consortium member having an equal share. The pipeline was to have a capacity of 31bcma (substantially more than the gas proposed to be transported from Shah Deniz).





The original 3,893km route would have carried gas from the Georgian–Turkish border through Turkey, Bulgaria, Romania, and Hungary to Baumgarten an der March, an existing gas hub in Austria. The Nabucco route was subsequently reduced and the modified Nabucco West pipeline, as it was renamed, was to start from the Turkey–Bulgaria border and then follow the original route, with a total length of around 1,300km.

ITGI would be connected to the Turkey–Greece pipeline outside Komotini Greece and would run to Igoumenitsa in northwestern Greece. ITGI is made up of the existing Interconnector Turkey–Greece (ITG), which has a capacity of about 11.5bcma, and a new Interconnector Greece–Italy (IGI) pipeline with a capacity of about 9bcma. IGI itself would be 800km long and include IGI Onshore, a 600km onshore pipeline in the Greek territory (to be developed by Hellenic Transmission System Operator S.A. (DESFA)) and IGI Poseidon, a 200 km offshore pipeline across the Ionian Sea (under development by IGI Poseidon S.A., a joint venture between Edison and Greece’s Public Gas Corporation S.A. (DEPA)).

SEEP was proposed by BP in September 2012 and was a pipeline whose route would start in eastern Turkey and end in Baumgarten an der March in Austria, like Nabucco West. In contrast with other proposals however, SEEP was to use existing pipelines (although it still needed 800–1,000km of new pipeline to be laid in different countries).

TAP was announced after Nabucco, by Swiss energy company EGL Group (now named Axpo) and is a joint venture between that company (holding a 42.5% share), Norway’s Statoil (holding a 42.5% share) and Germany’s E.ON (holding a 15% share). Two routes were initially considered for TAP. A northern route through Bulgaria, the Republic of Macedonia and Albania, and a southern

route through Greece and Albania. As currently proposed, TAP will start near Kipoi on the border of Turkey and Greece. It will then continue onshore crossing the entire territory of Greece and Albania from east to west all the way to the Adriatic Sea coast. The offshore part of the pipeline will begin near the Albanian city of Fier and cross the Adriatic Sea to tie into Italy’s gas transportation grid operated by SNAM Rete Gas.

Nabucco West and TAP were the two favourites to be selected by the Shah Deniz consortium partners. The shareholders of both consortia signed agreements with BP, SOCAR and Total (three of the Shah Deniz consortium partners) to provide short-term funding for project development activities until the final pipeline selection decision and, more importantly, to provide BP, SOCAR and Total with an option to acquire a 50% stake in Nabucco West or TAP in the event that either was the successful pipeline.

The final bids by Nabucco West and TAP were submitted to the Shah Deniz consortium in April 2013 and on 28 June 2013 the consortium announced its decision to select TAP. TAP expects that BP, SOCAR and Total will now exercise their option to acquire 50% of TAP.

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#### TAP features

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- In total, TAP will be approximately 870km in length (550km in Greece, 210km in Albania, 105km offshore in the Adriatic Sea and 5km in Italy).
- TAP will initially have a capacity of 10bcma, providing enough energy for as many as 7 million households.
- Two compressor stations, one near Kipoi, in Greece, and the other one on the Albanian coast near Fier, will be used to ensure gas transportation through the pipeline.

- The crossing of the Adriatic will not be deeper than 810 metres below sea level, so TAP can also use large diameter pipes for the subsea section.
- Through the use of such large diameter pipes the pipeline’s transport capacity can be expanded to 20bcma or more by adding more compression.

Source: TAP

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#### Transit country Greece

The decision to build a major cross-border pipeline can be of great significance for a transit country and explains, at least in part, the intense competition for the selection of the Shah Deniz gas transport route. For Greece, the TAP decision comes at a crucial time, as it seeks to emerge from the midst of a long recession. Estimates for the cost of the Greek section, which will be the longest part of TAP, are at approximately EUR 1.5 billion, making it one of the largest sources of foreign direct investment in Greece. A study by the Foundation for Economic and Industrial Research expects the benefit of TAP to the Greek economy in the next 50 years to come to EUR 17–18 billion. The construction work, which will start next spring, will create 8,000–10,000 jobs while the operation of the pipeline will mean 4,300 jobs for the next 50 years.

In particular, given its role as Greece’s natural gas transmission operator and SOCAR’s proposed investment, it was to be expected that DESFA would have an important role in the Greek portion of TAP. In early July, after the TAP selection by the Shah Deniz consortium, DESFA and TAP entered into a co-operation agreement in relation to the day-to-day technical operation and maintenance for the Greek section of the TAP pipeline. Other joint activities will apparently include the review of interconnection points with the DESFA pipeline system to further enhance security of supply and technical cooperation.



## EU law: Third Energy Package

Transmission and distribution infrastructures operating in the EU, such as TAP (and DESFA), need to comply with the EU internal market rules for electricity and gas.

**Unbundling:** The so-called Third Energy Package (consisting of two Directives and three Regulations) adopted in 2009 requires, amongst other things, the effective unbundling of energy production and supply interests from transmission networks. This is intended to eliminate any conflict of interests between these activities (on the basis that unbundling should prevent network operators from favouring their own energy production and supply companies).

There are various different ways to achieve unbundling. If an EU Member State decides to impose full ownership unbundling, its integrated energy companies would have to sell off their gas and electricity grids. In this case, no supply and production company would be allowed to hold a majority share in a transmission system operator, nor exercise voting rights or appoint board members. Various integrated energy companies in the EU have already proceeded with such an unbundling. In the electricity sector for example, both E.ON and Vattenfall Europe sold their high voltage grid in Germany, while Endesa sold its transmission assets in Spain. In the gas sector, both RWE and E.ON sold their transmission assets in Germany, while Endesa sold its transmission and distribution assets in Spain.

As an alternative, EU Member States may opt for either the independent system operator model under which the supply company can still own the physical network, (but has to leave the entire operation, maintenance and investment to an independent company), or the independent transmission system operator model under which the supply company can own and operate the network, but the management of the network must be undertaken by a subsidiary of the parent company (a supervisory board can be put in place to safeguard the financial interest of the parent company but without being involved in the day-to-day business).

In privatising DESFA, the Greek natural gas transmission operator which was a subsidiary of the gas distribution and trading company DEPA, the Greek Government gave investors the option to bid for DESFA on a stand-alone basis (in which case DESFA would have been ownership unbundled from DEPA) or to bid for DESFA and DEPA together (in which case DESFA would have been run as an independent transmission system operator (the alternative unbundling model provided for under the relevant Greek energy law transposing the Third Energy Package)).<sup>1</sup>

**Third Party Access:** In addition, so as to enable effective competition, the operators of transmission networks must allow any electricity or gas supplier non-discriminatory access to the transmission network in order to enable it to supply its customers. This is the third party access (TPA) principle. The conditions of access to the networks are regulated by national regulatory authorities. Moreover, transmission networks are bound by regulated tariffs that they must apply, so as to avoid any abuse of dominance.

The European Commission recognises that some new investments, particularly cross-border gas pipelines (such as TAP) and LNG terminals, as well as cross-border electricity interconnectors, can be particularly risky. If, exceptionally, such projects cannot be realised if the rules on third party access, tariffication, ownership unbundling, etc. were applied, national regulators may “exempt” them entirely or partially from the relevant EU energy rules.

In May 2013, TAP announced that the European Commission had formally approved its application for third party access exemption for the initial capacity of 10bcm. The receipt of approval follows consents received from the relevant regulatory authorities in Italy, Greece and Albania. The decision means that TAP will be able to enter into long-term ship-or-pay Gas Transportation Agreements (GTAs) with the shippers of Shah Deniz gas. In addition, the Commission has approved exemptions from regulated tariffs on both TAP’s initial and expansion capacity, as well as exemption from ownership unbundling for 25 years.

<sup>1</sup> The privatisation of DESFA (and DEPA), which HFW has been heavily involved in, is also part of the Greek government’s plans to reduce its debt burden and rebuild the economy following the debt crisis. The tender for the sale of DEPA and DESFA was launched in February 2012 and attracted significant initial interest from investors including Gazprom, Mitsui, ENI, SONATRACH, Edison, Enagas, Gas Natural and SOCAR (amongst others).



## Further developments

Croatia, Montenegro, Bosnia and Herzegovina and Albania recently signed an inter-governmental memorandum of understanding supporting the realisation of TAP and the Ionian-Adriatic Pipeline (IAP), a bi-directional pipeline in western Balkans which would run from Fier in Albania through Montenegro, and Bosnia and Herzegovina, to Split in Croatia. In Fier, IAP will connect with TAP and in Split, IAP will connect with the existing gas transmission system of Croatia. (In addition, it may be connected with other new gas infrastructure, including the proposed Adria LNG terminal in Krk.) The length of the pipeline will be 516km and will have capacity of 5bcma, and suggests that the stated benefit of TAP reaching new markets in Europe may materialise.

DEPA does not appear to have abandoned the concept of an East Mediterranean pipeline which would connect the Cypriot and Israeli gas fields in the Mediterranean (Tamar, Leviathan and Block 12) with Greece. According to the proposals presented in 2012, the pipeline would run from the gas fields to Cyprus, from Cyprus to the Greek island of Crete and from Crete to mainland Greece. It would have a total length of 1150km and capacity of 8bcma. Whether the technical obstacles of the East Med pipeline will be overcome and whether there will be sufficient political and economic support for it, particularly from Cyprus, which is forging ahead with its own onshore LNG terminal plans, remains to be seen.



**For Greece, the TAP decision comes at a crucial time, as it seeks to emerge from the midst of a long recession.**

ALEXIS KYRIAKOULIS

Further afield, Russia has begun construction of the South Stream pipeline. South Stream is a 2,446km gas pipeline (930km of which will be offshore through the Black Sea) with a capacity to transport 63bcma Russian natural gas from Russia through the Black Sea to Bulgaria and further to Greece and Italy<sup>2</sup> (via Serbia, Hungary and Slovenia). South Stream is a joint venture between Russia's Gazprom (holding a 50% share) Italy's ENI (holding a 20% share), France's EDF (holding a 15% share) and Germany's Wintershall (holding a 15% share) and has long been seen as Russia's answer to the Nabucco proposal. Given the cost, rumoured to be anywhere between EUR 16 and 25 billion, commentators have queried the economic feasibility of South Stream if it does not supply significantly more gas to Europe through the new pipeline than at present.

Interestingly, following the decision not to select Nabucco West for the Shah Deniz gas, Kazakhstan was quick to offer to deliver natural gas to Romania via an extension of the South Stream pipeline from Romania's southern neighbour Bulgaria. At the same time, there were reports that Bulgaria may benefit from Caspian gas through the existing pipeline between Greece and Bulgaria to which TAP could, subject to any technical obstacles, connect. Azerbaijan is in any event apparently already looking to future

gas exports beyond Shah Deniz when fields like ACG Deep, Absheron, Umid and Shafag-Asiman are developed, and with pipeline routes towards Austria.

The decision to choose TAP for the Shah Deniz gas may have brought a temporary end to the competition for the transport of the Shah Deniz II gas through the Southern Gas Corridor but it certainly does not mark the end of the competition for the supply of gas to Central, Eastern and Southern Europe.

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<sup>2</sup> In November 2012, Gazprom removed the Greece-Italy route from South Stream but subsequent reports suggest that the pipeline may still connect with Greece albeit that it is unlikely to stretch to Italy. Greece's DESFA owns 50% of the shares in South Stream Greece S.A. (the company that would be involved in the Greek section of South Stream), so may also become involved in this pipeline.

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