Projected demand – 521 bcm
Gas demand – 462 bcm
Additional import needs: 125 bcm
Imports: 327 bcm
Imports: 202 bcm
Production: 194 bcm
Production: 260 bcm

Energy for a growing market

Russia has a long-standing partnership with Turkey. Gazprom delivered the first gas via the Trans-Balkan pipeline as far back as 1987. Since then, Turkish energy needs have grown significantly, in tandem with the country’s rapid economic development.

As of 2003, the Blue Stream Pipeline has supplied additional volumes of natural gas directly from Russia to eastern Turkey. The TurkStream Pipeline System will further increase the country’s energy security by providing a direct and reliable supply for the west of Turkey. When fully operational, the pipeline will be able to transport up to 31.5 billion cubic metres of gas each year. This will not only satisfy the growing energy needs of the Turkish economy, but also that of neighboring countries. Turkey will continue to increase its strategic position in the regional energy market, acting as an energy gateway for the whole of south-east Europe.

Reliable Gas Supplies

The TurkStream pipeline will directly connect the Russian gas reserves to the Turkish network and provide reliable energy supplies for Turkey, as well as South and Southeast Europe. Its offshore section will be developed by South Stream Transport B.V. and consist of two parallel pipelines running through the Black Sea. Both strings will start near the Russian city of Anapa and end near Kıyıköy, 100 kilometres from Istanbul. The first of the onshore pipelines will connect to the Turkish network at Luğleburgaz. The second line will be directed to the Turkish-European border.

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Projected demand 2014 and 2030

Gas demand OECD Europe in billion cubic metres (bcm)

Designed by Dmitry Koltyrev, 2017
From Concept to Construction

The offshore pipeline is constructed in several steps. First, extensive surveys were conducted to find the best route for the pipeline along the seabed. In parallel, engineers worked on a so-called Front-End Engineering Design (FEED) for the system. Once all designs were approved as safe and environmentally sound, the construction work started. During this phase, heavy pipes were welded together and laid on the seabed by specialized vessels. And, in the final stage, the system is tested and the first gas can be transported!

Designed for maximum safety

Each of the two offshore pipelines was made up of thousands of individual pipe joints of 12 meters in length. The pipes are designed and manufactured especially for safe use in the deep sea. The walls of the pipeline are made of 39 millimeters of high-quality carbon manganese steel and each joint weighs around 9 tonnes.

Offshore Construction

Steel pipes were produced in special mills and checked thoroughly during production. They were inspected with x-ray and ultrasound and tested from the inside with water at high pressure. Finally, an independent inspector verified the quality of each pipe before it left the factory floor. The individual pipes were then brought to storage yards on the Black Sea coast by rail and boat.

Onboard the vessel, the pipes were welded onto the main string with high-precision equipment. Afterwards, each weld was tested and then coated, before the pipe string was lowered into the water.

During operations, each pipeline can safely operate at high pressure to transport up to 15.75 billion cubic metres (bcm) of natural gas per year - the total capacity of 31.5 bcm is enough to satisfy the energy demand of 15 million households.

Advanced subsea surveys

Over 16,500 kilometres of subsea surveys were performed to find the most suitable path to lay the pipeline across the Black Sea. Near the coast, the pipeline runs along the relatively shallow part of the sea called the continental shelf. However, at the so-called continental shelf break, the seabed suddenly plunges from about 40 to over 1,500 metres deep and engineers paid extra attention to the routing and design of this section.

The route of the pipeline takes into account aspects such as possible shipwrecks or objects of historical value, as well as potential fault lines or geological structures. Little was known about the abyssal plain, therefore a range of survey techniques was applied to map out the best route for the pipeline.

Underground connections

The pipeline will connect to the Turkish gas grid at Luleburgaz. From there, underground lines will carry the gas to the Turkish-Greek border. The underground sections of TurkStream will be constructed in several stages.

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