



INFO PACK

TurkStream and the Trajectory of Russia- Turkey Relations

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Introduction

The Turkey-Russia-EU energy trade is a relationship of undeniable interdependence and geopolitical strategic attachment. This is especially so given the increasing attention to the role and importance of energy transit states. The demand for natural gas has been rising much faster than the need for other primary energy sources. Turkey, in this context, should be considered as one of the es-

sential transit hubs to reach the new available sources in Azerbaijan and the Central Asia region, as well as in the Middle East. However, Russia's influence has proven difficult to reconcile for Western European countries due to the state autonomy in the area. Nevertheless, Turkey has managed to enhance the bilateral relationship with Russia, boosting its relevance and position in a strategic energy relationship within this axis.



Turkish President Recep Tayyip Erdogan (R) shakes hands with Russian President Vladimir Putin (L) as they participate in a ceremony commemorating completion of sea section works for TurkStream natural gas project on November 19, 2018 in Istanbul, Turkey. (Kayhan Ozer - Anadolu Agency)

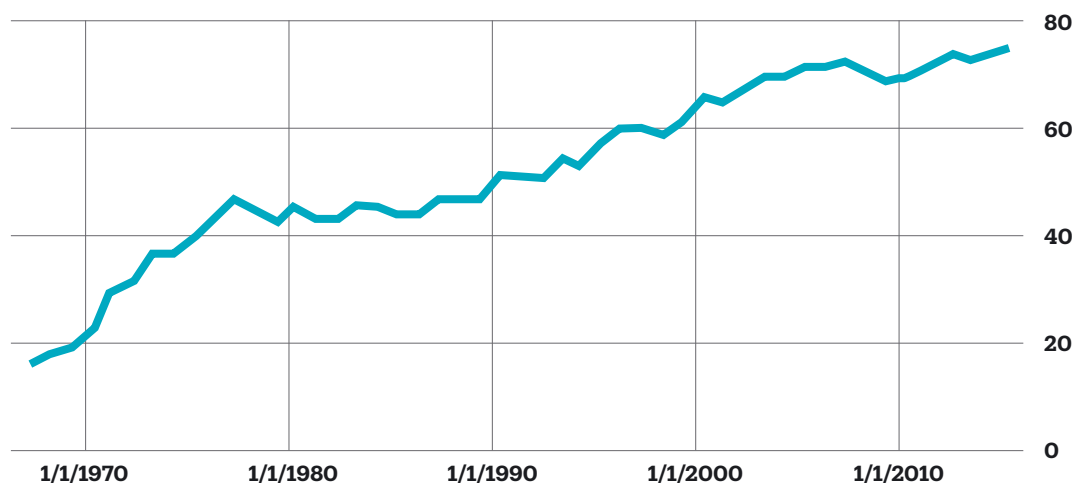
1. Turkey as a Major Regional Energy Hub

Turkey is well placed and an increasingly important hub for oil and natural gas transits from the Middle East, Central Asia, and Russia, to Europe and the Atlantic. With respect to naval oil transit, Turkey's straits, Bosphorus and Dardanelles, are the gateways for Russian and Caspian crude oil to international markets. Thus, Turkey is gaining significance as a major physical hub, an energy corridor supplying oil and gas to Europe from oil-rich Russia, Central Asia, and the Middle East. With a population of 80 million people, Turkey has become one of the fastest growing energy consuming countries in the world; Turkey is considered the 5th largest country in Europe in natural gas consumption at 48 bcm. Consequently, while Turkey is now an important natural gas-consuming country, it is likewise a strategically important oil and gas transit destination. Oil, natural gas, and liquefied natural gas (LNG) are Turkey's top imports, having costed the country **\$198.6 billion in 2016, and \$223 billion in 2018**. Turkey's priority to secure energy for its own market coincides with its priority to become an energy center and a transit corridor for the natural gas market. Pipeline politics play a substantial role in the current state of affairs in energy politics. Meet-

ing the criterion of being a crossroad, Turkey has exhibited its greater ambitions of becoming a trading hub – a strategic place where energy is bought and sold. Moreover, the Trans-Anatolian Natural Gas Pipeline (TANAP) and the Southern Gas Corridor (SGC) have allowed Turkey to diversify its energy supplies, a critical step. The TANAP project is particularly important for the economic and political development of Azerbaijan and Turkey, as well as the European Union (EU).

Turkey has a strong transmission system that extensively supports the growing natural gas management throughout the country. According to the Ministry of Foreign Affairs, as of July 2019, Turkey has an installed capacity of 90.4 GW, which represents a threefold increase in 15 years. The two main characteristics of Turkish energy markets are rising energy demand and dependency on imports. Even though Turkey is dependent on the import of natural gas, it tries to ensure the security of its supply by both expanding its supply sources and building the relevant infrastructure.

Energy Imports, net (% of energy use) in Turkey



Source: Trading Economics

Active Import Long Term/ Prospective Contracts

West Line - Russia

The total length of the pipeline: 842 km
Contract volume: 14 bcm/a
Source country: Russia
Max. daily capacity: ca. 51.4 mcm/day
Importers: BOTAŞ (4 bcm/a) and 7 Private Sector Players (10 bcm/a)
BOTAŞ contract termination date: End of 2021

Blue Stream - Russia

The total length of the pipeline: 1,213 km
Contract volume: 16 bcm/a
Source country: Russia
Max. daily capacity: ca. 47.4 mcm/day
Importers: BOTAŞ
BOTAŞ contract termination date: End of 2025

Eastern Anatolia - Iran

The total length of the pipeline: 1,491 km
Contract volume: 9.6 bcm/a
Source country: Iran
Max. daily capacity: ca. 28.6 mcm/day
Importers: BOTAŞ
BOTAŞ contract termination date: July 2026

South Caucasus - Azerbaijan

The total length of the pipeline: 692 km
Contract volume: 6.6 bcm/a
Source country: Azerbaijan
Max. daily capacity: ca. 19.1 mcm/day
Importers: BOTAŞ
BOTAŞ contract termination date: April 2021

LNG - Algeria

Contract volume: 4.4 bcm/a
Source country: Algeria Importers: BOTAŞ
BOTAŞ contract termination date: October 2024

LNG - Nigeria

Contract volume: 1.3 bcm/a
Source country: Nigeria
Importers: BOTAŞ
BOTAŞ contract termination date: October 2021

TANAP - Azerbaijan

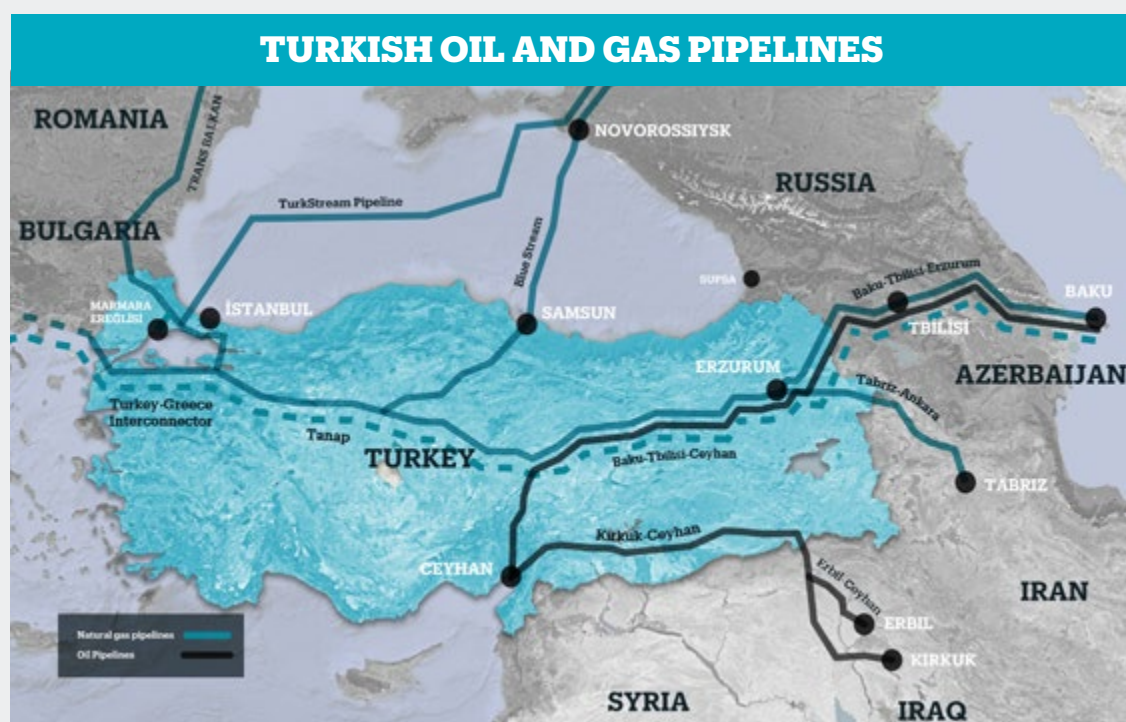
Contract volume: 16 bcm/a (6 bcm/a to Turkey)

Turkish Stream - Russia

Prospective volume: 31.5 bcm/a (15.75 bcm/a to Turkey)

Iraqi Gas

Prospective volume: ca. 3 bcm/a



Source: Anadolu Agency

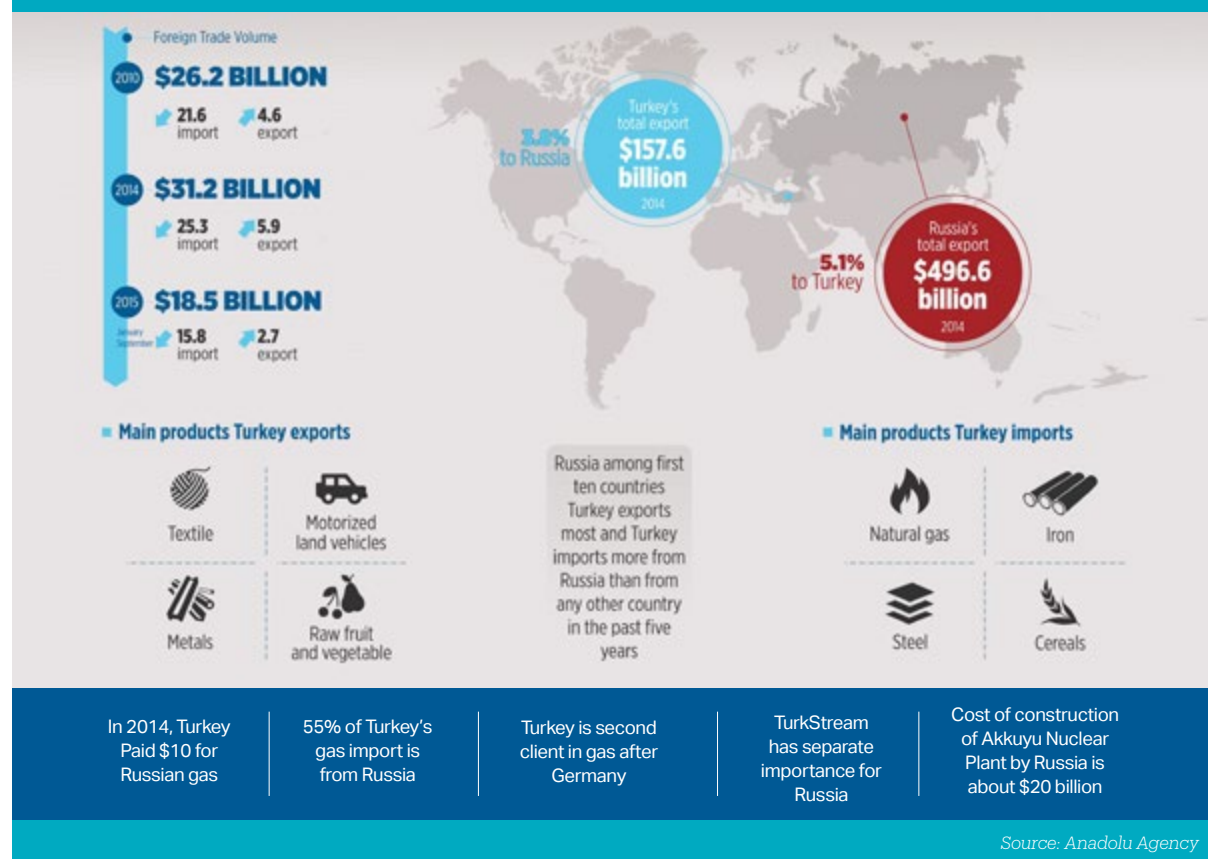
2- History of Russia-Turkey relations in the Geopolitics of Natural Gas

Over the past two decades, bilateral economic relations between Russia and Turkey have developed along an upward trajectory: production has grown, mutual investments have increased, energy cooperation has expanded, cultural ties have been strengthened, and there is a continuous stream of Russian tourists. Additionally, Russia is Turkey's second-largest trading partner. The two countries have a constantly growing trade volume, which is expected to triple in the coming years.

Turkey is a key trading partner for Russia, with exports valued at \$25 billion. The overall trade volume between the two countries was estimated at around \$21 billion in 2010 and \$25.7 billion in 2018. However, there is also a mutual

dependency on energy cooperation, and Turkey ranks as second in Europe for Russian gas imports. Turkish-Russian energy ties were improved by the transporting of oil from Russian ports in the Black sea to foreign markets through the Bosphorus and Dardanelles, and by implementing the Akkuyu nuclear power plant project. Russian-Turkish cooperation in the gas sector can be traced back to 1984 when the two governments signed an agreement on natural gas supplies to Turkey. Turkey's blue fuel demand grew rapidly, which made Russia increase its gas exports and build reliable transit. Consequently, a need emerged to build a gas pipeline that would connect the two countries. This ultimately manifested itself as the Blue Stream gas pipeline.

TURKEY HAS GREAT ECONOMIC IMPORTANCE TO RUSSIA



3- Blue Stream Pipeline Project

One of the first primary and direct gas pipelines between Russia and Turkey was the Blue Stream, a project that was initiated when Russia and Turkey signed an intergovernmental agreement in 1998 for the sale of an annual 565bcf of Russian natural gas. The construction of Blue Stream was completed in December 2002, and gas flows from Russia to Turkey started in February 2003. However, due to the price dispute between Russia and Turkey, the official inauguration ceremony didn't take place until 2005.

Blue Stream is owned by a partnership formed between Gazprom, the Russian National Hydrocarbon Company, and Italy's Eni to operate a pipeline between the two aforementioned countries via the Black Sea. It is designed to deliver Russian natural gas to Turkey across the Black Sea via Ukraine, Moldova, Romania, and Bulgaria. The project aimed to increase the reliability of gas supplies to Turkey and improve the infrastructure development in both countries.

The full gas pipeline capacity is 16 billion cubic meters of gas annually. The pipeline consists of three main parts: a 222-mile section in Russia from Izobilnoye to Dzhugba on the Black Sea Coast (the Russian onshore section), a 235-mile section on the bottom of the Black Sea connecting Dzhugba to Samsun on the Turkish coast (submarine section), and a further 300-mile link from Samsun to Ankara (Turkish onshore section). The gas pipeline is a total 1,250 km long. The two 24-inch lines enter the sea on the Russian coast at Beregovaya and cross the seabed at a maximum depth of 2,150 metres, before emerging close to Samsun in Turkey.

Blue Stream tapped into this historical era of advancing gas transmission technologies between Russia and Turkey. With specific engineering feats during the pipeline's construction, reliability and security have been enhanced, enduringly transforming the gas sector.

4- South Stream and Strategic Rerouting

South Stream was the project to transport Russian natural gas through the Black Sea to Bulgaria and through Serbia, Hungary, Slovenia, and further to Austria. On 6 August 2009, the former Prime Ministers of two countries, Vladimir Putin and Recep Tayyip Erdogan, in attendance of the Italian Prime Minister Silvio Berlusconi, signed an agreement routing the pipeline through the Turkish territorial waters. This pipeline envisioned the annual delivery of 63 bcm/y from Gazprom to Europe via four offshore lines which could connect the Russian mainland with Bulgaria. The 1,455-kilometre-long onshore section was to start from Varna and run to Pleven, a city in Bulgaria. The offshore pipeline was planned to carry 63 billion cubic metres of natural gas per year.

However, the civil war in Ukraine in 2013 and the annexation of Crimea by Russia affected the course of relations between the Western world and the latter negatively. Following the outbreak of the Ukraine crisis, the United States and the EU decided to impose trade restrictions against Russia, and Russia began to seek a new alternative to bypass Ukraine. As a result of this, the South Stream project raised by Russia was vetoed by the EU, and the project was shelved.

Because of the Russia-Ukraine gas disputes that threatened natural gas supplies in numerous European countries dependent on natural gas imports from Russian suppliers, the pipeline was instead to be routed through Turkey's waters to avoid the exclusive economic zone of Ukraine.

Considered a rival to the proposed Nabucco pipeline, a natural gas pipeline from the Turkish-Bulgarian border to Austria, this project was regarded as non-compliant with EU legislation and a decision was ultimately taken to cancel South Stream. On 1 December 2014, during a state visit to Turkey, Russian President Putin announced that Russia was withdrawing from the project blaming Western sanctions and the lack of construction permits in the territory of the EU.

5- TurkStream Natural Gas Pipeline

To guarantee its gas supply to Europe, Russia replaced South Stream with another gas pipeline under the Black Sea, naming it TurkStream. It will be the replacement for the South Stream project.

Events have affected its progress. This includes when ties between Moscow and Ankara dropped to their lowest level in years in November 2015, after Turkish forces shot down a Russian warplane over Syria. The TurkStream project was consequently plunged into uncertainty by the warplane crisis. Despite the short-term deterioration of the relationship, President Putin said the two countries could return to cooperation in all areas.

At the World Energy Congress in October 2016, Ankara signed an agreement on the construction of TurkStream Gas Pipeline project. This was one of the first steps towards the normalization of relations between the two states.

TurkStream is a natural gas pipeline that is planned to run from the Russian Federation to Turkey. It runs from the Russkaya compressor station near Anapa in Krasnodar region across the Black Sea to Kiyikoy on the Turkish coast. The South Stream and TurkStream projects became an alternative to an increasingly burdensome Ukrainian transit.

TurkStream will considerably advance the reliability of gas supply to Turkey, as well as to southern and southeastern Europe. The Russian OJSC Gazprom and the Turkish company Botas Petroleum Pipeline Corporation confirmed their intention to supply gas to Turkey through a new gas pipeline for the first time in December 2016. From 2019, Russian gas supplies to Europe will bypass Ukraine. Although TurkStream's capacity is half compared to South Stream's, the pipeline has the potential to impact European markets significantly.



A photo shows the inside view of Pioneering Spirit vessel, in Istanbul, Turkey on April 26, 2018. The deep-water offshore construction of the first line of the TurkStream natural gas pipeline is now complete as the world's largest pipelaying vessel, the Pioneering Spirit, reached the Turkish shore off Kiyikoy in northwest Turkey. The vessel with 13 floors and 288 cabins can cater for over 500 employees at any given time. The Swiss-based Allseas Group executed nearly 300 projects worldwide, installing more than 21,500 km of subsea pipeline in water depths ranging from 5 meters to 2,730 meters. (Isa Terli - Anadolu Agency)

6- The TurkStream Route

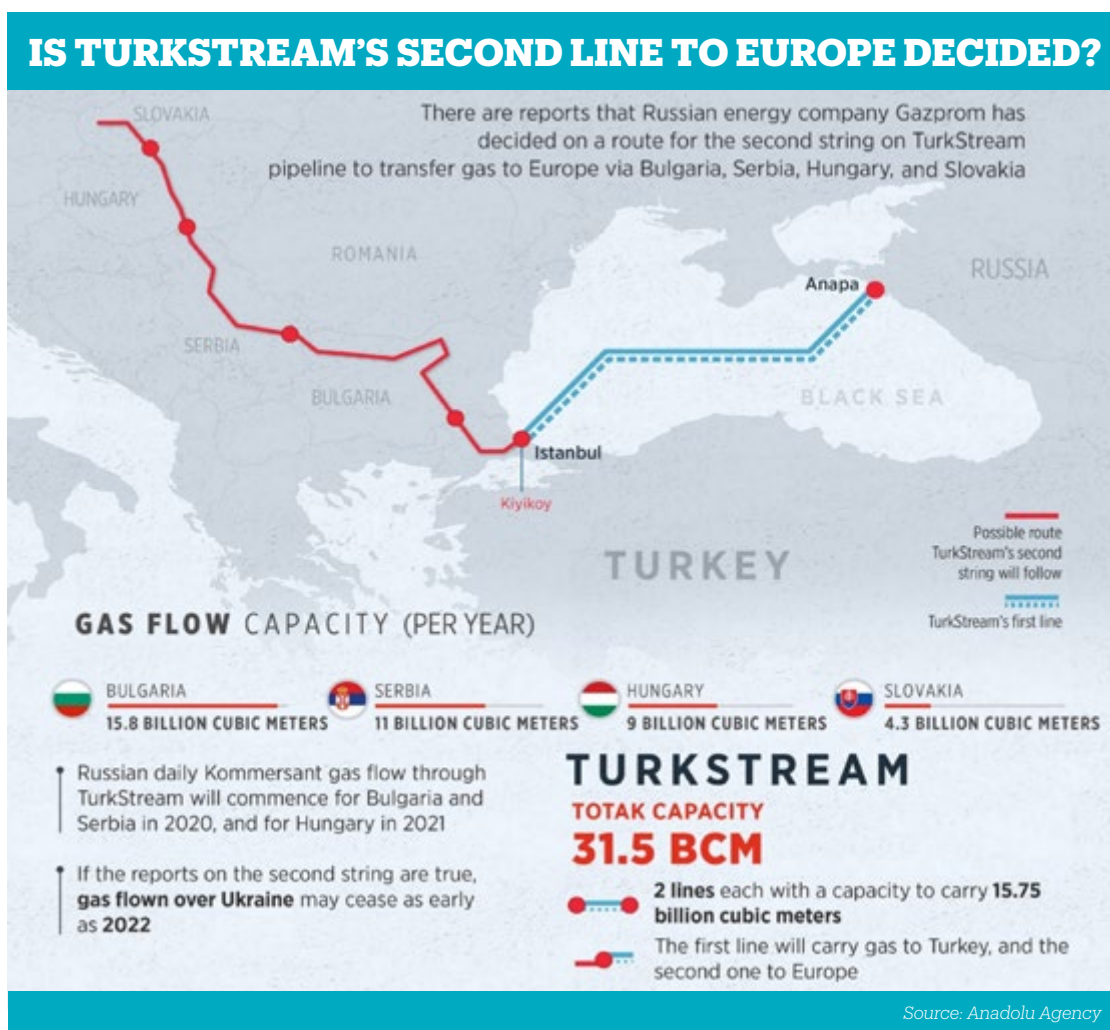
The TurkStream Natural Gas Pipeline Project made considerable progress in 2019. This project is due to deliver natural gas from Russia to Turkey and Europe. The TurkStream pipeline comprises two lines, each having the capacity of 15.75 billion cubic meters a year. The first line is set to bring Russian natural gas across the Black Sea directly to Turkey, while the second line is planned to supply gas to Southern European customers through a natural gas hub set up by Gazprom.

This project is significant to Turkey for two reasons. Firstly, it enhances supply security by eliminating a transit country – Ukraine – by enabling a direct line between Russia and Turkey. Secondly, it will strengthen Turkey's position as an energy provider.

Turkey was initially reluctant to transmit large volumes of

Russian gas to Europe even if it would gain from its transit role. However, as TurkStream will directly connect the vast gas reserves in Russia to the Turkish gas transportation network, this will gradually provide reliable energy supplies for Turkey, in addition to the south and south-east Europe. The TurkStream project also has a crucial advantage of reinforcing the energy security for the EU countries as well as Russia and Turkey.

With the pipeline's total capacity of 31.4 billion cubic meters annually, it is considered a major joint project between Russia and Turkey. The landfall point in Turkey will be near the town of Kiyikoy, in Thrace, while another stop of the delivery of gas to Turkish consumers will be near Luleburgaz. Being located near the Istanbul Metropolitan Area, this place has become Turkey's most significant gas consuming region.



7- TurkStream's Technology and Importance for Energy Security

The technical and industrial specifications of TurkStream are pushing manufacturing boundaries further. TurkStream will be the first 32-inch sized system to be laid at depths of over 2 kilometres. With the expertise of specialized engineers, the project is applying advanced pipeline design and material technology to create a pipeline that will be able to safely withstand high pressure. By using the latest techniques in steel production and high-precision pipe manufacturing, the engineers have been able to design durable pipes with a wall thickness of 39mm.

Each offshore pipeline will be made up of over 75,000 individual pipe joints that are designed specifically for high-pressure gas transport. The pipes are directly transported by ship to Pioneering Spirit, which is considered the most extensive construction vessel in the world. Onboard Pioneering Spirit, the pipe joints are welded onto the main string. Afterwards, the weld is tested and then coated, before the pipe string is lowered into the water. Pioneering Spirit can lay over 3 kilometres of pipeline each day.

Accordingly, with over 150,000 pipes, the entire system will not only be strong enough to hold off the high external water pressure but will also resist the internal design pressure of 300 bar. As a result, this will enable the safe and reliable transport of large volumes of natural gas.

The pipeline is planned to be installed in water depths up to 7,220 feet (2,200 m). The plan is implemented by South Stream Transport BV, a subsidiary of Gazprom, which was initially established for the implementation of the South Stream project.

Overall, the energy cooperation between Turkey and the EU is a geographical necessity, and Turkey's participation is of critical importance for the EU to enhance its energy security. Similarly to the Blue Stream and South Stream projects, TurkStream can help in achieving the fruitful goal of route diversification and is best approached as a scalable and flexible project.



Pioneering Spirit is seen at the construction site of TurkStream and Russian company Gazprom gas pipeline's offshore of Anapa city in the Black Sea on June 23, 2017. Construction is run with the world's largest construction vessel Pioneering Spirit with the length of 382 meters and width of 124 meters. Pioneering Spirit departed from Port of Rotterdam. TurkStream will directly connect the large gas reserves in Russia to the Turkish gas transportation network, creating a reliable source of energy for Turkey and south-east Europe as construction of the project began today.

(TurkStream Project - Anadolu Agency)

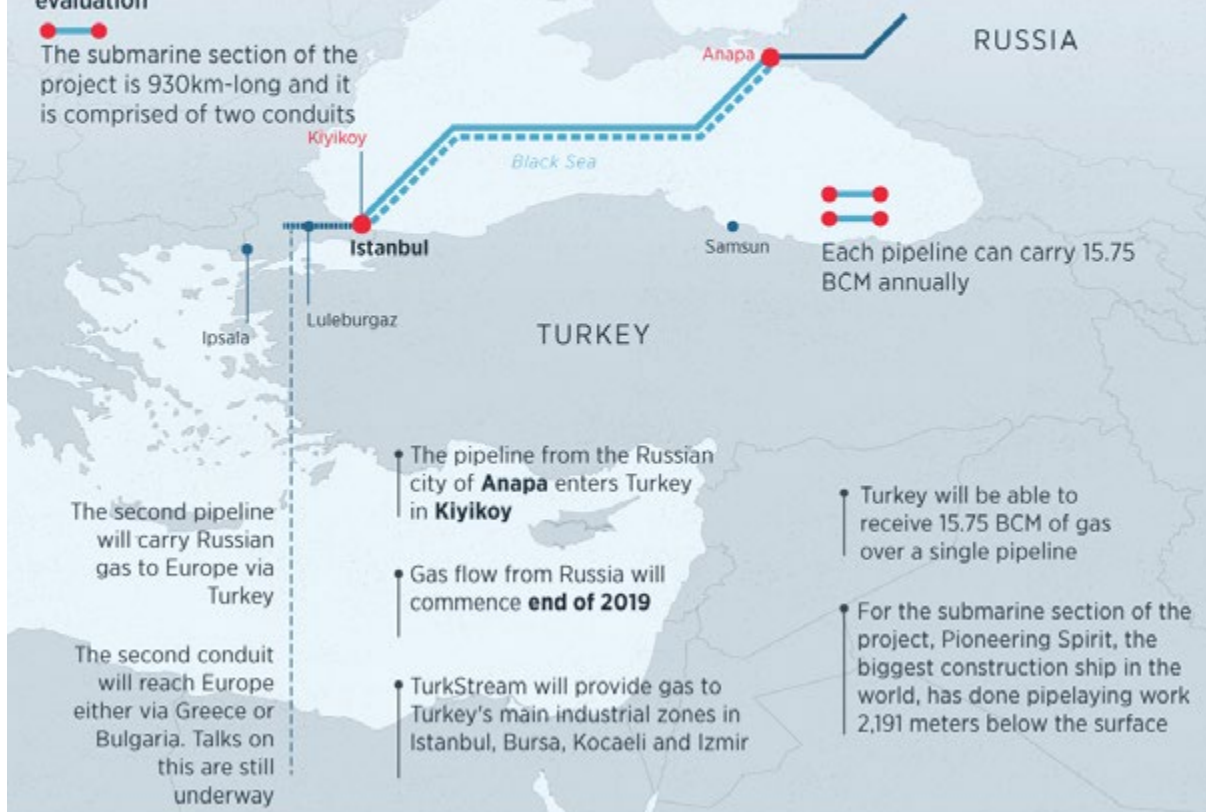


Chairman of the Board of Gazprom Alexey Miller (R) is seen during examination with 4-hour helicopter tour with Turkey's former Energy Minister Taner Yıldız (L) on possible course of Turkish Stream pipeline in Istanbul, Turkey on February 08, 2015. (Umut Özgan - Anadolu Agency)

TURKSTREAM: THE GIANT PROJECT OF A STRATEGIC PARTNERSHIP

The construction of the offshore section of the TurkStream, the pipeline project that will carry Russian gas to Turkey, has been completed. Alternate routes for the second phase of the project that would carry gas to Europe are under evaluation

The submarine section of the project is 930km-long and it is comprised of two conduits



Source: Anadolu Agency

TurkStream Project Timeline

December 1, 2014

Russian company Gazprom and Turkish company Botaş Petroleum Pipeline signed the Memorandum of Understanding on the construction of an offshore gas pipeline from Russia to Turkey.

January 27, 2015

Alexey Miller, Chairman of the Gazprom Management Committee and Taner Yildiz, Minister of Energy and Natural Resources of the Turkish Republic decided on its routes.

February 7, 2015

Alexey Miller and Taner Yildiz defined the key points of the route and technical solutions for the gas pipeline in Turkey.

June 22, 2015

Turkey issued a permit on engineering surveys for the offshore section of TurkStream.

October 10, 2016

The Agreement on the TurkStream project between the Government of the Russian Federation and the Government of the Turkish Republic was signed in Istanbul. This document provides for the construction of two strings of the gas pipeline from Russia to Turkey across the Black Sea, as well as an onshore string for gas transit to Turkey's border with neighboring countries.

December 6, 2016

President of Turkey Recep Tayyip Erdogan approved the draft law on the ratification of the Intergovernmental Agreement on the TurkStream project.

January 20, 2017

The Intergovernmental Agreement on the TurkStream project was rat-

ified by the State Duma of the Russian Federation, and on February 1, 2017 by the Federation Council of the Russian Federation.

May 7, 2017

Construction of the TurkStream gas pipeline was commenced in the Black Sea near the Russian coast.

April 30, 2018

Alexey Miller stated that the laying of the first string of the TurkStream is completed.

July 22, 2018

Works started for the TurkStream Gas Pipeline in near Turkey's north-western town of Kiyikoy.

August 3, 2018

A new 20-kilometer extension pipeline was launched between Turkey and Bulgaria.

August 8, 2018

The second line of the TurkStream natural gas pipeline project is over 45 percent completed, according to Asli Esen, the project's spokesperson.

November 19, 2018

Turkish President Recep Tayyip Erdogan and Russian counterpart Vladimir Putin attend a ceremony marking the completion of the construction of the offshore section of the TurkStream project.

December 5, 2018

A group of Turkish and Russian energy experts are set to meet in Istanbul to discuss energy cooperation.

December 7, 2018

Greece conducts negotiations with the EU on the extension of Turk-

Stream natural gas pipeline.

February 4, 2019

Bulgaria's natural gas transmission and storage system operator, Bulgartransgaz, announced that Bulgaria completed a third market test to expand the country's gas transit network from Turkey to Serbia for the TurkStream pipeline.

March 3, 2019

The construction of the TurkStream project's gas receiving terminal in Kiyikoy, Turkey's main onshore section, was 50 percent completed.

March 22, 2019

Hungarian minister of Foreign Affairs and Trade announced that Russia will begin delivering natural gas to Hungary via TurkStream pipeline in the second half of 2021.

April 17, 2019

Serbia started construction of its section of the TurkStream pipeline.

August 5, 2019

The construction of the TurkStream project's gas receiving terminal in Kiyikoy, Turkey's main onshore section, marked a 95 percent threshold completion.

November 20, 2019

Gazprom announced that both sections of the dual TurkStream pipeline had been filled with gas.

December 10, 2019

TurkStream spokeswoman Asli Esen confirmed that the landfill facilities in Russia and the offshore lines were fully completed.

January 8, 2020

Turkey will launch TurkStream natural gas pipeline.

The Importance of the TurkStream Natural Gas Pipeline

The Turkish Ministry of Energy has stated that the natural gas disputes between Russia and Ukraine over the past years have caused the gas supply to be cut off sporadically from the West line to Turkey. Hence, this situation has put the security of the energy supply of Turkey, especially during winter, in jeopardy. Within this context, TurkStream's first line will supply gas to Turkey solely and reliably. According to the state officials, 14 billion m3 of gas purchased from West Line will be delivered to Turkey through TurkStream without any change in the existing contracts. Therefore, it will be ensured that the gas supplies will be transported directly from Russia to Turkey without the usage of the transmission system of another country. As a result, it will not be exposed to possible external interruptions caused by third parties.

In 2019, the construction works of the first line to Turkey and the second line to Europe were fully completed. Tur-

key's geopolitical situation vis-à-vis its gas resources will ensure the country can benefit from competitive pricing to renew its gas contracts. According to the government's 2019 investment plan, Turkey is planning to invest \$23 million for the land section on Turkish soil of the TurkStream natural gas pipeline.

President Vladimir Putin, alongside President Recep Tayyip Erdogan, have given the command to weld the final joint of the second line of the gas pipeline. Ergo, the construction of TurkStream, the new gas pipeline connecting Russia and Turkey across the Black Sea, is now entering its final stage. Speaking at a November 19 ceremony in Istanbul, Erdogan said the TurkStream pipeline has ensured that Turkey would become a "major European hub" for the energy sector.



Turkish Minister of Energy and Natural Resources Berat Albayrak (R) and Russian Energy Minister Aleksandr Novak (L) sign Turkish Stream agreement as President of Turkey Recep Tayyip Erdogan (2nd R) and President of Russia Vladimir Putin (3rd L) look on during their press conference at Mabeyn Palace in Istanbul, Turkey on October 10, 2016. (Metin Pala - Anadolu Agency)

Turkish President Recep Tayyip Erdogan

"TurkStream Natural Gas Project is a beautiful symbol of our foreign policy and win-win approach, in which we suggest that energy should not be a cause of conflict in international relations but a unifying instrument for peace"

Russian President Vladimir Putin

"Turkey is becoming an important international energy hub as the TurkStream pipeline project becomes a reality."

Turkish Energy Minister Fatih Donmez

"The TurkStream natural gas pipeline project is the most vivid example of our vision [Turkey's aim to become a gas hub]. Gas flow from TurkStream will start in 2019 and this will eliminate risks on transmission and transfer of natural gas."

Alexey Miller, chairman of the management committee of Russian Gazprom

"Existing pipelines point to success of the direct route model. Based on Turkey's increasing energy demand, the TurkStream project, similar to the Blue Stream is designed to continue to supply reliable natural gas to Turkey and European partners."

