

# PROSPECTS FOR THE TRANSPORTATION OF LIQUEFIED GAS FROM THE CASPIAN REGION TO EUROPE

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**Abstract:** Georgia proposes to supply Caspian liquefied gas to the European market via the alternative route - by building a terminal for exporting liquefied gas on the Black Sea coast. Compressed gas will be delivered from Georgia to the Romanian port of Constanta on tank vessels.

*Kazakhstan regards this route as an option of delivery of liquefied gas to the world market.*

*Turkmenistan is also studying options for exporting liquefied gas through Azerbaijan and Georgia.*

*To participate in the project as a vendor, Turkmenistan could supply liquefied gas by the Caspian sea to Azerbaijan for its further transit through Georgia to Europe.*

**KEY WORDS:** KULEVI TERMINAL; BLECK SEA PORTS; MARITIME TRANSPORT.

## 1. Introduction

The government of Georgia proposes to supply Azerbaijani gas to the European market via the alternative route – through the construction of a terminal on the Black Sea coast for exporting liquefied natural gas.

Azerbaijan and Romania signed an agreement on the exporting liquefied gas to Europe across the Black Sea, and in order to implement this project, it is necessary to construct a plant for the compression of natural gas in Georgia, and Georgia is interested in becoming a part of a new transport corridor. The delivery of natural gas from Azerbaijan for the compression can be carried out through the South Caucasus gas pipeline, through which gas is currently being transported to the north of Georgia. There must be constructed a gas compression plant with an initial capacity of 5-10 billion cubic meters [1].

According to data from the Ministry of Energy of Georgia, compressed gas will be delivered from Georgia to the Romanian port of Constanta by tankers, and the Romgaz company is already working on the creation of a receiving terminal. At present, the project is at the initial stage. Official negotiations and development of a feasibility study still lie ahead. In the future, this route will be used by other suppliers from the Caspian basin, including Turkmenistan, which exports mainly through the territory of Russia. In this case, the capacity of the plant should be brought to 15-20 billion cubic meters. At the same time, liquefied gas can also be exported from Romania to other countries.



**Fig.1.** A route for the transportation of liquefied natural gas from Azerbaijan to Romania and further.

Azerbaijan is interested in supplying compressed gas to Europe, since it does not require transit costs and SOCAR (the State Oil Company of Azerbaijan) already owns the Kulevi terminal on the Black Sea coast in Georgia. Recently, during a visit of the Azerbaijani delegation to Romania, the Ministry of Industry and Energy of Azerbaijan and the Ministry of Economy, Energy and Tourism of Bulgaria signed a memorandum of cooperation in the field of energy. Some directions were taken as a basis, one of which is transportation of liquefied natural gas from Azerbaijan to the Bulgarian port of Varna.

If this project would be rational, the Azerbaijani side will construct a terminal for liquefied gas in the Georgian port of Kulevi.

## 2. Preconditions and means for resolving the problem

According to SOCAR, in January 2017, Azerbaijan exported 8,876 tons of liquefied gas - 25.5 times more than in the same period last year. In 2016, Azerbaijan exported 58.843 thousand tons of liquefied gas. Liquefied gas in Azerbaijan is produced at the H. Aliyev Baku Oil Refinery and at the Azerbaijani Gas Processing Plant [2].

Bulgaria confirms its deep interest in the implementation of the Southern Gas Corridor (SGC) project, designed to transport Azerbaijani gas to Europe.

Last year, Ukraine imported 740 tons of propane-butane mixture from Azerbaijan. Prior to this, Azerbaijani liquefied gas was not delivered to Ukraine.

The first importers were the companies "Nadezhda" and SOCAR Energy Ukraine, which contracted respectively 530 and 210 tons of propane-butane mixture.

Liquefied petrol gas (LPG) was imported in Ukraine by rail from the City Gas terminal, which is located in the free economic zone of the Romanian port of Galati. In turn, the propane-butane mixture was delivered to the terminal in Romania by tanker from the Black Sea port of Batumi. According to the latest data, Kazakhstan allowed for the possibility of transit of its liquefied gas through the territory of Azerbaijan. Kazakhstan offered Azerbaijan to explore the idea of creating transit opportunities for the transportation of Kazakhstani liquefied and compressed natural gas through the Caspian and the territory of Azerbaijan and further to the global market.

The Southern Gas Corridor (SGC) is a project designed to expand the South Caucasus Gas Pipeline (Baku-Tbilisi-Erzurum), as well as to construct the TANAP gas pipeline in Turkey and extend it through Europe. The estimated length of the pipeline is 3500 km.

It is expected that the SGC will increase security of gas supply to Europe by reducing the share of Russia as a gas supplier, and by excluding Ukraine as a gas transit State. The declared cost of the project is about \$ 45 billion.

In 2018, the first phase of the Southern Gas Corridor with the final destination in the EU zone will be launched. This event, in addition to Turkmenistan, was very interested for Kazakhstan. At a recent meeting of the intergovernmental commission, the Minister of Energy of Kazakhstan said that Astana is exploring the possibility of supplying its gas through the territories of Azerbaijan and Georgia to the global markets, including shipments of liquefied form by tankers [3].

In 2017, Kazakhstan extracted 50 billion cubic meters of natural gas, and further growth is expected. In connection with plans to increase gas production, Kazakhstan regards Azerbaijan as one of the options for delivering liquefied gas to the world market. Together with Azerbaijan, a working group is being formed on this issue, whose experts will analyze in the next few months how competitive is this project.

As part of the implementation of this idea, Kazakhstan is exploring the possibility of constructing a liquefied gas plant in the west of the country. In the State Oil Company of Azerbaijan, the idea of Kazakhstan on transit of liquefied and compressed natural gas through the territory of Azerbaijan has been accepted for consideration. The SOCAR notes that, at present, they do not have required infrastructure, and it is also necessary to think over the logistical aspects of transit [4].

Turkmenistan is also exploring the possibility of exporting liquefied gas through the territories of Azerbaijan and Georgia. Currently, the issue of supplies of Turkmen liquefied natural gas to Europe through the Romanian port of Constanta (Black Sea region) is being under consideration. It is planned that liquefied natural gas will be delivered in special containers by the ships of maritime merchant fleet of Turkmenistan to the port of Baku, and then - to the ports of Batumi or Poti (Georgia, Black Sea region), by rail (Fig. 2).



**Fig. 2.** A route for the transportation of liquefied and pressurized natural gas from Kzakhstan and Turkmenistan to Europe.

Further, from the Georgian ports, containers will be delivered by sea to Romania or other countries of the Black Sea basin. The same scheme can be applied to the other Turkmen goods that can be transported by containers.

Earlier, Turkmenistan had expressed interest in the AGRI gas pipeline project (Azerbaijan-Georgia-Romania Interconnector) (AGRI), which provides for Caspian liquefied gas supplies gas through the Black Sea coast of Georgia to Romania. The project is inherently suited under transporting Azerbaijani natural gas through the gas pipelines to the Black Sea coast of Georgia, where this gas will be liquefied at a special terminal, after which tankers will be delivered to the terminal in Romania.

Further, liquefied gas will be brought into the state of natural gas, and using the gas infrastructure existing in the country, it will be directed to the needs of Romania and other European countries. To participate in the project, Turkmenistan as a supplier could supply liquefied gas through the Caspian Sea to Azerbaijan for its further transit to Europe [5].

### 3. Conclusion

But the most important thing in implementing the idea of transporting gas from Central Asia to the EU, is that infrastructure for exporting the large quantities of Caspian gas to the global markets has already been built on the territory of Azerbaijan. Now we can safely say that starting from 2020, the first Caspian gas will be transported to the European markets, and then the process of stage-by-stage expansion of this gas main line will evolve in the future. That is why the countries having sufficient volumes to supply gas to the external markets, as well as planning to export it in the future, for example, Israel and Iraq, have begun to consider the possibility of joining to "Southern Gas Corridor".

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