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Romania: ambitious plans for natural gas exports

Romania, through the implementation of the Neptune Deep project, has the opportunity to become the largest producer of natural gas among the countries of the European Union. The development of the Domino and Pelican South fields could be an essential element in strengthening the energy security not only of Romania but also of Central European countries. The increased availability of natural gas in the region will require the expansion of transport capacity and the adaptation of existing natural gas pipelines to new market conditions.

Natural gas market and development projects. Romania is currently a net exporter of natural gas, with an annual production of 9.9 bcm (approximately 75% of production occurs onshore, with the remainder in coastal waters). Consumption, on the other hand, stands at 9.1 bcm per year, resulting in a portion of the produced natural gas already being diverted to markets in neighbouring countries. Romania has a long history in the oil and gas industry and serves as an important hub for international energy companies. In recent years, legal, fiscal, and organisational turmoil led to the withdrawal of US-based ExxonMobil from the Romanian market in 2019. Nevertheless, the sector still holds significant growth potential.

In a broader context, Romania ranks fifth in terms of natural gas reserves in Europe as well as natural gas production (after Norway, the UK, Ukraine, and the Netherlands), with a 4.3% share. However, considering only European Union member states, it ranks second, after the Netherlands, with a production share of 25%. Furthermore, it should be noted that with planned investments, particularly the implementation of the Neptune Deep project, Romania's market position could improve significantly.

The decision to develop two deposits – Domino and Pelican South – located at the bottom of the Black Sea as part of the Neptune Deep project was made in June 2023. Work on this project has been carried out with varying intensity since 2008. Between 2008 and 2016, numerous activities were undertaken to estimate the deposits of the Neptune Deep concession block, value the project, and select a development concept for the deposits ([“IEŚ Commentaries”, no. 412](#)). The project plans to drill a total of 10 production wells and situate the Neptune production platform between the Domino and Pelican South fields. The produced natural gas will be directed to the platform for pre-cleaning and will then be transported onshore via a 160-kilometre pipeline. It is expected that the target completion of the development stage of the field (the stage up to so-called First Gas) will occur by 2027, after which commercial production of the resource will begin. The investment cost is estimated at 4 billion EUR, and the project is expected to increase Romania's natural gas production by about 8 bcm per year for a period of 10 years. As a result, natural gas production is expected to almost double. In addition to the tangible benefits of developing the fields in the form of natural gas exports, the project is expected to generate 20 billion EUR in revenue for the state budget from various fees and taxes.

Existing and planned infrastructure investments. Romania already plays a significant role in ensuring the energy security of Central European countries, primarily Moldova ([“IEŚ Commentaries”, no. 1124](#)), and eventually Ukraine, among others. At the end of 2024, the Russian-Ukrainian agreement for the transportation of natural gas through Ukrainian territory will expire, which means that some countries in the region, particularly Austria and Hungary, will no longer be able to receive natural gas from Russia via Ukrainian pipelines. Such supplies will then only be possible from southern Europe, specifically through the TurkStream pipeline. In this changed international environment, the importance of Romania, which can supply natural gas from the south through the Trans-Balkan pipeline (with the possibility of supplies coming from Azerbaijan or regasification terminals in Greece) to Moldova and potentially other Central European countries, as well as to Ukraine, will increase. At the same time, some of Romania's available natural gas is already being routed to Hungary via the BRUA pipeline. As part of the Neptune Deep project, it will be necessary to build the Tuzla-Podișor natural gas pipeline, which will connect offshore infrastructure to the national transmission network.

The development of the Domino and Pelican South fields will alter the energy landscape of Central European countries by increasing the availability of natural gas from outside Russia. Since the outbreak of the full-scale war in Ukraine in 2022, the Russian Federation's influence in the region has declined and the Neptune Deep project could lead to the complete independence of Central European countries from Russian natural gas supplies. With the help of existing and planned investments, there will be a strengthening of natural gas exchange along the North-South axis, improving the energy security of countries in the region. Importantly, through existing solutions, Romania will be able to direct natural gas to Moldova, Bulgaria, and Hungary, and ultimately, through Hungary, to the markets of other EU member states.

Conclusions

- With the implementation of the Neptune Deep project, Romania has the opportunity to become the largest producer of natural gas among European Union countries. The planned doubling of natural gas production will significantly strengthen Romania's position in the region. This will enable Romania to act as a guarantor of energy security not only for Moldova, as is currently the case, but also for other Central European countries.
- Enhancing energy security in the region will only be possible when the Neptune Deep project is fully realised. The companies involved in the investment (OMV Petrom and Romgaz) have experience in implementing such projects. However, in addition to the development of the deposits, an essential element for increasing the integration of the markets of Central European countries will be the expansion of transport capacity (potentially an additional 8 bcm of natural gas per year in the region) along the North-South axis.
- The commercial exploitation of the Domino and Pelican South fields will have both positive and negative consequences for Romania's climate situation. On the positive side, it may lead to a change in the energy balance (currently, natural gas ranks fourth, behind hydropower, nuclear power, and coal). Thus, the project may contribute to reducing the share of coal and meeting climate goals (although it is unclear how much of the planned 8 bcm per year of natural gas will be used in Romania and how much will be exported). On the negative side, it is anticipated that the investment could lead to a significant increase in greenhouse gas emissions (GHG), despite the introduction of Zero Routine Flaring and Zero Routine Venting principles in the exploitation of deposits¹.
- The implementation of the investment may face challenges due to the ongoing war in Ukraine. Through the Neptune Deep project, Romania will become a strong regional player in the natural gas market in Central European countries, thus reducing the influence of the Russian Federation, which aims to destabilise the market. Given the past damage to transport infrastructure in Europe (mainly Nord Stream 1, Nord Stream 2, and the Balticconnector pipelines), a potential attack on the 160-kilometre-long pipeline delivering natural gas from the Domino and Pelican South fields to the mainland should be considered. Importantly, following the illegal annexation of the Crimean Peninsula by the Russian Federation in 2014, Romania's exclusive economic zone in the Black Sea now borders Russia.

¹ Zero Routine Flaring and Zero Routine Venting are initiatives to reduce greenhouse gas emissions by eliminating routine flaring (flaring) and venting (venting) of gases associated with oil and gas production.