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# SEE ENERGY BRIEF

## Monthly Analysis

IGB and its Impact on the SE European Gas Market



## Introduction

As the energy crisis is still unfolding in the European Union (EU), mainly caused by Russia's suspension of gas supplies and the observed energy shortages at global level, the EU has been eager to diversify its gas imports, as, according to an official statement from the European Commission, "amid Russia's continued weaponization of its energy supplies, diversification of energy imports is a top priority for the European Union". (1)

On October 1, 2022, the start of the commercial operation of the Interconnector Greece-Bulgaria (IGB) that transports natural gas from Greece to Bulgaria was a relief for the wider SE European region<sup>1</sup>, as it is expected to decrease regional dependence on Russian gas and enhance energy security. This development also created a sense of security in society that households will not freeze in the winter, while at the same time that there is an alternative to the deadly energy embrace of Russia.

Undoubtedly, IGB is changing the gas and energy map in the Balkans. The opportunity for the region to connect even further to the gas networks of SE and Central Europe and become a gas hub can be achieved through the construction and operation of a number of gas infrastructure projects that are now in the planning or in the implementation phase.

## The Interconnector Greece-Bulgaria (IGB)

The gas interconnector Greece-Bulgaria (IGB) connects the natural gas transmission network of Greece near the town of Komotini with the Bulgarian transmission network near the town of Stara Zagora. The interconnector has an overall length of 182 km and a technical capacity of 3 bcm per year with an option for increasing the transmission capacity to up to 5 bcm per year with the construction of a compressor station on Greek territory that would also allow for reverse flow. (2)

The implementation of the IGB project aims to ensure diversification not only of the routes but also of the natural gas sources for Bulgaria and the wider region. As part of the development of the Southern Gas Corridor through IGB, Bulgaria and its neighbouring countries will have access to alternative supplies from the Caspian region as well as from existing or planned LNG terminals. IGB is set to create new market opportunities and will enhance international partnerships in the region. The IGB is the first project to be realized within the Southern Gas Corridor framework, but also on the North-South axis, as further expansion to Romania, Serbia and Hungary is foreseen, with Greece serving as the transit hub for Azeri natural gas

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<sup>1</sup> SE Europe, as defined by IENE, includes Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Slovenia, Cyprus, North Macedonia, Greece, Hungary, Kosovo, Montenegro, Romania, Serbia, Turkey and Israel.

going to SE Europe.

**Map 1: The Gas Interconnector Greece-Bulgaria (IGB)**



*Source: ICGB*

The gas interconnector Greece-Bulgaria is recognized as a leading project for the CESEC initiative<sup>2</sup> and has excellent synergy with other major projects, such as TAP and TANAP. The project can be considered as a game-changer for the Bulgarian and SE European energy market with its ability to increase competition and decrease the prices for consumers while securing diversified gas deliveries.

It is important to note that the IGB has been developed in tune with the Alexandroupolis FSRU, which is set for completion by the end of 2023. With the FSRU's implementation, IGB's capacity may see a significant boost of up to 5 bcm/y, which will further ensure the independent energy deliveries in the region.

As a project, the construction of the gas interconnector between Bulgaria and Greece costed some of €240 million in total:

- €45 million were provided under the European Energy Program for Recovery (EEPR),
- €39 million were allocated under the Operational Program "Innovation and Competitiveness" (OPIC 2014-2020),
- €109.9 million were provided in the form of a loan from the European Investment Bank (EIB),
- and the remaining funds were secured by the project's shareholders - BEH EAD and IGI Poseidon (see below).

The IGB was implemented by the joint venture company ICGB AD, with shareholders BEH EAD (50%) and IGI Poseidon (50%). The co-shareholder IGI Poseidon is a company, registered in Greece, with shareholders being the Greek Public Gas Corporation DEPA SA (50%) and the Italian energy group Edison SpA (50%).

<sup>2</sup> The Central and South Eastern Europe Energy Connectivity (CESEC) works to accelerate the integration of Central Eastern and SE European gas and electricity markets. The CESEC high-level working group was set up by Austria, Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Slovakia and Slovenia and the EU in February 2015.

## Greece to Become a Gas Hub

In a certain way, it can be argued that IGB is changing the gas map in the Balkans. The opportunity for the region to connect even further to the gas networks of SE and Central Europe and become a gas hub is through the operation of the gas **interconnection Greece-North Macedonia**, among others. Athens and Skopje signed a relevant agreement in September 2021 in Thessaloniki, in the presence of the American ambassador, which is revealing the project's importance to the West alliance and underscores its geopolitical significance. Based on the deal, the pipeline is expected to stretch over 123 km from Nea Mesimvria to Negotino, through the border towns of Evzoni and Gevgelija, connecting the national natural gas transmission systems of Greece and North Macedonia.

Its initial transport capacity will be 1.5 bcm per year, with the possibility of expanding it to 3 bcm, while plans have been made so that the pipeline can also transport "green" hydrogen. Current information indicates that a tender for the project's hydrogen upgrade is imminent in both countries, with increasing interest also from other countries, such as Serbia, Kosovo and even Hungary. (3)

There is also the **Revithoussa LNG terminal**, located southwest of Athens and in operation since 2001, which was upgraded two years ago and can now manage bigger LNG volumes. This terminal has increased substantially its LNG gasification capacity with the aim of reinforcing the security of gas supply for the country and the broader region. More specifically, a newly installed floating storage unit (FSU) at the terminal has enhanced capacity by 70%, from 225,000 cubic meters to 380,000 cubic meters, allowing traders and suppliers to plan LNG imports for 2023.

The terminal already receives American and other LNG shipments, highlighting the prospect of Greece becoming a bigger LNG importer than a piped gas importer in accordance with the ongoing transformation of global LNG market. It has to be noted that increased LNG loads arriving at the Revithoussa terminal have sustained the Bulgarian market since late April when Gazprom turned off the tap and deprived it of 90% of its gas needs. Bulgaria now receives quantities of 90,000-100,000 MWh of natural gas through Greece. Of these quantities, 10,000 MWh are Azeri gas funneled through the TAP.

It is worth noting that in a latest auction organized by Greece's Natural Gas Transmission System Operator DESFA, energy companies submitted bids between €3.5 million and €4 million for slots at the Revithoussa LNG terminal. These bids are roughly three-and-a-half times higher than price levels recorded last year. Two Bulgarian companies, Bulgargaz and Kolmar, as well as Greece's power utility PPC and Motor Oil, were the winning bidders at the auction's session, securing four out of eight of the slots offered.

Greece's recent transformation as a strategic gas exporter for the wider region has prompted a surge in demand for slots at the Revithoussa LNG terminal. During the year's first nine-month period, the country's gas exports increased by 293%, representing over 20 TWh. Bulgaria was the main recipient. Greece has been covering the neighboring country's gas needs for some months now, following natural gas pipeline disruptions from Russia.

In addition, the swift construction of the **Alexandroupolis FSRU** in northeast Greece for the transfer of LNG to the Balkans and SE Europe has attracted American and European support because it enhances the diversification of Europe's and the broader region's energy resources. Construction work on Alexandroupolis FSRU was officially launched in early May 2022, while the terminal is expected to be operational by December 2023. The Alexandroupolis FSRU will provide 5.5 bcm of gas annually to the markets of Greece, Bulgaria, Serbia, and North Macedonia. The new infrastructure is tied to other interconnection projects, like the IGB and the gas links between Bulgaria, North Macedonia, and Serbia. Through this project, the four countries will practically diversify their routes and sources of supply and thus be able to reduce their dependence on Russian gas.

In addition to the above project, Greece's Regulatory Authority for Energy (RAE) has already approved Elpedison's **Thessaloniki FSRU** project as well as the final phase of a market test for Motor Oil's FSRU plan, **Dioryga Gas**, off Corinth, west of Athens. For Elpedison, the authority's approval essentially signals the go-ahead for the Thessaloniki FSRU as the decision awards a 50-year project license until 2072. Through a 50-50 joint venture involving Elpedison's two partners, Edison and HELLENiQ Energy, formerly known as Hellenic Petroleum, the Thessaloniki FSRU will be developed at the Thermaic Gulf, just a few kilometers from Dock 6 at Thessaloniki port. The Thessaloniki FSRU, planned to consist of four storage tanks offering a total of 170,000 cubic meters, is scheduled to be launched in 2025.

Besides approving guidelines for the final phase of Motor Oil's market test concerning the Dioryga Gas FSRU, RAE also approved a capacity boost for this project, to 210,000 cubic meters from 170,000 cubic meters, as had been specified in the project's original license, as well as Dioryga Gas's transfer to Motor Oil's MORE subsidiary, also hosting the petroleum group's RES projects. Dioryga Gas's FSRU is slated for operation before the end of 2024.

In addition, Mediterranean Gas officially launched the market test for the capacity allocation for the **ARGO FSRU**. The ARGO FSRU in Volos is strategically located in the heart of Mediterranean and in the center of the Greek natural gas system and is expected to support the energy security and diversification of the region. The company's goal is for the ARGO FSRU to be operational in the first quarter of 2025. The regasification capacity of ARGO FSRU will amount to 5.2 bcm of natural gas per year. The LNG that will be shipped from various sources to Volos will be regasified, enter the National Natural Gas System, and

transmitted through an axis of cross-border pipelines to North Macedonia, Bulgaria, Romania, Albania, Italy, and the rest of Europe.

Furthermore, Greece and Bulgaria are close in signing a Memorandum of Understanding (MoU) in order to maintain strategic natural gas reserves on behalf of Athens at the Chiren underground gas storage facility in the northwest of the country, where Greece's Public Gas Corporation (DEPA) has already installed quantities equivalent to around 400,000 MWh. Greece does not have any gas storage facility besides Revithoussa; therefore, according to an EU regulation, it should maintain strategic reserves equal to 15% of its annual consumption in another EU country. In this context, it has already signed an MoU with Italy, where the Greek importing companies have started storing gas, and another with Bulgaria is expected now.

The plan is to offset the quantities that will be stored by Greek companies in Bulgaria with quantities of either Azeri gas or LNG intended for the neighboring country. In other words, Greece will be able to retain the corresponding quantities instead of waiting for their transfer from Bulgaria, thereby ensuring it will be able to use them in any event. The contingency plan by the Regulatory Authority for Energy forces gas importing companies to maintain stock from November 1, 2022 until March 21, 2023, either in Italy or in another European country, provided the cost is not higher than what it has been determined for Italy. Total reserves amount to the equivalent of 1.14 TWh.

Moreover, Greece is a country that features some promising hydrocarbon reserves that are documented in 2-D and 3-D seismic surveys conducted by seismic vessel "Nordic Explorer". The seismic vessel collected geological data within the Greek Exclusive Economic Zone (EEZ) from a total area of 225,000 square km in the Ionian Sea and in South and Southwest Greece in 2013. As quoted in a recent IENE study (4), the offshore areas of the Ionian Sea and south and west of Crete could accommodate potential deposits of 70-90 trillion cubic feet or 2.0-2.5 tcm of gas.

The war in Ukraine triggered a Greek government decision for an action plan aiming at the completion of seismic surveys and exploratory drilling at the offshore blocks in the Ionian Sea and southwest of Crete. Notably, the basic strategy in Europe on energy transition has not changed. Thus, the lifespan of the hydrocarbons in the energy mix remains limited. That said, the former Hellenic Hydrocarbon Resources Management Company (HHRM), now Hellenic Hydrocarbons and Energy Resources Management Company (HEREMA), estimates that there is enough time for the development of the natural gas industry in Greece, having as a guide the precedent of the Zohr gas field in Egypt. The Egyptian field's commercial utilization took less than two-and-a-half years following completion of the seismic surveys. In addition, the geological structures in fields west and southwest of Crete resemble to those of the super-giant Egyptian Zohr and the Israeli Leviathan gas fields. (5)



A consortium headed by ExxonMobil has already started conducting seismic surveys at concessions south and southwest of Crete this winter, Greece's Prime Minister announced on November 7, 2022. The timing of the prospective surveys is in line with a schedule announced earlier this year by HEREMA, which envisaged surveys for the winter of 2022-2023. The seismic surveys are expected to be followed by higher-definition 3D surveys in 2024. If all goes according to plan, initial exploratory drilling at the offshore Cretan blocks could take place in 2025 and 2026, which, if successful, would result in development of hydrocarbon deposits in 2027, leading to production in 2029. ExxonMobil increased its stake in a consortium holding licenses for the two offshore Cretan blocks following a recent decision by France's TotalEnergies to withdraw from the venture. ExxonMobil acquired TotalEnergies' share to now hold a 70% share in the consortium as the venture's operator. (6)

## Discussion

The war in Ukraine and the political risks facing the region seem to escalate, but a group of countries in SE Europe are determined to maintain stability and economic growth. Greece belongs to this group and endeavours to play a constructive role in mitigating the energy supply risks of Europe and in containing the accumulated instability. The development by Greece of offshore and onshore hydrocarbon deposits and the undertaking of gas infrastructure projects through synergies with regional and international partners, such as the IGB, demonstrate their joint determination to lock the East Mediterranean into a European energy strategy that provides a win-win situation by which cooperation benefits all.

Expansion plans in Greece, involving the addition of more regasification capacity to be complemented by additional transmission capacity, such as the launch of IGB, help consolidate the region's security of supply. For instance, there are plans for additional entry capacity up to 10.7 mcm/day to supply exclusively IGB from the Alexandroupolis FSRU. So far, this entry point has not been established in the national gas transmission system. Information on the capacity of this entry point will be announced by DESFA when the relevant arrangements, foreseen by the regulatory framework, are completed early in 2023. In addition, IGB is due to ship not only Caspian gas but also regasified volumes imported via the Alexandroupolis FSRU and could be expanded to 5 bcm/year depending on regional market demand.

The above indicate the strategic importance of IGB and how it can become a significant project not only for Bulgaria but also for the wider region of SE Europe, providing alternative gas supplies and also helping diversify energy sources of neighboring countries. IGB can also be characterized as a flagship project and a best practice for the implementation of various other gas infrastructure projects that are currently in the planning or in the implementation phase.

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