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Energy security of Israel and energy cooperation between Israel and the European Union

Original article

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Abstract

Objectives: There are two major objectives. The first objective of the paper is to critically analyse the energy security of Israel and assess the prospects for the future. The second objective is to consider the prospects for the future energy cooperation between Israel and the European Union.

Methods: The main objective of this report is to verify this thesis by either demonstrating that it is true or by rejecting it. To answer the two questions and to support the thesis, the study includes a critical analysis of a selection of relevant materials, which include other research papers from academic journals, press articles, and reliable websites that focus on the topic. The report starts with a short introduction into the latest developments that may affect the energy security of the state of Israel.

Results: Israel and the EU, this may open new perspectives and lead to attaining energy security by the European Union. This, to some extent, confirms the thesis that has been assumed for this research:

The discovery of the new gas fields has significantly enhanced Israel's energy security and may also contribute to improve the energy security of the European Union.

Conclusions: In conclusion it may be observed that the discovery of the new gas field has significantly enhanced Israel's energy security in terms of Israel's own gas consumption, especially in view of the latest political situation in Europe and the war in Ukraine.

Introduction

The paper focuses on energy security of Israel and energy cooperation between this state and the European Union. There are two major objectives. The first objective of the paper is to critically analyse the energy security of Israel and assess the prospects for the future. The second objective is to consider the prospects for the future energy cooperation between Israel and the European Union. There are two research questions that guide this study:

RQ1: What is the current energy security level of Israel and how may the discovery of the new gas fields affect Israel's energy security?

RQ2: How does energy security level of Israel contribute to improve the energy security of the European Union?

In view of these questions, the following research thesis that has been assumed for this study:

RT: The discovery of the new gas fields has significantly enhanced Israel's energy security and may also contribute to improve the energy security of the European Union.

The main objective of this report is to verify this thesis by either demonstrating that it is true or by rejecting it. To answer the two questions and to support the thesis, the study includes a critical analysis of a selection of relevant materials, which include other research papers from academic journals, press articles, and reliable websites that focus on the topic. The report starts with a short introduction into the latest developments that may affect the energy security of the state of Israel.

1. Background

International Energy Agency defines energy security as the continuous availability of energy sources and their affordability (IEA, 2022). For Pietraś and Misiągiewicz, energy security is a state in which supplies of energy resources are guaranteed, allowing for the satisfaction of the energy needs of the state in a situation of peace and conflict (Pietraś, Misiągiewicz, 2017). The IEA emphasizes the multifaceted nature of the concept, including long-term energy security, mainly related to investments in energy infrastructure in line with economic development and environmental needs, and short-term energy security, focusing on the ability of the energy system to react quickly to sudden changes in the balance of energy supply and demand (IEA, 2022).

Proninska argues that energy security is a highly complex concept that combines a wide selection of elements, such as geostrategy or economy (Proninska, 2012). What is more, energy security may occur on diverse levels, one can talk about global, national, regional, organizational, or individual ones. Therefore, understanding the issue requires a precise identification of all the factors that affect them. It is also vital to prioritize these factors according to their significance. Therefore, energy security requires a broad and precise view. When preparing national strategies, for example, governments should take into account not only the factors connected with their own territory, but also the resources of neighboring countries, regional leaders and global players. Formulating a responsible energy policy is

currently one of the major objectives of the states across the world, a serious challenge for politicians, economists, planners, and strategists.

To provide a comprehensive definition of energy security, Proninska describes in detail four major categories of the factors that impact energy security, i.e. geostrategic factors, economic factors, institutional factors, and ecological ones (Proninska, 2012). Geostrategic factors are mostly connected with enhancing the security of energy supply. This is achieved through the development of a strategy for acquiring and the use of energy and raw materials that are energy sources. Therefore, the geostrategic dimension includes in the internal energy security strategy the international situation, which is prone to crises and conflicts. A significant role in this context is played by such elements as:

- sustainability and crisis response strategies that may be successfully used to counterbalance the negative impact of a conflict, crisis, or rapid energy price change,
- the level of diversification of raw materials in the energy mix,
- the structure of individual energy carriers in domestic consumption (Proninska, 2012).

According to some geopolitical experts, electricity has become more than just a driving force for the economy, it has become one of the main topics of political strategic reflection. In this context, energy security is viewed by many experts as a synonym of national security and economic security. This is confirmed by Latvian Minister of Energy, Rokas Masiulis, who, during the conference on nuclear energy held in Vilnius in 2015, stated that the geopolitical situation had an important impact on energy security. These days, energy security is not only a part of energy policy, but energy security is also a key part of geopolitical security, said Masiulis (Masiulis, 2022).

The economic aspect of energy security is extremely important as it has a huge impact on the functioning of state economies. It is also therefore most important to closely link energy security with economic security (Lee et al., 2022). The economic dimension of energy security includes such factors as current levels of fuel and energy prices, predictable trends in energy markets, or the relationship between economic growth and energy consumption (Proninska, 2012). For example, rising fuel prices is very likely to increase transport costs, which in turn may have an impact on global trade prices and patterns.

The institutional factors that affect energy security are connected with the organizations associating countries that are major suppliers of energy resources, especially OPEC, which was established in 1960 and included such states as Saudi Arabia, Egypt, Iran, Iraq, or Venezuela. Other international organizations that influence the global trade patterns of energy sources include the UN, EU, and NATO. Such organizations may attempt to control the energy supply market and create legislation that can significantly affect global energy trading patterns (Filipović et al., 2018).

Ecological factors have been becoming more and more prominent recently. The ecological dimension of energy security focuses on reducing negative impact of the use of energy on the planet Earth (Filipović et al., 2018). The negative changes of the Earth's climate caused by the exploitation of deposits and the processing of raw materials is just an example of this global impact. However, the environmental issues are diverse and extensive,

they may concern not only the issue of climate protection, but also such factors as international relations and actions with the aim to make energy use more environmentally friendly, the development of new technologies that may slow down the negative impact (such as CO₂ sequestration), the assumption of the legislative acts that shape energy supply markets, the formulation of guidelines for more environmentally friendly use of certain energy supplies or energy production methods (Proninska, 2012).

All the dimensions of energy security may affect the energy situation of Israel. One may observe that Israel's energy security depends to a large extent on a group of external factors of a regional, interregional and global nature. They include independent variables that determine the conditions under which Israel's energy security is shaped, and dependent variables through which Israel can influence particular aspects of this security (Bahgat, 2011). The first of these groups includes, among others, the location of energy resources in the region, topography influencing the possibility of transporting these resources, or natural conditions that hinder or facilitate the extraction of raw materials and energy production. The second group of dependent variables includes energy agreements and alliances concluded by Israel (or agreements made by other states in which Israel is mentioned), processes of political and economic regionalization in the Eastern Mediterranean (Egypt, Jordan, Cyprus, Turkey) and the Middle East, agreements signed by Israel for the purchase and sale of energy, gas and oil, or Israel's energy relations with the Palestinian National Authority (Dyduch, 2018).

Own energy sources seem to be of utmost importance in view of Israel's energy security. Israel has long struggled with a severe shortage of energy sources. This is due to the geopolitical situation. Israel is surrounded by several oil-rich countries, global major suppliers of oil and gas (Wodka, 2011). But these are not energy sources that Israel can rely on, because these countries are hostile to Israel (Podeh, 1997). For years, Israel has relied on supplies of coal from Russia, as well as oil and gas from all over the world. According to Dyduch, the United States has usually played a large role in keeping Israel's energy sources sufficiently high (Dyduch, 2018).

However, the situation with Israel's energy security changed dramatically in the 2010s. With the discovery of the Leviathan gas field, one of the largest offshore natural gas deposits, Israel found itself in a completely different situation (Zemach, 2016, p. 64-74). The Leviathan gas field, located on a shelf 130 km west of Haifa, can contain up to 600 billion cubic meters of natural gas which is enough to provide the whole country with energy for the next 40 years and leave a large surplus for export. In total, nearly 840 billion square meters have been discovered over the last decade. Experts say that after the likely finding of more deposits, the amount of gas available for exploration may even double (Czyżewski, 2022). Commercial operation of the Leviathan gas field began in December, 2019 (Stanić, Karbuz, 2018). The exploration is carried out by Noble Energy, a Houston-based company that has been working on the Israeli coast since 1999 (Ramu, 2022).

The discovery of the Leviathan gas field opened new prospects for the cooperation between Israel and the European Union since Israel is an important EU's partner, the member of the Southern Neighbourhood (together with such countries as Egypt, Lebanon, Jordan, Syria, Algeria, Morocco, Libya, Tunisia). According to the European Commission, this

"privileged partnership" was established in 1995, "with the launch of the Euro-Mediterranean Partnership at the Barcelona Conference, aiming to establish an area of peace, stability and economic prosperity that upholds democratic values and human rights" (European Commission, 2022).

2. Israel's Energy Security

In geopolitical terms, the discovery of the Leviathan gas field may prove a radical game-changer for both Israel and the entire region of the Middle East. It may strongly enhance Israel's energy security and may also significantly change the Energy cooperation between Israel and the European Union. Owing to this, Israel's energy contribution may also change the energy security of the European Union.

The new gas field strongly enhances Israel's energy security and influences its green transformation of energy economy. The Israeli population is less than 9 million people. Israel can consume annually only about 1% of the gas discovered in the Leviathan gas field. Israel's oil and coal-based energy industry has been switching to gas for decades. Israeli authorities are even considering a complete ban on the import of gasoline and diesel cars from 2030 (Israel's Ministry of Energy, 2022). This may mean that after 2030 the demand for oil and coal can drop to insignificant levels in Israel. The largest coal-fired power plant in Hadera will be converted to gas-fired power plant in the next 3 years, which is to lead to a decrease in Israeli coal combustion by as much as 30% (Israel's Ministry of Energy, 2022). In 2018, the Minister of Energy of Israel formulated the new energy objectives. According to these objectives, by the year 2030, Israel is expected to experience a significant "reduction in the use of polluting fossil fuels, specifically, totally terminating the use of coal and mostly terminating use of distillate fuels, whilst maintaining the reliability and continuity of energy supply" (Israel's Ministry of Energy, 2022). Israel is on track to full decarbonisation by 2030. The natural effect of switching from coal to gas power plants is a significant improvement in air quality. However, somehow contrary to the declaration made earlier by Israel's Ministry of Energy, in July 2021 the Jewish administration "announced a plan to reduce its carbon emissions by 85 percent by 2050 compared to 2015, a less ambitious goal than the carbon neutrality adopted by most developed countries", as i24news reports (I24news, 2022).

However, the richness of the raw material may also slow down the development of renewable energy sources (Hamed and Bressler, 2019) (Hamed, Bressler, 2019). Israel has a surprisingly low level of renewable energy sources in the mix for a country situated in a geographically abundant region of sunshine. According to Czyżewski, gas constitutes 71%, and coal 27% in Israel's energy balance. Renewable energy sources account for only 2% of Israel's energy sources. In comparison, renewable energy meets over 12% of the demand in Poland (Czyżewski, 2022). However, the Israeli authorities declare that their strategic goal for 2030 is to produce 83% from gas and 17% from renewable energy sources. According to OECD, "natural gas can reduce GHG emissions in the near term, but risks jeopardising deep decarbonisation and broader well-being goals in the long term"(OECD, 2022). As further explained, "natural gas power plants are cleaner than coal, but have a number of other issues, including the emission of GHGs (including fugitive emissions), NO_x and other air pollutants along the gas supply chain" (OECD, 2022).

The impact of the discovery of the new gas field on Israel's energy security has been enhanced by the latest political situation in Europe, especially the Russian invasion of Ukraine and its political and economic consequences. At the time of the discovery of Leviathan, countries such as Russia, Qatar, Australia and The United States were flooding the world with cheap gas, leading to one of the lowest gas prices levels ever. However, the situation has changed dramatically since 24.03.2022. As many countries, including the EU and US, decided to stop or limit importing gas from Russia, the worldwide prices of gas have risen rapidly. As many experts predict, the price of gas may soon double as compared with the pre-Ukraine war levels. This means that the profitability of the new gas field exploitation may also significantly increase for Israel.

As the volume of the new gas field strongly exceeds Israel's energy consumption, Israel has started to consider export options and directions. Egypt, Jordan and the Palestinian Authority were the first potential export destinations. A decade ago, it was Israel that imported Egyptian gas from Egypt and Jordan. It is estimated that Egypt provided as much as 40 per cent of the total Israeli demand of gas. In 2018, the Israeli company Derec Drilling, together with Noble Energy, signed a 15-year contract for gas supplies to Egypt. The country has two terminals from which the raw material can be re-exported. The growing Egyptian population, already reaching 100 million, could make Egypt a profitable market. On the other hand, Egypt itself has made significant discoveries of gas deposits in recent years in its own territorial waters. But the most important obstacle to this cooperation may be political considerations. Egypt's instability started with the Arab Spring of 2011, and the problem of terrorism - at the beginning of 2020, terrorists detonated explosives on a section of a new gas pipeline in the Sinai Peninsula, 80 kilometers from the city of El Arish. Gas in the attacked infrastructure flowed from the Leviathan fields to Egypt.

However, Israel has other assets, both tangible and intangible, that makes its energy security stronger. Dyduch argues that the innovativeness of the Israeli economy (consisting of elements such as renewable energy technologies, the development of technologies related to electromobility, technologies related to cybersecurity in the energy sector) significantly improves Israel's energy security (Dyduch, 2018). According to Dyduch, the innovativeness of the Israeli energy economy has become the engine of its international competitiveness and an important element of diplomacy, and thus an instrument for achieving foreign policy goals (Dyduch, 2018). Moreover, innovative solutions in the energy sector not only increase Israel's internal energy security, but are also a way to build strategic international alliances, they can change the architecture of the geopolitical system. Energy innovation also allows for significant economic profits (Dyduch, 2018).

3. Energy cooperation between Israel and the European Union

Due to the terrorist threat and political uncertainty of the Middle East countries, the concept of exporting to Europe through a gas pipeline located at the bottom of the Eastern Mediterranean Sea has emerged. The EastMed gas pipeline would run from Israel through Cyprus and the Greek islands all the way to Italy. The project was met with enthusiasm. According to Tsakiris, the research suggests "that the new gas discoveries of the Eastern Mediterranean could transform the region to a new source of simultaneous supply and transit

diversification for the EU" (Tsakiris, 2018, p. 25). The project was therefore supported by the affected countries (Cyprus, Greece, Italy) and the entire European Union. What remained was the problem of finding investors who would finalize the project with the amount of USD 7 billion (Czyżewski, 2022). Zemach observes that "natural gas is usually traded regionally via pipelines, or to some extent, in the form of compressed natural gas" (Zemach, 2016, p. 64-74). According to the same author, "the only way to trade natural gas globally is in the form of LNG, in which heavy investments and strong financial backup are required" (Zemach, 2016, p. 64-74).

Besides funding, the project faced other difficulties. In January 2022, the Biden administration abruptly withdrew American support for a gas pipeline in the Mediterranean. There could be several reasons for this decision. The most important reason could be the generally unstable situation in the region from which gas would flow to Europe and the threat of potential Russian interference in gas flows (Tsakiris, 2018). It is also possible that the White House has bowed to pressure from Turkish president Recep Tayyip Erdoğan, who has loudly opposed the offshore gas pipeline because it bypassed Turkey, as some commentators note (Kem, 2022). As an alternative to the EastMed gas pipeline and exporting gas to Europe, Israel is considering sending gas to Asia (Czyżewski, 2022). As for now, the gas currently produced by Israel is sent to Jordan, Egypt and local markets (Oxford Analytica, 2022).

However, these difficulties that have so far blocked the realisation of the EastMed gas pipeline may be overcome by new situation connected with the Ukrainian war and the international sanctions against Putin's regime. As Forsal reports, "Turkish President Recep Tayyip Erdogan said Turkey and Israel could work together to transport natural gas from Israel to Europe; both countries will be discussing energy cooperation during the talks" that have been scheduled for February 2022 (Forsal, 2022). This has been confirmed by other sources. For example, WNP reports that Turkey and Israel have been making their diplomatic relations more friendly and held talks about running several joint gas projects in the nearest future (WNP, 2022). One of such projects would include building a pipe connecting the Leviathan gas field with Turkey, thus making it possible to transport the gas further to the southern states of Europe. According to WNP, the talks that concern this project have only just been started and are to be continued in the nearest future (WNP, 2022). Hopefully for both Israel and the EU, this may open new perspectives and lead to attaining energy security by the European Union.

4. Conclusions

In conclusion it may be observed that the discovery of the new gas field has significantly enhanced Israel's energy security in terms of Israel's own gas consumption, especially in view of the latest political situation in Europe and the war in Ukraine. It also potentially enhances the energy security of the European Union since there is a political will on Israel's part to export its gas to Europe. This, to some extent, confirms the thesis that has been assumed for this research:

The discovery of the new gas fields has significantly enhanced Israel's energy security and may also contribute to improve the energy security of the European Union.

However, this contribution to the energy security of the European Union is only potential at this moment since it is not certain whether this export of Israel gas to EU will prove feasible owing to the lack of infrastructure. The discovery of the new gas field has also led to the discrimination of the green transformation and renewable energy sources, which may in a long term lower the diversity of the energy sources and, as a result, decrease the energy security level of Israel.

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