

## TURKEY'S PERSPECTIVE ON THE FLOW OF MEDITERRANEAN GAS

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***Abstract:** Regardless of whether it is possible to implement the EastMed project eventually under current conditions, in the foreseeable future a new outstanding actor is expected to appear either way in the international gas arena. Accordingly it's hard to imagine that this technologically advanced country would miss the opportunity of becoming an exporter. Moreover this situation promises the country not only financial benefits but also geopolitical advantages in a pretty disturbed region. "Bets" were placed on "traditional" pipeline gas but not on LNG. Consequently the EU market is the most obvious option for precise orientation. Moreover this option is supported politically and financially by the Union itself which is also encouraged by the US known as the most important ally of Israel. On the other hand Greece playing an important role currently in the EastMed project highly needs foreign investments and new workplaces particularly in industrial sectors for European loans to the country. Several developed countries including the founding members of the EU were interested in economic prosperity of this member of Eurozone. In this sense they have been saving Greece from bankruptcy for a long time and the country has been overcoming the decade-long economic crisis with great difficulty.*

***Keywords:** natural gas, pipeline, supplies, economic development.*

***JEL Classification:** L13, L95, Q42, Q48.*

### **1. Introduction**

The East Mediterranean region has attracted the world's interest due to hydrocarbon reserves especially discovered by the end of the 2000s. Within this framework as a result of exploration works of the giant international energy companies, several natural gas fields with different sizes were found in the Mediterranean Sea around Israel, the Greek Cypriot Administration, Egypt, Lebanon and Palestine. Tamar, Leviathan, Aphrodite and Zohr fields were among the most outstanding and contentious reserves. While these reserves enhance current energy potential of the region, they also give the surrounding countries having high energy demand new opportunities in terms of supply. Accordingly countries, particularly the EU members, which have high energy demand and insufficient sources began to put these reserves on the agenda to diversify supply routes and to strengthen energy security. In this sense different projects were in question for exportation of the region's gas sources. The EastMed project and Turkish route are prominent options among them. The EastMed project is supported by the EU however Turkey is excluded at the moment. While Israel is one of the key countries of the EastMed, it considers Turkey as strategic partner and possible transit country for delivery of the Leviathan gas to the EU if realization of the EastMed becomes difficult. That's why Israel approaches more carefully and cautiously to Turkey's Libya move by which Turkey disrupted the project. On the other hand Turkey is considered as the optimum option by many decision makers by dint of its major completed projects including TANAP, existing infrastructure, and obviously geographic location. A project in the region where Turkey is included has potential to create a "win-win" situation for both suppliers and consumers. Turkey plans to be one step closer to the objective of being a regional hub by playing an active role in transportation of the East Mediterranean gas to the West.

### **2. Development degree**

Several studies of experts and scientists from Turkey and other countries were used widely during preparation of the article. In this sense works of G.K. Shrikov about

globalization of the world economy, V.A. Melyantsev about the world economy, V.A. Yashkin on economic mechanisms, V.A. Isaev about problems in energy markets, A.I. Dinkevich and L.A. Friedman on economic development of the CIS countries, A.V. Akimov about problems in oil and gas economy of the Caspian states, N.G. Kireev, L.H. Matyunina, G.I. Starchenkov, N.Y. Ulchenko and E.I. Urazova on Turkish economy and its economic relations with the Caspian states were utilized. In addition studies of Turkish experts and scientists including the works of Cenk Pala, Alaeddin Alcinkaya, Aydin Aydin and A. Necdet Pamir were also used.

### **3. Aim of research**

The aim of this article is analysing the logic and arguments of decision making in complicated geopolitical and geoeconomic conditions on major international natural gas pipeline projects in the region.

### **Research methods**

Historical and comparison methods, diagnostic tools, forecasting, calculations, inductions and deductions were used within the scope of research methods.

### **4. Results and analysis**

Iran has the second largest proven gas sources of the world. In this context while the country's reserves were 31,9 tcm in 2018 (BP, 2019), 17% of global sources were located within the boundaries of Iran. However delivery of Iranian gas to the EU through Turkey or any other route seems difficult due to current political conditions including ongoing sanctions and poor infrastructure.

Iraq is another country attracting attention of the EU in terms of natural gas supply. In this sense proven gas sources of overall Iraq was 3.6 tcm in 2018 (BP, 2019), while between 3-6 tcm of gas were estimated to be on intersection point of borders of Iran, Turkey and the Kurdistan Regional Government on Northern Iraq (KRG).

But due to current political conditions, security concerns, insufficient technology and infrastructure and absence of a "concrete" gas pipeline, transportation of Iraqi gas to the EU through Turkey or other routes seems impossible in the short term.

Apart from Iran and Iraq, which are geographically close to Turkey and the EU, Qatar, UAE and Saudi Arabia come into prominence in terms of rich gas sources comparing to the other states in the Middle East. Within this framework Qatar had 24.7 trillion m<sup>3</sup> of natural gas in 2018 ranking 3rd in the world, while both UAE and Saudi Arabia held 5.9 tcm (Can, 2019). In addition to this, Qatar was the only country exporting gas to Europe among these countries. In this sense Qatar exported 19.5 bcm to the EU in 2018 as LNG while Turkey imported 3.1 bcm from Qatar (BP, 2019). Accordingly Qatar's inclusion to the SGC through Turkey by a pipeline considering its existing strong LNG infrastructure is unlikely to happen. On the other hand both UAE and Saudi Arabia are neighbouring states, however they don't have gas exportations to the Union. Their reserves are also smaller to a certain extent comparing with current suppliers of the EU and Turkey which pretty dominate in the region at the moment. From this point of view UAE and Saudi Arabia may not be included to the SGC at this point. However within the frame of the SGC there may be several routes to include these states in the SGC. Within the frame of the SGC there are two possible options for delivering gas. One of them is already running TANAP and other is the planned EastMed Project. Accordingly if both Saudi Arabia and UAE desire to be included in the SGC through TANAP, the proper route may be the connection of these countries at initial stage and linking them to Turkey via Iraq or Iran. However this option can be costly and troubled at the moment due to poor infrastructure and ongoing sanctions in Iran and political problems in Iraq.

Other option would be connection of these countries through the Arab Gas Pipeline (AGP) to Turkey. The AGP was planned to reach Syria and Turkey, however construction activities in both countries were suspended due to political issues. Accordingly Turkey was excluded in this sense. Since the AGP runs without Turkey and Syria, UAE and Saudi Arabia may be linked with Jordan and Israel then with the planned EastMed Pipeline that can be another option. Although construction agreement of the EastMed project has been signed recently and target date has been set as 2025, concrete steps in this direction haven't been taken yet. That's why realization of this route seems difficult in a close future. Moreover it's necessary to remind that the EU welcomes additional suppliers within the frame of the SGC including the countries of Middle East. That's why it's possible to say that much more countries would be evaluated in future.

**The East Mediterranean Region.** With the emergence of scientific predictions about existence of rich gas sources in the east of the Mediterranean Sea particularly in the early 2000s, the region has attracted interests of not only littoral states but also international companies and global powers. In this sense, the year of 2009 can be considered as a milestone, when the first large reserve in the region was discovered in the Tamar field located in Israel's Exclusive Economic Zone (EEZ). Approximate gas source was predicted to be 280 bcm in the field (Figure 1).



**Figure 1. Overview of gas assests in the East Mediterranean Region**

Sources: Schulte, S. and Weiser, F., 2017. Natural Gas Transits and Market Power-The Case of Turkey. *EWI Working Paper No 17/06*, Institute of Energy Economics at the University of Cologne (EWI), August 2017, p. 5. [pdf] Available at: <[https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI\\_WP\\_17-06\\_Natural\\_Gas\\_Transits\\_and\\_Market\\_Power.pdf](https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI_WP_17-06_Natural_Gas_Transits_and_Market_Power.pdf)> [Accessed 2 March 2020].

The following year Israel discovered a larger reserve in the Leviathan field. There was about 622 bcm of gas, of which extractable amount could meet Israel's domestic demand for 40 years alone. However Lebanon claimed that part of Tamar and Leviathan fields were located in its maritime jurisdiction. An exploration work in the Aphrodite field of Cyprus in 2011 caused Turkey's objections. Turkey didn't recognize the agreement on the maritime border delimitation signed by the Greek Cypriot Administration with Israel, Egypt and Lebanon, claiming that the agreement ignored the area of juristicion of the Turkish Republic of Northern Cyprus (TRNC). The first reserve discovered in Aphrodite field was predicted to contain 129 bcm. The largest ever reserve of the East Mediterranean

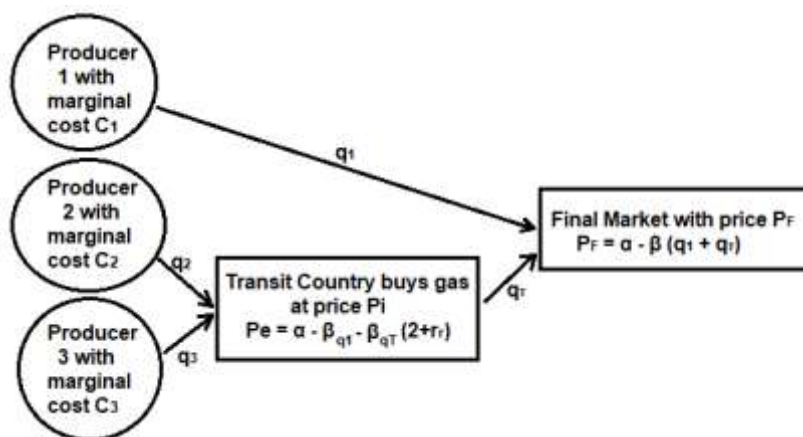
region was discovered in the Zhor field of Egypt in 2015 by ENI, an Italian energy company. Gas source was predicted to be 849 bcm. It was aimed to extract 30 bcm annually and ongoing production started firstly in August 2019. Apart from that another source was explored in the Nour field of Egypt by ENI in 2018 as well, of which estimations haven't been officially stated due to ongoing feasibility studies. Then ENI stated about another gas source in 2018 in the Calypso field of Cyprus. Although feasibility studies continue, the field is estimated to hold gas from 169 bcm to 226 billion m<sup>3</sup>. Finally the biggest reserve of Cyprus was discovered in the Glaucus-1 field in 2019. According to initial determinations the field was likely to hold gas between 142 bcm and 227 bcm (Can, 2019). In this sense Turkey owning the longest coastline of the Mediterranean Sea is expected to maintain exploration activities in 2020 in the region as well. It's worthy to note that especially after ENI's findings, the region has attracted interest if the giant international energy companies. In this sense companies such as Total (France), ExxonMobil (the U.S.), Korean Gas Corporation (KoGas), BP (The U.K.), Qatar Petroleum (Qatar), Mubadala Petroleum (U.A.E.), Rosneft (Russia), Noble Energy and Derek Drilling (Israel) and Dolphin Energy (Egypt) have been actively operating in the fields since then. So far approximately 2.2 tcm of gas have been discovered. However according to estimations of the U.S. Geological Survey overall region contained approximately 9.9 tcm that was equal to 700 billion USD, of which 6.3 tcm were held by the Nile Delta Basin in Lower Egypt while 3.6 tcm were located in the Levantine Basin.

All these developments including ongoing activities have changed the region's security environment and geopolitics in terms of transportation of the gas to be extracted. As a result of this new actors and mechanisms have joined in the East Mediterranean's "energy game" and new "forced" cooperations have become obligatory.

In this context Cyprus, Egypt and Israel seem to become new natural gas exporters however Egypt and Israel can become a rival to Turkey in terms of being regional gas hub.

As is known to all Egypt with the second longest coastline after Turkey became one of key players in the region in 2003 when it signed an agreement on EEZ with the South Cyprus. Accordingly Turkey started to develop its relations with Egypt. In this context signing an agreement on EEZ was determined as a matter of priority in foreign policy of Turkey. However diplomatic and military relations have been suspended when Egypt's current president Sisi took over the management.

It's worthy to note here that Turkey is a transit country especially in terms of natural gas. When considered from this point of view market structure of the country can be identified through the Stylized Theoretical Model (Figure 2).



**Figure 2. Stylized Theoretical Model**

Source: Schulte, S. and Weiser, F., 2017. Natural Gas Transits and Market Power-The Case of Turkey. *EWI Working Paper No 17/06*, Institute of Energy Economics at the University of Cologne (EWI), August 2017. [pdf] Available at: <[https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI\\_WP\\_17-06\\_Natural\\_Gas\\_Transits\\_and\\_Market\\_Power.pdf](https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI_WP_17-06_Natural_Gas_Transits_and_Market_Power.pdf)> [Accessed 2 March 2020].

The final market has a price  $P_F$ .

Producer 1 can sell volumes  $q_1$ , producer 2 can sell volumes  $q_2$ , producer 3 can sell volumes  $q_3$ , to the transit country that then resells the volumes  $q_T = q_2 + q_3$  to the final market.

Again, regarding to gas reforms in Egypt, a new Law on Regulation of Gas Markets entered into force in 2018. An important step to become a hub has been taken by authorizing direct gas importation to private sector by the mentioned Law. Then an agreement priced at 15 billion USD was made with Israel. Hereunder Israel annually will sell 7 bcm for 10 years. Part of gas to be supplied from Israel will be used in domestic market and rest of it will be re-exported as LNG.

It's necessary to remind here that Egypt has been importing gas since 2012. Recently-discovered sources in the Zohr field and an annual production capacity of 30 bcm gave chance to the country to be an international player. In addition two LNG terminals of the country with an annual capacity of 19 billion  $m^3$  have been reactivated. Turkey had similar process with Israel. Close relations shaped by the Operation Reliant Mermaid had continued until the Gaza flotilla raid in 2010. Turkey was considered both as a market for gas to be extracted from Tamar and Leviathan fields and access point for the EU market. However suspension of both bilateral and political relations complicated this option. Although bilateral relations have normalized to a certain extent in 2016 when the parties signed a reconciliation agreement, Israel turned its face to Egypt. On the other hand Israel will have an annual capacity of 40 bcm when Tamar and Leviathan fields start production in full capacity (World Bank, 2019). By increasing domestic demand, bridge position between Asia and Africa, ready LNG infrastructure and export opportunity to other Arabian countries through the 1.200-km-long AGP (The Arab Gas Pipeline is a natural gas pipeline in the Middle East. It originates near Arish in the Sinai Peninsula and was built to export Egyptian natural gas to Jordan, Syria, and Lebanon, with branch underwater and overland pipelines to and from Israel) has turned Egypt a good partner for Israel. Contrary to Egypt and Israel, reserves discovered in the fields which were announced a tender by the South Cyprus fell short of the mark. At this point it seems impossible to build LNG terminals in Cyprus without discovering additional sources. If sufficient amount isn't

discovered, the optimum route excluding Turkey can be transportation of current reserves to Egyptian LNG terminals in market conditions.

Factors such as problems between Turkey, Israel and Egypt, the Greek Cypriot State's unilateral declaration of 13 parcels in the region, the ongoing Cyprus dispute, extracting of discovered reserves and their marketing have forced countries for cooperation, which have opened a road for new coalitions and cooperation fields that Turkey has been excluded. Within this framework triple coalition period started between Greece, the Greek Cypriot State and Israel, supported diplomatically by the U.S. and the EU, which included subjects such as cooperation in the fields of military and energy security, construction of EastMed Natural Gas Pipeline and transportation of Israeli and Cypriot natural gas to the EU.

As a mechanism of regional cooperation the East Mediterranean Gas Forum was established on 14 January 2019 in Cairo with the participation of Israel, Italy, the Palestinian National Authority, the Greek Cypriot state, Jordan, Egypt and Greece which are also the founding members. In January 2020, the U.S. and France asked to join the Forum as a permanent member and observer respectively. Turkey, TRNC, Syria and Lebanon were left out. Founding purposes of the Forum are ensuring coordination between member countries in optimal use of East Mediterranean reserves as well as current sources and establishment of a regional gas market serving to purpose of member countries [4]. On the other hand energy giants Total, ENI, Novatek and Exxon signed exploration and production agreements with member governments in 2019.

Generally, it's possible to state that the region may be an alternative supply source for the EU in the future to lessen dependence on Russia given recently-discovered reserves and support of the Union for triple coalition of the countries in the region.

Within this framework the Eastern Mediterranean Pipeline (EastMed) Project was designated under the Regulation of the European Commission as a Project of Common Interest in 2015 during the 2015-2018 period and the Commission contributed more than 34 million to complete environmental, technical and economic studies for the project. In the same year it was granted an award of 2 million through the Connecting Europe Facility (CEF) Programme. The project was also included in the Union's Ten Years Development Plan in line with the objective of ENTSO-G. On the other hand Greek Cypriot state, Greece and Israel signed an international agreement for the EastMed pipeline on 20 March 2019. The agreement was also supported by the U.S. by virtue of the EU's ongoing diversification policies. And on 2 January 2020 the parties also signed another agreement on the EastMed's construction.

The EastMed is a designed pipeline connecting the East Mediterranean gas sources to Greece via Cyprus and Crete (Figure 3). Total length of the pipeline was planned to be 1.900 kilometres and its total capacity was thought annually as 10 billion m<sup>3</sup> at the initial stage, which could be increased to 15 billion m<sup>3</sup> and to 20 billion m<sup>3</sup> at final stage. Total expenditures of the project were predicted to be minimum 10 billion EUR. The project was planned to be completed in 2025.





**Figure 3. Route of the EastMed Project**

Source: Schulte, S. and Weiser, F., 2017. Natural Gas Transits and Market Power-The Case of Turkey. *EWI Working Paper No 17/06*, Institute of Energy Economics at the University of Cologne (EWI), August 2017. [pdf] Available at: <[https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI\\_WP\\_17-06\\_Natural\\_Gas\\_Transits\\_and\\_Market\\_Power.pdf](https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI_WP_17-06_Natural_Gas_Transits_and_Market_Power.pdf)> [Accessed 2 March 2020].

However the project is controversial due to its high costs and geological issues along with geopolitical dimensions that are mostly related with Turkey owning the largest coastline of the Mediterranean Sea. First of all as already stated total length of the project was designed to be 1.900 kilometres of which 1.300 kilometres were planned to be offshore and the basic starting point of the project was to transport Israeli natural gas to Europe without Turkey and using Turkish territorial waters (IGI Poseidon, 2020). To do so, submarine part of the pipeline should be constructed in high seas and deep water. On one hand this situation approximately triples cost of the project, on the other hand there are some serious geological challenges in the seabed between Crete and Greece. Accordingly the longest and deepest pipeline of the world has been facing with technical and economical difficulties and energy companies haven't been taken concrete steps for this project and the project hasn't been supported financially yet (Aksan, 2020). It's necessary to note that according to some experts financial support from the EU wasn't expected due to its investments in eco-friendly energy sources desisting from hydrocarbon use. That's why the project can be realized with the support of private capital which seems difficult under current circumstances. However as it is understood from figures and expert interpretations, even if the project was financed by some actors, expectations wouldn't be an economic profit. However due to Turkey's decisive and solid stance for protection of the foster-land Northern Cyprus's and its own rights, political benefits of actors are unclear at the moment. Accordingly all these factors seem to be serious obstacles for project's realization in a close future.

There is another issue effecting the project. Turkey signed an agreement with Libya's internationally recognized government on maritime boundaries in the Mediterranean Sea in November 2019 which is very critical in geopolitical and geostrategical terms (Figure 4). In this way Turkey disrupted the project by blocking it under favour of this agreement. Because the EastMed was planned to cross from the EEZ where was created with the agreement by Turkey and Libya.



**Figure 4. Shared Maritime Zone of Turkey and Libya within the frame of the agreement**

Source: Schulte, S. and Weiser, F., 2017. Natural Gas Transits and Market Power-The Case of Turkey. *EWI Working Paper No 17/06*, Institute of Energy Economics at the University of Cologne (EWI), August 2017. [pdf] Available at: <[https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI\\_WP\\_17-06\\_Natural\\_Gas\\_Transits\\_and\\_Market\\_Power.pdf](https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2017/08/EWI_WP_17-06_Natural_Gas_Transits_and_Market_Power.pdf)> [Accessed 2 March 2020].

According to experts Turkey gave a message that it couldn't be ignored in the region and it wouldn't give access permission to the waters considered by the EU as its continental shelf by this agreement and Turkey which was a transit country and net energy importer didn't want hands of energy exporting countries such as Egypt and Israel to be strengthened against itself. And the agreement on Libya's side was mostly focused on security.

## 5. Conclusions

In general terms applicability of the projects related to region's gas has raised doubts. The main reasons of these doubts were difficulties of gas exportation and its pricing in an environment where the EU was able to import cheaper gas from Qatar and Russia. So a competition is in question. In this sense export is the key of gas potential's accurate evaluation in the region, of which realization isn't easy due to high cost of the EastMed. Moreover the agreement signed between Libya and Turkey has also further complicated this challenging picture.

The EU, the Greek Cypriot state and Greece object the agreement. Contrary to these parties Israel approaches more carefully and cautiously to Turkey's Libya move. According to analysts one of the main reasons of Israel's this behavior was possibility of gas exportation through Turkey if realization of the EastMed became difficult. Even if Turkey and Israel have an "on again off again relationship", bilateral foreign trade is still strong (bilateral trade volume of Turkey and Israel was 6 billion USD in 2019) and both countries consider each other as strategic partners. On the other hand as already stated Israel will gas to Egypt for conversion to LNG and re-exportation. That's why it is less dependent on Greece and the Greek Cypriot state in this respect (Amerika'nın Sesi, 2019). Apart from that Turkey mostly was pointed out as the most economic and optimum option in terms of transportation of East Mediterranean gas to Europe, which already has a ready infrastructure including TANAP.



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