Geopolitical impact of natural gas discoveries in the Black Sea

Abstract

Turkey recently announced the discovery of significant natural gas reserves in its exclusive economic zone in the waters of the Black Sea. These discoveries, which could satisfy the internal consumption needs of this fuel for more than 9 years, represent significant support for the National Energy and Mining Policy (2017) that aims to guarantee the country’s energy security in support of an increasingly assertive foreign policy. If the commercial exploitation of the discovered deposits materialises in accordance with the government’s prospects, Turkey will see its geopolitical position strengthened.

Keywords

Turkey, Natural Gas, Black Sea, Russia

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Impacto geopolítico de los descubrimientos de gas natural en el mar Negro

Resumen

Recientemente Turquía ha anunciado el descubrimiento de importantes reservas de gas natural en su zona económica exclusiva en aguas del mar Negro. Estos descubrimientos, que podrían satisfacer las necesidades de consumo interno de este combustible durante más de 9 años, suponen un importante respaldo a la Política Nacional de Energía y Minería (2017) que pretende garantizar la seguridad energética del país en apoyo de una cada vez más asertiva política exterior. Si la explotación comercial de los yacimientos descubiertos se materializa de acuerdo con las perspectivas del Gobierno, Turquía verá reforzada su postura geopolítica.

Palabras clave

Turquía, Gas natural, Mar Negro, Rusia

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Introduction

In August 2020, while the international press echoed an escalation of tension in the waters of the eastern Mediterranean due to disputes over the delimitation of sovereign areas between Turkey on the one hand and Greece and Cyprus on the other, Turkish President Recep Tayyip Erdoğan announced to the world the discovery of a huge natural gas site in the Black Sea. The announced gas volume of 320 bcm\(^1\), subsequently expanded by an additional 85 bcm, is the largest discover of its kind in Turkey’s history and has been received as a real boost to its economy. There has been no shortage of optimism from the government, and some even refer to the Black Sea as the new North Sea.

What does this discovery mean for Turkey’s energy policy? To what extent can these findings alter regional geopolitical balances? In this document, we will aim to answer these questions. To this end, after briefly describing the significance of this finding, we will briefly assess the situation of the gas markets and their contribution to the energy policies implemented by the Turkish Government and then, on these considerations, try to determine to what extent these new gas reserves change Turkey’s geopolitical position.

The Sakarya site

Located just over 160 km from the Turkish coast within Turkey’s exclusive economic zone (EEZ) (Figure 1), the well known as Tuna - 1 in the Sakarya site could hold around 405 bcm of natural gas\(^2\), which would cover –considering an annual consumption of between 40 and 45 bcm– the country’s needs for about 9 or 10 years\(^3\). This is not a negligible amount, which, at the current price level, could reach a value of more than $75 billion\(^4\).

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1 Billions of cubic metres, equivalent to 1 billion m\(^3\). In this work, tcm or “trillions of m\(^3\)” is also used.
3 In 2019, consumption was 43.2 bcm (BP Statistical Review of World Energy 2020, 69th Edition).
According to the Government, exploitation could begin in 2023, a date of great symbolism in Turkey because it is the 100th anniversary of the founding of the current Republic, with an initial production of about 5-10 bcm per year, although it will not be until 2026 that production will reach its maximum, 15 bcm per year, 30% of the country’s demand. And this, again according to the Turkish Government, could be just the beginning, as exploration work in the area continues with hopes of making more discoveries. In general, the exploration of the Black Sea is in its infancy and there are even studies that estimate that, overall, methane reserves could rise to more than 70 tcm\(^5\).

This important discovery is a considerable success for the state oil company, TÜRKİYE PETROLLERİ ANONIM ORTAKLIĞI (TPAO), which owns 100% of the site, and has been conducting an intensive exploration campaign in the Black Sea waters since 2004\(^6\). It is this same company that is planning the solo operation of Tuna-1, although its lack of experience in deepwater operations (drilling has reached 4,775 m) has cast doubt on its

\(^{5}\) *Investigation of gas hydrate potential of the Black Sea and modelling of gas production from a hypothetical Class 1 methane hydrate reservoir in the Black Sea conditions*, Journal of Natural Gas Science and Engineering Volume 29, February 2016, Pages 66-79,

technical capabilities. Therefore, according to government sources, the cooperation of foreign companies is anticipated as necessary.\(^7\)

Be that as it may, the discovery constitutes a true endorsement for the National Energy and Mining Policy, issued in 2017 in support of an increasingly assertive foreign policy which, recognising the limitations of the national energy sector in meeting the demands of its economy, seeks to reduce foreign dependence as a preliminary step to achieving energy self-sufficiency. To this end, the policy articulates strategies that, in general, seek to strengthen the security of energy supply, advance the development of indigenous energy resources and consolidate energy market reforms to make them competitive, liberalised, transparent and financially sound.\(^8\)

Natural gas accounts for approximately 25% of Turkey’s energy consumption, meaning that its impact on national energy policy is considerable. Let us see how.

**Natural gas in Turkey’s energy policy**

Sticking to natural gas, the national policy strategies try to achieve many objectives, which for the sake of the analysis, we can group into the following lines of action: 1) reduction of external dependence, 2) diversification of supply sources, 3) increase in distribution network capacity, including the development of liquefied natural gas (LNG) processing capacities, 4) increase in storage capacity and 5) liberalisation of the gas market. If all this bears fruit, we can expect a reduction in the country’s heavy energy bill, which is largely responsible for a budget deficit that in 2019 amounted to $21 billion, almost 3% of GDP, and which by the first half of 2020 was already $16.7 billion.\(^11\)

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Reduction of external dependence

With production barely covering 1% of demand, Turkey is forced to import most of the gas it consumes (Table 1).

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports</td>
<td>46,352.17</td>
<td>55,249.95</td>
<td>50,282.05</td>
<td>45,211.47</td>
<td>-10.08</td>
</tr>
<tr>
<td>Production</td>
<td>367.28</td>
<td>354.15</td>
<td>428.17</td>
<td>473.87</td>
<td>10.67</td>
</tr>
<tr>
<td>Exports</td>
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<td>630.67</td>
<td>673.29</td>
<td>762.68</td>
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<tr>
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<td>53,857.14</td>
<td>49,204.14</td>
<td>45,285.50</td>
<td>-7.96</td>
</tr>
</tbody>
</table>


The development of policies to improve the use of own resources, including the use of renewable energies (in 2019 they reached 48% of the installed capacity\(^\text{13}\)), and to improve energy efficiency made it possible for imports of this raw material to be reduced by 10% last year. The data available so far in 2020 indicate that, due to the pandemic caused by COVID-19, demand has also contracted considerably, which could consolidate this downward trend\(^\text{14}\).

But no matter how much is achieved through these policies, lack of resources is the real Achilles’ heel in reducing external dependence. That is why exploration activities in the Mediterranean and Black Sea are particularly important. Since 2017, TPAO has intensified this type of activity, for which it has two seismic research vessels, the BARBAROS Hayreddin Paşa and the ORUC REIS, and three drilling platforms, FATIH, YAVUZ and KANUNI, the latter having been added to its inventory this year (2020).


\(^{14}\) The regulatory authority’s (EMRA) forecasts put demand in 2020 at 52.3 bcm, well above the 45.2 bcm of 2019. COVID-19 could bring that figure down to 44 bcm.
precisely the FATIH platform that has discovered the Tuna-1 well and is currently continuing its activities in the Sakarya site\textsuperscript{15} and will soon be joined by the KANUNI\textsuperscript{16} (figure 2).

![Activity of TPAO-owned seismic prospecting vessels and drilling platforms in November 2020](https://example.com/figure2)

**Figure 2:** Activity of TPAO-owned seismic prospecting vessels and drilling platforms in November 2020

**Diversification of supplies**

Traditionally dependent on massive imports from Russia, the diversification policies launched in 2017 have enabled it to reduce its imports from this source by more than 47% (Figure 3).


The data available for the first half of 2020 show a consolidation of this trend, with a further fall of 44.8% compared to the same period last year. This has been made possible by an increase in Azeri gas imports and, above all, by a dizzying rise in LNG imports, especially from the USA. The US and Qatar (144% and 124%, respectively, in the first half of 2020). The development of LNG regasification infrastructures, which we will discuss below, in conjunction with a growth in spot market imports driven by the fall in prices experienced worldwide\textsuperscript{17}, has enabled Turkey to become the second European importer of LNG in 2019, balancing its LNG imports with those from the pipeline (Figure 4). So far in 2020, the former has accounted for 46% of the total\textsuperscript{18}.

\textsuperscript{17} In 2019 the spot prices at Henry hub fell by about 20%, while in Europe and Asia they fell by around 40%. BP Statistical Review of World Energy 2020 | 69th edition.

The year 2021 is a key date for Turkey, as many of the long-term contracts that were concluded in the 1980s and 1990s expire (Table 2).

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Source</th>
<th>Importer</th>
<th>bcm/y</th>
<th>Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGSC1</td>
<td>Azerbaijan</td>
<td>BOTAŞ</td>
<td>6.6</td>
<td>April 2021</td>
</tr>
<tr>
<td>NLNG</td>
<td>Nigeria</td>
<td>BOTAŞ</td>
<td>1.338</td>
<td>October 2021</td>
</tr>
<tr>
<td>GAZPROM</td>
<td>Russia</td>
<td>BOTAŞ</td>
<td>4</td>
<td>December 2021</td>
</tr>
<tr>
<td>GAZPROM</td>
<td>Russia</td>
<td>Private</td>
<td>4</td>
<td>December 2021</td>
</tr>
<tr>
<td>SONATRACH</td>
<td>Algeria</td>
<td>BOTAŞ</td>
<td>4.444</td>
<td>October 2024</td>
</tr>
<tr>
<td>GAZPROM</td>
<td>Russia</td>
<td>BOTAŞ</td>
<td>16</td>
<td>December 2025</td>
</tr>
<tr>
<td>NIGC</td>
<td>Iran</td>
<td>BOTAŞ</td>
<td>9.6</td>
<td>July 2026</td>
</tr>
<tr>
<td>AGSC2, TANAP</td>
<td>Azerbaijan</td>
<td>BOTAŞ</td>
<td>6</td>
<td>June 2033</td>
</tr>
<tr>
<td>GAZPROM</td>
<td>Russia</td>
<td>Private</td>
<td>1</td>
<td>2036</td>
</tr>
<tr>
<td>GAZPROM</td>
<td>Russia</td>
<td>Private</td>
<td>5</td>
<td>December 2042</td>
</tr>
</tbody>
</table>

Table 2: Long-term natural gas supply contracts (pipeline and LNG). Source: The Oxford Institute for Energy Studies.
LNG is supplied through long-term contracts with Algeria (Sonatrach) and Nigeria (NLNG), but also through spot contracts with Qatar, USA, and the UK. The United States, Nigeria, Egypt, Trinidad and Tobago, France, Norway and Equatorial Guinea (Figure 5).

![LNG supply countries in spot markets](image)

**Figure 5**: LNG supply countries in spot markets. Source: Energy Market Regulatory Authority (ENRA/EPDK), Annual Report 2019.

**Increasing the capacity of the distribution network**

Turkey has a sufficient network to import and distribute natural gas virtually throughout its territory and its capacity to import natural gas by pipeline is currently close to 80 bcm/y, well above the maximum of 55 bcm imported in 2017 (Figure 6).
This network is completed with 2 onshore LNG regasification plants and 2 Floating Regasification and Storage Units (FRSUs)\(^{19}\), which today have a capacity of 33.8 bcm/y, with expectations of reaching a total capacity of 49 bcm/y with the entry into service in 2021 of an expansion of the Aliaga terminal, clearly exceeding the demand for 2019\(^{20}\). A new FRSU (Ertugrul Gazi) will also be added soon in Saros Bay, north of the Gallipoli peninsula\(^{21}\).

\(^{19}\) Marmara Facilities Ereğlisi, Ege Gaz A.Ş. LNG Terminal and FRSU (Floating Regasification and Storage Unit) in Izmir/Aliaga and Dörtyol


Improved storage capacity

As a result of the investments made in this field, both underground and LNG storage capacity have improved substantially in recent years. The state-owned company BOTAŞ, which owns the infrastructure, has two underground gas storage facilities (Silivri and Tuz Gölu) with a capacity of about 3.4 bcm (Figure 6). If the storage capacity at the LNG plants (onshore and FRSU) is added, the total approaches 5 bcm\(^{22}\). The strategic objective is to reach approximately 20\% of annual consumption, some 10 bcm\(^{23}\), for which a project has been undertaken to expand the capacity of the Tuz Gölu underground storage to 5.4 bcm in 2023, a project financed by the Asian Infrastructure Investment Bank (AIIB) and carried out with the participation of the Chinese company CAMC Engineering\(^{24}\).

Market liberalisation

Turkey seeks to advance the privatisation of the sector by eliminating the state monopoly on the import, export, distribution and commercialisation of natural gas, a process in theory initiated with the entry into force in 2001 of the Natural Gas Market Law (No. 4646), almost 20 years ago\(^{25}\). Some progress has been made along these lines and, since 2018, the Energy Stock Exchange Istanbul (EPIAŞ)\(^{26}\) has established a spot gas trading platform that enables Turkey to pursue its goal of becoming a genuine energy hub. However, despite the fact that the government has issued import licences to more than 50 companies, most of them have not made use of this possibility, and the state-owned company BOTAŞ is still responsible for almost 97\% of gas imports (2019)\(^{27}\).

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\(^{25}\) Market reforms in Turkey were set by the Natural Gas Market Law (No. 4646), (Official Gazette 2 May 2001, No. 24390).


Sakarya's impact on Turkey's geopolitical position

If government expectations are met, exploitation will bring significant benefits to Turkey’s battered economy, as the $12 billion a year the state spends on gas imports ultimately accounts for almost three-quarters of the budget deficit.\(^{28}\)

But prudence is called for, because at best the economic benefits will not be fully felt for another five years, and that is if technical difficulties (depth of site) and other geopolitical considerations allow gas to be extracted at competitive prices. A scenario of downward pressure on LNG prices, which cannot be ruled out at this time, would harm the development of Tuna-1.

In any case, there is no doubt that these discoveries are good news that can make a decisive contribution to achieving the objectives set by Turkish energy policy, particularly in terms of reducing external dependence and diversifying supplies. In this respect, Turkey’s negotiating position with regards to the renewal of long-term contracts expiring in the coming years with the main suppliers (Russia, Azerbaijan, Iran, Nigeria and Algeria) is clearly strengthened. Let us also bear in mind that the process of diversification of supply was already taking place prior to this discovery, as has been very strongly endorsed in the first half of 2020.

The availability of own resources would also support Turkey’s aspirations to become an energy hub, for which it was already in good condition before the discovery. As expressed by Fatih Birol, Executive Director of the International Energy Agency in 2019, “if we take into account Turkey’s geographical location and its proximity to both gas producers and consumer markets in Europe, as well as the progress made in developing LNG infrastructure, the objective of becoming a negotiating centre for gas is not far away.”\(^{29}\)

This possibility depends on the consolidation of the EPIAŞ spot gas trading platform,


already in operation since 2018 and which in 2020 has reached an average of more than 5 million m³ of daily contract trading³⁰.

In addition to the direct implications for the Turkish economy, the present discovery and the prospects for future findings take place at a geopolitically sensitive time for Turkey, which, for various reasons, has fallen into diplomatic isolation in all the conflicts in which it has been involved over the last few years: Libya, Syria and, more recently, Nagorno-Karabakh. In all of them, Russia and Turkey are keeping the dialogue open, but at the same time they have positioned themselves on opposite, or at least non-coincident, sides. So far, both parties have been able to compartmentalise their differences for the sake of pragmatic understanding where possible, but, despite this, their relationship remains extremely fragile³¹.

Russia is the supplier country most adversely affected by the potential development of gas sites in the Black Sea, which could erode its capacity to use energy as a power resource. Turkey is suddenly invested with a greater negotiating capacity that it will no doubt try to use to its advantage, which may be an additional source of confrontation. A deterioration in its relations with Russia could push Turkey to rebalance its deteriorated relations with the West and its institutions, in particular the European Union (EU).

If it decided to do so, it would not be an easy task and, in this respect, the recent gas discoveries could be useful. Indeed, the absence of conflicts over the delimitation of Black Sea waters with EU coastal states and the existence of regional cooperation structures, such as the Black Sea Economic Cooperation Organisation (BSEC)³², could facilitate the establishment of collaborative relations for the exploitation of these resources with Bulgaria and Romania, also taking into account that Turkish energy regulations are sufficiently harmonised with European ones to allow the integration of gas markets

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³² Organization of the Black Sea Economic Cooperation, BSEC, http://www.bsec-organization.org/
without major difficulties. The need to draw on the experience of Western companies in
extracting gas from deepwater sites would complete this scenario.

A priori, this situation could help to reduce tension in the eastern Mediterranean, if only
to highlight the obvious advantages of cooperation in this area. But the truth is that the
nature of the problems in the latter geographical space has more to do with other
geopolitical issues than with energy, so it is likely that this is not the case. It cannot be
ruled out that, strengthened in its geopolitical position by the discoveries in the Black Sea,
Turkey will decide to reaffirm its strategy in the eastern Mediterranean.

In reality, it is the old disputes over the delimitation of the areas of sovereignty in these
waters, now rekindled by the presence of huge hydrocarbon reserves, that are the real
cause of the tensions between the coastal states, in particular Greece and Cyprus on the
one hand, and Turkey on the other, but on which external powers at regional or global
level are acting (France, the USA, Russia). Tension is high and incidents between naval
or air forces have occurred repeatedly in recent months.

It is true that institutions for regional energy cooperation have been established, such as
the Eastern Mediterranean Gas Forum (EASTMED Gas Forum - EMGF)\textsuperscript{33}, but they have
done little to reduce tensions. Quite the opposite is true, as Turkey, which simply
considers EMGF to be articulated against its interests, has been deliberately excluded.
The same goes for Russia, whose energy companies have been blocked from
participating in the exploitation of these resources, despite repeated attempts. As the
commercialisation of gas reserves in the Eastern Mediterranean materialises, Russia
could see its position as a gas exporter to European markets threatened and,
paradoxically, its interests could converge with those of Turkey\textsuperscript{34}.

\textsuperscript{33} Cairo-based Regional Political Cooperation Forum for Energy Resources Development in the Eastern
Mediterranean comprising Greece, Cyprus, Israel, Italy, Jordan, the Palestinian Authority and Egypt.

\textsuperscript{34} SÁNCHEZ TAPIA, Felipe, \textit{Geopolítica en el Mediterráneo Oriental: algo más que gas}, Chapter 2 of
ENERGÍA Y GEOESTRATEGIA 2020, pgs. 105 - 167. Spanish Institute for Strategic Studies 2020,
in November 2020).
Conclusion

In August 2020, the Turkish government announced to the world that it had made the largest natural gas discovery in Turkey’s history in the Black Sea waters, and probably the largest in the world this year. This is undoubtedly an important milestone for a country like Turkey, which, with serious aspirations to influence its environment as a regional power, is in desperate need of energy resources that it lacks.

Although the commercial exploitation of this and other potential sites will still take some years, the prospects for domestic production of energy resources give hope not only of reducing external dependence, but even of becoming an energy hub for the supply of natural gas to European markets. This would make it possible to reduce a chronic budget deficit due, in large part, to the high energy bill that the country has to pay annually.

Moreover, this discovery gives an additional boost to the diversification of supply sources that had already begun since the implementation of the national energy policy in 2017 and which has made it possible to reduce Russian gas imports by almost 50%. Under these circumstances, Turkey is in a favourable position to renegotiate long-term gas supply contracts due in 2021, not only with Russia’s Gazprom, but also with gas companies in Azerbaijan and Nigeria.

In short, Turkey sees its geopolitical position strengthened at a particularly sensitive time for its foreign policy. Certainly isolated in the conflict of its immediate environment, this discovery opens up strategic options that Turkey could use, either to promote cooperation on energy matters with the European Union, which could contribute to relaxing the high tension between the two, or in the opposite direction, reaffirming its claims in the Mediterranean area. In the latter case, and given that the reasons for the instability in these waters are not so much due to potential energy resources, but originate from geopolitical issues with deep historical roots, we could witness episodes in which the parties end up choosing to resort to the use of force to resolve their differences.

Moving in a delicate balance between competing interests, Turkey’s relations with Russia and with Western countries will depend largely on how it plays its cards. The discoveries in the Black Sea provide Turkey with an additional tool to influence developments.

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