

## ENERGY SUPPLY SECURITY OF THE EUROPEAN UNION AND THE ROLE OF TURKEY AS A POTENTIAL ENERGY HUB

*Avrupa Birliđi'nin Enerji Arz Güvenliđi ve Potansiyel Enerji Hub'ı Olarak  
Türkiye'nin Rolü*

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### **Abstract:**

As a major consumer in the global energy market, the European Union has serious supply security challenges such as high dependence on oil and natural gas; incomplete integrated electricity and gas sectors of Member States, and disintegration with neighbor countries (achieving trans-European energy networks); insecurity and instability in most of its suppliers; and lack of energy dialogue with its producers. As a potential '*energy hub*' in its region, how Turkey can contribute to the European Union to overcome those challenges and thus secure its energy supplies. The aim of this study is an attempt to answer this question.

**Keywords:** *European Union, energy supply security, Turkey's potential role.*

### **Özet:**

Dünya enerji tüketiminde önemli bir paya sahip olan Avrupa Birliđi günümüzde oldukça ciddi enerji arz güvenliđi sorunlarıyla karşı karşıyadır. Petrol ve doğalgaza olan yüksek bağımlılığı; trans-Avrupa enerji şebekeleriyle (TEN-E Projesi) iç enerji pazarında tam entegre edilmiş bir piyasa kurmaya çalışması (finansman sıkıntısı, üye devletler arasındaki anlaşmazlıklar gibi sorunlar enerji altyapı projelerini geciktirmektedir); mevcut ve potansiyel tedarikçilerin çoğunun güvenli ve istikrarlı olmayışları; ve Birliđin üretici bölge ve ülkelerle güçlü bir diyalog kuramaması yani enerji dış politikasını yeterince geliştirememiş olması Avrupa Birliđi'nin enerji arz güvenliđindeki temel problemleridir. Bu bağlamda, bölgesinde potansiyel bir '*enerji hub*'ı (merkezi) olma yolunda ilerleyen Türkiye Avrupa Birliđi'nin enerji sorunlarıyla başa çıkmasında diđer bir ifadeyle enerji arzını güvence altına alabilmesinde nasıl bir rol oynamaktadır? Bu çalışmada bu soruya bir cevap bulma amacı taşımaktadır.

**Anahtar Kelimeler:** *Avrupa Birliđi, enerji arz güvenliđi, Türkiye'nin potansiyel rolü.*

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## **INTRODUCTION**

In the recent decades, energy supply security has become one of the most important global issues. It plays a crucial role in country's national security and economic agenda. Therefore, energy sources should have affordable prices and come from reliable suppliers without any physical interruption. However, today's energy supply security faces many physical, social, geopolitical and environmental problems and risks. As a major energy consumer in the world, supply security of the European Union (EU) has many challenges such as insufficient domestic production, high dependence on foreign oil and natural gas, an incomplete single energy market, unreliable suppliers, and lack of a strong external energy policy. To handle these challenges, the EU should reduce its dependence on foreign energy sources by increasing the number of suppliers and transit routes, have a fully integrated energy market within electricity and gas sectors of Member States, have more reliable and secure suppliers, and develop a common and strong energy dialogue with its producers and transit countries. In this article, first, energy supply security challenges of the EU are explained; then the contributions of Turkey to energy supply security of the EU are analyzed; and finally a small reading passage on Turkey's potentiality is separately offered.

### **1. ENERGY SUPPLY SECURITY CHALLENGES OF THE EU**

#### **1.1. Growing Import Dependence**

European Union is the second largest energy consumer and the largest energy importer in the global market.<sup>1</sup> However, nearly half of its total energy demand comes from outside of the member states like Russia, the Middle East, North Africa and Caspian Basin.<sup>2</sup> Although the EU has

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<sup>1</sup> European Commission, *Towards a European Strategy for the Security of Energy Supply*, (Green Paper, COM(2000) 769 final, 2000).

<sup>2</sup> Domestic energy production within the EU is not enough to meet its total demand. Natural gas and oil reserves are depleting: gas reserves located in the UK, Denmark

substantial domestic coal reserves, which was substantially expanded by the last two enlargements, it cannot benefit enough from these sources due to environmental challenges (CO<sub>2</sub> emissions), difficult geological conditions, and lack of state subsidies from member countries for the production.<sup>3</sup> As an alternative way of developing domestic production, the EU is trying to increase the share of renewable energy sources within its total consumption. However, the level of renewable energy sources has not yet reached a satisfactory point. According to the current projections, it seems quite difficult to meet 20 percent of total energy demand of the EU from renewable sources in 2020, which is the aimed level and strategy of the Union. In terms of nuclear energy within the EU, many member states have nuclear power plants, for example, France produces almost 80 percent of its electricity from nuclear energy sources. However, after the recent accident in Fukushima nuclear reactor, Germany decided to shut down its nuclear plants, which created a new discussion within the EU member states. It is not certain whether the rest of the member states will stop or continue with their nuclear power production, therefore, it would not be wrong to argue that from now on the future of the production of nuclear energy in Europe will be so uncertain.

Further, the situation of the EU-27 has become worse than of the EU-15 since the enlargements of 2004 and 2007 have made the EU-15 more dependent. The gas demands of those current members are more rapidly increasing than those of the EU-15, and also due to historical reasons, most of the new member states import their natural gas from Russia, which means that the dependence of the EU on Russia has been increased more than ever. Russia is very dominant in the EU energy market, meeting a quarter of the total gas demand, and almost half of its oil demand.<sup>4</sup> However, the energy crisis between Russia and Belarus in 2004, and Russia and Ukraine in 2006

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and the Netherlands are not adequate, and oil reserves in the North Sea will run out about 2030-2050; European Commission, *The Internal Energy Market – Improving the security of energy supplies*, (MEMO, 2002).

<sup>3</sup> European Commission, “Towards a.”

<sup>4</sup> Paul Belkin, *The European Union’s Energy Security Challenges*, (CRS Report for Congress, May 2007).

and 2009 created undesirable consequences of the EU dependence on energy resources of Russia. As one should remember the last crisis of 2009, gas flow into South Eastern members of the EU was temporarily broken up which caused larger interruptions in their industries and citizens of those states had to live without heating under extreme cold temperatures. Those crises have shocked the EU. Until then the Union has never much worried about its energy supplies. In brief, as a rapidly growing energy consumer with no adequate domestic sources and recently enlarged with energy resource-poor countries, the EU has become very dependent on external oil and natural gas. Today, 82 percent of its total oil and 57 percent of its natural gas consumption is coming from outside of EU borders.<sup>5</sup> Most probably in near future energy import need of the EU will increase. It is expected that its oil and gas import will rise to 90 and 70 percent respectively in 2020.<sup>6</sup>

## **1.2. Non-integrated Gas and Electricity Sectors**

Since 1980s the EU has been trying to have an internal energy market at the Community level. Interconnection of the electricity and gas networks of member states plays a crucial role for this internal energy market. Indeed, an integrated energy market within the EU can function properly, providing for more competition, better regulations and affordable prices for consumers. However, still some member states have disintegrated electricity transmission lines and gas transport infrastructures. For instance, the Baltic States, the Iberian Peninsula and the United Kingdom and Ireland remain isolated from the internal energy market. Even within member states,

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<sup>5</sup>European Commission, *An Energy Policy For Europe*, (Brussels: COM(2007) 1 final, 10.1.2007).

<sup>6</sup>European Commission *The Internal Market in Energy: Coordinated Measures on the Security of Energy Supply*, (COM (2002) 488 final of 2002). Wyh will Europeans need natural gas much more? “Because gas is relatively easy to use, is less polluting than oil and coal and has so far been relatively abundant and cheap. In particular, natural gas has become the favoured fuel for power generation where, the relatively low investment cost results in a quick return. Consequently, gas-fired power generation could account for approaching half of all electricity generated within the EU by the 2020s.”; Emre Iseri, *The EU’s Energy Security and Turkey’s Energy Strategy* (Keele University, 2007).

particularly electricity networks of Central Europe are insufficient. EU aims to upgrade and interconnect gas networks and electricity grids of its member states as well as trying to integrate those of its neighbors, like electricity and gas markets of south east Europe, North Africa and Russia, and also gas markets of the Caspian basin, Central Asia and the Middle East, into its single energy market. A complete integrated internal energy market in gas and electricity sectors of member states are not enough alone to secure future energy supplies of the EU citizens. Therefore, the Union needs to interconnect electricity and gas networks of those regions with its energy market, from which the EU gets half of its energy demand.

### **1.3. Unstable and Unreliable Suppliers**

The main energy suppliers of the European Union are Russia, North Africa and the Middle East. Also, the Caspian region is considered as potential for the near future, which is currently supplying the EU with a small amount. Most of those regions, however, have unstable and insecure political and economic environment. On the other hand, as major gas and oil supplier of European energy market, Russia cannot be trusted due to the fact that its gas disputes with Ukraine showed us that the country is not a reliable energy partner for the EU. The recent developments in the MENA (the Middle East and North Africa), the protests against governments of the region in order to have more democracy and freedom, and possible problems of coming administrations have started to challenge energy supply security of the EU and of other main consumers as well.

### **1.4. Weak External Energy Policy**

The European Union has not well developed a strong energy dialogue with its suppliers, specifically with the Middle East. Although the Union has a few initiatives for promoting energy relationships in the region, like cooperation with the Gulf Cooperation Council, its dialogue with Iraq and Iran has not reached at an adequate level. Its energy relations with Caspian region are still very weak.

## **2. TURKEY'S ROLE AS A POTENTIAL ENERGY HUB**

As a potential energy hub, Turkey can help the European Union mainly in the following ways:

1. To find new and alternative energy suppliers and routes;
2. To integrate electricity and gas sectors of its neighbors into its internal energy market;
3. To have more security and stability in the Middle East, Balkans, Caspian region and Caucasus; and
4. To develop energy dialogue with its potential suppliers.

### **2.1. Turkey Can Help the EU to Find New and Alternative Energy Suppliers and Routes.**

Geographically located in close proximity to 70% of the world's proven gas and oil reserves, Turkey forms a natural energy bridge between major producers and Europe. Thanks to its strategic geography, Turkey can make a substantial contribution to energy supply security of the EU. First, Turkey can help the EU to reach new energy sources by delivering oil and natural gas sources of Central Asia, Caspian region, the Middle East and Africa to the European energy market. Secondly, Turkey can carry Russian energy sources to the EU energy market by providing an alternative transit route to Ukraine.

The Caspian region and Central Asia are considered by the European Commission as the main alternative energy suppliers, which pave the way for Turkey to emerge as a key actor, as the hub of an East-West energy corridor. Indeed, there are some important pipelines that currently deliver natural gas of the Caspian region and Central Asia to the EU energy market, passing through Turkish territory. The first is the Turkey-Greece Natural Gas Pipeline,<sup>7</sup> which provided Europe with a potential to access the natural gas

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<sup>7</sup> This pipeline is the first leg of the South European Gas Ring Project, which aims at bringing natural gas from the Caspian Sea, Middle East, Southern Mediterranean

sources of Caspian and Central Asia region. This project is the first one which has enabled the EU to get Caspian gas without crossing Russian territory. The second is the Baku-Tbilisi-Erzurum (BTE) Natural Gas Pipeline, which exports Azerbaijani natural gas to Europe,<sup>8</sup> and is considered as the first leg of the Trans-Caspian Natural Gas Project, which will tap into natural gas sources of Turkmenistan and Kazakhstan.<sup>9</sup> When this project is completed both countries would have an opportunity to export their gas to the EU. However, the main natural gas pipeline project is Nabucco, which will largely break Russian monopoly over the EU energy market. The 3,300 kilometer-long pipeline runs from eastern Turkey through Bulgaria, Romania and Hungary into Austria. Its construction will start in 2013, and it is estimated that Nabucco will transport the first gas in 2017. As soon as it will be operational, it would transport yearly 31 billion cubic meters gas to the EU energy market. The Middle East, Caspian region and Egypt are estimated as potential suppliers of Nabucco pipeline.

With regard to oil transportation, Turkey's importance lies essentially in two major pipelines: Iraq –Turkey (Kirkuk-Yumurtalık)<sup>10</sup> and the Baku-Tbilisi-Ceyhan (BTC)<sup>11</sup>. The first pipeline is carrying the Middle Eastern and the second the Caspian oil to the western markets, including Europe. In addition to above pipelines, there are some other important projects that

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countries to Europe through Turkey and Greece. Although this line is carrying a small amount of gas as in the beginning, its capacity would be increased – from 250 million cubic meters to 12 billion cubic metres – in the coming years. Especially with the completion of the Turkey-Greece-Italy Natural Gas Pipeline, second step of the South European Gas Ring Project, which is expected to be completed by 2012.

<sup>8</sup> It is the second component of the East-West energy corridor by having constructed parallel to the BTC Oil Pipeline.

<sup>9</sup> *Turkey's Energy Strategy*, (Republic of Turkey: June 2007).

<sup>10</sup> Due to current instability in Iraq, the pipeline is currently not working, sometimes carries very small amount. The annual capacity of this pipeline is about 71 million ton. This volume is greatly significant for western consumers including Turkey itself.

<sup>11</sup> This pipeline can transport 1 million barrels of oil a day from Azerbaijan via Georgia to the Turkish port of Ceyhan. It is the most critical leg of East-West energy corridor and its annual capacity is 50 million ton.

cross/will cross through Turkish territory, some of which are under construction and some are proposed to be built.<sup>12</sup> Through those existing and upcoming gas and oil networks, passing Turkish territory, the European Union will be able to reach energy sources of the Caspian basin, Central Asian, the Middle East and North African countries.

Turkey has also a potential of being an alternative to Ukraine to deliver Russian energy sources to the EU market. The European Union needs alternative routes to get Russian hydrocarbons since Russia is a dominant supplier in the EU energy market, and will continue to remain as a major supplier in the near future as well.<sup>13</sup> About 80% of Russian natural gas exports to the EU are being carried through Ukraine and the rest 20% through Belarus.<sup>14</sup> The gas disputes between Russia and Ukraine in 2006 and 2009 caused the EU and Russia to think about how to reduce this dominant share of Ukraine over Russian gas flow to the EU. Even before the first crisis, Russia had long wanted to decrease the influence of Ukraine and Belarus in its gas shipment to Europe, says Ariel Cohen<sup>15</sup>. Since the first gas crisis in 2006, the European Commission has been frequently highlighting Turkey's transit potentiality as an option to Ukraine for delivering Russian gas to the EU market. Turkey can rival Ukraine because it is a longstanding NATO ally with a future committed to become a member of the EU. Moreover, Turkey has tried to integrate its energy market with the internal

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<sup>12</sup> *East-West Corridor*: Turkey-Greece-Italy Gas Pipeline (Under Construction), Nabucco Gas Pipeline (Projected) mentioned above; Trans-Caspian Gas Pipeline (Projected); Kazakh Oil-expansion to BTC (Projected); Turkmenistan-Iran-Turkey Gas Pipeline (Projected); and Iraqi-Turkey Europe Gas Pipeline (Projected). *North-South Corridor*: Samsun-Ceyhan Bypass Oil Pipeline (Projected); Burgas-Alexandroupolis Oil Pipeline-Bypass for straits (Projected); Samsun-Ceyhan Gas Pipeline (Projected); Turkey-Israel Oil/Gas Pipeline (Projected) Egypt-Turkey Natural Gas Pipeline.

<sup>13</sup> Katinka Barysch, "Turkey's role in European energy security," *Center for European Reform Essays* (December 2007).

<sup>14</sup> Ariel Cohen, *The North European Gas Pipeline Threatens Europe's Energy Security* (Heritage Foundation Studies, 2006).

<sup>15</sup> Cohen, *The North*.

energy market of the EU, implementing energy legislations of the EU, recovering its transit conditions, and upgrading its infrastructure.

## **2.2. Turkey Can Help the EU to Integrate Electricity and Gas Sectors of Its Neighbors into Its Internal Energy Market.**

Interconnections of natural gas and electricity networks within member states as well as their connections with EU neighbors are very important for an effective internal energy market in electricity and gas sector of the EU. For this reason, the EU has created a project called the Trans European Energy Networks (TEN-E). Within this project, the EU aims at integrating the energy markets of the South Eastern European countries into its single energy market, through which the EU wants to reach the Middle East and Caspian region energy sources. The Union is trying to achieve this aim particularly with the Energy Community Treaty of 2006<sup>16</sup>, which targets to establish a regional energy market in electricity and gas sectors in the South East Europe. As located at the intersections of the Middle East, Caspian and South East Europe and thanks to above-mentioned gas pipelines, Turkey can easily assist the EU to succeed in integration of gas sectors of these resource-rich regions with its single energy market. Concerning electricity interconnections, Turkey joined the European electricity network, ENTSO (European Network of Transmission System Operators) last year, 2010. In the west, it has electricity connections with Balkans in the east with the Middle East. That means Turkey forms a natural electricity bridge between East and West. It is estimated that Turkey could in the coming years deliver or even export power from the Caspian and the Middle East to the EU market.<sup>17</sup> In brief, thanks to Turkey's potentiality of connecting the EU with

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<sup>16</sup> All Balkan countries signed it, except Turkey which is observer now. Turkey has already been invited to be join this grup, and the negotiations on this issue between Turkey and the EU are continuing.

<sup>17</sup> ENCOURAGED – WP1, “Final WP1 report on optimised electricity corridors between the enlarged EU and the neighbouring areas”, in *Project: Energy Corridor Optimisation for European Markets of Gas, Electricity and Hydrogen, Work Package 1 No 3* (July 2006). Large exports from Turkey are foreseen. A 2000 MW short term transfer capacity is expected for the next years. An increase of transmission

the Middle East and Caspian, the EU could easily complete TEN-E works and have a fully integrated internal energy market for its energy supply security.

### **2.3. Turkey Is Able to Enhance the Security and Stability of the Middle East, Balkans, Caspian region and Caucasus.**

Turkey is a secure and stable country in its region. It has a rapidly growing economy, and a working democratic and secular political system with moderate Islamic values. Turkey is a pro-western actor, trying to integrate itself into the European Community since a half century. It is a member of the OECD, Council of Europe, and NATO. On the other hand, Turkey has political, economical, historical and cultural relations with the Middle East, Caspian region, Caucasus and Balkans. Thanks to such features, Turkey is able to provide security and stability for those regions. According to the former Enlargement Commissioner Olli Rehn, “Turkey is an anchor of stability in the wider Middle East and a key regional actor in South Eastern Europe.”<sup>18</sup> Likewise, K. Barysch, notes that Turkey could help the EU to bring stability to the Middle East, Caspian and Caucasus.<sup>19</sup> Moreover, Turkey can also help improve economic prosperities of those regions by delivering their energy sources to the EU market. These prosperities will provide political and economic stability and sustainability, which could guarantee the long term security for energy supplies of the European Union.

### **2.4. Turkey Can Help the EU to Develop Energy Dialogue with Its Potential Suppliers.**

The importance of the Caspian region, Central Asia and Middle East as being main potential suppliers for the EU are increasingly growing. In order

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capacity up to 5000 MW will be economic efficient in the long run. (Encouraged WP1, 2006).

<sup>18</sup>Olli Rehn, Speech to the Conference, ‘Turkey and the EU: Together for a European energy policy’, Istanbul, June 5th 2007.

<sup>19</sup> Barysch “Turkey’s role.”

to secure its future energy supplies, the EU should have good energy relationship with those producers. However, at the moment the EU has not got a well developed, strong dialogue with them. Apart from its energy interconnections and trades with those suppliers, Turkey has strong and long-standing cultural, historical and economic ties with them. On the other hand, Turkey's energy market has become an attractive center for countries of the Middle East, Caspian region and Central Asian. So, any regional cooperation or initiative with Turkey can also be a great opportunity for the European Union to develop its energy relations with those regions.

### **3. FURTHER READINGS ON TURKEY'S POTENTIALITY**

As long as the EU remains dependent largely on a few external supplies like Russia and Algeria, geographical diversification of EU's supplies would appear desirable, says Green Paper of the Commission in 2000.<sup>20</sup> This idea is supported by the former Enlargement Commissioner Olli Rehn, saying that "there is an urgent need for diversification"<sup>21</sup>. And he refers to Turkey as a potential diversification centre, indicating that "Turkey has a key role to play in the diversification of energy supply routes to Europe".<sup>22</sup> On the other hand, the Commission underlines that "*Turkey is becoming a crucial 'energy hub' for supplies from the producer regions,*" namely Russia, the Caspian Sea, the Middle East and Northern Africa.<sup>23</sup> Furthermore, Liam Fox, notes in his article that "no energy security strategy can work without the support and cooperation of Turkey (...) because in the south, Turkey is the gateway to the resource – rich Caucasus and Caspian Basin".<sup>24</sup>

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<sup>20</sup> European Commission, "Towards a European strategy for the security of energy supply", "Final report on the *Green Paper*, COM(2002) 321 final, Brussels, 2002.

<sup>21</sup> Rehn 'Turkey and the.'

<sup>22</sup> Rehn 'Turkey and the.'

<sup>23</sup> European Commission, *External energy relations-from principles to action*, (Brussels: COM (2006) 590 final, 12.10.2006).

<sup>24</sup> Liam Fox, "Energy: the new cold war," *The Sunday Times*, July 15, 2007. Within this statement, he also evaluates the potential of Norway which is a gateway for the north: "Norway and Turkey, both of which are valuable NATO members, are not members of the European Union. No energy security strategy can work without the

The EU's need to have alternative oil and natural gas suppliers and routes tallies with Ankara's plan, which aims to become a major energy hub in its region.<sup>25</sup> According to John Roberts, there are some factors that favor attainment of this goal. First of all, geographically Turkey, as a central transit supplier, is clearly well placed to serve the expected major growth in the EU energy demand. Secondly, several European energy companies are actively working on ways to bring gas from the Caspian basin and the Middle East to the European market through fully commercial pipeline systems that pass through Turkey and the Balkans. And finally, Turkey can deliver a large volume of gas supplies to European energy market, which can also increase the pressure over Gazprom, the state-controlled gas company of Russia, so that the company would try to operate on a commercial basis, rather than as a monopoly.<sup>26</sup> hence, the EU and Turkey both have complementary interests in the field of energy.

## **CONCLUSION**

Most of the existing literature focuses on Turkey's potentiality of transporting natural gas from Middle East, Caspian and Central Asian to the European Union energy market. However, the potential of Turkey to help the EU to secure its supplies should not only be limited to delivering natural gas to the EU energy market. First of all, Turkey is not only a potential transit route for natural gas, but also will be soon an electricity artery for Europe by

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support and cooperation of these two states.....After the cold war their geo-strategic importance is just as valid. In the south, Turkey is the gateway to the resource-rich Caucasus and Caspian Basin. In the north, Norway is located near the resource-rich Arctic Ocean.

<sup>25</sup> Barysch "Turkey's role."

<sup>26</sup> John Roberts, *The Turkish Gate: Energy Transit and Security Issues*, (EU-Turkey Working Paper, No. 1, October 2004). He continues and says "Indeed, by offering a competitive challenge to Gazprom, the promotion of increased flows of gas through Turkey may yet prove to be one of the most effective ways of promoting gas market reform in Russia. In this context, with Russia always likely to prove a very major supplier indeed of gas to the European Union, the placement of Russian gas development on a sound basis that is both commercial and competitive would go a long way to ensuring European energy security."

connecting the Middle East to the Balkans, and the Caucasus to Europe.<sup>27</sup> Secondly, in terms of oil transportation, Turkey's potentiality will be more important than the current. Oil demand of the EU is increasing and will continue to increase in the coming decades too. Therefore, the Union is trying to reach more oil sources of the Middle East, and Caspian region, with which Turkey has strong energy links. Indeed, in the near future, Turkey can deliver greater volume of Iraqi and Iranian oil to European energy market, as well as Caspian basin. Also, Turkey can help the EU to be more influential in the Middle East, where the US is currently dominant, and in this way the EU can gain an advantage over the geopolitics of petrol. Moreover, as a secure and stable country in its region, Turkey provides the Persian Gulf, the Caspian, the Caucasus and the Mediterranean with security and stability, which are essential for securing energy supply sources of the EU. Besides, in the recent years, Turkey's energy sector has achieved numerous reforms towards having more competition, liberalization, privatization, modern infrastructure, larger storage capacity, and more sustainability, which are also important to fulfill requirements of being an energy hub. As a potential energy hub in its region and having potentiality of being member of the EU internal energy market, Turkey will in the near future play a crucial role for the European Union to secure its energy supplies.

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<sup>27</sup> The EU's electricity demand could increase by 50 % in the next 25 years. European Commission, *Energy Corridors: European Union and Neighbouring Countries*, Project Report (Directorate-General for Research, Directorate Energy, 2007). So, there is an urgency to find alternative suppliers.

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