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## ENSURING EFFECTIVE COOPERATION BETWEEN EU AND TURKEY TO FOSTER ENERGY SECURITY

Policy Brief, July 2016

### Background

The Crimean crisis and the continuing instability in Eastern Ukraine have turned into a rude wake up call for Europe's energy security vulnerabilities. In response, the EU leaders have increased their focus on the development of a viable European Energy Security strategy. The outcome has been the publication in early 2015 of the European Energy Union Roadmap, which points to the main steps to be taken by member-states in diversifying the EU energy supply, strengthening the bargaining power of Member States and the EU vis-à-vis external suppliers, the development of indigenous energy sources in the EU and reinforcing the Energy Community. The successful creation of a European energy union will not be possible without the active involvement of Turkey. The latter is going to play a vital role as a natural gas trading hub for future alternative natural gas supply from the Caspian region, East Mediterranean and the Middle East. Similarly, Turkey will benefit from the development of the Energy Union because it can transform itself in a major energy-trading hub based on alternative gas supplies that will satisfy domestic demand, while the excess supply could be reexported to Europe.

However, the difficulties of advancing the Southern Gas Corridor projects revealed differences in strategic

#### KEY POINTS

- As Turkey is a strategic bridge for new energy sources, it will play an increasingly critical role in helping the EU in completing the energy security pillar in the Energy Union initiative.
- Despite EU's activism for developing universal rules for Europe for liberalisation and security in gas and electricity, Turkey and the countries in the Black Sea region still pursue mostly a bilateral approach to energy security, which is insufficient for the development of a strategic regional energy security partnership between EU and Turkey.
- Turkey's energy sector transformation towards becoming part of the planned European internal energy market is happening only very slowly. Given that the inevitable changes will have an effect on both industries and individual consumers, politicians have been reluctant to sign on the dotted line and initiate the final stages of liberalization.
- Turkey is one of the most vulnerable countries from possible energy supply cuts, especially during the seasonal peak demand period. Most of oil and gas, and half of coal supply came from imports leading to serious macroeconomic imbalances and producing a negative impact on business and investment confidence.
- Turkey should work not only on diversifying energy import sources but also its domestic energy mix, where it is underutilising the country's enormous renewable energy and efficiency potential.



dialogue after the missed opportunity of elevating their geostrategic cooperation through the promotion of the Nabucco pipeline. The scaled-down version of Nabucco, which includes the significantly smaller Trans-Anatolian (TANAP) project, is mostly implemented on a bilateral basis between Azerbaijan and Turkey.

Moreover, infrastructure projects developed under Southern Gas Corridor vision Projects are quite expensive considering the current market situation and the recent updated future projections for demand and supply. Both TANAP and TAP will face high transmission tariffs making the gas shipped through the Southern Gas Corridor non-competitive in most European regional markets. To avoid this problem, Turkey should work on the development of a liquid market based on gas-to-gas competition that blends different gas sources in one reference price quote used for export to the EU. To enable the development of a functioning trading hub, stakeholders both in the EU and Turkey should work side by side complete the stalled liberalization of the domestic gas market.

Despite EU's activism for developing universal rules for Europe for liberalisation and security in gas and electricity, Turkey and the countries in the Black Sea region still pursue mostly a bilateral approach to energy security, which is insufficient for the development of a strategic regional energy security partnership between EU and Turkey. The latter erodes efforts for a multilateral (pan-regional) approach to the region's energy challenges, and puts at stake Europe's opportunity to diversify its energy supply.

Energy has been one of the most significant field of cooperation between the EU and Turkey despite a quarter of decade of snail-paced process of European

integration. The reason is that both the EU and Turkey are likely to share a similar energy future based on shrinking domestic energy production and increased dependence on energy imports. The EU and Turkey are also sharing the common goal of diversifying energy supply sources and routes. Russia looms large for both as the single largest energy partner in the foreseeable future. As Turkey is a strategic trading hub for new energy sources, it will play an increasingly critical role in helping the EU in completing the energy security pillar in the Energy Union initiative. Since both parties have an interest in improving their energy security profile, there is the need for closer integration of policy priorities and regulatory frameworks.

The so-called process of the EU *energy acquis* implementation in Turkey has been very successful as the Turkish authorities have mostly introduced at least on paper most of the EU energy laws.<sup>1</sup> This was confirmed also by the Energy Chapter in Turkey's 2013 EU Accession Progress Report, which acknowledged the successful alignment of Turkey's energy legal framework with that of the EU.<sup>2</sup> The report came also on the back of the EU-led effort to enhance the accession process in 2012. Energy has been seen as a critical area of cooperation that can jumpstart the integration process. Among the most important points in the energy synergy strategy are Turkey's full integration with the EU internal energy market, the joint implementation of energy security projects and the merging of the energy regulatory

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<sup>1</sup> Energy Community Secretariat. ENERGY GOVERNANCE IN TURKEY Report on Compliance with the Energy Community Acquis. 1 October, 2015.

<sup>2</sup> European Commission, Turkey 2013 Progress Report (SWD(2013)417), 16 October 2013, par. 4.15,

<http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52013SC0417>. See also S. Karbuz, EU-Turkey Energy Cooperation: Challenges and Opportunities, IAI Working Papers 14 | 12, - November 2014,  
<http://www.iai.it/sites/default/files/iaiwp1412.pdf>

framework of the two energy partners. Further harmonization of the Turkish natural gas market is needed.

The lack of adequate communication is a risk for both Turkey and the EU. It could be overcome only with intensified cooperation. Thus EU and Turkey will be capable of increasing their bargaining power in the region and of overcoming political and commercial barriers for realizing projects for the purpose of strengthening security and efficiency needs of both. In this respect, the civil society sector can be a powerful mediator between policy-makers in the EU and Turkey by raising awareness of the benefits of improving energy security. Institutional communication and alignment practices between Turkey and the EU should be implemented in a more decisive way. In particular, there is a need for developing strategic understanding for the challenges and opportunities EU's Third Liberalisation Package and Energy Union drive create for Turkey and for the Black Sea and South East Europe.

The actions of regulatory bodies that should monitor the activities of energy companies and other institutional stakeholders have revealed lack of independent and transparent decision-making. Despite years of liberalization reforms and attempts to make the energy market function on a more competitive basis, the reform especially of the crucial gas sector has been inadequate. BOTAS is still the de-facto monopoly.

Turkey has also been shying away from a major push towards decarbonisation despite the ambitious renewable energy program launched by the government. It is still prioritizing energy security based on the promotion of domestic coal production, a policy that runs against the energy objectives of the EU enshrined in the Renewable Energy Directive, also part of the acquis. Decreasing the country's energy import bill is seen consistently as one of the most important obstacles before the sustainability of

Turkey's energy model. However, at the current environment of low energy prices, the government could benefit from a unique opportunity to transform the structure of its energy balance shifting it towards more renewable energy sources, improved efficiency and reduced air pollution levels.

Instead, the government's most recent draft energy law amendment aims to lock in the country's energy supply with an expansion of the coal power industry that will benefit from subsidized feed-in tariffs at levels much higher than current market prices. The Institute for Energy Economics and Financial Analysis estimates that the new measure could cost up to USD1.1bn per annum and would drive power prices by 19%. And all this at a time of record low power prices and an excess supply of energy at home and in the region.<sup>3</sup>

Meanwhile, Turkey is still not benefitting enough from its enormous solar and wind energy potential. The country's geographic position allows it to have 2640 hours of sunshine per year, with an average radiation of 1.311 kWh/m<sup>2</sup>, or equaling more than 50% of the annual capacity of Germany, the leader in solar policy in Europe.<sup>4</sup> Turkey is only behind Spain in terms of solar capacity and with the right incentives could potentially overcome all European countries as the largest solar power producer. Similarly, Turkey's total theoretically available annual potential for wind power is around 131,756.40 MW.<sup>5</sup> Developing this renewable energy potential would not only massively reduce fossil fuel imports but could also potentially turn Turkey from a net importer of electricity into a net exporter.

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<sup>3</sup> Dilek, Pelin. (2016). Subsidizing Lignite Plants Would Create Risks for the Turkish Economy and Undermine Less Expensive Alternatives. Institute for Energy Economics and Financial Analysis, May 17, 2016, <http://ieefa.org/subsidizing-lignite-plants-create-risks-turkish-economy-undermine-investment-less-expensive-alternatives/>

<sup>4</sup> Cetinkaya, Serdar. (2013). Solar Energy in Turkey. U.S. Commercial Service Turkey. US Department of Commerce. September, 2013.

<sup>5</sup> Ilkilic, Cumali. (2011). Wind energy and assessment of wind energy potential in Turkey. Renewable and Sustainable Energy Reviews, Volume 16, Issue 2, February 2012, Pages 1165–1173

Hence, Turkey would be able to at least partially solve the most common energy policy trilemma, namely to improve energy security, boost energy sustainability and reduce energy poverty risks at the same time. Energy affordability would be the trickiest as renewables would likely drive energy prices up but the current trajectory of falling investment costs coupled removing the unsustainable coal subsidy policy, could make the gradual rise in power prices more bearable for households and businesses.

Turkey's energy sector transformation towards becoming a well-functioning part of the planned European internal energy market, as required by the Third energy package of the EU, is taking place at a gradual but yet slow pace. Given that the inevitable changes will have an effect on both industries and individual consumers, politicians have been reluctant to sign on the dotted line and initiate the final stages of liberalization. The implementation gap in terms of the introduction of the EU Third Energy Package will depend not only on the independence of the energy regulator's decision-making but also on the improvement off the corporate governance of the Turkish state-owned energy enterprises (SOEs). The latter are still marred with inefficiencies related to the persistent meddling of politicians in their day-to-day management as well as their common attempts to stem competition on wholesale markets or improve transparency in the public procurement process.

## The Energy Union –Comparative Assessment

Building on a 2010 proposal by Jacques Delors, the European Union is now shaping its Energy Union that aims at fostering a cost-efficient energy transition able to deliver secure, sustainable and affordable energy to all European consumers. The Energy Union Framework Strategy laid out on 25 February 2015 embraces a citizens-oriented energy transition. The

low-carbon transformation of the energy system includes the development of sustainable energy production and energy efficiency. Resting on five pillars (Energy security, solidarity and trust; A fully integrated European energy market; Energy efficiency contributing to moderation of demand; Decarbonising the economy, and Research, Innovation and Competitiveness), it aims at enabling the delivery of the EU energy-climate objectives.<sup>6</sup>

While the Energy Union has developed a coherent plan for a sustainable energy transition, there are large differences between countries regarding their ability to sustain the costs of energy reforms and the investments needed. This emphasizes the need for a comparative approach, which overviews the process of energy liberalization and internal energy market integration in CEE and SEE countries. This should be then compared with the progress of Turkey, which has implemented a large share of the earlier EU energy package directives but has been reluctant to embrace the EU's push for more liberalization in the natural gas sector, as well as the introduction of a greener energy policy path and climate change. This includes the gradual phasing out of coal power plants, the reduction of emissions and the mass introduction of renewable energy capacity to the power grid.

The main push for the creation of the Energy Union has been to find a common policy platform to be embraced by 28 different states, which have very different energy policy agenda and interests. The new EU project is driven by the need to coordinate energy policy-making to ensure the implementation of the 2020 and 2030 renewable energy and energy efficiency targets. The second and somewhat

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<sup>6</sup> Reduce EU territorial greenhouse gas emissions (by 20% by 2020, and by 40% by 2030), increase the share of energy coming from renewable sources (to 20% by 2020 and to 27% by 2030) and improve energy efficiency (by 20% by 2020, by 27% by 2030).

related reason for the emergence of the Energy Union initiative is the urgency to strengthen the EU energy security framework by driving through diversification projects and strengthening the cohesion of the internal energy market. The third priority is to establish a well-functioning European energy market to facilitate trade, enable competition and drive costs down for consumers.

The three priorities hinge on contradictory energy supply and demand trajectories. On the supply side, conventional energy production is becoming increasingly expensive as reserves are depleted. Concurrently, on the demand side, consumption trends point to a continued rise, which cannot be sustainable if Europe is to follow through with its obligations for decarbonisation of the economy and the shifting of the energy supply towards renewable energy sources (RES). Part of the efforts for ensuring a reliable and uninterrupted supply of energy has been the diversification of energy sources away from depending on imports, the increase of the renewable energy sources in the power generation mix, and the fostering of domestic energy supply sources including the development of unconventional fossil fuels and the construction of new nuclear capacity. The latter has been more successful despite safety fears after the Fukushima incident in 2011. At least 13 EU members are considering the development of nuclear energy either by building new reactors or extending the life of old ones. The benefits of reducing energy dependence on a limited number of energy suppliers have outweighed the environmental risks.

The dependence on imports from foreign sources is also strongly related to the development of grid infrastructure to link energy consuming with energy producing regions. The lack of regional balance between power generation sources and demand centers implies the need for significant expansion of the grid and the construction of power storage and balancing systems. While hydro-power provides one

of the few known systems for the storage of power capacity, increasingly RES and gas-fired power plants are able to cover gaps in the energy supply.

Finally, decreasing energy dependence requires significant decentralization of power generation. The process has already undergone significant progress in some European regions. In Germany, the share of industrial consumers that are generating their own power in 2013 reached 9% and is expected to rise to 15% by 2020. Enhanced utilization of roof top installation, micro-CHP gas-fired generators and improvements in energy efficiency will significantly decrease the continent's dependence on foreign fuel imports. Local energy sources development, decentralized power generation and improvements in energy efficiency will have the added value of making the energy supply more affordable in the long term. Currently, though, energy bills for consumers are rising and account for a growing share of the average expenditure of households, including personal transport, varying between 7% and 17% across MSs. According to the European Commission (EC), poorer parts of the population are faced with energy expenditures of 22 % of total expenditure in some MSs.<sup>7</sup> Household expenditure on energy, taxation and levies included, is expected to rise further even if all possible gains from completing the internal energy market are taken into account.<sup>8</sup>

The development of the Energy Union should be observed, though, as pre-determined by the chosen pathways of the different Member-States leading to very different responses to the collective action aspiration of centralized institutional bodies such as the European Commission. Despite the ambitious

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<sup>7</sup> European Commission (2013). Energy challenges and policy: Commission contribution to the European Council, Brussels, 22 May 2013.

<sup>8</sup> Ibid

plan to create an Energy Union, the attitudes and interests of Member States differ when it comes to supply, use and transformation of energy sources. The discrepancies in the energy policies of EU members have already hampered the adoption of a long-term approach to energy policy to ensure security, affordability and sustainability of the energy supply for Europe's citizens and businesses.

Turkey is no exception to this paradigm. Turkey is at a pivotal point in its economic development, whereby it is transforming itself into a modern industrial economy. As with other industrializing economies, Turkey is experiencing rising energy consumption wedged to supply challenges. However, Turkey, with the development of proactive policies, is able to change the current paradigm of industrial inefficiency (such as rising energy intensity rates) and promote economic competitiveness. To achieve this goal, Turkey needs to take advantage of its strategic geographic role as a potential hub for oil and gas.

The development of the Turkish energy policy in the framework of the completion of the Energy Union should not be seen only in terms of natural gas geopolitics. A key prerequisite for the functioning of the energy markets in SEE and CEE is the integration of Turkish energy system. Turkey is already an active gas and power market participant. Turkey is though still badly interconnected with neighboring EU member states and market coupling based on common capacity allocation mechanisms and price convergence are works in progress. Regulatory and barriers prevent a deepening of the regional energy markets and its integration into the wider European energy system.

To better understand the obstacles before the full integration of the Turkish energy market in the EU, we can try to draw a comparison with the process of implementing the energy liberalization packages in the new members of the EU from Central and Eastern Europe. In principle, most of the countries in the

region have adopted the necessary laws transposing the Third Energy Package of Reforms aiming to liberalise the domestic power and gas markets, implement a renewable energy state subsidization scheme and the integration of the EU internal market.

Although the aim of the Third energy package, an integral part of the Energy Union, is liberalization, this does not mean that the electricity and gas markets will be left completely unsupervised. Instead, in order to ensure that the free market is run properly, the European Commission has emphasized the importance of an independent national regulatory authority, with sufficient power and discretion to guarantee the correct application of the legislation in this field.<sup>9</sup> It is of utmost importance that the regulator is independent from any public or private interests, as well as completely separate from the government so that it can make unbiased decisions regarding crucial aspects of the market. Member states must ensure that the staff of the regulatory authority can act in an unbiased manner without seeking instructions from any external entity.<sup>10</sup> This is especially tricky to achieve in the new MSs, which have continued preserving their regulatory regimes keeping domestic prices artificially low to make their economies more competitive and populations happy. As will be seen in the last section, Turkey has a mixed track record in implementing the energy acquis including in the field of regulatory governance but in some areas has been actually more advanced than the EU member-states in the CEE.

The role of the independent regulator is crucial in implementing the requirements of the EU with regards to promoting a 'competitive, secure and environmentally sustainable internal market in

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<sup>9</sup> Directive 2009/72/EC - preamble 33.

<sup>10</sup> Directive 2009/72/EC, Article 35.

electricity'. The regulator is also responsible for collaborating with its counterparts in other member states and work towards regional cooperation, as well as ensuring the entry on the market of new producers, including those using renewable energy sources.

It should be emphasised that the independence of the national regulatory agencies in some of the countries is questionable at best. In Hungary, for example, the national energy regulator (HEA) cannot set tariffs autonomously. Similarly, Slovakia needs to enhance the independence and accountability of its NRA. At the same time Greece has impaired its RAE with severe budget cuts, which have undermined the regulator's independence and efficiency. With the possible exception of the Czech Republic and Lithuania, further efforts in enhancing the independence of the NRA are required in CEE countries.

A brief overview of the progress of the EU member-states in implementing the liberalisation packages shows that the energy markets have been successfully reformed only in several CEE countries.<sup>11</sup> Moreover, the degree of success also varies from member state to member state. For example, the regulator has been able to ensure full price liberalization only in the Czech Republic and Slovenia. In other countries, such as Estonia, Greece, Latvia, Lithuania, Poland, Romania, and Slovakia they have been deregulated only partially, and mostly for industrial consumers in the gas and power markets. Bulgaria, Croatia and Hungary continue to fully regulate household gas and power prices due to popular pressure to keep natural gas and electricity cheap. The Bulgarian power price protests in 2013 and the pre-election campaign in Hungary in 2014 forced the governments to adopt policies aiming at keeping power and gas prices

artificially low below the general market level. This has also severely limited the liquidity of the market and has stifled supplier switching.

Furthermore, the main pillar of the EU energy liberalization initiative s include ownership unbundling of the transmission and distribution system operators (TSOs and DSOs), which guarantees the non-discriminatory access to the transmission networks. Hence, the transmission system must also be independent from any vertically integrated undertakings which are involved in the generation and/or supply of electricity. In CEE, the unbundling process has proven lengthier and more difficult than initially anticipated in several countries. Both TSOs and DSOs have been legally unbundled in the Czech Republic, Estonia, and Slovakia. The other states need to step up their efforts so as to complete this process in a proper manner.

The situation has improved more quickly in the area of regional market integration. The Czech, Hungarian and Slovak power markets have coupled, while the three Central European countries have completed several interconnections and bi-directional upgrades on transit gas pipelines. The countries have also done a lot in diversifying their gas and power supply by allowing energy flows from West to East to increase the wholesale market liquidity and competition. The regional integration has brought about stability on the energy market and has strengthened the countries' resilience to supply crises.

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<sup>11</sup> COM(2014) 634 COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS: Progress towards completing the Internal Energy Market, 13.10.2014.

**Table 1. Progress of the CEE EU member states on the EU energy liberalization reforms**

	Bulgaria	Croatia	Czech Republic	Estonia	Greece	Hungary	Latvia	Lithuania	Poland	Romania	Slovakia	Turkey
Third Energy Package	Compliance Review	Transposed	Transposed	Transposed	Transposed	Transposed	Granted derogation from the Third Energy Package	Transposed	Compliance review	Not transposed completely	Transposed	Transposed
Organised Day-ahead Market	Further efforts required.	Further efforts required.	Coupling with Slovakia and Hungary	Member of the Nord Pool Exchange.	Further efforts required.	Coupling with the Czech and Slovak markets should be extended to other countries.	Active participation of Latvenergo to Nord Pool Spot market is necessary.	Baltpool operation is based on the Nord Pool Spot model.	In progress.	In progress.	Coupling with the Czech and Hungarian markets	Further efforts required on coupling with Bulgaria and Greece. Most contracts are still bilateral
National Balancing Market	Further efforts required.	Further efforts required.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes
Price Deregulation	No.	Further efforts required.	Yes.	Yes.	Yes.	Regulated prices were cut by 20% in 2013.	In progress.	Deregulated gas prices and regulated electricity prices.	Electricity prices for non-households are deregulated.	In progress. Electricity prices for non-households are deregulated.	Regulated gas and electricity prices.	Wholesale prices are not regulated; partial regulation of retail markets
TSO Unbundling	Legally Unbundled	In progress	Legally unbundled	Legally unbundled	DESPA Independence under review	Legally Unbundled	Legally unbundled.	Certification in progress.	Accomplished	In progress since 2000.	Legally unbundled.	Unbundled completed in electricity but not in Gas Markets
DSO Unbundling	Legally Unbundled	In progress.	Legally unbundled.	Legally unbundled.	Legally unbundled.	Further efforts required.	In progress.	Legally unbundled	In progress.	In progress	Legally unbundled	Unbundled
NRA Independence	Further efforts required	Further efforts required	Independent	Independent	Impaired by severe budget cuts.	Cannot set tariffs autonomously.	Independent	Independent	Further efforts required.	In Progress	In Progress	Dependent on the Executive

Market coupling and enhanced regional integration has been visible also in the Baltic region, where the Nord Pool power exchange have become a case-study for successful market coupling. The model is set to be emulated in SEE but lack of political will, regulatory burdens and market imbalances have prevented a wide-reaching integration. Turkey will play a critical role in the latter's integration initiative as the country is the biggest energy consumer in the region, yielding a very strong gravitational pull for energy exports. EU-led initiatives in the Energy Union framework could help regional regulators better coordinate policies including by lifting the arbitrary cross-border capacity limits and by investing in regional gas and power interconnectors removing capacity bottlenecks and the state support for national energy incumbents.

On the sustainable energy front, the CEE region has fared much better than on energy security and supply diversification. With the exception of Poland, which has stubbornly preserved the dominant position of

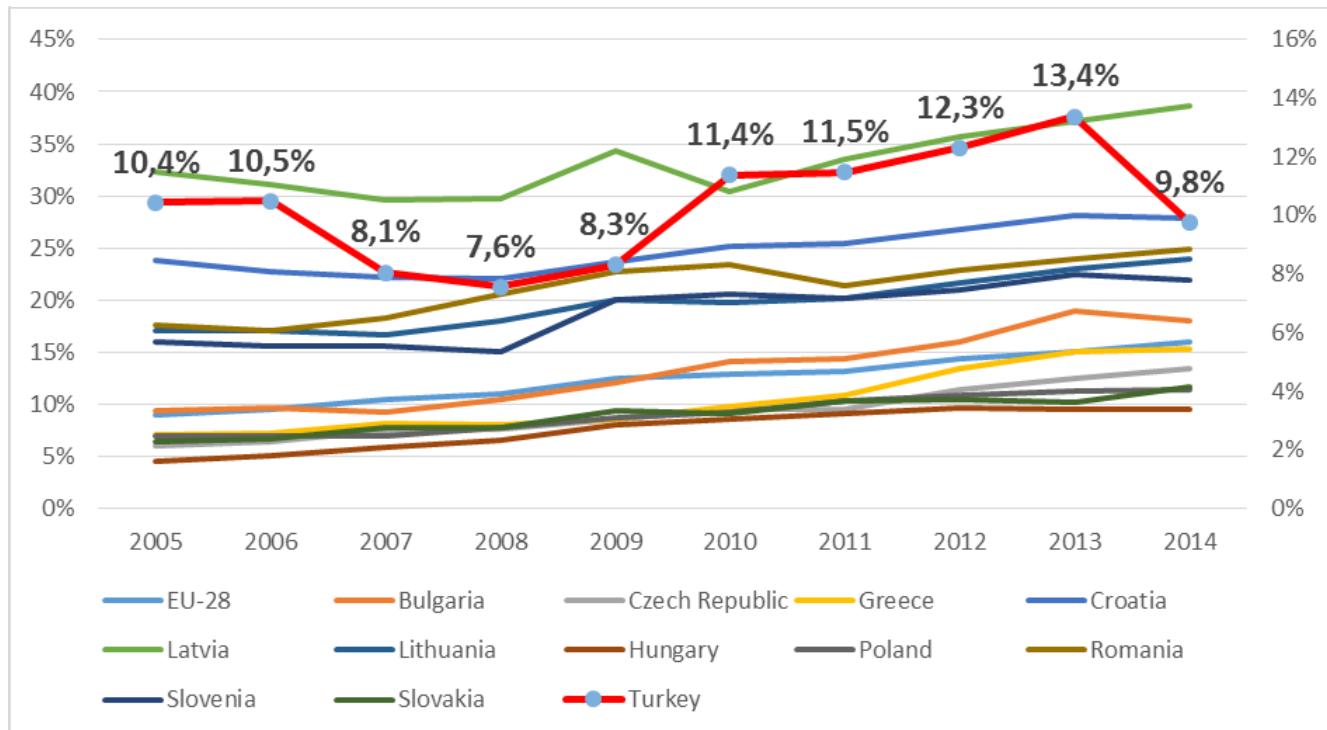
coal on its energy market, most countries in the region have accelerated the development of renewable energy sources. In 2009 the Renewables Directive set binding targets for all EU Member States, such that the EU will reach a 20% share of energy from renewable sources by 2020. On January 22, 2014, the Europe 2020 strategy has been revised to extend implementation phases and update goals for competitiveness, security of supply and sustainability. The European Commission has published its proposals for an energy and climate policy framework for 2030, setting goals for "a competitive, secure and low-carbon EU economy". They include a 40 % reduction in greenhouse gas (GHG) emissions below the 1990 level, an EU-wide binding target for renewable energy of at least 27 %, and a mechanism to improve the robustness of the EU emissions trading system (ETS). The framework builds on the existing climate and energy package of targets for 2020 as well as the Commission's 2050 roadmaps for energy and for a

low-carbon economy. These documents reflect the EU's goal of reducing green house gas emissions by 80-95 % below 1990 levels by 2050.

By 2014 the EU realized a 16% share of energy from

renewable sources with nine member states already achieving its goals. In comparison, the share of renewable energy sources in the energy mix of the CEE was already 19.4% in 2014 and is expected to have already gone over the 20% EU target in 2015 once the official EU statistics comes out.

**Figure 1. Share (%) of renewable energy sources in the overall energy mix (incl. hydro power)**



*Source:* Eurostat

To increase the share of renewables by almost 7% in a matter of seven years, the countries of the region have introduced generous renewable energy support schemes, most of which have been based on above-market preferential feed-in tariffs and mandatory purchase quotas. This has led to an investment boom in renewable energy capacity across the CEE contributing to the rise in electricity prices and to a strain on the financial stability of power incumbents often serving as wholesale buyers of renewable energy and compensated via special taxes or higher network tariffs.

Where has Turkey been in this process? According to Turkey's National Renewable Energy Action Plan for Turkey 2013-2023, around 30% of Turkey's energy generation capacity could come from renewable sources by 2023 or 61 GW of solar, wind and hydro capacity.<sup>12</sup> The action plan includes a mix of policy and financial incentives to stimulate greater investment in renewable energy facilities

<sup>12</sup> New 'action plan' targets 61GW of renewable energy for Turkey by 2023, Out-Law.com, <http://www.out-law.com/en/articles/2015/february/new-action-plan-targets-61gw-of-renewable-energy-for-turkey-by-2023/>

and the development of the national power grid. Preferential feed-in tariffs would be implemented but their levels will be frequently reviewed as to reflect falling technology costs.

The Turkish economy is currently heavily dependent on imported energy supplies and the use of fossil fuels for its energy generation needs. In 2014, 90% of its primary energy consumption came from fossil fuel sources and most of these were imported from other countries<sup>13</sup>. If the plan is implemented, the country will be on track to surpass the EU's 2030 renewable energy goals.

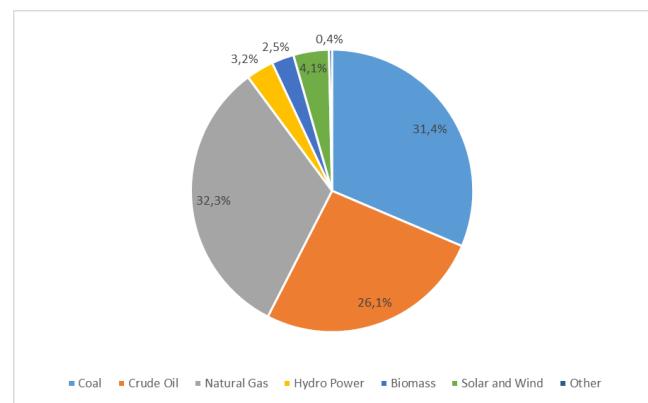
## Energy Security Risks and Opportunities for Turkey in the Context of the European Energy Union

Turkey is at a pivotal point in its economic development, whereby it is transforming itself into a modern industrial economy. However, Turkey, with the development of proactive policies, is able to change the current paradigm of industrial inefficiency (such as rising energy intensity rates) and promote economic competitiveness.

The rapid rise in energy consumption can be attributed to both robust economic performance and the sheer increase in the population, the latter, which grew by 45 percent between 1990 and 2015<sup>14</sup>. According to the latest UN estimates, population in Turkey will reach 88 million in 2030. This would impose a strong upward pressure on energy consumption. As a result, supply shortages could appear based on the current structure of the natural

gas sector because some of the current pipeline suppliers suffer from production and transportation constraints, and there is not enough scope for new entrants in the sector. Therefore, it is crucial for the Turkish government to expedite the process of competitive liberalization of its natural gas sector to meet future demand increases. According to forecasts by OME's Mediterranean Energy Perspectives (MEP) report on Turkey, the energy demand is likely to double by 2030 even in a conservative scenario of business-as-usual with around 85% of the supply coming from conventional fossil fuels.<sup>15</sup>

**Figure 2. Turkey – final energy consumption by fuel type for 2014**



**Source:** Ministry of Energy, Energy Balance for 2014

Turkey has only modest amounts of oil and natural gas, and it is an important coal producer. Production of these fuels, however, is not enough to satisfy domestic demand. In 2014, Turkish production provides about 8% of its crude oil supply, 1% of its natural gas supply, and 70% of its coal supply. It is not surprising, then, that Turkey's import exposure risks stack up poorly against the OECD averages for these fuels, especially for natural gas.

<sup>13</sup> Based on data from the Energy Balance Tables of General Directorate of Energy Analysis, Ministry of Energy and Natural Resources, [www.eigm.gov.tr/en-US/Balance-Sheets](http://www.eigm.gov.tr/en-US/Balance-Sheets).

<sup>14</sup> World Bank Population Growth Country Database, 2015.

<sup>15</sup> OME (2014). Mediterranean Energy Perspectives – Turkey. Observatoire Méditerranéen de l'Energie (OME).

Domestic oil and gas production supplies less than 3 percent of Turkish energy needs, making the country significantly dependent on energy imports. Natural gas consumption has been growing by 8.2% per year for the last 10 years more than doubling to 48 bcm in 2015.<sup>16</sup>

When compared to other members of the Organization of Economic Development and Cooperation (OECD), Turkey has relatively low energy consumption. However, Turkey has all of the indicators that it will have the fastest medium to long term growth in energy demand amongst the IEA member countries due to its large young and growing urban population and industrialization on the back of very rapid economic growth. While significant progress has been made to increase gas supply, ensuring a stable source of energy to a rapidly growing economy is one of the principal concerns of the government.

Turkey has a fairly diverse electricity generation mix. Generating capacity in Turkey's power sector is divided between conventional thermal capacity (about two-thirds of the total) and hydroelectric capacity (about one-third). Natural gas-fired facilities account for about 33% of Turkey's electricity production, coal nearly 30%, and hydroelectric about 25%. Turkey has no nuclear reactors, but the government plans to have at least 2 nuclear power plants by 2030 to reduce Turkey's fossil fuel imports.

A sector analysis reveals that natural gas contributed a large share to the overall increase in Total Primary Energy Supply (TPES) since 2000. Not only was the power sector affected by the surge in gas use in Turkey. Household gasification has increased dramatically from virtually non-existent two decades ago to more than 30% of the country now.<sup>17</sup> Similarly,

industrial use of natural gas has also increased substantially to 11%, especially in the petrochemical industry. Additionally, more than half of total power generation comes from natural gas, while the coal and oil share in electricity generation are steadily declining.

Along the lines of high economic growth, a population surge and a policy of full electricity access, power generation has also been growing by leaps and bounds. Electricity generation jumped by close to 60% since 2005 to 260 TWh in 2015. But, with major investment (foreign and domestic), incentives and power tariff price reform, the future tendency points to a strong growth in power generation, which is forecast to increase between 383 TWh and 542 TWh, according to OME. Yet, while Turkey has made enormous strides with power sector privatization and liberalization since a multibillion dollar plan to modernize the sector was initiated in 2008, it still requires substantial investment to manage rising demand.

### I. Turkey's Energy Security Risks

Due to the minimal domestic production of oil and gas, Turkey has been over reliant on energy imports. This has contributed to the country's difficult energy security position especially amid rising geopolitical instability in the Black Sea, Caspian Sea and Middle East regions. Based on the International Index of Energy Security Risks (IIESR), developed by the US Institute for 21st Century Energy, Turkey is ranked 14 out of the 75 largest energy consumers in the world in terms of the energy security position.<sup>18</sup> Turkey's energy security

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<sup>16</sup> Author's calculations based on Ministry of Energy energy balances and EMRA Natural Gas Market Report for 2015.

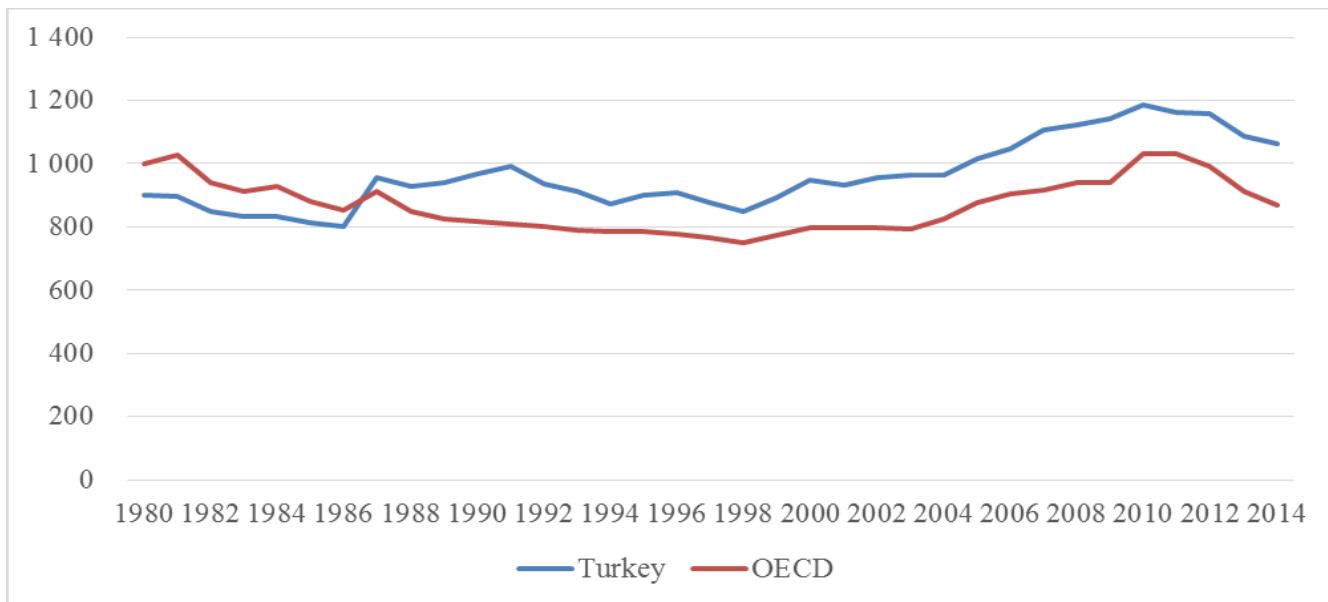
<sup>17</sup>Energy Policies of IEA countries – Turkey – 2009 Review

<sup>18</sup> The IIESR is an annual energy risk indicator, which uses quantifiable data, historical trend information, and government projections to identify the policies and other factors that contribute energy security. The index is based on a combination of global and national factors which affect energy security: global fuel reserves; fuel imports; national energy expenditure; price and market volatility; energy use intensity; reliability of electricity generation; efficiency of the transport sector and environmental policies. The purpose of the annual International

score is around 20% worse than the one in 1980 largely due to the increasing energy dependence on oil, gas and coal imports, the slow progress in

diminishing energy intensity and the unsustainable growth of CO<sub>2</sub> emissions. Turkey scores around 16% higher than the OECD score as visible in Fig. 3.

**Figure 3 Energy Security Index – Turkey (1980-2013)**



**Source:** International Index of Energy Security Risks (IIESR), 21st Century Energy Institute

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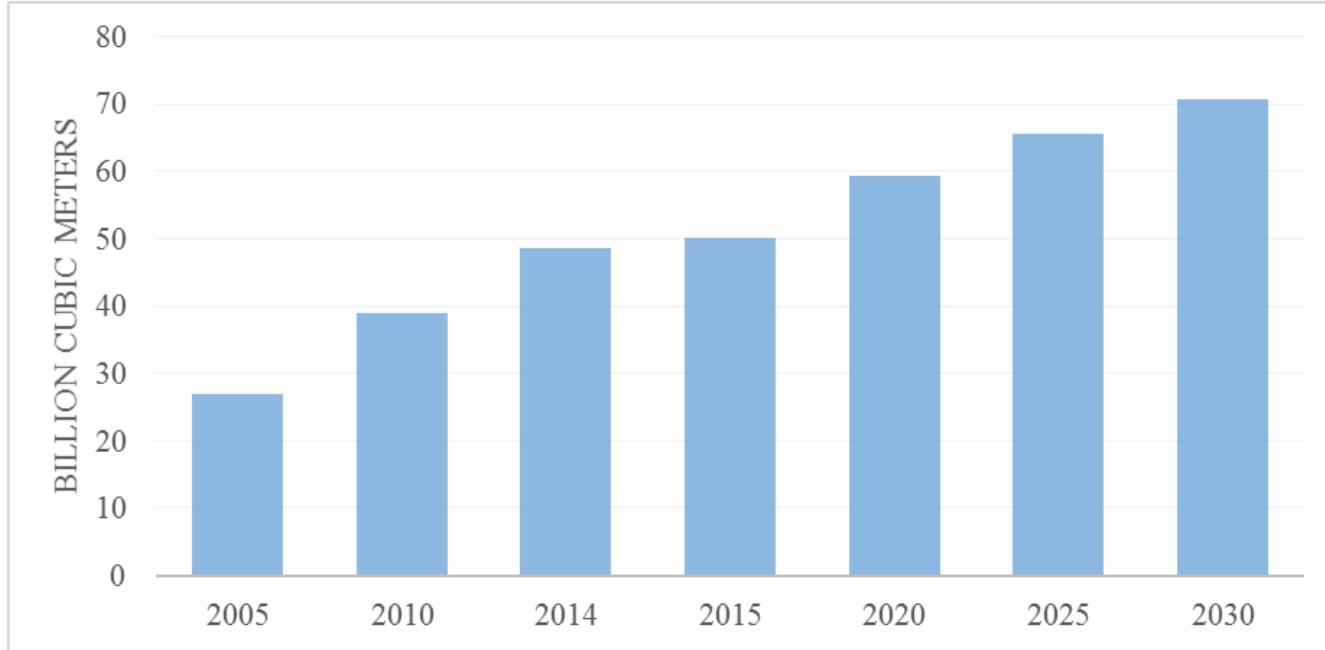
Index is to help identifying significant transitions occurring in world energy markets while also monitoring the performance of major energy producers and consumers in coping with the energy security implications of these transitions. In this sense, the energy security index could fill in the niche of an international energy security scoreboard platform that could serve as the stepping-stone for successful and opportune energy policy making on national level.

Turkey is one of the most vulnerable countries from possible energy supply cuts, especially during the seasonal peak demand period. In 2014, most of oil and gas, and half of coal supply came from imports. Turkey is dependent on the imports of Russian natural gas for close to 56% of its total consumption in 2015, which has placed Ankara in the difficult position of paying one of the highest import gas prices in Europe. Turkey's external energy shortfall of 5 percent of GDP, which accounts for more than half of the trade deficit, is believed to be the Achilles' heel of Turkey's macroeconomic stability.<sup>19</sup> Although with the fall of energy prices in 2014/2016, Turkey's import bill is falling, the continued rise in demand would likely

preserve the country's economic imbalances. Due to this reason, Turkey should take quick steps towards the design of a liquid trading hub based on market forces rather than on centralized price-setting mechanisms.

To counter the energy dependence, Turkey had begun a massive program of energy investment. One avenue has been the fostering of domestic natural gas exploration. EIA reports that Turkey could have as much as 680 billion cubic meters (bcm) of technically recoverable shale gas reserves that if realized would represent a dramatic increase over the current and very small reserve estimate of about 5.6 bcm. Turkey also is looking at potentially large reserves of natural gas offshore. In addition, EIA estimates Turkey holds 4.7 billion barrels of technically recoverable shale oil (compared to existing proved reserves of 270 million barrels).

**Figure 4. Natural gas demand forecast**



*Source:* BP Statistical Review of World Energy 2015, Oxford Institute for Energy Studies

<sup>19</sup> Based on data from IMF, Turkish Ministry of Economy and Turkish Central Bank.

To limit its reliance on natural gas imports for power generation, Turkey has also embarked on a USD 43 billion nuclear energy program that would be invested in the building of two nuclear power plants (Akkyu and Sinop) with combined generation capacity of 9,400 MW. Construction is expected be completed by 2021 and 2023, respectively. While Akkyu is a well-advanced project, Sinop, which is being designed by a consortium of Japanese and French energy companies, has stalled at the feasibility stage with only little information known about the project's development.

Akkyu's main shareholder is the Russian state-owned company, Rosenergoatom Concern, which will also architect, engineer and construct the NPP through subsidiary firms. Russia is also going to supply the reactor fuel for the nuclear plant. Well until the incident with the shot-down Russian plane by the Turkish air force near the Syrian border, the project was advancing very quickly. The consortium company has fulfilled a large part of the licensing procedures including the environmental assessment analysis that could green light the start of the construction activities. In December 2014, the Turkish government struck a power purchase agreement with Rosatom for the power sales. The Russian company now holds 15-year offtake guarantees for 70% of the power produced from the first two 1.2 GW units and for 30% from the third and fourth units. The total capacity of the nuclear plant will be 4.8 GW. While the work on the project began already in mid-2015, Rosatom is facing financial troubles amid lower power demand and a string of cancelled orders. Although the energy ministry has reiterated that the first stage of the project would come online in 2022, Rosatom has indicated that it is seeking a strategic investor for 49% of the project company if it is to complete the project on time.

Turkey has also been investing in hydro-power plants, and most recently in wind and solar capacity.

Projections by the Turkish energy regulator show that by 2030, hydro power will make up 27% of the total installed power capacity, while wind, solar, biomass and geothermal – another 10%. The ultimate goal is to diminish the country's overreliance on polluting coal and at least until early 2015, expensive natural gas, for power generation. When externalities are included in a consideration of the costs of energy, the electricity generation from wind and solar is already cheaper than generation from coal and the costs of renewables are expected to fall significantly over the next 15 years. The energy regulator (EMRA) initiated pre-license tenders in 2013 for a solar energy portfolio including projects that have a combined generation capacity of 600 MW. Prior to 2013, solar energy projects were not subject to a license regime. During the first round of tenders in 2013, EPDK received 496 applications for a total capacity of 8,900MW.<sup>20</sup>

The Turkey's level of ambition in boosting wind and solar capacities seems to decrease after 2023. According to the National Renewable Energy Action Plan (NREAP), the wind power generation target falls from 20 GW in 2023 to 16 GW in 2030. Meanwhile, the solar capacity is expected to double to 10 GW in 2030, which considering the enormous potential of the country for developing the solar energy sector, points to a modest ambition.<sup>21</sup> This is even truer when talking about Turkey's technical wind power potential, estimated by the European Commission at 275 GW.<sup>22</sup>

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<sup>20</sup> PwC (2014) Spotlight on SolarPower in Turkey. Accessed on 12.12.2015  
<https://www.pwc.com/tr/en/publications/industrial/energy/pdf/turkiye-de-gunes-enerjisine-genel-bakis.pdf>

<sup>21</sup> IEA (2014) Trends 2014 in Photovoltaic Applications

<sup>22</sup> European Commission (2013) Bringing Europe and Third countries closer together through renewable Energies, See also the Climate Action Tracker for Turkey published by ECOFYS, Climate Analytics et al. <http://climateactiontracker.org/countries/developed/turkey.html>

The National Renewable Energy Action Plan (NREAP) has been already bearing fruit. The Renewable Energy Law No: 6094, which entered into force on January 2011, designed preferential feed-in tariffs for different renewable energy resources to mobilize further efficient investment ( USD 0.07/KWh for hydroelectric and wind, USD 0.107/ KWh for geothermal, and USD 0.13/KWh for biomass and solar energy). On the back of the new subsidies regime, renewable energy consumption rose by 410% in the past five years reaching over 16.5 TWh in 2015. More than 90% of it consists of wind power and biomass. Solar power capacity is also expanding but is yet to attract enough investment to become a major power source. In total, non-hydro renewables made up almost 3% of the total primary energy supply of the country up from virtually non-existent less than a decade ago.

Coal, on the other hand, which used to be the most important energy source for power generation, has been losing steam as natural gas-fired power plants are increasingly replacing coal-fired generation. However, coal consumption has still grown by almost a third in the past ten year and is now making a little less than 30% of the TPES. More worryingly still, the Turkish government has indicated plans to double its coal-power generation capacity by 2020.<sup>23</sup> This means a quadrupling of the number of coal power plants from 22 today to around 80. According to the 2016 BP's Statistical Review of World Energy, Turkey is the sixth largest coal producer in Europe (46.2 million tonnes) despite a 28% drop in output in 2015. Despite the large-scale production, Turkey still needs to import more than half of its coal consumption needs.

The shift in the government's coal policy contradicts the previous commitment by Ankara to decrease Turkey's carbon footprint. If it follows through with its plans, Turkey is expected to emit an estimated additional 340 MtCO<sub>2</sub>e in 2020 and 250 MtCO<sub>2</sub>e in 2030, relative to a business-as-usual scenario, according to a report by the Intended Nationally Determined Contribution (INDC). <sup>24</sup> The International Institute for Sustainable Development (IISD) that in 2013 the Turkish government granted direct subsidies to the domestic coal industry worth USD 730 million, which though excludes preferential VAT, land allocation and interest rate treatment.<sup>25</sup> By 2030, the share of coal in the power mix could rise from 27% to 32% on the back of the increased coal-generation capacity.<sup>26</sup> Around 2/3 of the new coal capacity is based on the low-calorific and highly polluting domestic lignite deposits, which is likely to further deter Turkey's efforts to combat climate change. In balancing its energy policy priorities, the security of supply and the preservation of the low electricity prices fuelling the economy's competitiveness seem to have overtaken the efforts for boosting the energy sector's environmental sustainability. The latter goes against the EU Energy Union's priorities for an energy transition based on low-carbon energy resources, energy efficiency and decentralisation of energy production.

As one would expect to see in a rapidly growing emerging economy, the various energy intensity and carbon dioxide emissions measures also are worse than their corresponding OECD averages. Unlike a lot of other emerging economies, however,

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<sup>23</sup> Friedman, Lisa (2015). *Can a country planning 80 coal-fired power plants get serious about climate change?*? E&E news accessed at <http://www.eenews.net/stories/1060026121>

<sup>24</sup> Republic Of Turkey (2015). Intended Nationally Determined Contribution.

<sup>25</sup> Acar, Sevil, Kitson, Lucy and Richard Bridle. Subsidies to Coal and Renewable Energy in Turkey. IISD Report. March, 2015.

<sup>26</sup> Ibid.

these metrics do not appear to be improving vis-à-vis the OECD levels.

Meanwhile, energy intensity has somewhat leveled over the past decade despite the steep rise in energy consumption per capita but still way above the OECD average, and would likely worsen as the drivers behind the economic growth remain the energy intensive industries such as construction, low added-value manufacturing and the chemical industry. The growth of population and the rapid urbanization of the more rural part of Turkey would also contribute to the expansion of energy consumption per capita and relatively high level of energy intensity.

## **II. Regional Integration and Diversification**

The main pillar of Turkey's external energy policy is developing a robust gas hub. Turkey has a significant advantage as a hub, as it has a variety of supply options and import points (approximately six at the moment) due to its beneficial geographical position. One of key steps forward would be the development of the country's LNG import capacity amid increasing supply and falling international gas prices. Turkey's LNG terminals and storage capacity, both of which if increased, would fulfill Turkey's ability to become an energy centre between the MENA region and Europe.

Any successful gas trading hub instituted in Turkey must have two fundamental aspects: firstly, it must have the ability to import and export gas to the market, and secondly, there must be a mature consumption center, either through domestic demand or through the existence of markets easily reached from the hub. Turkey has the potential to satisfy both requirements.

Turkey's geographical location as a bridge between the energy rich Caspian basin and Middle East, and the energy-poor Europe has predisposed the country's position as one of the main transit points for energy routes. Turkey has also been a centerpiece

in the development of alternative sources of natural gas for the EU looking to diversify its supply away from Russia. The principle objective of this energy route is to link the current Baku-Tbilisi-Erzurum pipeline with markets in the SEE and CEE region, as well as Italy, which is the ultimate destination of the planned Trans-Adriatic Pipeline (TAP).

With the launch of the second phase of the Shah Deniz field, Azerbaijan would be able to export an extra 16 bcm in Western direction. The state-owned natural gas supplier, BOTAS, has already secured 6 bcm/yr from Shah Deniz, while the rest would be divided among Greece, Bulgaria and Italy with the latter taking the lion's share or 8 bcm/yr.

Additional sources of natural gas in the Caspian and Middle East regions are also under consideration. These include: Turkmenistan, Iran, Kurdistan Region of Iraq, and Israel.

The Iranian and Turkmeni options are unlikely to materialize due to significant geopolitical, legal and economic obstacles. Although Iran is the largest conventional gas reserves holder in the world (34 trillion cubic meters) for the country to become a major natural gas supplier to Europe, it would have to develop its massive untapped potential in the South Pars supergiant field in the Persian Gulf. Key barriers to the reserves development are the continued web of sanctions that push away foreign oil & gas companies from servicing the E&P market. Another problem is that Iran is currently a net importer of natural gas as its domestic demand sucks up most of the new production capacity coming online. Turkmenistan is also an unlikely EU gas partner as the viability of its gas supply hinges on the construction of a TransCaspian pipeline or an LNG link with Azerbaijan. The successful commissioning of the two projects has been prevented by the lack of a decision on the Caspian legal status.

As a more likely alternative, the Kurdistan Region of Iraq (KRG) could become a potential future gas supplier to Europe<sup>27</sup>. The prospects were strengthened in 2013 when Turkey and the KRG signed a gas sales agreement in 2013 for the supply of up to 10 bcm per year starting in 2020. Yet he pointed out that the viability of Kurdish gas exports will depend on the ability of the regional government to reach an agreement with the central government in Baghdad on autonomous natural gas contracts.

Israel is also a potential supplier after the discovery of the giant Leviathan field in the eastern Mediterranean. However, a pipeline project with Turkey would be difficult as the latter has been wary of strengthening energy relations with Israel due to different foreign policy approaches to the Gaza conflict. A more viable export solution for the Israeli gas would be the LNG option. For the Israeli government there are two LNG options: one is to take advantage of existing LNG facilities in Egypt or to construct its own terminal on the Mediterranean coast. The viability of both options will depend on the structure of the European gas market in the next decade. A tight market would provide more incentive for foreign investors to build up the Israeli gas capacity. Some European gas experts in Europe claim that the demand for natural gas in Europe is bound to decline over the next decades due to a significant shift in the structure of Europe's energy mix<sup>28</sup>.

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<sup>27</sup> Presentation by Dr. Simone Tagliapietra, Researcher at Fondazione ENI Enrico Mattei in Italy, on The EU-Turkey Energy Relations After the Ukraine Crisis, during a roundtable on Energy Security and State Capture Risks in Europe, organised by the Southeast Leadership for Development and Integrity (SELDI) and NATO's Public Diplomacy Division on 27 October, 2014 in Sofia, Bulgaria. More information about the event and the presentations of the speakers could be found at:  
<http://www.csd.bg/artShow.php?id=17111>.

<sup>28</sup> Presentation by Dr. Frank Umbach, Director of the European Centre for Energy and Resource Security, on

However, regional gas market integration would not depend only on making new diversification options possible. It also depends on the creation of a new regulatory framework that encourages competitive entrants through the promotion of a gas volume release program through public auctions instead of a contract release method, which would increase the Turkish market's liquidity and spot trading levels. The natural gas volume release program will encourage diversity of supply sources fostering the security of supply, especially in winter times. It will also forge a more dynamic gas supply and demand equilibrium than the monopolistic structure established by the state-owned company, BOTAS. Releasing gas volumes on auctions would also stimulate global capital investment and also the transference of financial risk to the private sector diminishing the burden on the budget already under significant strain.

In addition, expanding domestic LNG and storage capacity would prepare the country for the upcoming new LNG capacity on global markets that is likely to drive spot prices down increasing the attractiveness of Mediterranean and CEE markets. Currently, Turkey has only two LNG regasification terminals: the Marmara Ereglisi and Aliaga regasification terminals with combined capacity with around 14 bcm of annual import capacity. These are largely underutilised especially outside the winter season due to not only the high spot prices compared to the long-term contracts, but also because of the contractual rigidity and limited spot trading options.

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Good Governance and the Example of the South Stream Gas Pipeline Project, during a roundtable on Energy Security and State Capture Risks in Europe, organised by the Southeast Leadership for Development and Integrity (SELDI) and NATO's Public Diplomacy Division on 27 October, 2014 in Sofia, Bulgaria. More information about the event and the presentations of the speakers could be found at: <http://www.csd.bg/artShow.php?id=17111>.

In order for Turkey to build a vibrant and active gas trading hub, it must focus on four main factors as the core structure of the hub: depth, breadth, immediacy and resilience.<sup>29</sup> Depth requires large liquidity that prevents severe price fluctuations at a virtual trading exchange; breadth refers to the inclusion of a large number of diverse market players trading spot, forward and futures contracts; immediacy requires the elimination of contractual congestion and a vibrant spot trading; and finally resilience relates to the ability of the hub to absorb external shocks including supply cuts that can be easily replaced by LNG, storage capacity or an alternative pipeline routes. To establish such a virtual trading point that could easily become a reference to the whole SEE region, Turkey would need to demonopolise the gas import and wholesale supply, increase storage capacity, optimize the use of LNG regasification facilities and launch a transparent electronic clearing system that would be open to all private market participants on equal terms. To prevent capacity bottlenecks, the transmission systems operator would have to ensure open access to capacity booking and efficient balancing mechanisms.

To foster regional market integration, Turkey should also join regional policy initiatives in the framework of the Energy Union. These include the Central and South East Europe Gas Connectivity (CESEC) High Level Group bringing together 15 EU and Energy Community countries engaging in high-level discussions on improving the security of gas supply and diversification of sources. The European Commission coordinates CESEC by placing a strong accent on gas infrastructure in the SEE. Turkey could play a critical role in this format as it has already become a natural transit country for alternative gas

supply that would feed most of the regional interconnectors expanding and deepening the SEE gas market. The fact that the decisions of CESEC are not legally binding makes it the energy cooperation preferred by Ankara unlike the Energy Community, which mandates strict implementation of the EU energy acquis. Members of the CESEC Group have suggested a voluntary opt-in mechanism in various energy issues that can be used by Turkey as an entry point to the regional discussions.

In general, there should be a stronger focus on multilateral energy cooperation in both gas and power markets (which are also very much interrelated especially in Turkey). Currently, the countries in SEE prefer to work on bilateral basis with their neighbors instead of fully opening the market to cross-border gas and power flows. The fragmented approach to improving the security of supply has left the region exposed to future disruptions amid a continuing turmoil in eastern Ukraine<sup>30</sup>. The domination of bilateral energy deals instead of a common vision for SEE energy markets has also diminished the ability of the Energy Union initiative to push through crucial liberalization reforms and new supply security infrastructure. The influential presence of Russian economic interests in the region has further complicated cooperation as Russia has successfully conducted a ‘divide-and-rule’ energy policy in SEE. Turkey could and should play the role of a counterweight driving forward regional market creation through diversification projects and the implementation of energy liberalization reforms.

## Energy Market Liberalisation

Realizing Turkey’s enormous economic potential would require affordable and consistent energy, essential to buttress growth. Significant

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<sup>29</sup>Ian Cronshaw, et al, *Development of competitive gas trading in continental Europe: how to achieve workable competition in European gas markets?*, International Energy Agency, May 2008,46.

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<sup>30</sup>CSD Policy Brief No. 47: EU and NATO's role in tackling energy security and state capture risks in Europe

investments are needed in the basic energy infrastructure, most notably in the power and natural gas sector over the coming decade in order to mitigate structural bottlenecks. In addition, the regulatory framework governing the energy sector needs to be optimized and streamlined reflecting the needs for efficiency and resilience. Despite years of liberalization reforms and attempts to make the energy market function on a more competitive basis, the reform especially of the crucial gas sector has been inadequate. BOTAS is still the de-facto monopoly and private players are squeezed out of the market. In addition, both the power and gas sectors have not been completely opened for new entrants and the competition, especially in the wholesale sector remains limited, especially on the gas market.

Below is a brief overview of the regulatory transformation of energy markets by sector:

### *1) Electricity*

Turkey's energy sector structure has been subject to many changes in the last 50 years. The Vertically-integrated state owned company TEK dominated the Turkish power sector until the early 1990s. In 1993, following the liberalization wave in EU energy markets, TEK was unbundled in a generation, transmission and wholesale company (TEAS), and in distribution (TEDAS). Later in 2001 with the enactment of the Electricity Market Law, TEAŞ was separate into EUAS (generation), TETAS (wholesale) and TEİAŞ (transmission), each being a legal entity on its own. This regulatory structure persists even today, with EUAS and its subsidiaries holding 59% of the total generation capacity. Whereas TEİAŞ is a monopoly in electricity transmission, the distribution network, which is divided into 21 regions, was fully privatized by the end of 2013. Upon completion of the privatizations, the state share in electricity distribution and retail sales has been reduced down to zero. There are no privatization plans regarding TEİAŞ, the state owned electricity transmission

company in the short or medium term as it is considered a somewhat natural monopoly.

Electricity trading is conducted through bilateral negotiated agreements and is not subject to the energy regulator (EMRA's) approval. Therefore all commercial conditions are open to negotiation and electricity can be traded on day-ahead and real-time basis. The completion of the liberalization process in the electricity sector came with the launch of Turkey's power exchange (EPIAŞ) in March 2015. The opening of EPIAŞ is believed to have the goal of attracting more foreign investors to Turkey and increasing the competition in the energy sector. These transformations are milestones in the quest for a competitive, transparent and liberalized energy market.

Turkey has also become more active regionally. TEİAŞ is a shareholder in the SEE capacity auction platform, SEECAO, which aims to make cross-border capacity trading more transparent and less dependent on national decisions. Turkey is also an observer in the European Network of Transmissions System Operators for Electricity (ENTSO-E) and in the Energy Community, which is an international organization aiming to extend the coverage of the EU energy acquis to the candidate countries in the Western Balkans, as well as Moldova and Ukraine.

### *2) Natural Gas*

In a bid to overcome energy sector inefficiencies, Turkey began a comprehensive period of restructuring its natural gas sector between 2001-2004. The foundation of the reformation period was the Natural Gas Market Law (NGML) No. 4646 (2001). The main thrust of the law was to encourage liberalization of the Turkish natural gas sector, i.e., the development of a competitive gas market, reduction of state activity in the sector, synchronization of EU and Turkish law and the

liberalization of the natural gas market by breaking up the monopolistic position held by BOTAS. The NGM Law was broad in scope and covered transmission, distribution, marketing, trade, import and export of natural gas in Turkey.<sup>31</sup> The NGM Law stipulated that the natural gas transmission network that existed at the time of promulgation will be under BOTAS' mandate. However, the NGM law granted private entrants the right to construct and operate private transmission networks, with the stipulation that any new transmission systems be linked to the existing BOTAS gas network.

The future of BOTAS was the most difficult aspect to address during the sector restructuring. BOTAS has had a complete monopoly on imports, storage, distribution and the sale of natural gas. However, the complete execution of the NGM Law would have only retained BOTAS' monopoly in pipeline transmission, but would have allowed the free operation of the private sector to contribute in all other aspects of the Turkish natural gas market. A secondary legislation promulgated in 2005 was intended to constrain BOTAS' activities to natural gas transmission while reducing its role in natural gas import. But, this reform would only succeed when the current purchase contracts under BOTAS' purview expire. Until today, at BOTAS still plays a dominant role in the gas market as Turkey's dominant natural gas importer, owning 80% of all import contracts (principally pipeline), and for all intents and purposes still controls the national gas supply with limited scope for private companies to operate.

A key element of the reformation of Turkey's natural gas sector was the divestment of import contracts by BOTAS to allow the private sector to undertake a greater role in the natural gas sector. Initially, the NGM aimed at reducing the role of BOTAS' share of imports to 20% of the total country's consumption but as of 2016, the state-owned company's share still

hovers around 80%<sup>32</sup>. Without robust secondary legislation to meet the goals of the full liberalization, development of a competitive market in Turkey will have difficulty succeeding.

Comprehensive reorganization of BOTAS is essential if Turkey is to overcome the structural bottlenecks in its natural gas sector. Without this change, a dynamic market will not be formed and private sector involvement will not be forthcoming. Complete unbundling of BOTAS should be the ultimate goal with the creation of separate and legally defined entities that play a role in the storage, supply, transmission and importation of natural gas. The NGM Law should be amended to allow EMRA the ability to initiate volume release as a means to introduce competition into the Turkish gas sector<sup>33</sup>. As the gas volume release framework is implemented, EMRA should pay special attention to how the process is facilitated. As a prelude to the process, the unit of BOTAS that oversees import contracts should be legally crafted into a separate entity.

For such a policy to be successful, there must be an enabling environment consisting of a group of purchasers willing and able to purchase released gas volumes from BOTAS, (which already exist in sufficient numbers in Turkey), consumers allowed to have the ability to select early termination of contractual options with BOTAS in order to purchase at more competitive prices from new entrants on the date EMRA determines the new gas contractual period.

The complete reorganization of the Turkish natural gas sector to stimulate energy security should be the overall strategic focus of Turkish authorities; in particular, focus should be upon the liberalization of

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<sup>32</sup> Tunçalp, Emre (December 2015).Turkey's Natural Gas Strategy: Balancing Geopolitical Goals & Market Realities. Turkish Policy Quarterly. Vol. 14. No.3. Fall 2015

<sup>33</sup> Csilla Bartok, et al, A combination of gas release programmes and ownership unbundling as remedy to a problematic energy merger: E.ON / MOL, Competition Policy Newsletter, 1, Spring 2006, 79.

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<sup>31</sup> "The Report: Turkey 2008", The Oxford Business Group, 2008, 169-171.

the wholesale market and imports, the prioritization of LNG infrastructure and the development of the regulatory framework for virtual hub trading. These three goals, if implemented successfully, would stimulate the Turkish natural gas sector to attract significant capital investment from the private sector, carve out a dominant role for private energy companies, and meet Turkey's long term energy security and geopolitical aims.

## Conclusion

Turkey with its natural role as a bridge between Asia and Europe will be instrumental for the diversification of the regional and EU energy supply with alternative sources from the Caspian basin and the Middle East. For this to happen, though, there is an acute need for improved energy policy coordination between the EU and Turkey. Some success is already visible with the swift progress of the Southern Gas Corridor aiming to ship 10 billion cubic meters of Azeri natural gas by 2020. By taking part in the construction of the Trans-Anatolian Pipeline (TANAP), Turkey is a major contributor to the improvement of the region's energy security. However, as noted in subsequent Reports on its progress to EU accession Turkey is still lagging in the transposition of EU energy law and the implementation of the market liberalization reforms. In addition, Turkey has not been able to catch up with other OECD countries in terms of energy intensity reduction and needs to scale-up its investment in energy efficiency measures. This will accomplish two interrelated policy objectives: an increase of energy savings and a reduction of the country's energy import dependence.

Turkey's energy security in times of rising demand can be ensured only through a meaningful restructuring of the energy market system, which lacks efficiency and is barring competition. Investment in energy infrastructure needs to be urgently scaled up to improve power and gas connectivity and to enable

Turkey to fulfil its policy objective of becoming a transit country for oil and gas from the Caspian basin and the Middle East. According to the Investment Support and Promotion Agency of Turkey (ISPAT), Turkey's energy investment requirements amount to USD 120 billion by 2023.<sup>34</sup> Also, in attempt to decrease its dependence on foreign energy imports, Turkey needs to further develop its renewable energy market, which currently lacks enough investment and has been barred by an ineffective regulatory framework for economic incentives

A new EU-Turkey energy initiative is necessary, which matches the EU's and Turkey's energy security demands. Such an initiative would require common diplomacy in order to unlock new energy supply sources in the Caspian Sea, the Mediterranean and the Middle East. It would also require a common political will to work for regional market integration by investing in cross-border energy infrastructure and the synchronization of the regulatory framework. More specifically, Turkish policy-makers need to follow-up with their commitment to fully liberalize the energy sector, improve the transparency in decision-making and corporate governance, and increase the investment in regional energy links. On the latter issue, EU can provide both financial and political support using its dedicated infrastructure funds and drive forward a common energy strategy that focuses on diversification of resources and the narrowing of energy imbalances.

## Policy Recommendations

Improving the energy security and the governance of the energy sector in Turkey in the context of better integration in the EU Energy Union entails, at

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<sup>34</sup> Investment Support and Promotion Agency of Turkey official website: <http://www.invest.gov.tr>

a minimum, the implementation of the following actions:

- Enhancement of EU efforts to form an energy security policy based on close cooperation with its extra-EU key energy partners.
- Expansion of the regional natural gas and power interconnectors to facilitate the physical integration of Turkey in the European internal energy market leading to an increase in liquidity and competitiveness.
- Natural gas diversification away from pipeline trade, and development of LNG capacity on the Mediterranean coast to tap world markets and assist the development of a virtual natural gas hub.
- Improving the governance of the Turkish energy sector through the introduction of transparent regulation and management of the state-owned companies, as well as a consistent regulatory framework.
- Introduce prioritization and selection of large investments projects in the Turkish decision-making process, based on clear and transparent procedures and fact-based analyses, synchronized with the EU priorities.
- Private sector must understand that there is no risk free energy investments. A guaranteed profit mentality should be buried in the pages of history.
- Turkey should pursue a more balanced and diverse energy mix and electricity generation mix. In this sense the diversity of its supply sources and routes need to be improved as well.
- Turkey needs a strong push for renewable energy sources and aggressive implementation of energy efficiency and energy conservation policies. The effect of energy efficiency improvements would help the Turkish government achieve three energy policy objectives at the same time, namely to reduce the macroeconomic effect of energy imports on the current account balance, improve the security of supply and raise the competitiveness of Turkish businesses.
- Turkey must pay more attention to R&D and innovation in energy sector, especially when it comes to making use of domestic lignite reserves.

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