

Turkish Energy Market: An Investor's Guide

2012



Muhsin Yazıcıođlu Cad. No: 51/C
06530 Yüzüncüyıl - Ankara / TURKEY

www.epdk.gov.tr www.epdk.org.tr

Turkish Energy Market: An Investor's Guide

2012



www.epdk.gov.tr
www.epdk.org.tr



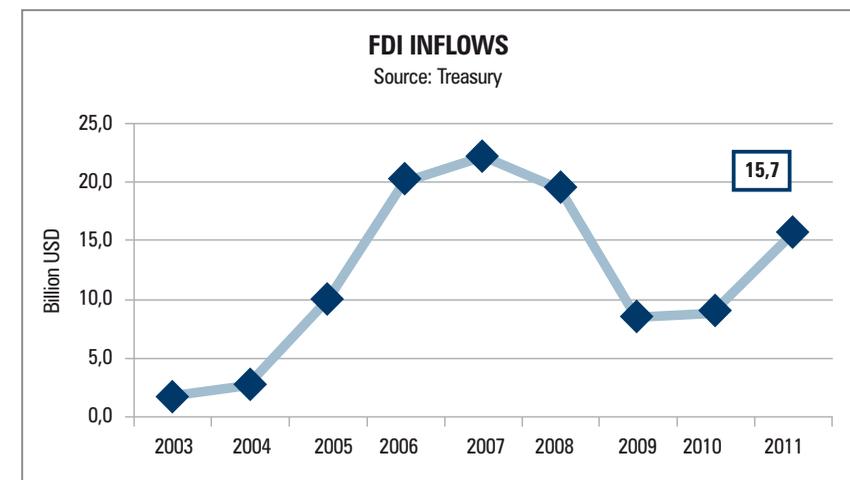
Table of Contents

Introduction	<i>05</i>
Institutional Framework	<i>10</i>
Electricity Market	<i>14</i>
Natural Gas Market	<i>30</i>
Oil and LPG Markets	<i>44</i>
Green Opportunities	<i>54</i>
Conclusion	<i>62</i>



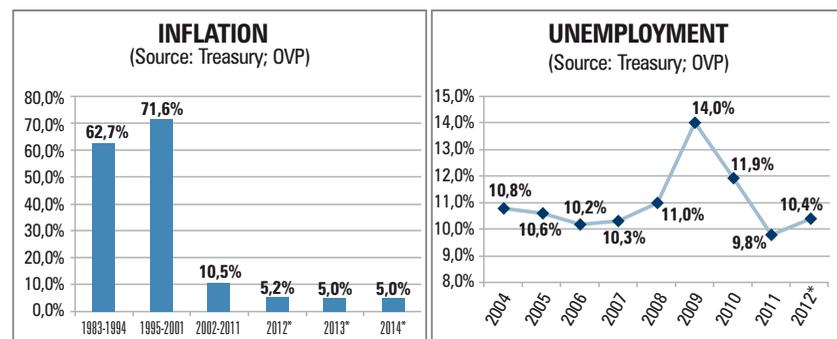
The Republic of Turkey presents a very attractive investment environment for the investors owing not only to her political stability but also to her growing economy and economic sectors most of which have been undergoing a massive program of restructuring and liberalization. As of 2011, Turkey is the sixth biggest economy in Europe with its more than \$376 billion foreign trade volume and exports its goods to more than 200 countries two thirds of them being advanced economies (Treasury, 2012).

After a steady growth since 2002 and a peak level of \$340 billion in 2008, trade volume stepped backed from its peak in 2009 due to the negative impact that the global financial crisis had on the international trade. As the negative implications of the global crisis faded away gradually, the trade volume started to increase again and reached \$376 billion as of the end of 2011 including \$135 billion exports and \$241 billion imports (Treasury, 2012). Turkish economy started to recover swiftly just after the global crisis in 2009 and grew 8.9% and 8.5% in 2010 and 2011 respectively (TUIK, 2012). Turkish economy has been able to produce approximately 780 billion USD GDP in 2011.



Foreign direct investments are seen as crucial for Turkey's economic development. In this context, Turkey has taken the necessary measures to improve the conditions for the investors and committed itself to the materialization of these measures. By the time this booklet is being

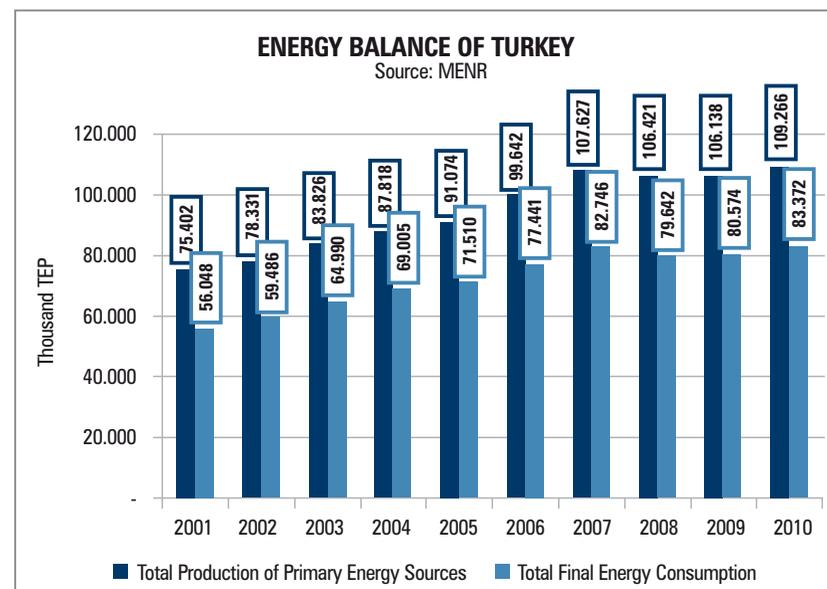
written, there is no discrimination against the international investors in favor of their domestic counterparts. There are no barriers against the free market entry, no limits on capital or transfer of capital and on procurement or transfer of foreign exchange. Owing to these favorable conditions, the interest shown by the foreign investors on Turkish economy started to accelerate especially after 2005. The total amount of FDI poured into Turkish economy within the last five years reached almost at \$105 billion. Data revealed by Turkish Treasury demonstrates that, the amount of FDI had dropped in 2008 and 2009 just because of the global financial crisis after a steady growth since 2002 and started to grow again in 2010 and 2011. In the meantime, the number of companies in Turkey with foreign capital has already exceeded 26,000 (Treasury, 2011). In order to have a better grasp of Turkish economy figures regarding the inflation and unemployment are depicted below.



In conjunction with rapid economic growth and urbanization, energy demand and the need for new investment in energy sector has also been increasing and the sector becomes increasingly attractive for investors, domestic and foreign alike. Having its roots in 1980s and gained momentum at the outset of the new millennium, the efforts to liberalize the energy sector has been one of the crucial elements that paved the way for greater interest shown by the investors in investing in Turkish energy sector. These efforts, to a great extent, succeeded in achieving its goals and Turkey became a country with a growing, transparent, competitive and attractive energy market.

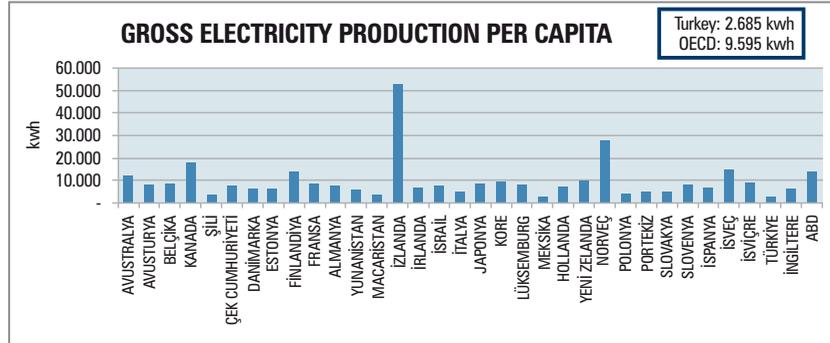
The liberalization process has also been accompanied by a massive privatization process. The privatization process in electricity sector is noteworthy in particular. In Turkish power market the privatizations have almost been completed in distribution segment while a concrete

timetable has been set by the Electricity Market Reform and Strategy Paper published by the Government in 2004 for the privatizations of the generation assets.



The sheer size and the expansionary trend in Turkish energy market are so evident that the potential investors, both domestic and foreign, are likely to find invaluable investment opportunities herein. The primary energy consumption in Turkey has been steadily growing within the last decade and reached at 83.4 MTOE in 2010. In 2011, Turkish economy consumed 229.3 billion kWh electricity and 44.2 BCM natural gas. Crude oil refined in Turkish refineries in 2011, on the other hand, was almost 21 million tons (EMRA, 2012). A glance at per capita production numbers shows that, Turkey still has lower per capita production levels compared to the averages prevail in OECD and EU countries. According to data revealed by the MENR, per capita electricity production was 2,685 kWh in gross terms in 2009. This number corresponds to one fourth of IEA average and it is expected to grow in parallel with the growing economy and energy demand. Indeed, gross electricity production per capita in 2010 reached at 2.865 kWh.

Introduction



With respect to energy intensity, Turkish economy consumed 0.11 Toe in 2008 in order to produce one dollar of GDP. While this level is 12% lower than IEA-Europe average, it has followed a relatively stable path during the last years due to the fact that the increasing share of services sector in the economy and the increasing population of the country worked in opposite directions and offset their respective effects (IEA, 2010).

It is estimated by IEA that, Turkey will likely see the fastest medium to long-term growth in energy demand among the IEA member countries (IEA, 2010). Ministry of Energy and Natural Resources (MENR), on the other hand, estimates that total final energy demand and the total primary energy demand will more than double and reach at 170.3 and 222.4 MTOE respectively by 2020. It is also estimated that electricity, natural gas and oil demand will reach at 398-434 billion kWh, 59 BCM and 59 million tons respectively. In order to meet such an immense growth in energy demand, huge levels of investment is required as well in all three sectors alike. Turkish governments prioritize the private sector in financing these investments and have taken the necessary steps to facilitate the investment environment in which the investors could make their investments in a transparent, predictable, liberalized and competitive framework.



With its fast economic growth, Republic of Turkey is not only an important consumer of energy but also a regional actor in distribution of the energy resources in its region. Only one-third of primary energy supply out of a total 109 MTOE was met by domestic sources in 2010 while the remainder was imported from various producer countries. In this context, a huge level of investment is needed to feed the Turkish energy market such that huge amounts of energy resources should be procured from other countries and transported into Turkish market.

Such an immense activity requires concomitant levels of investment and Turkish policymakers have shown their commitment and willingness in private sector's participation in funding these investments.

To this end, the share of state-owned enterprises in energy sector has been gradually reduced, especially after 1980s, thanks to the winds of liberalization that took place then and afterwards. From an historical perspective, traditionally state-owned and close to private participation and competition, Turkish energy sector has been undergoing tremendous reforms and the share of private sector has been increasing gradually but steadily. An increased role for private sector in Turkish energy market is one of the most important policy goals of Turkish politicians. The steps taken in 2001 and 2005 are particularly important in this sense. Thanks to these revolutionary steps, the obstacles against competition and private participation in electricity, natural gas, petroleum and LPG markets have been removed to a great extent and a favorable investment scheme has been established in which the investors face a transparent and highly predictable market structure.

The most important feature of the liberalization process is the unprecedented interest that the private sector has shown in Turkish energy sector. In fact, not only the private funds poured into the privatization processes of electricity and natural gas distribution assets but also a considerable number of the giant industrial conglomerates have decided to enter into energy business in Turkey and set strategic targets to be met in the foreseeable future. Turkish policymakers are well aware of the fact that the persistence of the involvement of the private sector, especially during the generation privatizations and meeting the increasing demand, is crucial if the reform process is to succeed.

The state structure in Turkey, which is withdrawing itself from the market as an investor except extraordinary circumstances, has reorganized itself as far as the energy sector is concerned

such that Energy Market Regulatory Authority (EMRA) was established in 2001 in order to perform the regulatory and supervisory functions in the market. The fundamental objective of EMRA is set forth in its founding document as follows: to ensure the development of financially sound and transparent energy markets operating in a competitive environment and the delivery of sufficient, good quality, low cost and environment-friendly energy to consumers and to ensure the autonomous regulation and supervision of these markets. As an independent regulator, EMRA is endowed with regulatory functions such as licensing to transcribe the entries and exits to the market; regulating the market to assure non-discriminatory third party access to the monopolistic infrastructures such as grids; ratemaking to inhibit monopoly rents; and supervising and penalizing (if necessary) to make sure that the market participants are in compliance with the rules and regulations.

As a result of the concrete steps taken during the liberalization process, the share of private sector in petroleum refining and distribution activities has reached almost 100%, while more than half of the electricity produced in Turkey has become privately-operated generation. As for electricity distribution, on the other hand, all of the 21 distribution regions have been either transferred to private sector or the privatization process has been finalized and expected to be transferred soon. In natural gas market, the process developed relatively slow due to the structural reasons pertinent to the market. As of 2011, 4 BCM gas import contract previously owned by BOTAS has been transferred to four private companies, one year extension has been put in place for another expiring contract due to the fact that private companies failed to qualify to take over the responsibilities of a new contract and to get an import license from EMRA, LNG imports have been completely liberalized and further studies are being conducted in order to transfer additional volumes of contract in order to open more room for competition and private participation. At the distributional level, all of the pre-existing regions except two of them have been privatized and distribution licenses have been granted by EMRA for 62 regions.

It is worth-mentioning here that one of the crucial issues that should be taken into consideration in assessing the investment environment in Turkish energy market is the accession process between Turkey and EU for full membership. The compliance of the regulations in Turkey with the EU directives pertinent to electricity and gas markets have been periodically assessed by the EU institutions as a part of negotiation process initiated in 2005. In this context, the yearly progress reports and the 2007 Energy Chapter Screening Report are particularly important. These documents confirm that the Turkish legislation and regulations

Institutional Framework

are in compliance with the EU electricity and gas directives. In other words, the EU documents confirm that regulations pertinent to energy sector in Turkey are compatible and in compliance with the EU directives which present one of the most advanced stage in terms of market liberalization and competition.

Another tenet of Turkish energy sector that also has implications for the investment environment is the geographical convenience that the country has to have access to primary energy resources which is crucial to security of supply concerns. Turkey's enthusiasm for the cooperation and collaboration in international and regional multilateral energy projects is particularly important in this context. When we think of the energy value chain in its entirety, it is no surprise to come to the conclusion that it is crucial for a refinery to have easy access to crude oil or for a combined cycle power plant to natural gas in terms of getting inputs in a secure and uninterrupted manner. Seen from this perspective, Turkey is adjacent to Middle East and Caspian region (including Russia) that have tremendous amounts of oil and gas deposits in addition to the friendly political and economical relations between Turkey and the countries placed in these regions. The strategy of becoming an energy bridge between east and west adopted by Turkish policymakers provides further conveniences for the potential investors as far as the input security is concerned. Turkey, furthermore, involves in most of the international projects which are being conducted or planned and actively put its efforts to enhance regional energy cooperation in compliance with its energy bridge strategy. These projects include, among others, BTC crude oil pipeline, Nabucco natural gas pipeline, Greece-Turkey interconnector and the interconnection between the Turkish and European electricity grids. Another most recent agreement between Azerbaijan and Turkey envisaged the establishment of a pipeline company (TANAP) in order to build a gas pipeline trough Anatolia from Azerbaijan to Turkey and Europe to market and monetize the potential of Shah Deniz II.

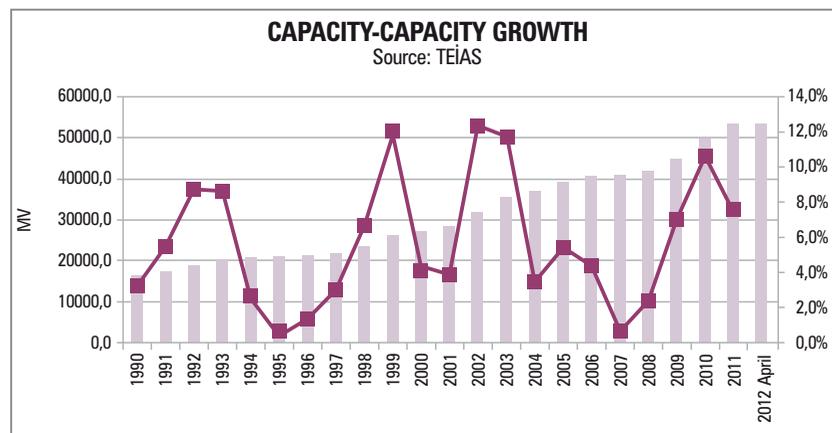


Electricity Markets

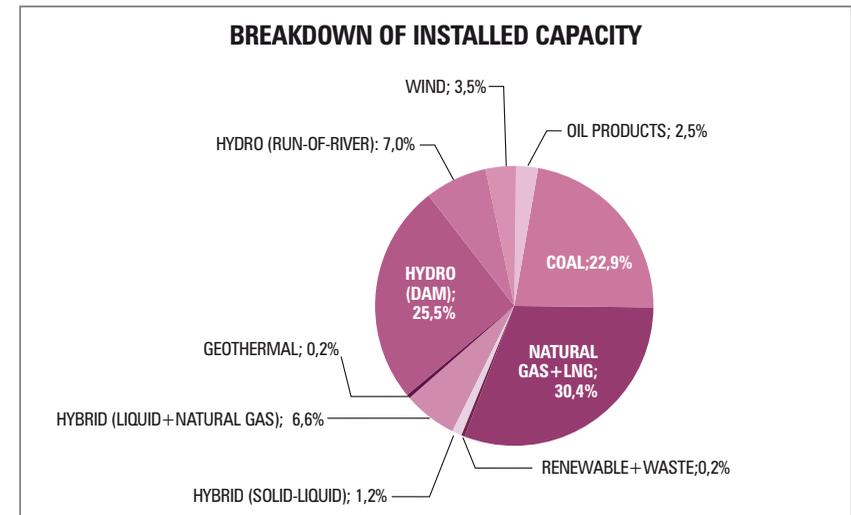
1- General Framework

Turkey, with the aim of replacing the state dominated vertically integrated power market with a competitive one, introduced competition gradually in the electricity sector with the enactment of Law No 4628 in 2001. The Law and the secondary legislation enacted by EMRA envisaged the transformation of the market from a single buyer model to full retail competition which is basically a bilateral contracts model supplemented by a balancing mechanism.

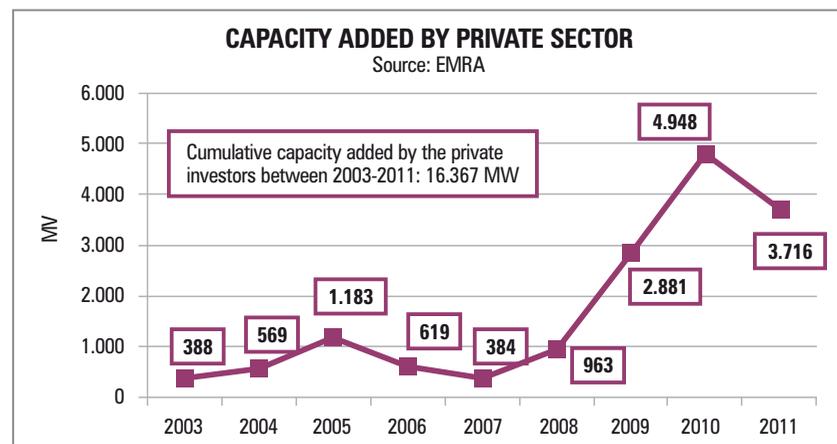
The espoused model, to a great extent, is in place currently owing to the established legal framework as well as the commitment of Turkish policymakers to the competitive market model. The new market design requires the dominance of the private sector in power market except transmission and espouses a market structure which is competitive, stable and transparent. In this context, the share of private sector in electricity market in Turkey has gradually increased thanks to the privatization process as well as the fact that the capacity additions are becoming increasingly private sector-originated. The private funds offered for the privatization of 18 distribution regions have already reached \$16 billion despite biddings for some regions have to be restarted.



The private sector contributed to more than three-fourth of the capacity additions made and played a key role in increasing the installed capacity from 31,846 MW in 2002 to 49,524 MW in 2010 and 53,211 MW at the end of 2011 (EMRA, 2012). The breakdown of installed capacity as of April 2012 which is 53,910 MW, is given in the below figure.

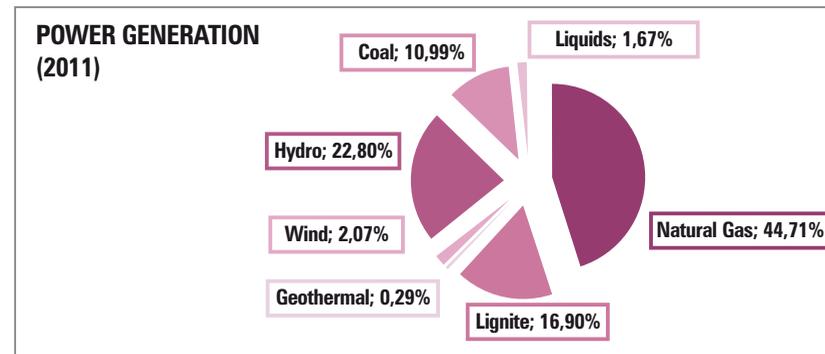
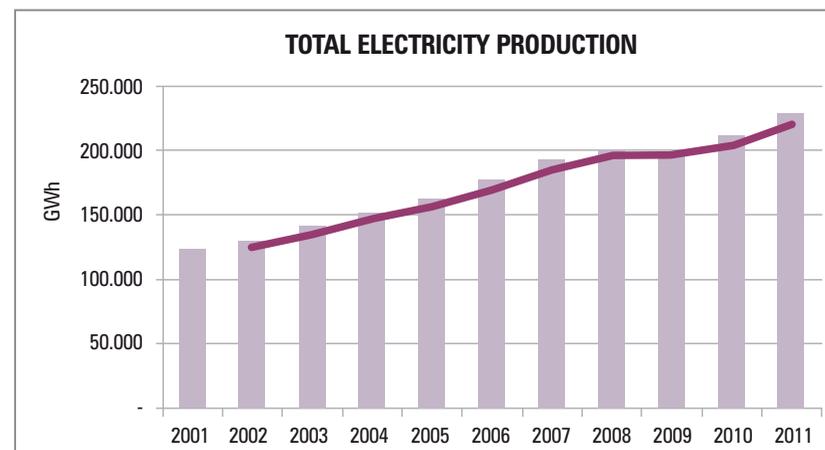


The role of the private sector has been especially evident in 2009 that is 98% of the 2,944 MW additional capacity is built by private companies. The interest of the private sector in Turkish electricity market remained intact in 2010 and 2011 as well and the total capacity added by private sector has reached 4,948 MW and 3,716 MW respectively. On a cumulative basis, private sector additions to total installed capacity has been 16,367 MW between 2003 and 2012. On the other hand, funds (fixed capital investment) invested by the private sector in generation and distribution segments of the market was 5 billion TL in 2008 and 8 billion TL in 2009 and 2010 each (EMRA, 2011). Together with the existing and planned privatizations, the share of private sector has been increasing so far and it is expected to increase for the foreseeable future.

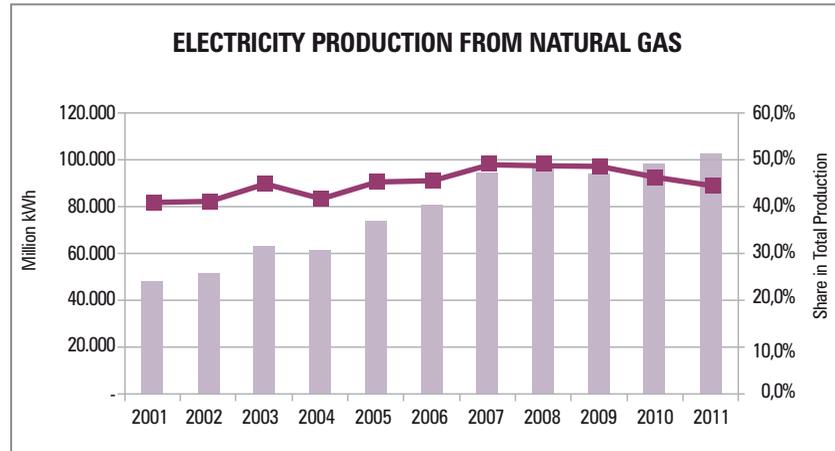


The electricity production in Turkey was approximately 228.4 billion kWh in 2011 while electricity consumption was 229.3 billion kWh by the same year. Out of this, 171 billion kWh (74.8%) was based on thermal plants and the remainder 58 billion kWh (25.2%) was produced by renewable sources such as hydro, geothermal and wind.

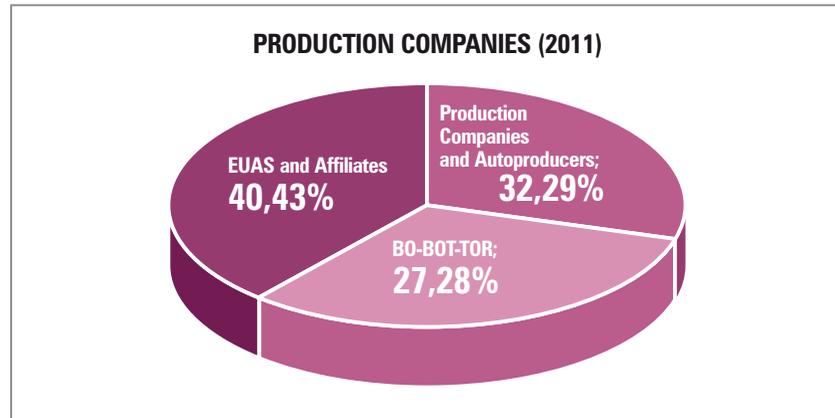
A closer analysis of the fuel mix in power generation reveals the increasing importance of natural gas. In 2011, 44.7%, 28.3%, and 22.8% of total production was based on natural gas, coal (hard coal and lignite including asphaltit as well), and hydro respectively while the shares of oil derivatives and wind were 1.7% and 2.1% respectively the remainder being other sources such as geothermal (TEIAS, 2012). A comparative approach reveals that, the power generation based on natural gas and coal increased between 2004 and 2010 while the share of renewables (especially hydro) and oil derivatives declined in the same period. Concrete targets have been set and certain policy measures have been taken to promote the use of domestic lignite and renewables for the power generation purposes as well as to include nuclear-based power generation in Turkish fuel mix. In fact, an international treaty has been concluded with the Russian Federation to build a 4*1200 MW nuclear power plant in Akkuyu and studies has already been began to build the power plant. In addition to this, it is planned to build two more nuclear power plants in Turkey in the medium term and a cooperation agreement has already been signed with the People's Republic of China in Beijing in April 2012. In fact, simultaneous negotiations are being conducted with South Korea, China and Japan.



Natural gas has become the fuel of choice in power generation in Turkey due to Turkey's geographic proximity to reserve-holder countries and the advantages that the natural gas presents in terms of efficiency and environment. As a consequence, the gas-based power generation has increased by 52 billion kWh between 2001 and 2011 and reached 102 billion kWh as of the end of 2011.



From an ownership point of view, it is observed that the share of state-owned generation company EUAS has steadily been decreasing at the advantage of privately-operated power generation. In 2011, EUAS and its affiliates produced 40% of total generation while 60% of total generation was produced by power plants operated by private companies.



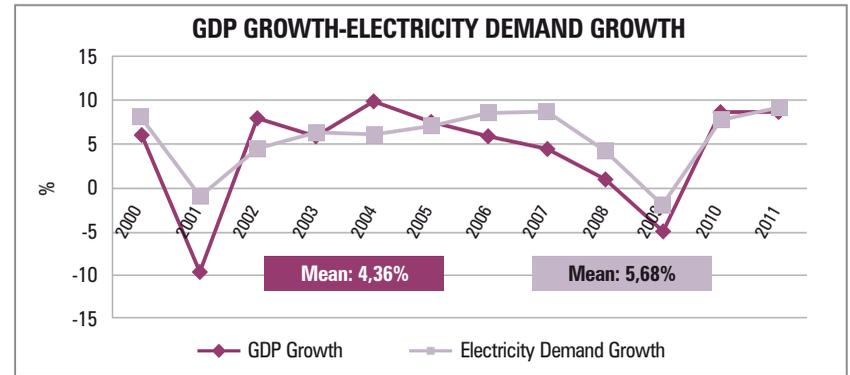
EMRA has been gradually reducing the eligibility threshold since 2002 to allow that privately-produced power is sold in the free market. The most recent reduction was made at the beginning of 2012 and customers more than 25,000 kWh annual consumption became eligible to choose their suppliers. Put it another way, customers more than 25,000 kWh annual consumption are allowed to have direct access to wholesale market and procure their electricity via bilateral contracts with their suppliers under free market conditions. The 25,000 kWh eligibility threshold freed 77% of total load to choose their suppliers. Further reductions in eligibility threshold are expected from EMRA so as to increase the share of customers free to choose their suppliers. In fact, it is stated in the Electricity Market and the Security of Supply Strategy Paper that all customers until 2015 will become eligible (Electricity Market and the Security of Supply Strategy Paper, 2009).



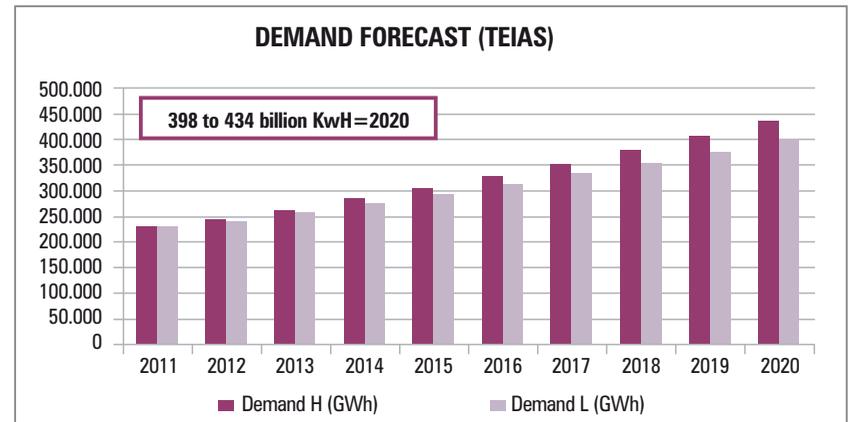
In order to secure the access of the free market players to the infrastructure such as distribution and transmission lines, further regulations have been introduced by EMRA and the right to access to this infrastructure has brought under regulation. The intermediary roles of distribution and transmission companies between buyers and sellers are unambiguously

defined via regulated tariffs. In order to secure the neutrality of the transmission function, TEIAS has been restructured in a separate and independent form and its functions are confined to grid and system operations. Similarly, in order to secure the non-discriminatory behavior of distribution network companies and the free and easy access by the users to the grid, certain rules and regulations compatible with the competitive structure of the market are introduced such as unbundling, TPA and tariffs. Last but not least, Turkish government proved to be committed to put an end to its presence in the distribution sector completely and in generation to a great extent (Electricity Market and the Security of Supply Strategy Paper, 2009).

There have also been eye-catching developments in the wholesale electricity markets. A bilateral contracts market supplemented by a balancing and settlement mechanism is envisaged by the design introduced by Law 4628. The commitment to the implementation of this design has been reiterated by the statements take place in the Strategy Paper announced in 2009. Within this framework, it is essential that suppliers that provide electricity to distribution companies with retail licenses and eligible customers are to secure their purchases from power producers via bilateral contracts. As a complementary mechanism, current balancing and settlement scheme implemented by Market Financial Settlement Center (PMUM) has initially been developed as day-ahead market and real time balancing market. In this regard, day-ahead market became operational as of December 2011. In contrast to the previous stage which is day-ahead planning, the newly adopted day-ahead market mechanism includes a collateral mechanism and allow for demand side participation together with the opportunity to submit bloc-offers. In order to give the market participants risk-hedging opportunities, trading of electricity future contracts has been launched within the Turkish Derivatives Exchange as of 26 September 2011. Studies are ongoing to extend the exchange traded electricity futures to the OTC markets and to introduce capacity markets to support the market mechanism that lean on energy trading. In addition, studies to establish “energy exchange” in which only energy and energy derivatives would be traded have been accelerated.



From an historical perspective, in addition to the fact that the electricity demand growth rate and GDP growth rate are highly correlated, the former outstripped the latter by 1.3% on average between 2000 and 2011. According to TEIAS projections, the electricity demand will reach 398 or 434 billion kWh by 2020 depending on the high or low scenarios. The capacity to meet the peak demand should be at least 61-67 GW in order to meet such a huge growth in demand (TEIAS, 2012). Taking into consideration the required capacity additions and the maintenance-expansion requirements in grid infrastructure as well as the privatization process reveal the fact that potential investors face a free and competitive market with tremendous investment opportunities.



Willing to reap the benefits of such opportunities, many private companies, domestic and foreign alike, got involved in Turkish energy markets and set strategic targets for their energy businesses in Turkey. The energy sector in Turkey, especially the electricity market, has increasingly become too attractive and promising that no investor can ignore in their business strategies.

In addition to the opportunities in the domestic market, Turkey's involvement in regional cooperation with its neighboring countries especially with the EU enables the market participants to get involved in cross-border trade. Turkey has already established grid connections with all of its neighboring countries as well as obtained the ability to work synchronal-parallel with the EU grid under the umbrella of ENTSO-E which means that the market participants in Turkish power market are able to engage in cross-border electricity trade with the neighboring countries as well as the EU.

Last but not least, Turkish electricity market requires 193 to 225 billion TL capital investments until 2030 depending on different scenarios to meet the growing demand. As mentioned before, it is one of the top political-economic priorities of Turkish policymakers that such a huge level of additional investment in Turkish energy sector is made by private sector within a transparent and competitive market framework.

2- Licensing

The types of licenses to be granted in the electricity market, activities to be made within the scope of the licenses and the general provisions which the licenses are subject to are regulated with the Law No: 4628. The details of licensing are set forth by the Electricity Market Licensing Regulation approved by the Board. Accordingly, the types of licenses in the electricity market are as follows;

- Generation License,
- Transmission License,
- Distribution License,
- Wholesale License,
- Retail License,
- Autoproducer and Autoproducer Group License.

All legal persons shall obtain separate licenses for each activity they are engaged in and for each facility where the same activity is conducted. Besides, all legal persons holding more

than one license or the legal persons performing the same activity in more than one facility are obliged to keep separate accounts and registers for each licensed activity or facility.

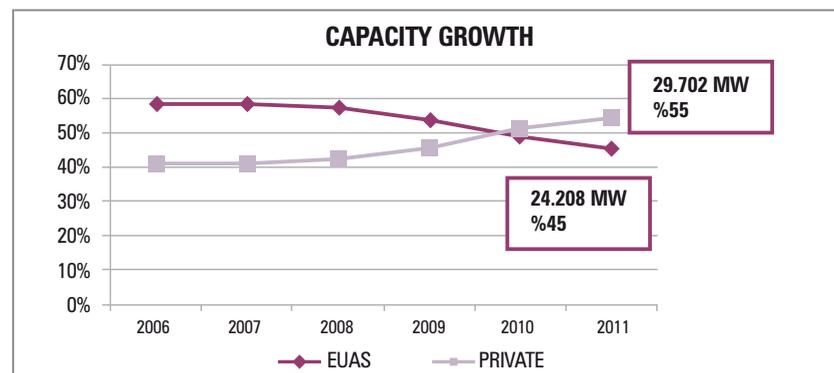
It should be mentioned that, the legal persons to be engaged in licensed activities in the electricity market are required to have been established as joint stock or limited liability companies in accordance with the provisions of the Turkish Commercial Code no. 6762 and the shares of the joint stock companies except for the ones traded on the stock exchange must be registered.

a) Generation License:

It is the license that the generation companies are obliged to get from EMRA for the generation and sale of electricity in the each existing and to be constructed generation facility. The generation licensees may be grouped into two; 1) EUAS and its affiliates, 2) Private sector generation facilities.

The total share of any private sector generation company, together with its affiliates, in the market may not exceed twenty percent of the total installed capacity of Turkey for the previous year, as published by TEIAS.

The privatization process commenced to privatize the assets owned by the state owned company EUAS is still continuing. In this framework, 141 MW installed capacity of the state owned generation company structured separately as ADUAS has been privatized. Afterwards, 19 separate portfolio groups formed within EUAS have been privatized. Since it was decided to privatize four big state-owned power plants separately, other EUAS power plants have been restructured as 9 portfolio groups have been taken into privatization agenda according to the developments in the distribution privatizations. The total installed capacity of these 9 portfolio groups is 12.640 MW and it is envisaged that the 22 big HES will continue to be operated by the state. With the effect of such developments, the share of EUAS in terms of installed capacity has reduced gradually. With the completion of other privatizations this share is expected to reduce more and the share of private sector is expected to increase.



b) Transmission License:

It is the license that the Turkish Electricity Transmission Co. Inc. (TEIAS) should get from EMRA to perform the transmission activity through all existing and to be constructed transmission facilities. As per the provisions of the network regulation, TEIAS is responsible for determining the merit order to meet the supply and demand, implementing the merit order in line with the technical and economic load dispatch rules according to the real time transmission congestions and when deemed necessary revising the merit order as per the provisions of the network regulation. TEIAS may not engage in any activity in the market other than transmission.

c) Distribution License:

Distribution companies operate within specified regions. Distribution license is the license that the legal persons have to be granted by EMRA to perform distribution activity within a specified region. It is stipulated by the Law No: 4628 that the private sector distribution companies, other than distribution and retail activities, may construct generation facilities provided that they get generation license and keep separate accounts and may purchase electricity from the generation company (ies) they own or are affiliated with, with a price not exceeding the average wholesale price in the country.

Distribution companies may deal with retail and/or retail sale service although there are other retail company and/or companies within their regions, provided that they get a license. The distribution companies may not be engaged in any market activity other than those indicated

herein. Generation and retail activities may only be performed under separate legal personalities as of 1.1.2013 (legal unbundling).

PRIVATE	PRIVATIZATION FEE (Million Dollars)	STATE
KAYSERİ		AKDENİZ
MENDERES	110	ARAS
GÖKSU	60	DİCLE
YEŞİLIRMAK	441,5	CEDİZ
SAKARYA	600	TOROSLAR
OSMANGAZİ	485	VANGÖLÜ
ULUDAĞ	940	BOĞAZIÇI
BAŞKENT	1225	İSTANBUL ANADOLU
MERAM	440	
ÇAMLIBEL	258,5	
FIRAT	230,25	
ÇORUH	227	
TRAKYA	622	
TOTAL	5639,25	

As of today, Turkey has been separated into 21 electricity distribution regions. 13 of these regions are currently operated by the private sector and the privatization process of 8 regions is still continuing. The distribution privatizations planned to be concluded in 2011 have been delayed to 2012 due to the financial resource problems of the successful bidder companies as a result of the global financial crisis. The consumption amount in the 13 distribution regions operated by the private sector corresponds to more than half of the electricity distributed in Turkey.

d) Wholesale License:

It is the license that the wholesale companies are obliged to get from EMRA to deal with wholesale and sale to eligible consumers of electricity in the market. In the wholesale licenses, there may be separate parts for provisions allowing electricity import or export to/from the countries where international interconnection conditions are established.

Wholesale licensees may be separated into two; 1) TETAS, 2) Private sector wholesale companies.

TETAS is the state owned wholesale company established to take over from TEAS and TEDAS the energy sale and purchase agreements signed within the scope of existing contracts. Besides, TETAS purchases the electricity generated by EUAS for a period determined by EMRA, but not exceeding five years, starting from the termination of the preparatory period envisaged by the Law.

The total share of any private sector wholesale company, together with its affiliates, in the market may not exceed ten percent of the total energy consumed in the market in the previous year.

e) Retail License:

It is the license that the legal persons are obliged to get from EMRA to deal with retail and/or retail services. In a retail license, where deemed necessary by the decision of the MENR, there may be a separate part for provisions allowing import of electricity at the distribution level.

Retail companies shall be engaged in retail and retail services without any limitation of regions. The distribution companies holding retail licenses shall only be entitled to sell electricity and/or capacity to eligible consumers located within the authorized area of another distribution region, provided that their retail licenses include related provisions.

f) Autoproducer and Autoproducer Group License:

It is the license that the autoproducers generating electricity to meet their own needs and operating in parallel with the transmission and/or distribution system and the autoproducer groups supplying electricity to the group partners are obliged to get from EMRA.

As per the Law, autoproducers and autoproducer groups may sell only twenty percent of the average yearly electricity generation amount included in their licenses in a calendar year. EMRA is entitled to increase this amount when deemed necessary only in terms of supply security.

Especially, completion of the generation facility investments within set periods is of utmost importance for supply security and system planning. In this respect, sanctions including the cancellation of the license related with the investments not realized within the set periods are

envisaged in the Law. To indemnify EMRA for the existing generation licenses and license applications is also stipulated in 4628 as a precaution to ensure the timely completion of the investments

Another issue to be mentioned is the situation of the Organized Industrial Zones (OIZs). The organized industrial zone legal persons established as per the Organized Industrial Zones Law No:4562, may engage in distribution and/or generation activities within approved areas to meet the needs of its participants without the obligation of incorporation as per the Turkish Commercial Code no: 6762 provided that they get a license from EMRA. OIZ legal persons are deemed as eligible consumers regardless of their consumption amounts. Consumers exceeding the eligibility threshold have the right to choose their suppliers provided that they pay a distribution fee to the OIZ.

As mentioned earlier, legal persons should get a license from EMRA to operate in the market. The procedures of licensing are set forth in detail in the Electricity Market Licensing Regulation. Accordingly, the stages of the procedure of getting a license is determined and time limits have been put to conclude the duly filed license applications as soon as possible. The review and evaluation process regarding the duly filed license applications shall commence after demonstrating that one percent of the licensing fee is deposited in the Authority's account and except for the wholesale license applications, the applications are publicized on the web site of EMRA on grounds of possible violation of personal interests.

The license applications taken under review and evaluation process is concluded within forty five days following the submission of the necessary documents to the relevant authorities' and/or institutions' final opinions asked according to provisions of applicable legislation and deemed necessary for granting a EMRA Board decision. If deemed necessary, that period may be extended by a Board decision and the time extension is notified to the related applicant

After examination and evaluation, license applications are either refused and the related person is notified in writing together with the justifications for refusal or approved and the related person is notified in writing that the license will be granted in case additional requirements; such as making necessary amendments in the main charter and getting EIA (Environmental Impact Analysis) report. To fulfill the requirements 90 days' time, and for EIA report 300 days' time is given to the applicant. Licenses are granted by Board Decision to the legal persons who fulfill the requirements within set time limits.

The detailed provisions regarding license renewal, termination, cancellation and license fees are included in the Licensing Regulation.

3- Tariffs:

The market model targeted by the Law No: 4628 envisages a competitive structure where the prices are determined in line with the supply and demand conditions. Within that scope, it is envisaged that the sale of electricity is realized primarily through bilateral agreements. In the generation and wholesale sectors where a competitive market structure is possible, it is foreseen that the prices are determined freely among the parties.

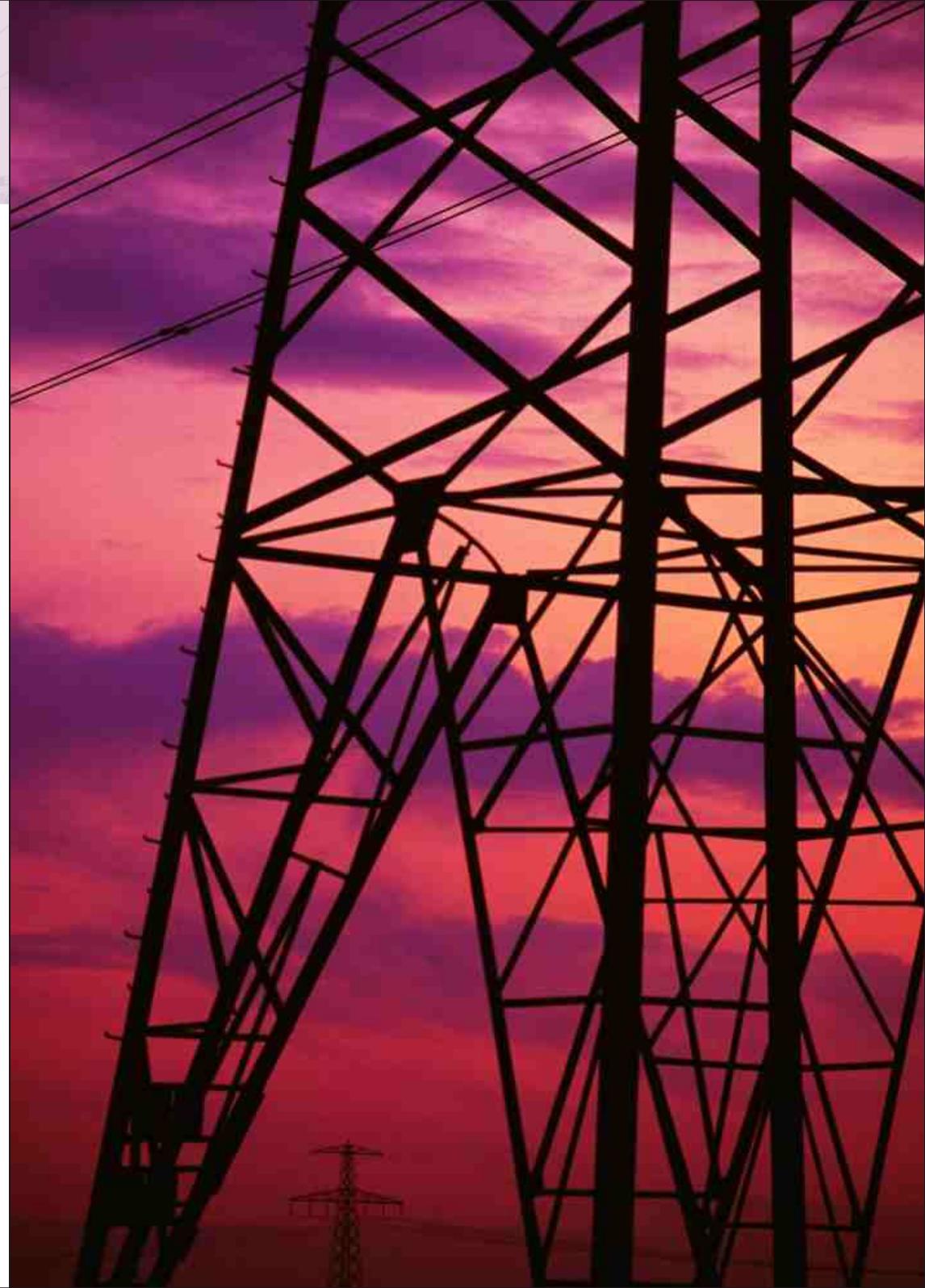
It is envisaged by law that EMRA makes tariff regulation in order to encourage the effective operation of the legal persons operating in the fields where a competitive structure is not possible due to natural monopolistic qualifications and to prevent excessive return. Retail tariffs applicable for non-eligible consumers and the wholesale tariffs to be applied by TETAS are also regulated tariffs. The tariffs regulated by EMRA are stated in the Law No: 4628 as follows;

- Connection and use of system tariffs,
- Transmission tariff,
- TETAS wholesale tariff,
- Distribution tariffs,
- Retail tariffs applicable to non-eligible consumers.

The licensees subject to tariff regulation shall prepare and submit to the Authority for Board approval their tariff proposals that include the prices to be effective in the following year and the applicable procedures and principles as per the provisions of the applicable legislation by the end of October every year.

The examination and evaluation of the tariff proposals shall be completed by the Authority before December 31 of the current year. If the tariff proposal is deemed appropriate, the tariffs proposals shall be approved. The tariffs approved shall be effective for the tariff period between January 1 and December 31 of the following year. The tariff methodologies adopted by EMRA are shown in the table hereunder;

ELECTRICITY MARKET TARIFF METHODOLOGY			
ACTIVITY	METHODOLOGY	ACTIVITY	METHODOLOGY
Transmission	Revenue Cap	Retail Sales Services	Hybrid
Distribution	Revenue Cap	Wholesale	Cost-plus
Retail	Hybrid	Connection	Project-based



Natural Gas Market

1- General Framework

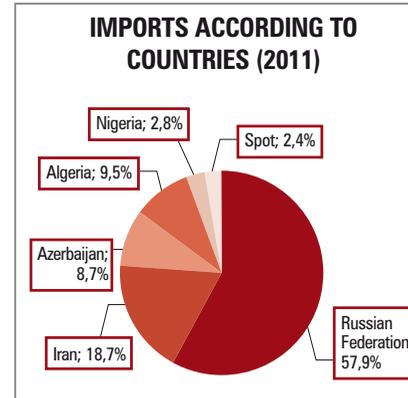
The role of natural gas in meeting Turkey's growing energy need is becoming increasingly important. Natural gas has become the fuel of choice in industrial and household consumption as well as in power generation.

In parallel to the liberalization process in electricity market, the natural gas market has also undergone a tremendous reform process at the outset of the first decade of the new millennium and Natural Gas Market Law was enacted in 2001 to lay the foundations for the reform and restructuring process. The objectives of the new legal system includes establishing a competitive natural gas market, reduce the share of state-owned enterprises within the market, and harmonization of the domestic legal framework with that of EU's.

The new market framework includes rules regarding the transparent market entry conditions as well as non-discriminatory TPA to the gas infrastructure and the extension of EMRA's responsibilities to cover regulations in natural gas market as well. Considerable steps have been taken to establish a truly competitive gas market thanks to enactment of the secondary legislation and its implementation by EMRA. It is confirmed by IEA that the domestic rules and regulations are in compliance with the EU directives although there are some delays in reducing BOTAS's market share and dominant position (IEA, 2010).

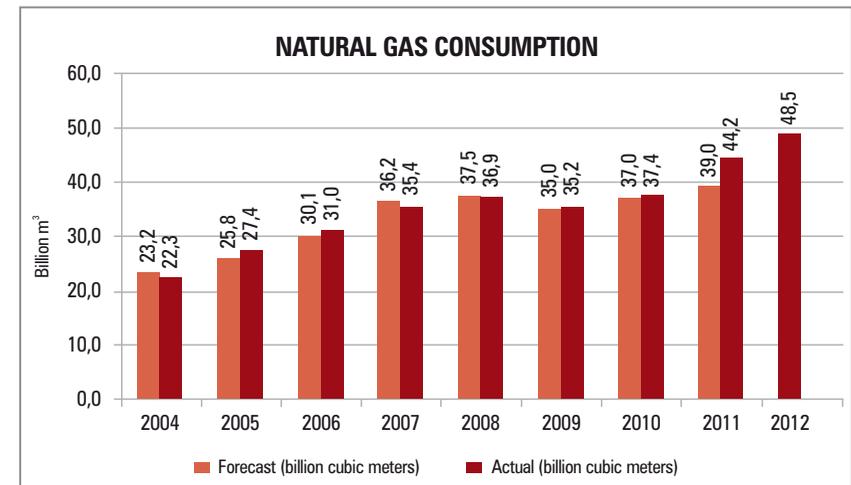
IMPORT CONTRACTS

	VOLUME (bcm/year)	DATE	DURATION (Year)
Russian Federation (West)	6	14 Feb 86	25
Algeria (LNG)	4	14 Apr 88	20
Nigeria (LNG)	1,2	9 Nov 95	22
Iran	10	8 Aug 96	25
Russian Federation (Blue Stream)	16	14 Dec 97	25
Russian Federation (West)	8	18 Feb 98	23
Turkmenistan	16	21 May 99	30
Azerbaijan	6,6	12 Mar 01	-

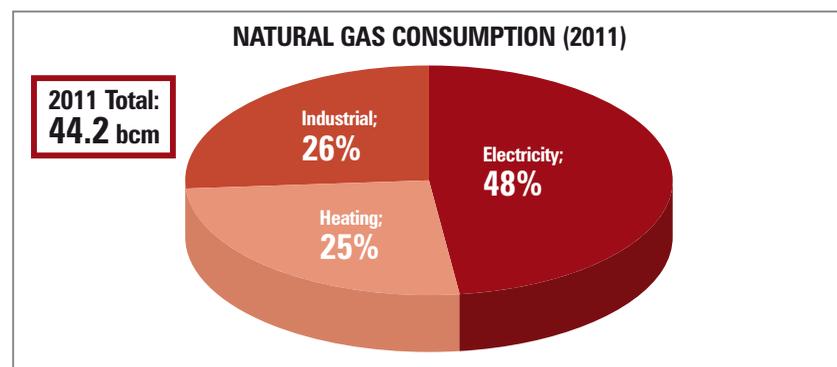


The consumption of natural gas in Turkey has become increasingly widespread since its inception in 1987. The share of natural gas in total primary energy supply reached at 32% in 2010 outstripping the share of oil (MENR, 2012). With its 44,2 billion cubic meters consumption in 2011, Turkey became a large and promising gas market in its region not only for the exporting countries to monetize their gas production but also for the potential investors with tremendous investment opportunities. As an import dependent country, Turkey imports natural gas from Russia, Iran and

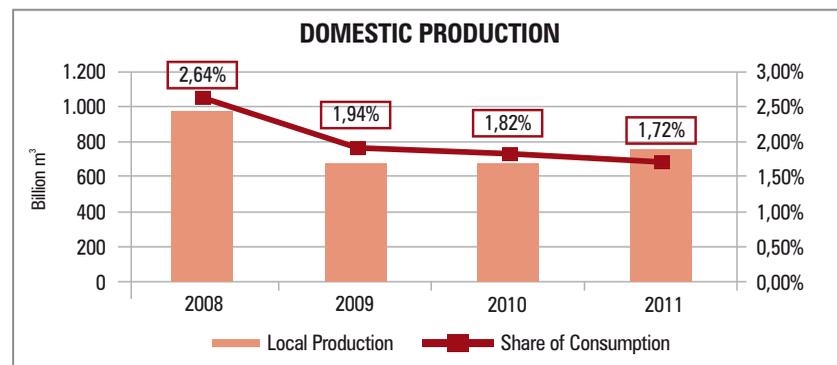
Azerbaijan via pipelines and from Nigeria and Algeria in the form of LNG. In addition to this, LNG is being imported from the international spot markets by spot-LNG license holders. According to EMRA estimates, 48.5 bcm natural gas will be consumed in Turkey in 2012 by various economic actors. It is eye-catching that, as for 2011, approximately 58% of imported gas has been originated from Russian Federation.



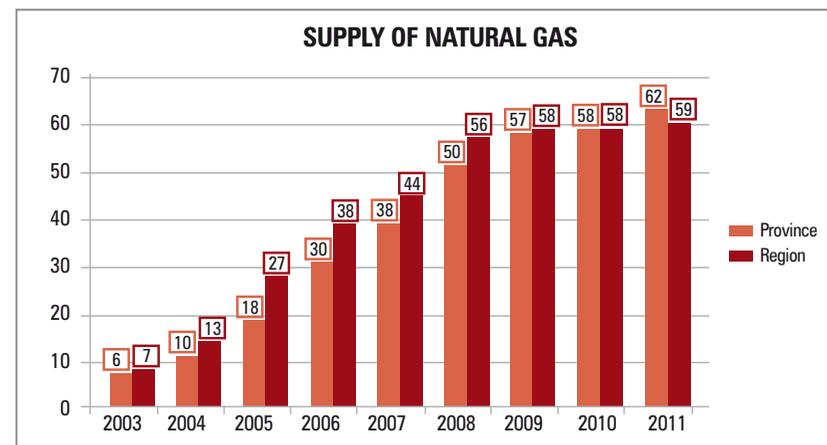
Natural gas plays a particularly important role in power generation: In 2011, almost 48% of total gas demand was used in gas-fired power plants (EMRA, 2012). That is, natural gas and electricity markets in Turkey have become inexorably intertwined. The expected grow in electricity demand is likely to increase the gas demand as well and in order to get the growing gas demand met, huge levels of investments are required such that vast amounts of gas has to be imported and shipped to Turkey just before marketed to the final customers.



As already mentioned, Turkey does not hold sufficient levels of gas reserves thus depends on imports to meet its domestic gas demand. For the last several years, the domestic production has revolved around just below 1 bcm corresponding to less than 2% of domestic consumption.

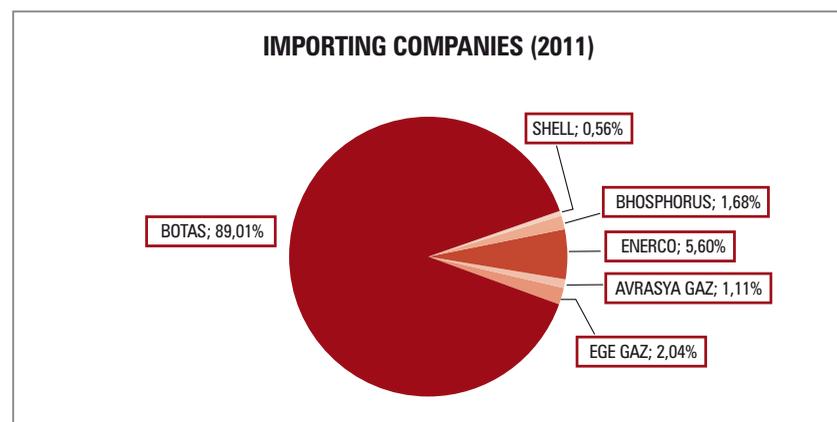


In addition to its growing use in power generation, natural gas has also become increasingly available for district heating and other household consumption. Especially after the enactment of Law 4646, EMRA has successfully implemented a unique auction model in order to expand the usage of gas in district heating. Thanks to this model, as of 2011, auctions have been completed for 55 regions and together with the existing 7 regions that already had gas supplies before the enactment of the Law, 62 companies in total have been granted distribution licenses by EMRA to conduct natural gas distribution and retail sales activities in their respective regions and in 59 of them natural gas service has already started. Overall, natural gas is being supplied in 62 out of 81 provinces of Turkey. Private investors are operating in all but two regions for which the privatization process is underway.



The transfer of gas contracts envisaged by Law to reduce the market share of BOTAS has partially been accomplished. In this context, 4 BCM contract with Russia has been transferred to private sector. Studies are being made by government officials to transfer further amounts of gas contracts to private companies. In addition to that, the imports of LNG have been liberalized in 9/7/2008 and spot LNG imports have been taken under EMRA's regulation in order to introduce further competition in natural gas market. According to this regulation, 30 companies including BOTAS were granted LNG import licenses as of April 2012 (EMRA, 2012). Turkey hosts two LNG re-gasification terminals owned by BOTAS and a private company. Having in mind the fact that 80% of total gas demand is eligible to choose their suppliers, it becomes clear that the potential market that the private suppliers with import

licenses face is vast in amount. In this context, an obvious decline in the market share of BOTAS during the recent years is observed and the domestic sales made by BOTAS have dropped considerably between 2007 and 2011 in favor of private sector.



Being aware of the fact that in a competitive gas market, nondiscriminatory TPA to natural monopolistic infrastructure services is as crucial as in the electricity markets, EMRA has been taking progressive steps in this field. In addition to the regulations on access conditions to BOTAS transmission infrastructure, access to LNG terminals is subject to TPA rules stated in EMRA regulations. Regulation on the Utilization of the Natural Gas Storage Facilities, on the other hand, was published by EMRA in June 4th, 2011.

Thanks to her geographic location and stable and growing economy as well as energy markets, Turkey has a great potential in taking up important roles in her region. In this context, Turkey has a central role in international and regional gas projects aimed at providing Europe with alternative gas supply routes. Realization of these projects not only contribute both EU's and Turkey's security of supply, but also confirms that the development of a liberalized and competitive gas market in Turkey is met with great appreciation and confidence by international investors and foreign policymakers alike. Another factor contributing investors' willingness to invest in Turkey is the fact that Turkey has, to a large extent, harmonized its legal framework in gas market with the EU who has one of the most competitive energy markets throughout the world.

2- Licensing

Similar to the electricity market, it is obligatory to get a license from EMRA for the legal persons willing to operate in the natural gas market. The types of licenses, activities to be performed within the scope of the licenses and the general provisions that the licenses shall be subject to are set forth in the Law No: 4646. The details for licensing are explained in the Natural Gas Market Licensing Regulation approved by the Board. Accordingly the types of licenses in the natural gas market are as follows;

- Import license,
- Transmission license,
- Storage license,
- Wholesale license,
- Export license,
- In-city distribution license,
- Compressed natural gas distribution and transport license.

As of the end of 2011, number of licenses according to their types is given in the table below.

	TYPE OF LICENSE	NUMBER
1	Import	42
	Long Term	12
	Spor LNG	30
2	Export	4
3	Whole sale	37
4	Storage	4
5	Transmission	1
6	Transmission (LNG)	22
	Compressed Natural Gas (CNG)	71
	CNG Sale	46
	CNG Transmission and Distribution	25
8	Distributor	62
	TOTAL	243

All legal persons shall obtain separate licenses for each activity they are engaged in and for each facility where the same activity is conducted. Besides, all legal persons holding more than one license or the legal persons performing the same activity in more than one facility are obliged to keep separate accounts and registers for each licensed activity or facility.

It should be mentioned that, the legal persons to be engaged in licensed activities in the natural gas market are required to have been established as joint stock or limited liability companies in accordance with the provisions of the Turkish Commercial Code no. 6762 and the shares of the joint stock companies except for the ones traded on the stock exchange must be registered.

a) Import License:

Turkey meets a significant amount of its natural gas demand through imports from third countries. Thus, the import activity is very important for the country and for the formation of a well-functioning market structure. As mentioned before, natural gas is imported both through pipelines and in the form of LNG. As of March 2012, 42 import licenses have been granted by EMRA. These include both the companies importing through pipelines and the legal persons importing LNG through long-term LNG contracts and from the spot LNG market.

EMRA takes into consideration the following criteria when granting import licenses:

- 1- Having the required technical and economic capability to make imports,
- 2- Making available the exact information and guarantee on the origin, reserve, production facilities and transmission system of the natural gas to be imported,
- 3- Having obtained such commitment and guarantees as required by EMRA from the legal entities which shall conduct storage activity concerning the ability to store an amount corresponding to 10% of the natural gas to be imported every year, in the national territory for five years,
- 4- Having the capability to contribute to the improvement and security of the national transmission system and financially contribute to the investments of the legal persons who improve the system.

As per the provisional Article 2 of the Law no: 4646, no new gas purchase contracts can be executed by any import company with the countries which has already signed contracts with

BOTAS, until the expiration of the term of these contracts. As per the same article, EMRA Board may give permission for import from the countries other than those with which contracts have already been executed by BOTAS by evaluating the applications within the framework of the procedures and principles to be determined by taking into consideration the formation of a competitive environment in the market, the obligations arising from existing contracts and export connections. Such principles and procedures are set forth by the Board by Decision no: 725. However, in cases where there is a natural gas supply deficit new gas purchase connections can be made with the countries with existing contracts. .

These constraints which used to be applicable for LNG imports were eliminated in 2008 with an amendment to the Law and LNG imports were liberalized for any import sources.

Import companies operating within the scope of the import licenses granted by EMRA may transfer the imported natural gas to wholesale or export companies within the country through sales contracts or sell to the eligible consumers or export with an export license. In addition, the annual natural gas amount imported by any import company may not exceed twenty percent of the national natural gas consumption forecast for the current year determined by the Authority.

As mentioned before, Law 4646 does not allow new import contracts with countries that BOTAS already had existing contracts. However, the number of companies that bring gas to Turkey has increased to 6 thanks to the contract transfers made in 2005 and LNG imports made by EGEGAZ. Last point that is noteworthy about the gas imports is the fact that according to the Board Decision 725, the affirmative opinion of BOTAS is required in order to conclude the import license applications intending to import gas from countries which BOTAS does not have an existing contract. .

b) Transmission License:

Transmission activity is defined in Law no: 4646 as the transport of natural gas through gathering lines used for production purposes and gas pipeline network excepting the distribution Networks or LNG transport vehicles.

Transmission licensees shall be responsible for any planning and service required for the flow of natural gas and for the operation of the system under their responsibility. In addition, transmission companies are obliged by law to take any measures to ensure the secure, efficient and cost-effective transmission of gas on the lines under their responsibility.

Transmission companies operate by signing transport contracts with import, wholesale, production and export companies and delivery contracts with eligible consumers, production, storage and other transmission companies.

Transmission licensee shall, to the extent the system is available, connect any user, who wishes to be connected to the system, at the most convenient point on the network within twelve months, in accordance with the criteria defined by EMRA. Any disputes in this respect shall be settled by EMRA within the framework of the provisions in the Grid Code.

Law no: 4646 stipulates that the ownership of the existing transmission lines shall belong to BOTAS and makes it possible to construct new transmission lines by private companies. On the other hand, it is adopted that the third party access to the transmission lines to be operated by BOTAS will be made through regulated tariffs. Accordingly, principles of regulated third party access was prepared by BOTAS as Transmission Network Operation Regulation and approved by EMRA and put into effect on 1 September 2004. The first third party using BOTAS's transmission network and making transport other than BOTAS made access to the network in 2007.

c) Storage License:

Legal persons willing to engage in the activity of storing natural gas underground or on the ground in the form of gas or LNG are obliged to get a license from EMRA. EMRA takes into consideration the following criteria when granting storage licenses:

- 1- To have technical and economical capability to carry out storing,
- 2- To undertake to manage all the storage capacities under their possession in such manner as contributing to safe and coordinated operation of the system,
- 3- To undertake that the services to be extended by the storage facilities under their possession shall be rendered in non-discriminatory and equal way in so long as the system is available.

Storage licensees should perform their activities in a non-discriminatory manner. In this respect, in the event of the rejection of the requests made to the storage company and that the system user has informed EMRA of the situation, and in the event that EMRA discovers, by making necessary examinations and audits, that the storage company has breached the

license terms and the procedures and principles in effect, it may force the storage company to provide the requested service.

The only underground storage facility in Turkey belongs to TPAO and the principles and procedures for utilization was prepared by the facility owner on the basis of free access to the storage facilities in line with the provisions of the "Regulation on the Principles and Procedures for Utilization of Underground Storage Facility" published on 4.6.2011 by EMRA and it was approved by EMRA on 28.3.2012.

As per the Law no: 4646 both storage facilities and LNG terminals are regulated under the title of storage. In 2009 EMRA published the "Principles and Procedures for Basic Usage of LNG Storage Facilities" on the basis of open access. "Principles and Procedures for Usage" of the two existing LNG terminals owned by BOTAS and EGEGAZ was put into effect in 2010.

d) Wholesale License:

In the Law no: 4646 wholesale activity is defined as the sale of natural gas to distribution companies and eligible consumers and stipulates that the legal persons willing to engage in this activity are obliged to get a license from EMRA.

The legal entities willing to engage in wholesale activity must show evidence from where it shall procure the natural gas and by which transportation conditions it shall sell the natural gas, and prove that it has sufficient technical and economical power and necessary storage capacity for the purpose of operating the system safely and further provide other guarantees and undertakings stated in the regulations, in order to obtain license.

Wholesale companies operate by concluding sale contracts with import or export companies, eligible consumers or distribution companies. The prices for such contracts are determined freely among the parties. No wholesale company may sell natural gas in quantities higher than twenty percent of the estimated annual national consumption as determined and announced by EMRA for the current year.

The final issue about wholesale licenses is that; although import licensees may perform wholesale activity without getting a separate wholesale license, the wholesale licensees are obliged to get a license to perform import activity.

e) Export License:

Legal entities that wish to export the natural gas imported or produced within the country, to abroad shall obtain an export license from EMRA. The companies asking for a license should fulfill the conditions determined in the regulations to be issued and the following requirements:

- 1) To prove that it has technical and economical sufficiency,
- 2) To inform to which county and by which transportation vehicles it shall export the natural gas,
- 3) To provide guarantee to the effect that the export process will not intervene in the operation of the system nor satisfaction of the natural gas demand of the country and towards recovery of any loss or damage which may occur if the system security is violated by the company, and to provide insurance coverage as compulsory for the loss and damage defined in this paragraph.

f) In-city distribution license:

The in-city natural gas distribution service shall be granted to the company which wins the tender announced by EMRA within a license term to be determined by EMRA including the possession of the local natural gas distribution network taking into consideration some issues such as the development level of the city, the consumption capacity and the number of users.

Distribution companies shall, if requested by the consumers in the areas under their responsibility, connect such consumers to the system. However, the obligation to connect such consumers to the system shall depend on availability of capacity of the system and shall be subject to completion by the consumer of actions set forth in the Distribution and Customer Services Regulation and shall be based on technical and economic feasibility of such connection in accordance with the principles and procedures set forth in the applicable legislation. In the event of a dispute in that regard, EMRA Board shall decide whether the proposed connection is technically and economically feasible.

Although the regions where distribution companies may operate are restricted by two by the Law, EMRA using its powers entitled by the Law, has determined this number as 20 by taking into consideration some factors such as the development level of the city, the consumption capacity and the number of users.

g) Compressed natural gas (CNG) distribution and transport license

CNG licensees, based on the content of their respective licenses, may, throughout the country, perform the activities of compressing, filling into pressurized containers and selling of natural gas, transportation of compressed natural gas filled in pressurized containers by means of special vehicles between cities and selling of compressed natural gas by reducing its pressure at places where the transmission or distribution network does not reach.

3- Tariffs

The market model objected by the Law: 4646 envisages a competitive structure where the prices are determined in accordance with the supply and demand conditions. In this framework, it is envisaged that the natural gas sale is made basically through bilateral agreements. It is envisaged that in sectors where a competitive market structure is possible the prices are determined freely among the parties.

It is stated by law that EMRA makes tariff regulation in order to encourage the effective operation of the legal persons operating in the fields where a competitive structure is not possible due to natural monopolistic qualifications and to prevent excessive revenue. Retail tariffs applicable for non-eligible consumers are also regulated tariffs. The tariffs regulated by EMRA in the natural gas market are stated as follows in the Law no: 4646.

- Connection tariffs,
- Tariffs pertaining to the control of transmission and dispatch,
- Storage tariff,
- Wholesale tariff,
- Retail tariff.

When making tariff regulation in the natural gas market, EMRA takes into consideration the principles of provision of adequate amount of natural gas of good quality to consumers, at low cost, and in a safe and reliable manner, and principles of non-discrimination and transparency. The prices to be applied for the following period and the tariff proposals including the principles and procedures regarding the implementation of the tariff , together with the necessary information and documents are submitted to EMRA by the related license holders 90 days before the end the previous tariff period.

Natural Gas Market

EMRA determines the tariffs taking into consideration the financial data of the related legal persons and the tariff proposals thereof and the tariffs are approved by the Board. The approved tariffs are implemented by the related legal persons throughout the new tariff period. The principles and limits of tariffs may be rearranged by EMRA within the tariff period considering the inflation and other factors. As seen in the below table, revenue cap for transmission tariffs and price cap for distribution tariffs are adopted as methodology. In addition, prices and tariffs regarding the storage are being determined by EMRA until sufficient storage takes place within the country.

TYPE	APPLICATION PERIOD	METHODOLOGY
Transmission	3 years	Revenue cap
Distribution	5 years	Price cap

Another important issue to be mentioned about the tariffs is about the wholesale tariffs. With the Board Decision of EMRA dated 27.12.2007 and numbered 1439/2 the wholesale price implemented by BOTAS and other wholesale companies was set free for the year 2008. Then, for the purpose of eliminating the troubles in the financial structure of BOTAS, it was decided to arrange the prices of BOTAS within the framework of Automatic Pricing Mechanism with a decision of High Planning Council. After that decision, as a result of the studies of the Under-secretariat for Treasury it was envisaged that the wholesale price of BOTAS is determined by Under-secretariat for Treasury, High Planning Council and BOTAS and such price is updated by Automatic Pricing Mechanism. The Board continued the implementation of determining the wholesale tariffs freely among the parties by the decisions taken after 2008. The continuation of such implementation was adopted for 2012 by the Board Decision dated 22.12.2011 and numbered 3577.

The final issue to be mentioned about the natural gas tariffs is that; the tariffs which were determined by tenders (applicable for eight years) of the legal persons entitled to perform natural gas distribution within their respective regions comes to an end gradually and had to be replaced by a new tariff methodology. Regulation to this end has been introduced by EMRA at the end of 2011 and "Regulation on the Principles and Procedures for Tariff Calculation" was published in the Official Gazette and the ambiguity in some market players' minds was eliminated.

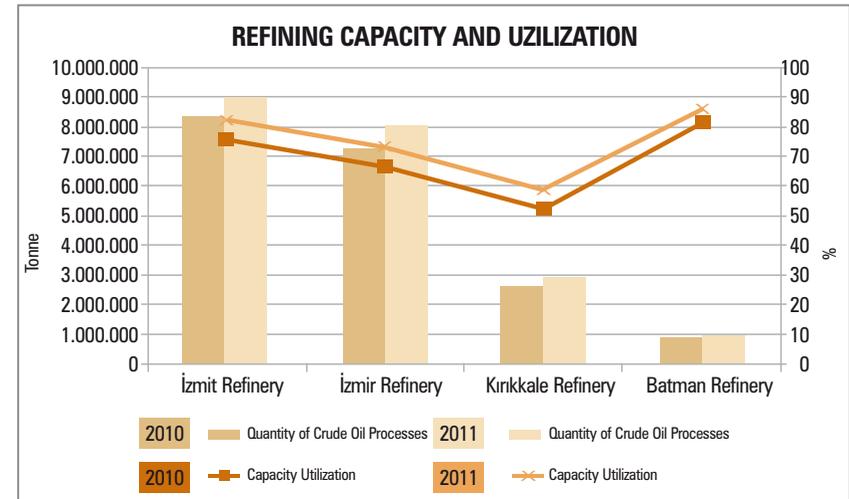
Oil and LPG Markets

1- General Framework

Oil and LPG markets in Turkey have been, to a considerable extent, open to competition and private participation for a long time. The first decade of the new millennium, however, witnessed further liberalization in these markets as a result of reforms in the energy markets in general that took place in this era. The existing, if any, restrictions have been eliminated to a great extent thanks to the enactment of Petroleum Market Law and LPG Market Law in 2003 and in 2005, Law No: 5015 and Law No:5307 respectively.

The market activities have been redefined by the new legal framework established by the aforementioned legislation and the activities within the value chain except production have been taken under EMRA's regulatory and supervisory jurisdiction. It is stipulated by Law that, companies willing to engage in market activities such as import, refining, transmission, storage, wholesale and retail sale should have licenses granted by EMRA and secondary legislation has been put into place by EMRA in order to establish a level playing field for all of the market participants. The most important novelty, among others, is the removal of restrictions on the price by 1/1/2005 and the price of oil products became completely demand and supply driven then on. Market participants have been licensed and registered to EMRA's records in order to create a transparent and competitive market structure. In this context 23,277 licenses, as of the end of 2011, in total have been given by EMRA to companies to conduct activities in oil and LPG markets. On the other hand, EMRA introduced a new auditing and inspection scheme based on national marker in order to prevent the unfair conditions in the market created by oil products brought into domestic market via illegal channels. Thanks to these new developments, oil and LPG markets in Turkey have become more stable and predictable thus attracted the interests of the existing and potential investors in its region with a high level of activity from a qualitative perspective.

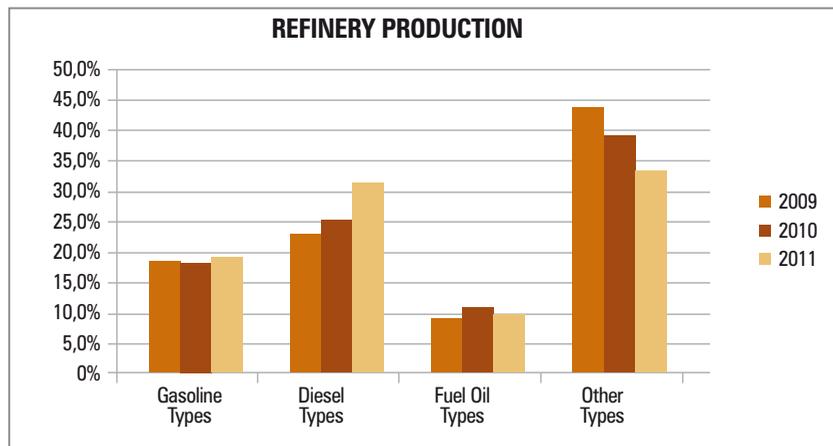
The volume of crude oil refined in Turkey in 2010 and 2011 was 19.2 and 21 million tons respectively. Given the total refinery capacity is 28.1million tons, it turns out that the capacity utilization was 68.4% and 74.7% in past two years. As for 2011, 18.1 million tons of crude oil processed by the domestic refineries was imported while the remainder 2.4 million tons was domestically produced.



An analysis of the product slate of the Turkish refineries reveals that there has been an increase in the production of gasoline and diesel types whereas the production of fuel-oil types and other finished products have been declining. The breakdown of the 20.9 million tons of finished products produced in the refineries was such that 4.3 million tons of gasoline types, 7 million tons of diesel types, 2.5 million tons of fuel-oil types and 7.2 million tons of other products such as LPG, jet fuel, etc. were obtained at the end of the refining process.

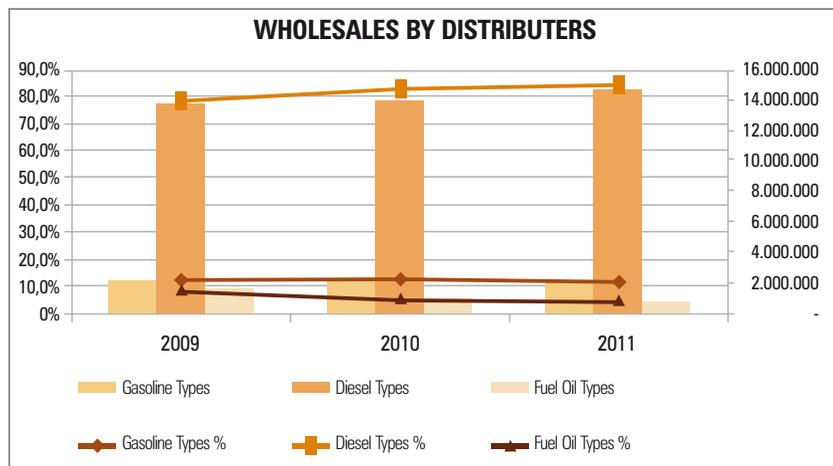
Refineries are also allowed to import and export petroleum products. Despite there is a sharp decline in the import volumes due to the fact that high-sulphur diesel was outlawed in Turkish domestic market, 1.6 million tons of petroleum products were imported by the refinery license holders in 2011. Exports, on the other hand, were 4.9 million tons in 2011.

REFINERY PRODUCTION



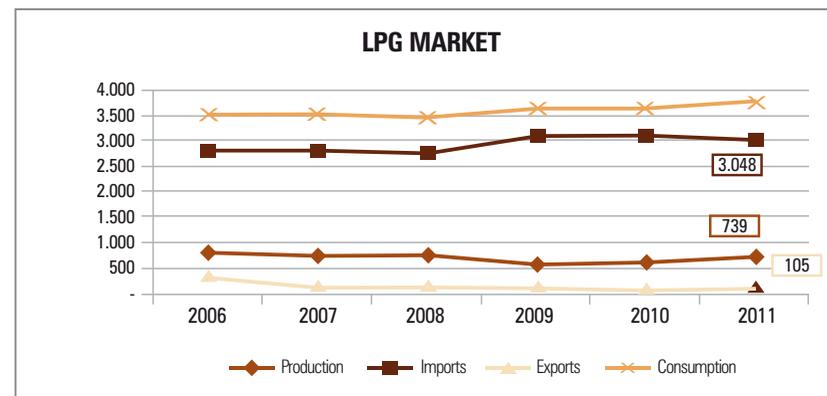
Petroleum distribution companies, who carry out the wholesale function in the market, obtained 10.3 million tons of petroleum products from the domestic refineries in 2011 while they imported 7.5 million tons from third countries during the same year. In return, their domestic sales exceeded 17.5 million tons in 2011 of which 2 million tons were gasoline types, 14.7 million tons were diesel types and 0.8 million tons were fuel-oil types (EMRA, 2012).

WHOLESALES BY DISTRIBUTERS



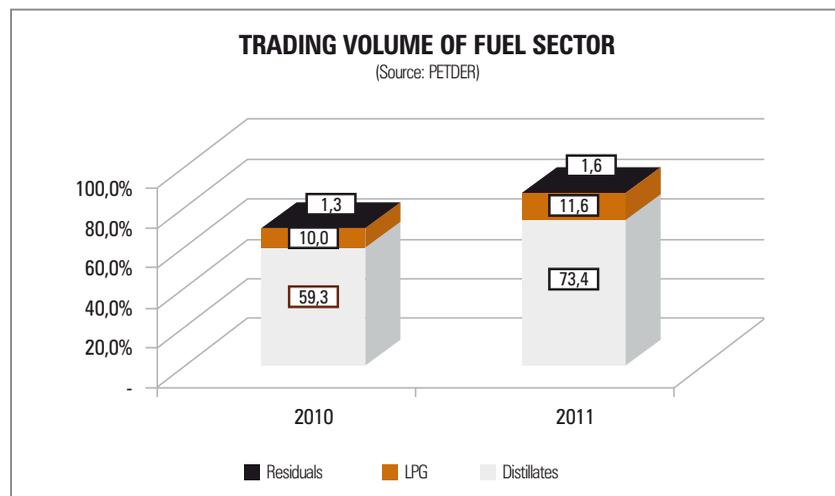
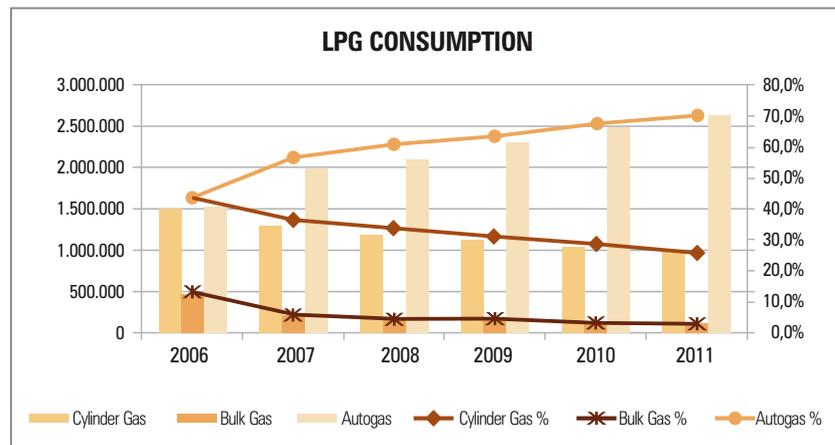
The production and consumption of LPG in 2011 was 739,421 tons and 3.7 million tons respectively. About 3 million tons of imports were originated from various different countries including Algeria, Kazakhstan, Russia, Norway and Nigeria (EMRA, 2012).

LPG MARKET



Turkish LPG market is among the most prominent in its region and in world LPG market with more than almost 4 million tons of annual consumption. Turkey is the biggest LPG market in Europe and second biggest after South Korea in the world in terms of LPG used in transportation sector and number of LPG-fuelled vehicle. There is no other country throughout the world that outstrips Turkish LPG market in terms of the number of retail stations (EMRA, 2010-2011).

The breakdown of LPG consumption in 2011 was such that 2.6 million tons out of the total 3.7 million was used for transportation purposes while the remainder was used for traditional purposes including cooking. A comparison between 2010 and 2011 volumes reveal that the LPG consumption for transportation purposes increased by 6% while use for traditional purposes has declined (EMRA, 2012).



The financial size of oil products and LPG markets in Turkey is also noteworthy. According to PETDER calculations, the overall size of oil products and LPG markets in 2009 was 51.4 billion TL. The financial size of the market was subject to a reduction by 10% in 2009 due to the negative effects of global financial crisis, however it is expected that it will recover as the

impact of the global crisis fade away. As a matter of fact, the recovery became noticeable as soon as 2010; according to the numbers revealed by PETDER as of the end of 2010 the financial size of the market increased by 14% compared to 2009 and reached at 75 billion TL. As of the end of 2011, on the other hand, the total financial size of the Turkish oil products market (including LPG) increased by 22.7% and reached at 86.6 billion TL (PETDER, 2012).

In addition to the developments in the domestic market, Turkey hosts two major international oil pipelines as well. Iraq-Turkey pipeline started its operations in 1977 and reached 1.4 mbd throughput capacity thanks to the capacity additions since its installment. The actual volume shipped through this line was 470,000 mbd on average in 2009 and it is expected to grow as the political and economic stability in Iraq is accomplished (IEA, 2010). The crude oil volume shipped through this pipeline was 144.5 million barrels in 2011. The second line is the BTC (Baku-Tbilisi-Ceyhan) crude oil pipeline that is used to ship oil from Azerbaijan and Kazakhstan to the world markets. Started its operations in 2006, this line, 1,760 km from Baku to Mediterranean port of Ceyhan, has a throughput capacity of 1.2 mbd. In addition to these pipelines, on an annual basis, 130-140 mbd of crude oil is being shipped to western markets through Turkish straits (IEA, 2010). Adding the planned Samsun-Ceyhan oil pipeline project into the picture further reveals the key role that Turkey has in transporting Caspian and Middle Eastern oil to the western markets.

Turkey is ambitiously willing to become a strong and reliable energy player in its region. To this end, regional and global energy projects have been embraced by Turkish policymakers and policies have been designed and implemented to make Turkey an energy hub. These policies proved fruitful and considerable steps have been taken, including the BTC project, to restructure Ceyhan region as an energy terminal. Ceyhan, as one of the exit windows of Turkey and her hinterland, is increasingly becoming an energy hub thanks to the existing and planned pipelines, refineries, storage facilities, and other infrastructure.

To wrap up, Turkish oil products and LPG markets are increasingly becoming more and more attractive for the domestic and foreign investors alike thanks to its growing volume and enhancing competitive structure. In addition to the existing refinery company TUPRAS, two companies were granted licenses to build refineries. As of April 2012, 46 domestic and foreign companies hold wholesale licenses and continue their activities within the market. Similarly, the number of wholesale license holding companies reached at 70 in LPG market as of April 2012. The fact that the new liberalized structure of the market and regulatory framework established in compliance with this competitive nature has been truly embraced by the market

participants reveals the strengths of Turkish oil products and LPG markets in maintaining its attractive status for the potential investors.

One of the worth-mentioning developments in Turkish oil market in 2011 was the introduction of the automation systems in the gasoline stations. In addition to that, high-sulphur diesel has been outlawed in the national market. Not but last least, EMRA introduced a new regulation which stipulates the addition of bio-ethanol and biodiesel to the regular gasoline and diesel fuels at certain minimum levels. According to the new regulation; ethanol produced from domestic agricultural products has to be mixed with gasoline at minimum 2 percent and 3 percent level as of 2013 and 2014. Similarly, fatty-acid methyl ester (FAME) produced from domestic agricultural products has to be mixed with gasoline at minimum 1 percent, 2 percent and 3 percent level as of 2014, 2015 and 2016 respectively.

2- Licensing

Similar to the electricity and natural gas markets, real and legal persons willing to operate in petroleum and LPG markets are obliged to get license from EMRA.

The types of licenses can be granted in petroleum and LPG markets, activities to be performed within the scope of the licenses and the provisions to which the licenses shall be subject are set forth in Laws no: 5015 and 5307. The details of licensing are determined in the Petroleum Market Licensing Regulation and LPG Market Licensing Regulation issued by EMRA. Accordingly, the types of licenses in the petroleum and LPG markets are as follows;

Regarding the Petroleum Market:

- Refining license,
- Processing license,
- Lubricants production license,
- Storage license,
- Transmission license,
- Eligible consumer license,
- Bunker license,
- Liquid fuel distribution license,
- Transport license,
- Retail service station license.

Regarding the LPG Market:

- Distribution license,
- Transport license,
- Retail service station license,
- Storage license,
- Production, filling, examination, repair and maintenance of LPG tubes.

The rights and liabilities of both petroleum and LPG market licensees are defined in Laws no: 5015 and 5307 and the secondary legislation issued by EMRA. Although the details will not be mentioned here, the abovementioned regulations are organized as refining-distribution-retail in line with the requirements of the value chain in petroleum and LPG markets. In line with this structure, liquid fuel and/or LPG are produced domestically in the refineries or imported, delivered to the retail service stations through distribution companies and supplied to the consumers via these stations.

3- Tariffs:

It is adopted as a general principle by the Law no: 5015 that the prices in the petroleum trade are formed according to the nearest accessible world liberal market conditions. Prices pertaining to the market activities conducted within the scope of refining undertaking and distributor license are notified to the Authority as price caps taking into consideration the formations in the nearest accessible liberal world market.

Regarding the goods and/or services supplied in the petroleum market, the principle of tariff is applied for the activities within the scope of transmission, storage, refining undertaking and distribution licenses. Price list is applied for the activities within the scope of the processing license. Price notification is applied for the activities within the scope of the retailer (with station) licenses.

Besides, EMRA may decide on the implementation of one of the principles of tariff, price list or price notification for all or a part of the activities within the scope of transportation, bunker delivery, naphtha and retail (without station) licenses. Similarly, EMRA may decide on the exemption of price list principle or implementation of price notification for all or some of the activities within the scope of processing licenses.

Oil and LPG Markets

Prices in the petroleum market are basically determined freely among the parties. However, in some cases, EMRA's approval is obligatory in terms of notification and effectiveness of the notified prices.

Although the general rules are such, the Law no: 5015 adopts an exceptional case and entitles the Authority to directly intervene with the prices under certain conditions and for limited periods. Accordingly, in case agreements or actions aiming to or possible to hinder, violate or strain the activities or competition in the petroleum market cause effects violating the market structure, together with the commencement of the necessary procedures, EMRA is entitled by Law to take any measures and determine the base price and/or price cap to be implemented on regional or national level for each phase of the activities not exceeding two month on each time.

Similarly, it is adopted by the Law no: 5307 that the prices in the LPG market are formed according to the accessible liberal world market conditions. Accordingly, refining undertakings and distributors are liable to notify EMRA of their prices regarding their licensed activities as price caps by taking into consideration the price formations in the accessible liberal world markets. The authority of EMRA to directly intervene with the prices under certain conditions and with limited periods is applicable also to the LPG market.



Green Opportunities

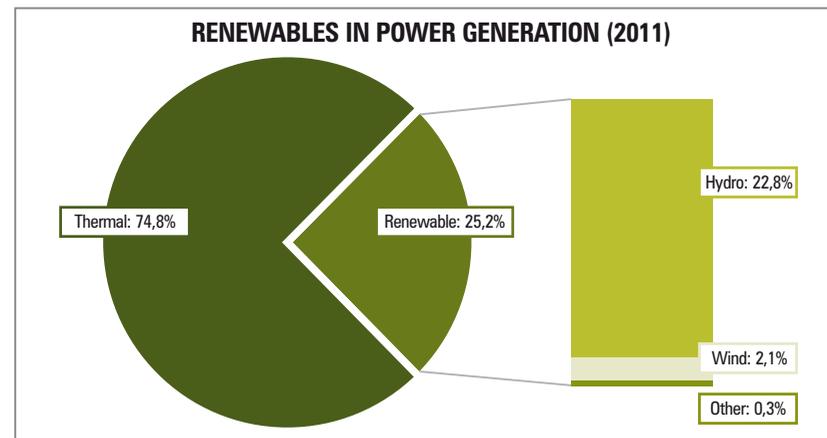
1- General Framework

Although Turkey is very rich in renewables potential, few of this potential has been utilized so far. The green opportunities has become one of the hottest topics in Turkey since renewables are considered not only as a way of mitigating import dependency in energy resources but also as a part of finding solutions to environmental problems such as global warming.

The share of renewables in TPES declined to 9.4% as of 2009 from 17% in mid-1990s and realized as 9.6% as of the end of 2011 (MENR, 2012). Two of the most important reasons explaining this reduction is the sharp decline in the traditional usage of biomass and the natural gas' increasing use in power generation. Biomass and hydropower are the two major types of renewable sources commonly used in Turkey in addition to the rarer uses of other types such as geothermal, wind and solar.

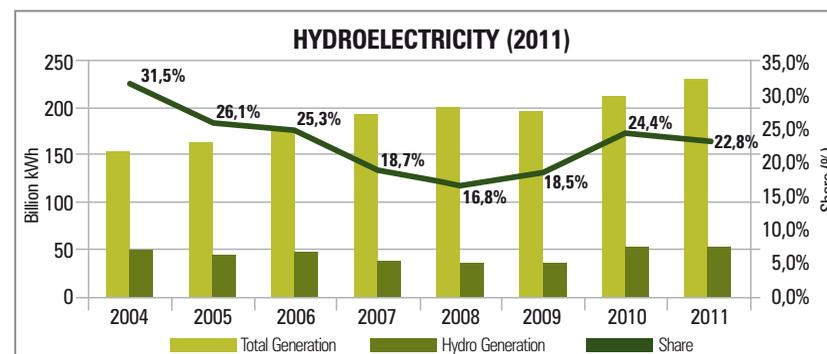
TYPE	POTENTIAL	IN OPERATION
Hydro	45.000 MW	17359,3 MW
Wind	48.000 MW	1792,7 MW
Solar	300 TWh/yl	-
Geothermal	600 MW	114,2 MW
Biomass	17 MTEP	117,4 MW

In parallel to the decrease in the share of renewables in TPES, its share in electricity production dropped to 26.3% in 2010 from its 40% level. Despite the increase in the volume of electricity produced by wind, the share of renewables in power generation has been 25.2% in 2011.

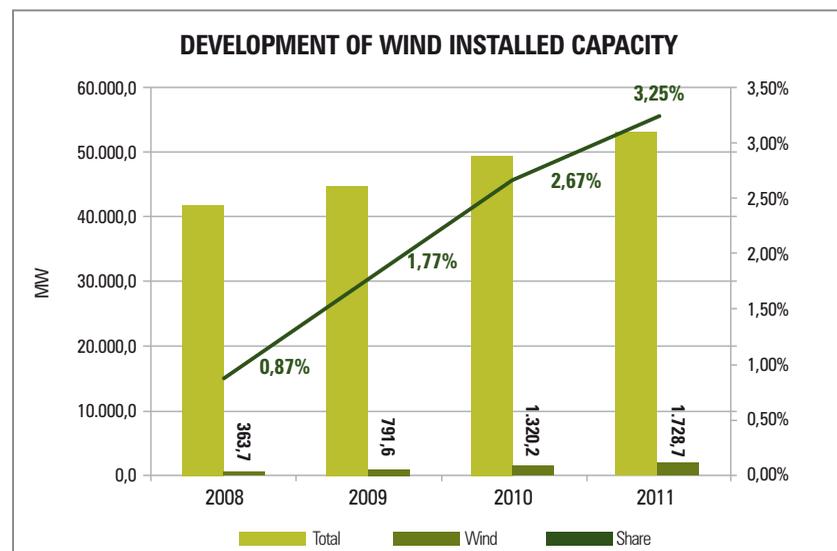


Turkey was, among 28 members of IEA, tenth in terms of share of renewables in TPES (9.5%) as of 2008 and 12th in terms of share of renewables in power generation as of 2009. Thanks to the increase in the use of hydro and wind power in 2010, the share of renewables in total electricity production went up by more than 7 points in 2010 and dropped by around 1 percent in 2011.

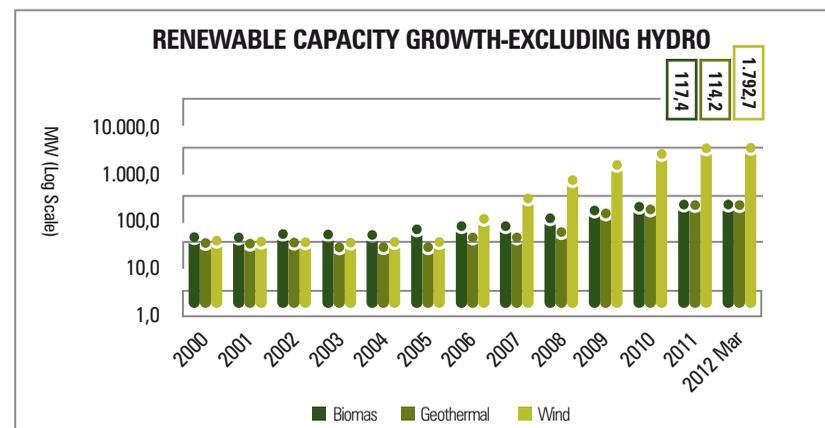
Corresponding to 57.6 TWh power generation, this amount is composed of 90.5% hydropower and 8.3% wind power, remainder being almost completely biogas and geothermal (EMRA, 2012). The development of power generation based on hydro resources and wind power capacity is shown in the blow graphs.



2010, the share of renewables in total electricity production went up by more than 7 points in 2010 and dropped by around 1 percent in 2011.



Turkish policymakers have adopted the objective to increase the share of renewables, which had declined due to the sharp decrease in the usage of traditional biomass and replacement of hydropower in electricity generation by other forms of power generation, by increasingly utilizing the so called new-generation renewable sources such as wind, geothermal and solar while totally exhausting the country's hydro potential at the same time.



The EU has committed itself to increase the share of renewables in total primary energy and in transportation to 20% and 10% respectively by 2020. To this end, 62% of the additions to the overall Installed capacity within the 27 members of the Union was renewables-based in 2009, 60% of this total being wind power. In other words, 38% of capacity additions was wind-based in EU in 2009 making wind power the fuel of choice, for a second consecutive year, in the Union (EC, 2010). The European Commission estimates that in order to meet the aforementioned targets by 2020, it would be necessary to increase the share of renewables in power generation to 35 to 40% (EC, 2010).

Similarly, Turkey has also adopted concrete targets to increase the share of renewables as well as introduced progressive legislation to set up a favorable legal and regulatory framework that would eventually pave the way for an increased utilization of renewables. In general, Electricity Market and Security of Supply Strategy Paper (2009) stipulates that the share of renewables in power generation will reach at least 30% by 2023. Furthermore, it is also set forth within the same document that by 2023 technologically and economically feasible hydro potential will be totally exhausted (approximately 140 TWh); the wind power capacity will reach at 20,000 MW; 600 MW geothermal potential will come online; and the necessary steps will be taken to promote electricity generation based on solar energy. Thanks to these targets and consequent initiatives, the wind power capacity exceeded 1,793 MW as of March 2012 from an almost zero level in 2002, and 2.140 MW capacity based on renewables was added to country's installed capacity during the past two years (TEIAS, 2012).

Having in mind that the government incentives are an indispensable part of any renewable energy scheme for the time being, Turkish Parliament passed the Law 5346 to incentivize the usage of renewable sources in power generation. Based on this legislation, the incentives for the use of renewables in power generation include Feed-in-Tariffs, purchase guarantees connection priorities, lower license fees, license exemptions in exceptional circumstances and various practical conveniences in project preparation and land acquisition. Efforts are ongoing to further enhance the investment framework in renewables sector and to further increase the share of renewables in compliance with the targets set by the Strategy Paper. In fact, an amendment to Law No 5346 has already been made at the end of 2010 which includes a differentiated and adequate level of Feed-in-Tariff scheme for different types that eventually provide the investors with fair and timely returns on their investment.

2- Licensing

Generation facilities based on renewable energy resources should first of all get a generation license from EMRA as per the Law No: 4628. If such legal persons would like to benefit from the support mechanism they should get a "Renewable Energy Resource Certificate" from EMRA. EMRA put into effect the Regulation on Certification and Support of Renewable Energy Resources on 21.7.2011 to set forth the principles and procedures regarding the RES Certificate.

Generation companies willing to benefit from the support mechanism should apply to EMRA until 31st October in case they would like to register to the system for the following calendar year. After the review and evaluation of the applications, the appropriate ones are notified within the first ten days of November and the final list is published by EMRA till 30th November.

It is determined in the Law no: 5346 who may benefit from the support mechanism and for which duration. Accordingly;

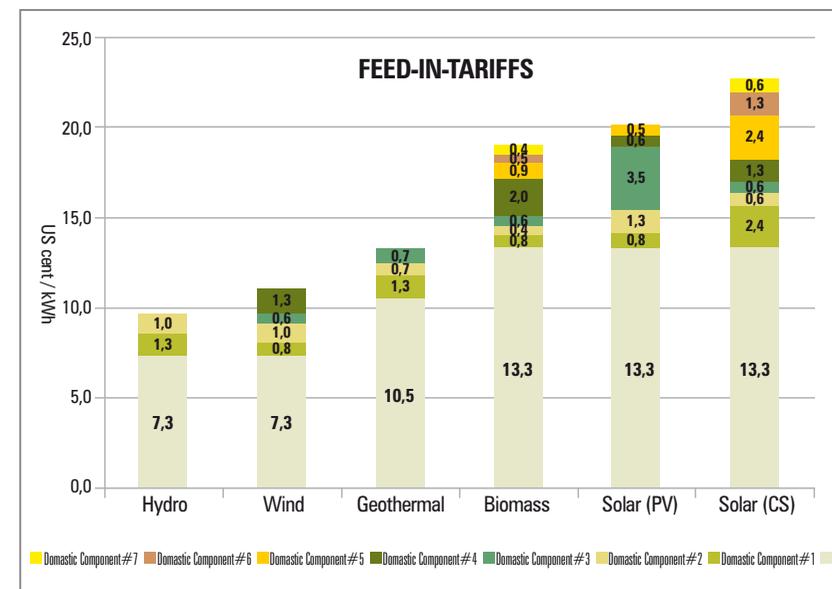
Legal persons holding generation license whose renewable energy based facilities are in or will be in operation from 18.5.2005 to 31.12 2015, may benefit from the support mechanism for 10 years starting from the date of taking into operation of their facilities. For the facilities to be operational after that date, the amounts, price, duration and resources shall be determined by the Board of Ministers not exceeding the current levels.

By considering some technical constraints, it is determined that the total installed capacity of

the RES Certificated generation facilities based on solar power to be connected to the transmission system until 31/12/2013 shall not exceed 600 MW. Board of Ministers is entitled to determine the total installed capacity for the RES Certificated generation facilities based on solar power to be connected to the transmission system after that date.

3- Tariffs

As mentioned earlier, the support mechanism put into effect by the Law No: 5346 includes a differentiated tariff support system for different renewable energy resources. Such tariff support is taken under guarantee by law in terms of US-cent and per KWh electricity generated. Basically, in addition to the guaranteed tariff countervailing the electricity generated, in case the equipment used in the establishment of the generation facilities based on renewable energy resources are domestically produced, some additional tariff supports are provided to the RES certificate holding generators. Data pertaining to the basic and additional tariff support are shown in the table hereunder;



4- Non-License Generation:

In the third paragraph of the Article 3 of the Law No:4628, it is stipulated that the real and legal persons establishing generation facilities based on renewable energy resources with an installed capacity of below 500 kW and micro- cogeneration facilities are not obliged to get license or establish a company.

Law No: 5346 named the electricity generated by such persons as "exempted generation" and stipulated that in case such persons give the excess electricity power to the distribution system, they can use the basic tariff support for ten years. The electricity power given to the distribution system should be purchased by the distribution company holding retail license and electricity power purchased within that scope by the related companies shall be deemed as generated within the scope of RES support mechanism and given to the system.

Non-license electricity generation can be analyzed in three broad categories and the fundamentals of these categories are comparatively given in the figure below.

1-Cogeneration

- ❖ No licence requirement,
- ❖ No corporation requirement,
- ❖ No capacity constraint,
- ❖ No energy given to the system,
- ❖ Efficiency: 80%.

2-Micro-Cogeneration

- ❖ No licence requirement,
- ❖ No corporation requirement,
- ❖ Capacity constraint: 50KW,
- ❖ Corporations can sell extra-production whereas non-corporations cannot,
- ❖ Price for extra enegy: Min. Base FIT.

3-500 KW Exemption

- ❖ No licence requirement,
- ❖ No corporation requirement,
- ❖ Capacity constraint: 50KW,
- ❖ Both corporations and non-corporations can sell extra production.
- ❖ Price for extra enegy: Both Base FIT and Extra FIT for domestically manufactured equipment apply.



Conclusion

Turkish energy markets have been undergoing tremendous changes in the last decade. These include liberalization, opening up to private participation and restructuring to establish a competitive market. Having witnessed a sharp and continuous increase in almost all forms of energy demand, the economy is in need of vast amounts of investment to meet this growing demand. Turkish policymakers have top-prioritized the increasing role of private sector in making the necessary investments in the energy sector to meet the growing demand.

To this end, a very favorable investment environment has been established and the necessary legal and regulatory steps have been taken.

Turkey still lags behind the developed countries in terms energy consumption per capita. With its rapid and stable economic growth, Turkey is expected to catch up with the developing world in per capita energy consumption in the foreseeable future since higher levels of per capita energy consumption is one of the major tenets of the developed economies. In order to reach advanced levels of per capita energy consumption, Turkey needs vast amounts of infrastructure to be built and the financial resources to fund the necessary investments to get these projects on line. In full concert with Turkish policymakers' priorities and policy goals, these investments are increasingly being financed by private sector in a fully competitive, transparent and highly predictable market structure.

Owing to the ongoing reform process, the energy sector has become the rising star of Turkish economy and an attractive venue for potential investors. The policies adopted and the espoused principles paved the way for a more transparent and predictable investment environment in Turkish energy sector. The commitment to the reform process has been repeatedly announced by Turkish policymakers at every level in every instance. One of the decisive features of the success of the reform process has been the commitment of the Turkish policymakers and their insistence on the rapid application of the adopted rules and regulations.

The investment opportunities created by the reform process is too attractive for the potential investors to ignore. The massive interest and the involvement of the domestic and foreign investors in Turkish energy markets during the last decade further confirms the fact that the process has been managed in an insightful and insistent manner.

