

ELECTRICAL ENERGY MARKETS IN TURKEY

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ABSTRACT

A process which has preformed liberalization in the economic areas, is still going on. During this process, the companies which work according to the rules of the free market incur into an international competition. Because of these developments, since from 1980's, Turkey has gotten into a changing process. Wide-ranging reforms have been started to create a permanent and stable environment in the national economy.

During the structural reform process, one of the most important corner stones is energy market. Energy Market Regulatory Authority (EMRA) was established to lay the groundwork for implementing the management principles by Law No 4628. The important applications have been implemented in this reform process.

In this paper, the reforms which are applied to electrical energy market in Turkey are discussed.

Keywords: Energy Market Regulatory Authority, The free market economy,

1. INTRODUCTION

Energy is one of the most important parameters in the development of countries. Electrical energy market is approximately 3 percent of the gross domestic product (GDP) in Turkey. The annual average growth rate of this sector is 6.3-8.4 percent. In order to cover the demand, the private sector years to make investments in this sector. Therefore, the process of transition of a competitive market structure is maintained. The purpose of this process is to increase the competitive power of industry and to decrease the electricity price.

Electrical Energy Market Reform in Turkey inured with Law No 4628 Electricity Market Law on 3rd March 2001. This reform package is important for the adaptation of *acquis communautaire* and energy legislation. The aim of this reform is giving the consumer the right to choose suppliers in a competitive market structure, providing quality, continuous, cheap and environmentally-conscious services of the production, transmission, distribution and sale of electricity.

In this context, in order to cover these investments by private sector without any burden to the public finance, competition should be created in the electrical energy sector. For the public to look after the power supply security by fulfilling the supervision and inspection activities effectively speeding up privatization of the state owned facilities is needed. The privatization of the state owned facilities is an instrument for the transition to competitive electricity market. In the process of becoming an EU member, it is unavoidable for Turkey to be integrated to EU domestic market and to grow the electrical energy market according to regional market developments. In view of this development, it is needed that the market participants perceive the market risks, implement the new business models against these risks and use the risk protecting instruments. This paper consists of the demand development, investment need, reform process and results.

2. DEMAND DEVELOPMENT AND INVESTMENT NEED

2.1 Demand Development

The basis of the making decision process in the market activities constitutes the demand estimations. According to electrical market regulation, electrical energy demand estimation has to get with combining the demand fore castings which are done by the local utilities. However, in the application, it is computed MAED (model for analysis of energy demand) which is used by Ministry of Energy and Natural Resources and Electricity Generation Utility. According to this computation, 174 billion kWh gross demands had been realized in 2006. In 2015, if we assume that annual growth rate is 6.3 percent, it is predicted that the gross demand will become 297 billion kWh, , if annual growth rate is 8.4 percent, it is predicted that the gross demand will become 354 billion kWh.

Per capita electrical energy consumption, a parameter of development, was 2400 kWh in 2006. This value is equal to 40 percent of EU's. In 2020, it is predicted that per capita electrical energy consumption will be equal to today's value of EU's. It shows that there is a big energy demand potential in Turkey. However, all previsions is done that, between 2006 and 2010, annual average of the economical growth rate is assumed 5.5%, population increase is assumed 1.4%, between 2010 and 2015, these rates are assumed 6.4% and 1.2%. In figure 1, the relation between the economical growth and electrical energy demand increase is given.

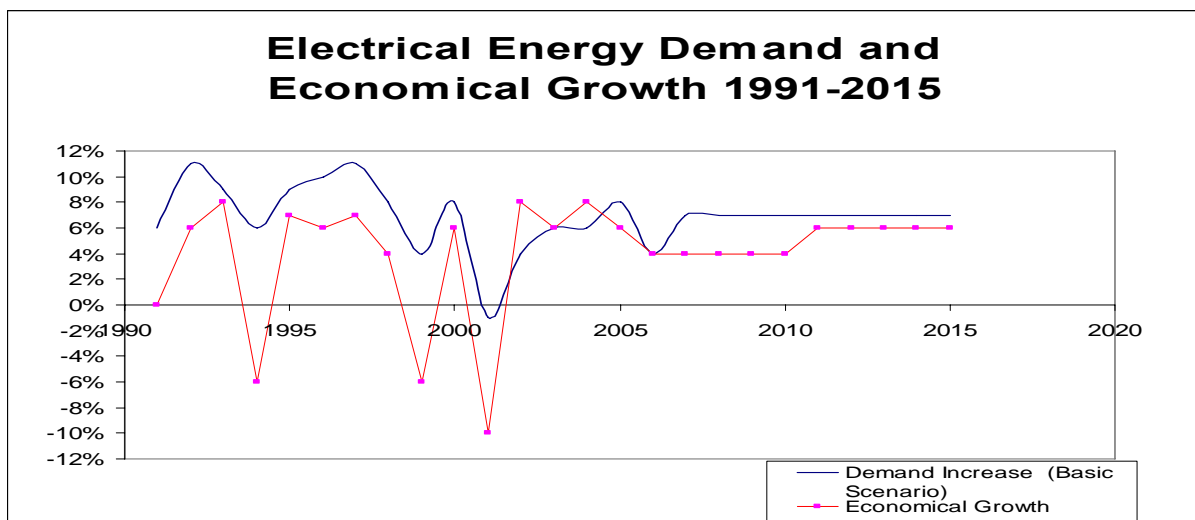


Figure 1. The relation between the economical growth and electrical energy demand increase

2.2 Capacity and Investment Need

According to the above forecasts, the installed capacity in Turkey had reached 41000 MW. In 2005, it became 38820 MW and in September 2006 it was 39299 MW. As to EMRA, it is predicted that 2500 MW capacity will be worked until 2015. 19.5% of this capacity have been completed.(Figure 2)

Furthermore, 2620 MW capacity, the project of Public Waterworks Administration and Electricity Production Corporation, will operate from 2007. It is predicted that if no delay occurs in the building process until 2015, total capacity will be 45920 MW.

In order to provide the power supply security, it is necessary to focus on the natural energy resources in the energy policy. This is brought out as a 10 year projection which is published by Turkish Electricity Transmission Corporation.

According to primary energy resources, the production technology of the new capacity need and approximate investment cost is shown in Figure 3. There is a need to increase the capacity in next 10 years and it costs about 32 billion \$ to finance new plants to achieve the required capacity.

3. REFORM PROCESS

A reform process is going on for the privatization as mentioned above. The expected result at the end of the reform process is to have a better capital budgeting and to provide the market operations going on, not to make a better load distribution.

The basic steps of the reform process can be classified to compose regulatory framework, to establish the regulatory foundation, to apply “The Corporate Governance Principles”, to separate the activities and the computations, to make a successful privatization, to construct the necessary infrastructure and to apply the cost basis the rate regulations.

In parallel with liberalism policy and privatization attempts which occurred in the world since 1980, the arrangements to provide the private sector has operation in the electrical energy market had been done. In 1984, Law No: 3096 which finished the monopoly of the Electricity In association with electricity sector, had inured. Electricity Market Law entered into force on 3rd March 2001. This law is important for the adaptation of *acquis communautaire* and energy legislation.

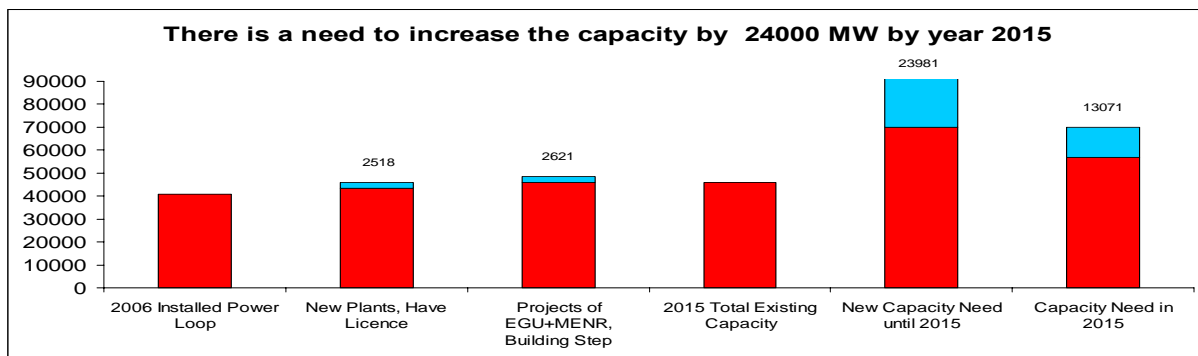


Figure 2. The Electrical Energy Capacity Need in Turkey

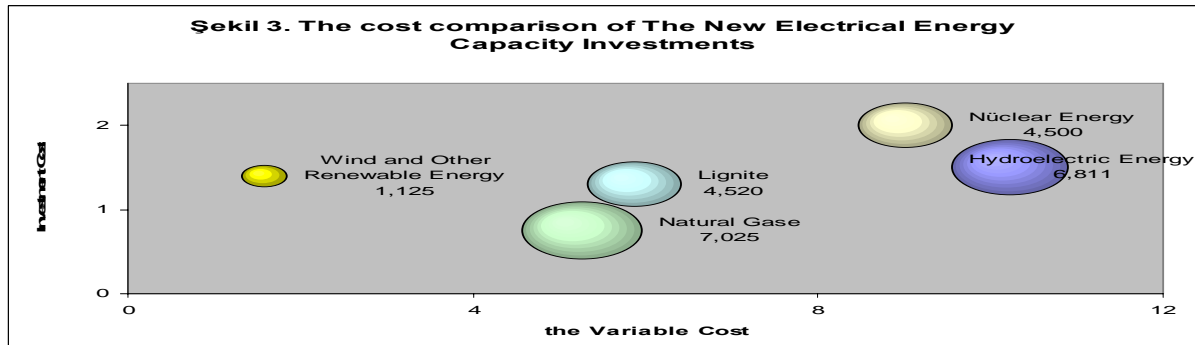


Figure 3. According to primary energy resources, the production technology of the new capacity need and approximately investment cost

This law consists of the bases of formation and operation of the electrical markets. It forms a legal infrastructure compatible with EU “Electricity Directive”. Furthermore, it adopts the implementation of a market model consist of the bilateral treaty, the concept of free consumer and balancing-accommodation mechanism. EMRA had been constituted by this law and the license necessity has been brought the participants those will have operations in the market. If they don’t have this, they cannot have operations in the market.

The regulation which sets procedures and bases of the financial accommodation in electrical markets have come into force by year 2003. Owing to this regulation, the partial open market structure, accommodated the imbalances, had been passed from the single supplier-buyer model. It is expected that Turkey Privatization Administration will accomplish the privatization of the specified havings of the electricity production and distributions until 2009.

A free market structure which is integrated the “Balancing- Accommodation” mechanism and leaning against bilateral agreement between the buyers and suppliers is applied. In order to perform the

purposes and principles of this strategy, the objective to be able a market role which can be bought and sold the electrical energy will be considered and the independent and small electricity producers to come into the markets will be made simpler, thus to contribute the power supply security will be planned on. The Balancing- Accommodation mechanism looks after the purpose to compose a spot market and consists of the signals to allure the new investments. The secondary legislations, a result of all work up until now, have been mainly drawn up and come into force. However, some difficulties had been appeared during the implementation process and the desired development could not be reached. “Turkey Development Report” which was published in 2005 by European Commission mentioned that Electrical Energy Laws in Turkey and the application regulations is largely compatible with the *acquis communautaire*, but effective operating and competitive markets have not been built yet. Another topic mentioned in this report is that the competition difficulties must be abated without causing skewness in the market conditions, in according to the nuclear energy production capacity plans in Turkey; the accordance to the *acquis communautaire* about nuclear security becomes important. “Turkey Development Report” which was published in 2005 by International Energy Agency (IEA) mentioned that in spite of there is a good legislation about energy in Turkey, there is the competition deficiency. Thus, in order to speed up the reforms, the private sector to step in is needed.

4. CONCLUSION:

In order to realize investments of the needed power production capacity in the coming years for the electrical energy sector in Turkey and accordingly to provide the power supply security, a reform process which plans on a reliable, stable, robust, competitive and operative market structure is needed. There is no relationship between privatization and liberation which are two important components of the reform process. It is seen that privatization is not an aim, in order to build the liberal market, it is an instrument. In order to establish liberal markets, some countries use the state owned facilities related electrical energy production, transmission, distribution, but there are some countries which firstly complete the privatization of the state owned facilities, then perform the liberalization. As many European countries, Turkey follows a policy which performs the liberalization and privatization at the same time. Thus, there is a model or reform recipe to be able to implement every country. Every country has the self structure, choices and priorities. According to this, it must not be forgotten that every country has to develop self model. To analyse the countries accomplishing the liberalization and privatization reforms and not to repeat the mistakes which is done these countries is important for Turkey. Secondary legislation which is a consequence of the works carried out up to now, has been largely accomplished and enforced by Energy Market Regulatory Authority. However, some difficulties have occurred in the process and desired level of progress has not been realized.

The Market development and expectations in the years ahead is:

- For companies to catch the economies of scale, to do the horizontal combination
- Forth companies to protect the production cost and end-consumer price, to do the vertical combination in the retail activities of the electrical energy production and distribution
- To standardize the agreements and to appear the new instruments

Furthermore, if the capacity mechanism is not established, the serious investment loop problem will continue to exist.

5. REFERENCES

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