Regulatory Reform in Turkish Energy Industry: An analysis

Erdogdu, Erkan

Energy Market Regulatory Authority, Republic of Turkey

2007

Regulatory Reform in Turkish Energy Industry: An analysis

Erkan Erdogdu[a,b,*]

[a]*Energy Market Regulatory Authority, Ziyabey Cad. No:19 06520 Balgat/ANKARA TURKEY*

Abstract

The Republic of Turkey has initiated an ambitious reform program in the most important segments of her energy market; which requires privatization, liberalization as well as a radical restructuring of these industries. However, there is no consensus that the measures introduced are optimal. The present article attempts, first, to evaluate the regulatory framework created by the laws of 2001 in terms of economic efficiency considerations; and second, to determine what still needs to be done to improve the current situation. The paper not only provides an analysis of these reforms but also lists some policy suggestions. The study concludes that despite relatively good legislative framework, in practice, the reforms in Turkey are far from ideal as they are mainly in the form of "textbook reforms"; and therefore a significant amount of work still lies ahead of Turkey to set up a fully-fledged energy market.

Keywords: *Turkish energy market, regulation, restructuring*

[*] Corresponding author. Tel.: +90-312-2872560 Fax: +90-312-2878819
E-mail: erkan@erdogdu.net
URL: http://erkan.erdogdu.net/english

[b] The author is working as an Energy Expert in Energy Market Regulatory Authority of the Republic of Turkey. The present article is a part of the dissertation submitted by the author in fulfillment of the requirements for the award of the degree "MSc in Energy Economics and Policy". In October 2005, the author is awarded an "MSc with distinction" by the Department of Economics, University of Surrey (UK). The views, findings and conclusions expressed in this article are entirely those of the author and do not represent in any way the views of any

1. Introduction

The Republic of Turkey (hereafter Turkey) has initiated a major reform program of the regulatory framework surrounding the most important segments of her energy market; namely, electricity, natural gas, petroleum and liquefied petroleum gas industries. The reform program entails privatization, liberalization as well as a radical restructuring of the whole energy industry. Also, an autonomous regulatory body, Energy Market Regulatory Authority (EMRA), was created to set up and maintain a financially strong, stable, transparent and competitive energy market.

Although there exists a huge literature on market regulation; to the best of my knowledge, so far, no scholar has studied and analyzed the regulatory framework created by the laws of 2001 in terms of economic efficiency considerations or tried to answer the question what still needs to be done to improve the current situation. The present article aims at filling this gap in the literature. Since it is obvious that the reforms will have important implications for the future of the country, the present article constitutes an important contribution not only to the existing literature but also to the energy policy formulation process in Turkey.

The paper is organized as follows. The next section presents the historical background of Turkish energy markets starting from the early 1900s up to the present time. Section 3 provides an overview of recent market reforms.

---

institution he is affiliated with.

Section 4 critically analyzes the compatibility of regulatory practice in Turkey with the theory of regulation. To improve current regulatory framework, next section lists some policy suggestions with crucial importance. The final section concludes.

2. Historical Background[1]

Hepbasli (2005) reports that in Turkey "the first electric generator was a 2 kW dynamo connected to the water mill installed in Tarsus" in 1902; and, he continues, "[t]he first bigger power plant was installed in Silahtaraga, Istanbul, in 1913". The following evolution of Turkish energy market may be summarized as follows.

The Republic of Turkey was founded in 1923, and until the 1930s the electricity industry[2] was heavily dependent on foreign investment as the country was trying a liberal economy. In the 1930s, there was a widespread belief all over the world in the benefits of public ownership of the electricity industry. Following this trend, nationalization of Turkish electricity industry started in 1938 and, by 1944, almost all electricity industry had been placed within the public domain.

In the 1960s, the government started the "development plans era". The Ministry of Energy and Natural Resources (MENR) was established in 1963,

[1] An in-dept analysis of the history of Turkish energy markets is outside the scope of this article. For a more detailed study of this subject, please see IEA (2005), OECD (2002), World Bank (2004), EMRA (2003), Hepbasli (2005), Ozkivrak (2005), Krishnaswamy and Stuggins (2003); and Atiyas and Dutz (2003).

[2] As the reform process has concentrated around electricity industry, the main focus of the article is placed on that segment of Turkish energy market.

and was responsible for Turkey's energy policy. This was followed in 1970 by the creation of Turkish Electricity Administration (TEK), which would have a monopoly in the Turkish electricity sector at almost all stages apart from distribution, which were left to the local administrations[3].

In the early 1980s, as was the case in many European countries, the Turkish electricity industry was dominated by a state-owned vertically integrated company, TEK. Starting from the 1980s, the government sought to attract private participation into the industry in order to ease the investment burden on the general budget. In 1982, the monopoly of public sector on generation was abolished and the private sector was allowed to build power plants and sell their electricity to TEK. In 1984, TEK was restructured and gained the status of state-owned enterprise.

Various private sector participation models short of privatization were put into practice. The first law setting up a framework for private participation in electricity industry was enacted in 1984 (Law No. 3096). This Law forms the legal basis for private participation through Build Operate and Transfer (BOT) contracts for new generation facilities, Transfer of Operating Rights (TOOR) contracts for existing generation and distribution assets, and the autoproducer system for companies to produce their own electricity. Under a BOT concession, a private company would build and operate a plant for up to 99 years (subsequently reduced to 49 years) and then transfer it to the state at no cost. Under a TOOR, the private enterprise would operate (and

[3] In 1982, however, distribution was also transferred to TEK, thus making TEK a national vertically integrated monopoly fully owned by the state.

rehabilitate where necessary) an existing government-owned facility through a lease-type arrangement (Atiyas and Dutz, 2003).

In 1993, TEK was incorporated into privatization plan and split into two separate state-owned enterprises, namely Turkish Electricity Generation Transmission Co. (TEAS) and Turkish Electricity Distribution Co. (TEDAS). However, the constitutional court of Turkey issued a series of rulings in 1994 and 1995 making the privatization almost impossible to implement in electricity industry. To overcome the deadlock; in August 1999, the parliament passed a constitutional amendment permitting the privatization of public utility services and allowing international arbitration for resolving disputes. However, during this interval, Turkey not only lost five invaluable years in terms of reform process that could never get back but also, and more importantly, tried to enhance the attractiveness of BOT projects by providing "take or pay" guarantees by the Undersecretariat of Treasury for adding new generation capacity to meet anticipated demand. An additional law, namely the Build Operate and Own[4] (BOO) Law (No. 4283), for private sector participation in the construction and operation of new power plants was also enacted in 1997 again with guarantees provided by the Treasury[5]. Current structure of the contracts concluded based on these laws acts as a major barrier to the development of competition in the electricity sector.

[4] Under the BOO model, investors retain ownership of the facility at the end of the contract period. That is, it is a kind of licensing system rather than a concession award.

[5] A typical BOT, BOO or TOOR generation contract, signed between the private party and TEAS or TEDAS, includes exclusive "take or pay" obligations with fixed quantities (in general, 85% of the plant output) and prices (or price formulas) over 15-30 years. That is, under these models, the government retains most commercial risks while providing the private sector with substantial rewards. Also the situation was worse in Turkey as, in Turkish case; there was no requirement for prequalification or even for a competitive open tender to

3. Recent Market Reforms

3.1. The Definition of Reform

In Oxford English Dictionary (2002), the term "reform" is defined as "*[t]he amendment, or altering for the better, of some faulty state of things*". In line with this definition; in this paper, the term "reform" refers to measures introduced so as to both *amend* the previous *faulty* state of things in energy industry that resulted in the problems listed in the following section and *alter for the better* situation in which these problems may be solved. Those actions taken to postpone the problems are not regarded as reform in this paper. To put it shortly, this article only refers to the period following the enactment of 2001 laws as "reform period". All other measures aiming at delaying the approaching energy crisis (such as BOT, BOO, TOOR schemes) do not constitute a part of "reform period" in this context.

3.2. Reasons

The reasons or problems that triggered the reform process in Turkey may be listed as follows in order of importance:

1. The rapid growth in electricity demand combined with the inability of the government to meet that demand through previous structure based on public or Treasury-guaranteed private investments

conclude these contracts (Atiyas and Dutz, 2003), which resulted in onerous terms and high electricity prices.

In Turkey, however, there exists no consensus over the actual size of the problem of "rapid electricity demand growth". Even some argue that, the official electricity projections have overestimated electricity demand to justify the construction of new power plants to use excess amount of natural gas (Ozturk et al., 2005).

2. Foreign influence

The need for an energy market reform has regularly been underlined by various international institutions (especially IMF, World Bank and OECD) that have supported Turkey during her frequent economic crises. The reform is also a precondition for Turkey's longer term objective of EU membership[6], which requires progressive liberalization of energy markets. Although this foreign influence factor resulted in considerable skepticism in Turkey about the real aims of the reforms[7]; effective implementation of recent reforms constitutes the only reasonable way to meet growing energy demand in Turkey. If the reforms are not implemented properly, the result may turn out to be an energy crisis with a potential to hinder the economic development of the whole economy.

[6] In October 2005, accession negotiations are opened with Turkey, who has been an associate member of the EU since 1963 and an official candidate since 1999. For a more detailed discussion of EU-Turkey relations, see Erdogdu (2002).
[7] Even still some regard whole reform process as a Western plot designed to control Turkish energy market through multinational corporations.

3. Fiscal problems

   A third rationale in reform process has been budget deficit problems. The government simply recognized that it cannot finance the capacity expansions necessary to meet future energy demand.

4. Planning and operational inefficiencies in public sector

   Like any other developing country, state monopolies in Turkey have been inefficient and politicians have been ready to tolerate this inefficiency.

5. Possibility of monopoly abuse

   Although the objective of preventing monopoly abuse is regarded as the primary reason for any market regulation in the literature; in Turkey, its influence has been extremely limited as the primary aim in Turkish case is to get rid of inefficient state monopolies, not to prevent monopoly abuse.

By the end of the 1990s, it became clear that quasi-privatization with Treasury guarantees was not going to be feasible given the rapidly deteriorating fiscal situation. Therefore, Turkey turned to a *radically* different framework for the design of her energy market.

On 3 March 2001, Electricity Market Law (EML, No. 4628) came into force and aimed at establishing a financially strong, stable, transparent and competitive electricity market. In line with new law, TEAS was restructured to

form three new state-owned public enterprises, namely Turkish Electricity Transmission Co. (TEIAS), Electricity Generation Co. (EUAS) and Turkish Electricity Trading and Contracting Co. (TETAS). The new law also created an autonomous regulatory body, namely Electricity Market Regulatory Authority.

Along the lines of developments in electricity sector, some other reforms were also introduced in other segments of the energy industry. On 2 May 2001, Natural Gas Market Law (NGML, No. 4646) also came into force and aimed at achieving similar objectives in natural gas market. It also renamed the regulatory body as Energy Market Regulatory Authority (EMRA). As a final step, Petroleum Market Law (PML, No. 5015) and Liquefied Petroleum Gas Market Law (LPGML, No.5307) came into force on 20 December 2003 and 13 March 2005 respectively and EMRA was granted the responsibility to regulate these markets as well.

3.3. Market Reforms

3.3.1. Reforms in Turkish Electricity Market

Electricity Market Law[8] (EML) made former laws on private investment in the electricity sector obsolete. The main issues and building blocks of the new system are given below.

[8] EML is, for the most part, compatible with the EU Electricity Directive of 2003 with the main exception that it does not allow state-owned generation companies to sell electricity directly to the eligible consumers but only to the wholesale company.

3.3.1.1. Market Opening and Market Design

Currently, on the demand side, consumers that consume more than 7.8 GWh per annum are designated as “eligible consumers” that are free to choose their suppliers[9]. The ultimate aim is stated as 100% market opening. On the supply side, the authorization-type licensing framework was established in the new regime, which provides entry opportunities into generation, wholesale supply, distribution, retail supply, import and export of electricity. Transmission remains as a state monopoly.

At the heart of the new regime is a bilateral contracts market where generation companies contract with wholesale trade companies (TETAS and any eventual new entrants), distribution companies, any new independent retail supply companies, and eligible consumers. As for end-users, eligible consumers may not only buy electricity from their regional distribution/retail supply company, but also may buy directly from a wholesale company, a new independent retail supply company or an independent generator. Captive (or non-eligible) consumers, on the other hand, must buy their electricity from the distribution/retail supply company in their region, but they also have the right to buy from any retail supply company operating in the region.

The EML requires the regulated third party access (rTPA) regime for access to the transmission and distribution system. The regulatory body (EMRA) will carry out the function of dispute settlement between parties.

[9] As of October 2004, about 270 eligible consumers signed a bilateral contract with a new supplier (IEA, 2005, p 147).

As for public service obligations, the EML only allows for an explicit cash subsidy in the form of direct cash refunds to consumers without affecting the price structure in cases where some consumers need to be supported based on non-economic objectives.

The current market design does not envisage a centralized pool or power exchange. The actual real-time equality of demand and supply, given the bilateral contracts, will be carried out by the system operator (that is, TEIAS) through purchases and sales in a balancing market. For this purpose, a "System Balancing and Settlement Center" is to be established within TEIAS. In short, it is expected that the market would be mostly by bilateral contracts and pool would be limited to balancing transactions only.

3.3.1.2. Restructuring

As discussed above, TEAS has been further unbundled into EUAS (generation), TETAS (wholesale trading and contracting) and TEIAS (transmission), each organized as a separate legal entity.

Under the new structure, EUAS will take over existing public power plants that are not transferred to the private sector. TETAS is created to carry out wholesale operations and it seems that it will dominate wholesale market in the near future. TETAS is also the holder of all previous BOO, BOT and TOOR contracts, including long-term power purchase agreements with Treasury guaranties; and will assume other stranded costs[10]. TEIAS is

[10] Stranded costs are defined as the costs incurred within the previous market structure that cannot be economically recovered within a competitive market structure. In Turkish case, the

responsible for transmission and, critically, for the balancing and settlement procedure that will balance the power transactions among parties, both physically and financially, in the new framework. That is, TEIAS is the transmission system operator (TSO) in Turkey.

3.3.1.3. Privatization

The new regime envisages eventual direct privatization in generation and distribution. Transmission assets are to remain under government ownership. In March 2004, the government issued the Strategy Paper Concerning Electricity Market Reform and Privatisation, which outlines the major steps to be taken during the period up to 2012 and addresses various issues, including the privatisation of distribution assets and power plants. According to the strategy paper, privatisation will start in the distribution sector in 2005 and will be completed in 2006. After the privatization of distribution assets, generation privatisation will start in mid-2006. Generation assets will be brought together into several groups composed of different types of assets for privatisation to enhance competition. Seventeen hydropower plants (which total 7,055 MW of capacity[11]), the transmission system and market operator, TEIAS, will remain in state ownership (IEA, 2005, p 144).

---

long-term power purchase obligations from private generators with high prices constitute the main stranded cost element in the new system. Other stranded costs include high operating costs of old and inefficient generators, removal of production subsidies, the debts and employment liabilities of public electricity utilities and so on.

[11] This figure equals to 19.5 % of total installed capacity in Turkey.

3.3.1.4. Independent Regulator

As mentioned before, the new regime established the Energy Market Regulatory Authority (EMRA), governed by its own 9-member board. The main functions of EMRA include:

- setting up and maintaining new licensing framework,
- preparing secondary legislation,
- enforcing rTPA,
- applying a new transmission and distribution code,
- determining eligible customers over time,
- regulating tariffs for transmission and distribution activities as well as provision of retail services to non-eligible customers,
- regulating the wholesale tariff of TETAS,
- performing tenders for gas distribution networks,
- monitoring the performance of all actors in the market,
- protecting customer rights,
- applying sanctions to parties that violate the rules.

EMRA has administrative and financial autonomy; it receives no financing from the state budget. It collects its revenues principally from electricity and gas licensing fees and from a surcharge on electricity TPA tariff (maximum 1%). Its total number of staff in August 2005 was 301 (EMRA, 2005a).

3.3.2. Reforms in Turkish Natural Gas Market

Turkey's indigenous gas production corresponds to 2.6% of the total gas demand making the country almost fully dependent on gas imports (IEA, 2004a). The government owned Turkish Pipeline Corporation[12] (BOTAS) is monopoly in almost all segments of the industry. Although its monopoly rights on importation, distribution, storage and the sale of natural gas have been abolished by the new law, the BOTAS is still Turkey's sole natural gas importer and has a *de facto* monopoly of gas supply in the country. It has eight long-term natural gas sales and purchase contracts with six different supply sources. In 2003, the shares of these sources were the Russian Federation 59.8%, Algeria 18.2%, Iran 16.6% and Nigeria 5.3% (IEA, 2005).

The objectives of the reform in Turkish gas industry closely accord with those in electricity and regulatory arrangements are also substantially parallel[13]. Consumers whose annual consumption is above the threshold set by EMRA, or eligible consumers, have the right to choose their own gas suppliers. At present, the gas market opening rate is 80% but eligible consumers cannot currently choose their suppliers because of the *de facto* monopolistic position of the BOTAS in import and trade.

As of February 2005, EMRA granted 65 licences for different natural gas market activities, namely storage, importation (all for the BOTAS),

[12] BOTAS was founded in 1974 and initially focused on the transport of Iraqi crude oil, diversifying into the gas sector after 1987. It was transformed into a state economic enterprise in 1995. Currently, it owns pipeline infrastructure for oil and gas transmission, LNG terminals, and gas distribution.

[13] The new law meets the requirements of the 2003 EU Gas Directive.

exportation, wholesale, distribution, transmission (only for the BOTAS) and CNG operations (IEA, 2005).

A key element of the reform is a requirement for a phased divestment of import contracts by the current monopoly importer, the BOTAS. The NGML requires the BOTAS to transfer part of its import contracts every year through a tendering process (the gas release programme). The first attempt to transfer 10% of the BOTAS's contracts was recently launched; however, the process has been delayed due to the complexity of the issue and the reluctance of the BOTAS to release its contracts[14].

Under the new law, EMRA is also responsible for organizing tenders for natural gas distribution licences in the cities. The tender process was carried out in 17 cities in 2003 and in almost 20 cities in 2004 (IEA, 2005).

Finally, despite the fact that gas demand has been growing rapidly for the last two decades; now, there is some risk of oversupply due to the overestimated demand forecasts. It is estimated that the existing contracts outstrip demand over the next 2 to 3 years by 9 to 13%, reaching 20% later in the decade[15] (IEA, 2005).

[14] An amendment to NGML, which is obviously supported by BOTAS and would have significantly reduced the scope of the gas release programme if implemented, was proposed earlier in 2004 but was withdrawn because of heavy opposition from EMRA and other parties (IEA, 2005).

[15] This is an enormous risk because contracts concluded by the BOTAS are long-term take-or-pay contracts, meaning that, unless necessary steps are taken, Turkey may find herself in a position in which she needs to pay for the gas that she will never use.

3.3.3. Reforms in Petroleum and LPG Markets

In 2002, Turkey's oil production was 2,420 thousand tons, which corresponds to 8% of the total oil demand (IEA, 2004b). In the coming years, oil production is expected to decrease due to the natural depletion of the fields (Hepbasli, 2005, p 327).

As for LPG (or liquefied petroleum gas); since the beginning of the 1960s, it has been used as an alternative to gas and kerosene in Turkey, while the first LPG use in cogeneration plants took place in 1996. In Turkey, LPG is marketed in three different segments, namely LPG cylinder, bulk storage (storage container), and autogas. Among these, autogas (or automotive LPG) is the branch that has grown the most of the three segments in recent years. In 2000, the consumption of petroleum products was 30 million tons, of which nearly 87% was accounted for by liquid fuel, while LPG constituted the rest (Hepbasli, 2005, p 326).

The Petroleum Market Law (PML) and Liquefied Petroleum Gas Market Law (LPGML) have liberalized market activities in petroleum and LPG markets respectively. Especially, the PML lifted price ceilings[16] and removed import quotas on petroleum products at the beginning of 2005. EMRA is also assigned the responsibility to regulate these markets as well.

[16] In Turkey, the Automatic Pricing Mechanism (APM) was operational from July 1998 until the end of 2004 to establish ceiling prices for gasoline, diesel, kerosene, heavy fuel oil, heating oil and LPG. The APM linked ex-refinery prices to CIF Mediterranean product prices. Since the abolition of the APM in the beginning of 2005, prices can be set freely provided that they reflect the developments in the world oil markets.

Actually, unlike electricity and gas markets, the petroleum market has been operating in a relatively liberalized manner for quite some time before the recent reforms. In fact, recent reforms in petroleum market have aimed at solving one of the most important problems of Turkish economy in general: large-scale fuel smuggling. The recent introduction of a national chemical oil marker also targets the same aim. The PML requires EMRA to take measures to prevent fuel smuggling and those to introduce and implement national chemical marker system in relevant oil products.

4. Critical Analysis

On paper, recent reforms clearly aim for liberalization of Turkish electricity and natural gas markets and the ultimate target is deregulation in the long run. However, deregulation, which requires development of effective competition in a fully functioning market, is a very distant objective in Turkish case as Turkey does not have a fully functioning (or even just functioning) electricity and natural gas markets, let alone effective competition in these markets. Hence, Turkey needs to follow the necessary steps to create the conditions for deregulation starting from restructuring and privatization, followed by enhancement of competition where possible and (effective) regulation where unavoidable; and finally introducing deregulation in the long term when the market is ready to do so. Since Turkey is still at the very beginning of this process (despite the fact that she started the process 5 years ago), the paper concentrates only on the first few steps; namely, restructuring and privatization; competition; and regulation.

4.1. Restructuring and Privatization

Underlying structure of the particular industry being regulated is one of the most important determinants in the success of regulation in any market. In Turkish case, there is no need for restructuring in petroleum and LPG markets as they already have appropriate structure. In electricity market, restructuring is either completed or planned to be completed in the near future. However, there exists a grave mistake in the restructuring process: the preservation of TEIAS as a single entity, which makes the effective regulation in transmission system impossible by rendering the only possible effective price regulation method[17], namely yardstick competition, in this segment of the market impossible to implement. As for natural gas industry, there is a vital need for restructuring in that industry in which the BOTAS currently dominates the entire market.

All powerful economic rationales for privatization cited in the literature are certainly valid in Turkish case. However; despite that, there are formidable political and institutional barriers to privatization in Turkey. Unless carefully managed; they can delay, or totally block, the process of privatization.

The first obstacle to privatization in Turkish case is the bureaucratic opposition from government owned utilities or labour unions, for instance, to maintain their privileged position in current public utilities, excessive work

[17] It is the only effective way as in all other methods (such as rate of return regulation, RPI-X and so on) the regulator needs information about the regulated firm (e.g. cost structure of the firm). As long as the regulated firm is a monopoly, it is almost impossible for the regulator to persuade the firm to reveal this necessary information. However; in yardstick competition, the regulator employs the performance of similar firms in an industry to create some benchmarks, which are in turn used to regulate the sector. As long as there is enough number of firms in the industry, this method may

forces or wages above market rates. Although such an opposition is generally the case almost in all similar countries, it is especially strong in Turkey where bureaucrats are a politically powerful force in their own right.

The second source of opposition to privatization in Turkey originates from the concerns based on economic nationalism and the desire to control the destiny of the energy industries so central to the economic infrastructure. However, there are some simple ways that combine privatization with maintaining government control of the key elements of the power system. However, in practice, these kind of arguments are employed by the bureaucrats at the top of public companies; and they are likely to resist privatization on the pretext of the probability that companies with so-called "strategic importance" will be taken over by a foreign or multi-national firm, an argument that can easily be falsified by, for example, keeping a "golden share".

The last problem with privatization relates the fact that subsidization, especially of consumer prices, is common in Turkey. It poses a major barrier to efficient privatization; and the elimination of the subsidies may be very difficult politically.

Regarding the progress made so far in terms of privatization, in electricity industry, the government plan of privatizing distribution company (TEDAS) and generation company (EUAS) into several parts is a reasonable approach as it may bring immediate competition to the market and/or enable the

provide an effective way of regulation. Otherwise, it is not possible to regulate a monopolistic industry effectively.

regulator to compare the performance of newly created private companies. However, it seems that government intends to keep both transmission company[18] (TEIAS) and large parts of the hydro generation facilities. It is again a serious mistake with a huge potential to undermine the positive expectations about the future structure of the energy market, and thereby may undermine the whole reform process. In natural gas market, the BOTAS is still there but should be privatized as soon as possible in a way that does not let new players have market power.

4.2. Competition

A kind of competition is possible in every segment of Turkish energy industry, including transmission and distribution of electricity and gas markets. Also, when we take into account the fact that even limited competition provides a regulator with some benchmarks against which to measure the performance of a dominant firm, gives consumers some alternatives, and forces the dominant firm to reduce costs, improve services, innovate and so on; EMRA should take all necessary steps to enable effective competition in the markets it regulates. The markets currently regulated by EMRA may be divided into four groups based on the possible type of competition:

1. The markets in which actual competition exists

   Almost all market activities in Turkish petroleum and LPG markets fall into this group. Since competition already exists in these markets and the rule

[18] The Electricity Market Law (EML) does not presume a public transmission system and it definitely allows for private transmission.

is, as suggested by Professor David M. Newbery (Newbery, 2000, p 134), "competition where possible, regulation only where unavoidable"; EMRA's role in these markets should be limited to further enhancement of competition and taking measures against possible threats to present competitive structure. Apart from this, regulation should be kept at minimum. In short, in these markets, the policy should be *laissez-faire*.

2. The markets which are currently not competitive but in which there is a potential for actual competition in the near future[19]

   All activities in electricity and natural gas markets with the exceptions of transmission and distribution may be placed into this group. Provided that EUAS and the BOTAS are privatized appropriately, there exists a huge potential for competition in these markets. Especially, electricity generation/supply and natural gas importation/supply seem to be highly competitive in the near future if necessary steps are taken. Nevertheless; until competition develops up to appropriate levels, EMRA should regulate these markets. However, while doing so, EMRA should always remember that a system of regulation should be evaluated in terms of incentives it provides the regulated firm to achieve economic efficiency. Therefore, EMRA should apply incentive based regulation (for instance, RPI-X or price cap regulation) wherever possible and try to avoid cost-plus regulation and its various different forms.

[19] When actual effective competition becomes operational in the future for the markets within this group; EMRA should again limit its role to further enhancement of competition and taking measures against possible threats to then existing competitive structure.

3. The markets in which one-to-one competition is not possible but there is a potential for *competition for the market* (franchising) and *competition via regulation* (yardstick competition)

   Electricity and natural gas transmission and distribution activities belong to this group. However; to activate “competition” in these sectors, the BOTAS’s transmission arm should be separated from its other activities. Then, this new natural gas transmission company together with its counterpart in electricity industry (TEIAS) should be divided into enough number of parts in a way that makes effective comparison of performance among these newly created companies possible. Finally, all distribution and transmission assets should be privatized as soon as possible.

4.3. Regulation

Littlechild (1983) states “[c]ompetition is indisputably the most effective means – perhaps ultimately the only effective means – of protecting consumers against monopoly power. Regulation is essentially a means of preventing the worst cases of monopoly; it is not a substitute for competition. It is a means of ‘holding the fort’ until competition arrives.” This statement well defines the role of regulation in a regulatory system; and implies that although the private industry with regulation is far from perfect, it is the best answer currently available to monopoly problem.

Actually, regulation is unavoidably inefficient. The inherent sources of inefficiency in regulation are various. For instance, regulated prices may

deviate from costs unless economic and non-economic objectives are clearly separated. Also, regulation is itself an expensive activity and easily spreads from economics into politics, if not properly managed. There are also other more fundamental problems inherent in any regulatory situation; namely, information asymmetries, commitment issues, the possibility of regulatory capture and/or failure. Despite the fact that there are no easy escapes from all these problems, in industries with natural monopoly characteristics, the extension of competition requires regulation in order to be effective. So, the most important problem to address in any reform process is to choose the right structure for the industry that will limit the need for naturally inefficient regulation. The main idea may be put forward as follows: the most important feature of regulation should be that *there should be as little of it as possible*, which involves the identifying the precise sources of market failure in industries and targeting regulation specifically on these areas.

Based on these theoretical underpinnings, the current Turkish regulatory framework may be evaluated as follows. First of all, EMRA should keep it mind that regulation is unavoidably inefficient and therefore it should be confined to the core natural monopoly of the network minimizing the extent of regulatory inefficiency. EMRA also needs to realize that regulation in essence is a kind of incentive mechanism design, which needs to reflect the consensus among all related parties such as consumers, firms, politicians, academicians and so on. Therefore, EMRA should take all necessary steps to create a platform in which everyone related with energy industry may express their ideas with a view to reaching such a consensus.

The effectiveness of regulation depends critically upon the information available to the regulator since a regulator can condition its policy only on what it knows. However, in practice, the state of unbalanced or "asymmetric" information between regulator and firm(s) benefits the regulated at the expense of not only the regulator but also actual and potential competitors and customers. Therefore, this so-called "asymmetric information problem" is at the heart of the economics of regulation[20].

The regulatory question is, then, how to motivate the managers of the regulated firm to exploit their superior information to advantage despite the problem of imperfect information and monitoring. From a practical point of view, to alleviate this problem, EMRA needs to put into practice an information program, by which the regulated firms provide relevant information regularly on the basis of agreed conventions.

Another issue relates what is called regulatory commitment. EMRA must ensure that it is committed to the ultimate aim of economic efficiency by taking all necessary measures. To do so, first of all, all decisions and procedures applied by EMRA should be transparent, which entails that, while making a decision, EMRA is required to include the reason(s) for that specific decision in detail into the final form of decision that is revealed to the public. EMRA should also realize that without transparency in the regulatory process it is impossible to ensure regulatory commitment and, therefore, to realize economic efficiency. Moreover a body of precedent should be created to ensure consistence in regulatory practice. If EMRA rejects transparent

[20] Actually, the problem of asymmetric information is one of the major sources of inefficiency inherent in regulation.

procedures, it may lose the public credibility, on which its success and acceptance so crucially depend. The second measure to guarantee regulatory commitment should be in the form of creation of effective appeal procedures for the firms, consumers or any other related parties against the decisions of EMRA. Under current framework, lawsuits against EMRA's decisions may be filed in the Council of State (in Turkish, "Danistay"), a high court in Turkish legal system. However, the Council of State is not well suited to review the decisions of EMRA due to technical nature of the matters and the need for speedy resolution of outstanding issues. Therefore, as also underlined by OECD (OECD, 2002, p 37), in Turkey, there is a need for establishment of a specialist regulatory appeal body with suitable expertise in regulatory issues. The appeals against the decisions of EMRA should be in the first instance to this appeal body that acts with similar discretion and flexibility to that of EMRA, not to the Council of State. Furthermore, the relation between EMRA and the firms should be based on what is called "regulatory contract" to further guarantee regulatory commitment. Current practice of provision of licences whose terms are unilaterally determined (and also may be altered) by EMRA undermines the regulatory commitment, let alone reinforcing it. If a firm considers that licence terms so crucial to its future profit level may easily be changed by EMRA at any time, it is almost impossible to provide it with incentives to act properly. Finally, to prevent any confusion and opportunistic behavior by firms, the appropriate division of labor between, on the one hand, general competition authority in Turkey (that is, Turkish Competition Authority) and, on the other hand, the specialist regulator in Turkish energy market (that is, EMRA) should be clearly determined by a protocol to be signed between these two institutions.

The other major issue in Turkish regulatory framework is the question of how to prevent regulatory capture and regulatory failure. To prevent regulatory capture by the industry it regulates, EMRA should not only encourage but also take concrete measures (if necessary) to set up and institutionalize consumer concern to enable active consumer participation in the regulatory process. But while doing so, it should pay due attention not to push regulation into social, and away from economic, matters; and ensure that consumer representatives' attention is confined to economic matters and does not spread over political or non-economic ones. Regulatory capture by government is also a threat to regulatory process especially in Turkey where government traditionally has strong powers. To prevent this, ministerial and other political influences must be constrained as far as possible to roles that do not allow them to influence regulatory decisions. That is, EMRA should be independent while making decisions concerning the markets it regulates. However, this does not mean unaccountability. EMRA, like any other public body in Turkey, must be held accountable for its actions and be subject to adequate controls. In short, EMRA should take appropriate steps not to be captured either by energy industry or its employees or by politicians or by other particular interests, or by self-interest at all costs.

As for regulatory failure, EMRA should make a clear distinction between its responsibilities concerning economic and non-economic regulation; and should delegate the latter to appropriate bodies as soon as possible. Otherwise, its discretion is sooner or later jeopardized by unwise extensions of non-economic regulation. Also, EMRA should always keep in mind that a

regulatory system which has objectives that either in principle or in practice differ from that of economic efficiency spells regulatory failure from an economic perspective.

The final critical issue in Turkish regulatory framework is about the quality of the persons in the position of regulators (that is, the members of the Energy Market Regulatory Board) and the staff of EMRA. As also indicated in OECD report (OECD, 2002, p 24), it is important for the credibility of EMRA that not only the members of its Board but also its staff are highly qualified, which requires strict merit selection and performance management. EMRA should seek to recruit a high level of expertise and pay very close attention to establish a merit based personnel system.

5. Policy Suggestions

Based on our analysis up to here, the answer to the question that what still needs to be done to improve recent energy market reforms in Turkey may be divided into three parts according to their urgency, degree of importance, and the responsible body to implement them.

5.1. Policy Suggestions for EMRA

Policy suggestions under this heading require immediate and effective action by EMRA, and therefore need to be implemented as soon possible. Otherwise, all reform process may face failure at the very beginning due to EMRA's actions or lack of action. To prevent this outcome, first of all, EMRA

should take all necessary steps to create a platform in which everyone related with Turkish energy industry may express their ideas with a view to reaching a consensus[21]. Second, EMRA is also expected to ensure regulatory commitment, which requires particularly transparency, creation of a body of precedent and effective appeal procedures against the decisions of EMRA. Moreover, EMRA should change, in the medium term, its licencing procedure into one based on the logic of private contracts, which is called "regulation by contract"[22]. Fourth, EMRA is advised to introduce all necessary measures to prevent regulatory capture and regulatory failure discussed before. Furthermore, it may prepare and publish a plan which specifies its short, medium and long term objectives in detail so as to strengthen regulatory commitment. Sixth, EMRA should put into practice the information program mentioned before to alleviate the problem of asymmetric information. Additionally, EMRA has to implement strict merit selection and performance management in its human resources policies. Eight, EMRA needs to clearly separate economic and non-economic issues and take appropriate steps to delegate the latter to suitable bodies. In addition, EMRA must carry out economic regulation in line with suggestions made before. Tenth, EMRA must continue natural gas distribution tenders in the form of "franchising" but also develop the mechanisms to introduce "yardstick competition" as soon as the construction of distribution networks are completed. Finally, it has to restrict the scope of regulation. In literature, it is underlined that only network industries require special economic regulation. Since petroleum and LPG industries cannot be placed in that group, there is

[21] Within such a platform; EMRA needs to persuade government, employees, managers, taxpayers, potential investors, customers, the financial markets, annalists, media commentators and all other related parties of the advantages of the reform process.
[22] For a detailed discussion of "regulation by contract", see Bakovic et al. (2003).

no need for economic regulation in these markets. So, EMRA should do its best to eliminate its responsibilities in petroleum and LPG markets as soon as possible. As for electricity and natural gas markets, EMRA should restrict the regulation to where it is needed; that is, transmission and distribution sectors. There is no need for regulation in generation (importation) and retail supply sectors. Even, it is unnecessary to distribute licences in these sectors.

5.2. Policy Suggestions for Turkish Government

Although the discretion of EMRA is limited in terms of the policy suggestions under this heading; EMRA still must take appropriate steps to supervise, encourage and facilitate the realization of these suggestions that are crucial for the outcome of the reforms.

The privatization of energy industry, including TEIAS, BOTAS and all hydro generation facilities, should be completed as soon as possible in an appropriate way after restructuring where necessary. As discussed before, the opposition to privatization of some bureaucrats will definitely be formidable. To counter this, a chairman who is more favorable to privatization may be appointed to the enterprises to be privatized. Second, the government is advised not to intervene in EMRA's decisions concerning economic regulation of energy markets. If it disagrees with EMRA in any issue, the government should have recourse to appropriate appeal procedures. The government is also expected to delegate all non-economic responsibilities of EMRA to related bodies. In particular, it should prepare and

put into force the necessary legislation that removes EMRA's responsibilities in petroleum and LPG markets[23].

The government ought to appoint the members of EMRA's board based on strict merit norms. The consequences of political appointments to EMRA may turn out to be destructive for the future of the country as a whole. Also, when all privatizations are completed, the energy sector and other related interests should be represented in the Board as well, which requires that some members of the Board should be selected by these interest groups. The government may also establish a specialist regulatory appeal body with suitable expertise in regulatory issues.

The BOTAS's share in imports should also be reduced, which is absolutely necessary for the market liberalization to be successful and competition to develop. Finally, the government should stop all forms of subsidy that affect price structure and provide subsidies only in the form of direct cash refunds if necessary.

5.3. Other Policy Suggestions

The policy suggestions under this heading are deemed beneficial for the future progress of Turkish reforms from an economic perspective but they

[23] Up to now, EMRA has distributed almost 10.000 licences to prevent fuel smuggling in Turkey. However, since this was an irrational step from the very beginning especially when we take into account the fact that an institution with only about 300 people cannot effectively monitor the implementation of licence terms of so many licences (let alone their enforcement); EMRA has already had to delegate most of its responsibilities in this area to the Ministry of Internal Affairs via a protocol signed between EMRA and the Ministry. So, what is suggested here is just the reflection of actual practice into legal system (EMRA; 2005b,c).

also need to be further discussed among related parties before actual implementation.

All persons or bodies that do not have sufficient expertise in issues related with energy markets but whose ideas or decisions have still a vital effect on the energy market should consult those with expertise before revealing their ideas or making some decisions with an (sometimes, profound) effect on the energy markets. The decisions of courts are especially critical in this respect.

EMRA should also prepare and publish a timetable indicating the process of reducing eligibility threshold to zero both in electricity and natural gas markets. Current “Strategy Paper” is not enough in this perspective.

EMRA and Turkish government should deal with the problem of “stranded costs” in a way that does not undermine the trust in the system and within the boundaries of the principle of “rule of law”.

EMRA should manage to ensure consistency in the decisions of its multi-member board. If this cannot be done, the practice of “regulation by an individual”, rather than “regulation by a board”, should be considered as an alternative.

EMRA should initiate the process of signing a protocol with Turkish Competition Authority to determine appropriate division of labour between them.

6. Conclusion

Despite relatively good legislative framework, the current regulatory policy in Turkey towards the energy industry in practice seems to be far from ideal. The reforms are mainly in the form of “textbook reforms”, meaning that they are simply copied from regulation literature with some modifications but in practice the crucial underlying economic logic behind them is not taken into account either by EMRA or by the Turkish government. It should not be forgotten that every new structure entails new understanding of the issues. However; in Turkish case, new reform has been tried to be implemented within previous degenerated bureaucratic understanding, which is simply impossible. As long as the vital decisions regarding the future of energy industry have been taken in the depths of some government departments, including those of EMRA; it is definitely impossible to create a fully functioning market and the result may turn out to be a disaster for the country as a whole. On the other hand, the energy industry is a complex one; and the creation of a market for energy, where none previously existed, is no easy task. Not surprisingly, there will be problems but most of them will disappear with the growth of more effective competition provided that necessary change in understanding mentioned above is materialized.

If reforms are practiced by taking into account their underlying economic logic, there is no reason not to believe that the domestic and foreign investors will be greatly interested in entering a market with excellent growth potential, like Turkish energy market. If implemented properly, the reforms my transform Turkey from a simple so-called “Eurasia energy corridor” into

an “energy base” where electricity is produced and exported to various regions surrounding the country, especially Europe.

Also, one should not blame the bureaucrats in the Turkish energy industry, its unions, and others for trying to protect what they see as their interests by persuading the government to retain previous structure as much as possible. But it will be a catastrophe for the country as a whole if they are successful in doing so as the way would be open for continued government manipulation of these public corporations.

As no meaningful competition has developed so far, a significant amount of work still lies ahead. It should not be forgotten that the true test of regulatory success comes in the form of whether a structure in which generators, suppliers, customers and other actors in the market can all freely negotiate, each taking their own view of the prices, risks, opportunities and threats that a competitive market offers is created or not.

Acknowledgements

I would like to thank my supervisor, **Joanne Evans** (Lecturer in Economics, University of Surrey, UK), for all her helpful comments and continuous encouragement during the writing of the dissertation on which this paper is constructed. I would also like to thank **Lester C. Hunt** (Professor of Energy Economics, University of Surrey, UK); **Paul Appleby** (BP plc, UK); **Gürcan Gülen** (Senior Energy Economist, University of Texas, USA) and **David Hawdon** (Senior Lecturer in Economics, University of Surrey, UK) for priceless comments on the final draft. I am also grateful to the British Government through the Foreign and Commonwealth Office for awarding me the British Chevening Scholarship that financed my studies in the UK. I also extend my thanks to the British Council for excellent administration of the scholarship. Besides, I am indebted to the Turkish Government through the Energy Market Regulatory Authority both for granting me a study leave to undertake my academic work in the UK and for the financial support towards my studies there.

References

Atiyas, I., Dutz, M. (2003). Competition and regulatory reform in the Turkish electricity industry. Prepared for presentation at the Conference on EU Accession, Turkey, May 10–11 2003, Bilkent Hotel, Ankara.

Bakovic, T., Tenenbaum, B., Woolf, F. (2003). Regulation by Contract: A New Way to Privatize Electricity Distribution?. The World Bank Group, The Energy and Mining Sector Board Discussion Paper, Paper No. 7, May 2003.

EMRA (Energy Market Regulatory Authority) (2003). Electricity Market Implementation Manual. Ankara, 2003, accessed from http://www.epdk.org.tr/english/reports/electric/manualapril2003.pdf on 19.08.2005 at 15:24.

EMRA (Energy Market Regulatory Authority) (2005a). Kurum Bilgileri (Institutional Facts). Accessed from http://www.epdk.org.tr/kurul/mali.html on 19.08.2005 at 15:45.

EMRA (Energy Market Regulatory Authority) (2005b). Petrol Piyasasi Lisanslari Hakkinda Aciklama (Announcement Concerning Petroleum Market Licences). Accessed from http://www.epdk.org.tr/basin/2005basin/2005-03-26-lisans.html on 24.08.2005 at 11:27.

EMRA (Energy Market Regulatory Authority) (2005c). Basin Aciklamasi (Press Release). Accessed from http://www.epdk.org.tr/basin/2005basin/2005-07-02-marker.html on 24.08.2005 at 11:32.

Erdogdu, Erkan (2002). “Turkey and Europe: Undivided but Not United”. Middle East Review of International Affairs (MERIA) 6(2): 40-51, (available online: http://meria.idc.ac.il/journal/2002/issue2/jvol6no2in.html).

Hepbasli, A. (2005). “Development and Restructuring of Turkey’s Electricity Sector: A review”. Renewable and Sustainable Energy Reviews 9(4): 311-343.

IEA (International Energy Agency) (2004a). Natural Gas Information 2004. IEA, Paris, France, 2004.

IEA (International Energy Agency) (2004b). Oil Information 2004. IEA, Paris, France, 2004.

IEA (International Energy Agency) (2005). Energy Policies of IEA Countries: TURKEY, 2005 Review. IEA, Paris, France, 2005.

Krishnaswamy, V., Stuggins, G. (2003). Private Sector Participation in the Power Sector in Europe and Central Asia: Lessons from the Last Decade. World Bank Working Paper No: 8, The World Bank, Washington DC, USA, 2003.

Littlechild, S.C. (1983). Regulation of British Telecommunications Profitability. Department of Industry, 1983.

OECD (The Organisation for Economic Co-operation and Development) (2002). Regulatory Reform in Turkey: Regulatory Reform in Electricity, Gas and Road Freight Transport. OECD Reviews of Regulatory Reform, 2002.

Oxford English Dictionary (2002). CD-ROM version 3.00. Oxford University Press, 2002.

Ozkivrak, O. (2005). “Electricity restructuring in Turkey”. Energy Policy 33(10): 1339-1350.

Ozturk, H.K., Ceylan, H., Canyurt, O.E., Hepbasli, A. (2005). “Electricity estimation using genetic algorithm approach: a case study of Turkey”. Energy 30(7): 1003-1012.

World Bank (2004). Turkey: Gas Sector Strategy Note. Report No: 30030-TR, Infrastructure and Energy Department, Europe & Central Asia Region, The World Bank, September 2004.