



## Turkish electricity reform

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### ABSTRACT

Turkish electricity reform has progressed slowly due to internal resistance against privatisation, and gained momentum after Electricity Market Law of 2001, prepared in line with EU Energy *Acquis* and established required institutional and legal framework. Although the eligibility threshold has reached 39% market opening rate, the dominant position of public both as owner and decision-maker is still the major problem in the sector. Currently Turkey is self-sufficient in electricity, but likely to face shortages in 10 years if the growing demand is not met by either speeding the liberalisation process, or joining the South East Europe Electricity Market.

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### 1. Introduction

Turkey's longstanding ambition of joining the European Union (EU) came a step closer as a result of its recognition as an accession country in October 2005. Since the establishment of official ties in 1959, Turkey has sought to harmonize with EU rules, progressing faster in some areas than some others. In the electricity sector, a reform programme was initiated in 1984, but gained momentum only after 2001 with the announcement of the Electricity Market Law (EML), prepared in line with the EU Energy *Acquis*. The EML

*Abbreviations:* EML, Electricity Market Law; EU, European Union; Strategy Paper, Electricity Sector Reform and Privatisation Strategy Paper; KCETAS, Kayseri Electricity Distribution Company; MENR, Ministry of Energy and Natural Resources; TEK, Turkish Electricity Authority; BOT, Build-Operate-Transfer; BOO, Built-Operate-Own; TOOR, Transfer of Operating Rights; TEAS, Turkish Electricity Generation Transmission Company; TEDAS, Turkish Electricity Distribution Company; EUAS, Electricity Generation Company; TEIAS, Turkish Electricity Transmission Company; TETAS, Turkish Electricity Wholesale Company; EMRA, Energy Market Regulatory Authority; TPA, Third Party Access; PA, Privatisation Administration; PPA, Power Purchasing Agreement; UCTE, Union for the Coordination of Transmission of Electricity in Europe; DSI, State Water Works; SEEM, South East Europe Electricity Market.

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aims to ensure the development of a financially sound and transparent electricity sector operating in a competitive environment under provisions of civil law to ensure delivery of sufficient, high quality, low-cost and environment-friendly electricity to consumers, and subject to autonomous regulation and supervision of this market. The EML is supported by comprehensive secondary legislation addressing all types of market activities, as well as the rights and obligations of market participants.

The newly created South East Europe Electricity Market (SEEM) envisages Turkey's integration into the European Electricity Market. Due to environmental concerns, Turkey has not yet signed the Energy Community Treaty of 2005 but has signalled its intention to participate by publishing the Electricity Sector Reform and Privatization Strategy Paper (Strategy Paper) in 2004. The Strategy Paper detailed the procedure for privatization due to start by the end of 2006 and to conclude by 2011 (CEC, 2006; World Bank, 2006). Privatization has not commenced as planned since 2007 has been a politically sensitive year due to parliamentary and presidency elections in Turkey. In light of the political sensitivity of privatization, the government has postponed privatization of electric facilities until 2008.

Turkey's electricity sector is presently dominated by public companies, and the country's deep-rooted statist tradition is likely to slow privatization even after the elections. Nevertheless, Turkey has had to deal with problems of inefficiency in publicly owned and managed state electricity enterprises, a high ratio of network

losses, rapid growth in electricity demand, substantial investment requirements both to expand generation capacity and for the extension of the grid, high maintenance costs of the transmission grid and of generation plant, combined with inadequate public sources of capital for investment. Furthermore, the electricity industry faces a legacy of poor technical and commercial security, low quality, substantial cross-subsidies and external costs, combined with the challenge of compulsory harmonization with EU *Acquis*, and global energy trends.

Turkey has two possible options for reform: either creating its own national electricity market, or joining SEEEM. Turkey is the largest of all the countries in the region both in terms of population (around 73 million) and in terms of the number of accounts. The former option is therefore feasible, but only if internal resistance to privatization and liberalization is surmounted. Not only does Turkey's obligations to the EU require it to take the second course, but this may also help to overcome the internal resistance to reform by opening electricity market to external competition. Turkey, covering 781 000 km<sup>2</sup>, is located at the crossroads of energy flows between Asia and Europe,<sup>2</sup> making it an important territorial bridge between the growing energy needs of the EU, and the desire of Middle Eastern and Hazarian energy sources to satisfy this demand. Turkey is currently self-sufficient in electricity, but likely to face shortages in the coming decade if electricity demand continues to grow at the current pace of around 10% annually. As other papers of this special issue point out, integration might be a mutually beneficial move, since Turkey can access electricity surpluses likely to emerge in SEEEM. Turkey's historical ties with countries of this region from the time of the Ottoman Empire might help ease integration and trade.

In the light of these arguments, this paper assesses the progress of Turkey's electricity reform programme in six sections. Section 2 provides the background to the Turkish electricity sector, Section 3 evaluates Turkey's progress against the benchmarks of reform outlined in Jamasb et al. (2004), Section 4 looks at the recent performance of the sector, Section 5 discusses progress to date and the impact of reforms, and Section 6 offers recommendations and prescriptions for future reform.

## 2. Background to electricity sector<sup>3</sup>

The electricity sector has developed historically in accordance with two different economic transformation strategies pursued in Turkey since its establishment in 1923 following the defeat of Ottoman Empire at the end of World War I. The first, an import substituting development strategy, dominated the period until 1980, and was characterized by widespread public entrepreneurship, cross-subsidization between sectors, and soft budgeting. This protective approach collapsed as the increasing oil prices of the 1970s worsened the structural deficits of Turkey's current account, elevating the consumer price index to triple digits, creating political turmoil and bringing economic transactions to a standstill. Since the 1980s, an export-oriented alternative followed has produced better, yet still unsatisfactory results. Disappointing results from this export-oriented approach have been due partly to a number of internal and external economic crises, two unfortunate earthquakes, as well as partly to persistent state control and intervention in economic activities, strong resistance against privatization from the public, from bureaucrats, workers unions, and political parties.

The development of Turkey's electricity sector reflects these streams of economic development, both in ideology and practice. The first years of the Turkish Republic were spent rebuilding the war-torn country and revitalising economic activities. Financial resources were scarce, forcing Turkey to rely for its electricity provision (mainly to large cities such as Istanbul) on private, predominantly foreign companies, including German (MAN&AEG in Ankara), Belgian, Italian and Hungarian (Ganz Corporation) firms.<sup>4</sup> As nationalization flourished during the 1930s, all energy related activities were entrusted to public entities. The first interconnection was provided between Istanbul and Çatalağzi thermal power plant in 1952. The Ministry of Energy and Natural Resources (MENR) was created in 1963 while the Turkish Electricity Authority (TEK) was founded in 1970 as an integrated monopoly, incorporating all electricity activities other than distribution, which was assigned to municipalities until 1982. Electrification of the country accelerated during this period, while investment in generation capacity was given priority to meet growing demand. However, due to unfavorable economic conditions of the period, necessary investment for renewal and maintenance, as well as for new projects, could not be provided from the central budget.

Following the adoption of an export-oriented development strategy in 1980, various models for reorganization and investment have been introduced in order to attract private investors into electricity sector. In 1984, the monopoly power of TEK was removed by allowing private entities to undertake generation, transmission and distribution activities of electricity. Three different financial models were tried to satisfy urgent investment needs of electricity sector, namely Build-Operate-Transfer (BOT), Built-Operate-Own (BOO), and Transfer of Operating Rights (TOOR) models. These models all required the Treasury's guarantee, with contracts signed on a take-or-pay basis. Consequently, none of these reduced the financial burden on the public purse. A more fundamental approach for easing this burden on the public budget was introduced with the enactment of Electricity Market Law, no. 4628 in 2001, in line with EU Energy *Acquis*. This new law was accompanied by the Strategy Paper of 2004, covering procedures for privatization of distribution and generation assets, measures peculiar to the transition period ending at 2011, and security of supply mechanisms. We now turn to an assessment of the Turkish electricity reform programme, as initiated in 1984, following the framework provided by Jamasb et al. (2004).<sup>5</sup>

## 3. Electricity reform programme

As of today all public electricity utilities are corporatized. The first major corporatization was accomplished in 1993, with the splitting of TEK into two separate public utilities, the Turkish Electricity Generation Transmission Company (TEAS) responsible for both generation and transmission activities, and the Turkish

<sup>2</sup> Turkey is bordered by Bulgaria, the Black Sea to the North, Georgia, Armenia, Azerbaijan, and Iran to the East, Iraq, Syria and the Mediterranean Sea to the South, and Greece and the Aegean Sea to the West.

<sup>3</sup> A detailed account of development of Turkish electricity sector is available in Hepbasli (2005), Ozkivrak (2005), and Atiyas and Dutz (2003).

<sup>4</sup> For the first time electricity is generated in Tarsus by 2-kW dynamo connected to watermill under Italian-Swiss joint venture in 1902. In the year 1913, a bigger generation plant was set in İstanbul, Silahtaraga. The longest serving private utility, the Kayseri Electricity Distribution Company (KCETAS), which is still distributing electricity today in and around Kayseri province, was established during this period (in 1926), as well.

<sup>5</sup> These are as follows: (1) corporatization of state owned utilities, (2) enactment of electricity reform law, (3) regulatory reform, including adaptation of incentive regulation for natural monopoly network activities, (4) establishment of an independent regulator, (5) unbundling of vertically integrated utilities into generation, transmission, distribution and supply activities, and where necessary horizontal splitting, (6) provision of Third Party Access to networks, (7) establishment of a competitive wholesale generation market, (8) liberalization of the retail supply market, (9) privatization of electricity assets, and (10) definition of rules governing consumer protection, allocation of energy subsidies, and stranded costs. We do not take these benchmarks in order.

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