

## CREATING MARKETS IN TURKEY'S POWER SECTOR

*The World Bank Group's engagement in Turkey's power sector, which began in the 1990s and continues today, has helped to expand independent power production and privatize electricity distribution in the country. Significant investments made in both generation and distribution shifted the power sector toward private investment and management while meeting growing energy needs.*

Since 1998 the World Bank Group has been actively engaged in the liberalization and privatization of Turkey's power sector, initially with technical and financial support from the World Bank, and culminating in IFC investments into private companies. These efforts have successfully created new markets in the sector, resulting in greater access to reliable electricity, accelerated economic growth, and an increase in labor force participation.

### Energy and the Economy

Turkey's economy has exhibited strong growth in recent decades, with average annual GDP growth of 7 percent between 2003 and 2013. While growth has slowed since then, Turkey continues its steady transition toward an industrialized and diversified economy.

A side effect of strong economic growth, in addition to ongoing industrialization and population growth in Turkey, is that the nation's energy needs have also risen rapidly. Growth of per capita electricity use has outpaced GDP per capita growth rates for the last two decades. And energy intensity—a measure of energy consumption per unit of GDP—has grown on average 5.5 percent annually between 2000 and 2015. Due to a heavy reliance on power hungry industries such as motor vehicle and steel production and mining, rising electricity prices threatened to make the economy less competitive. In addition, power outages, due to demand exceeding supply, have been common for ordinary Turks, occurring on average five times a month.

The inability of Turkey's power sector to keep up with demand was largely a result of a noncompetitive market. Until the 1980s Turkey's energy sector was dominated by a vertically integrated, state owned monopoly—the Turkish Electricity Authority—for generation, transmission, and distribution.

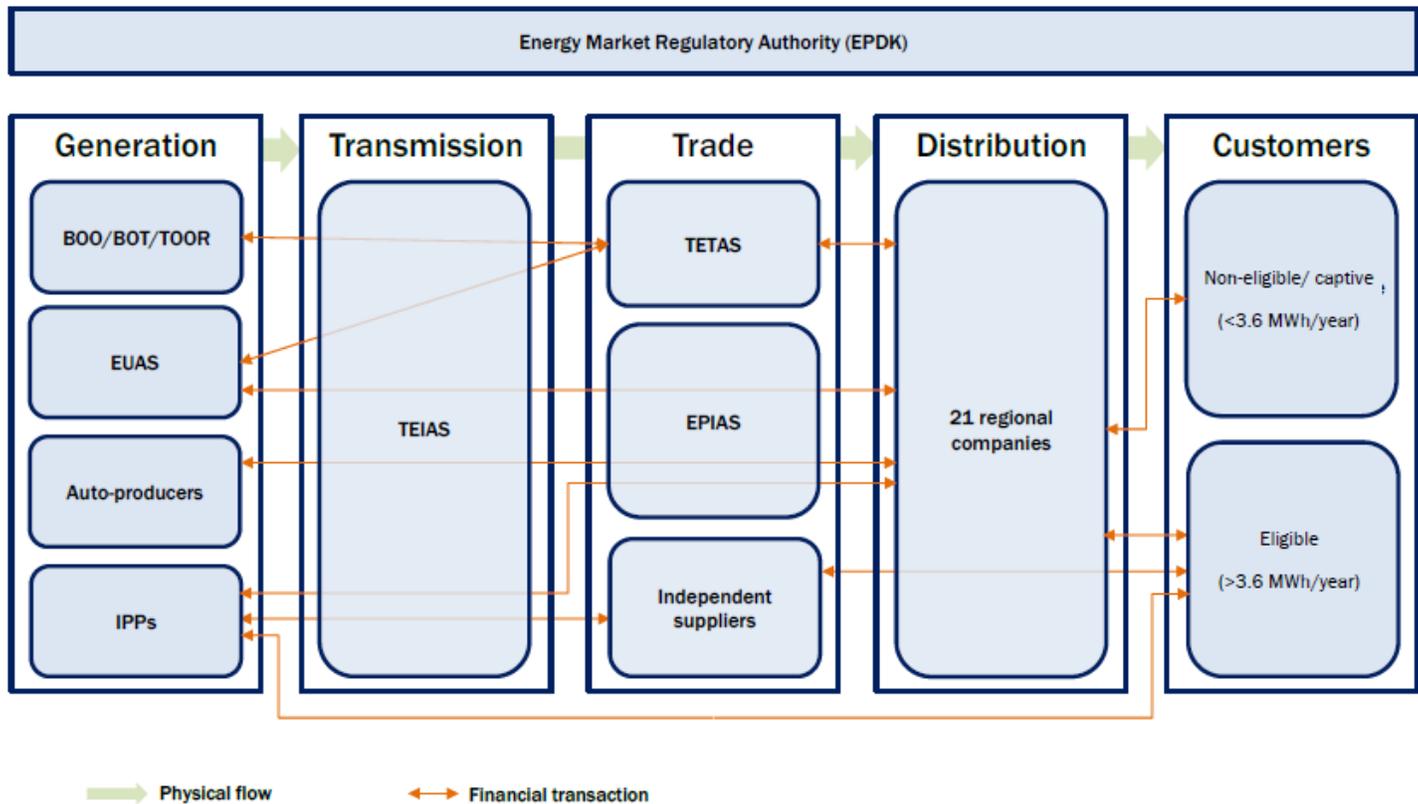
In 1984, with legislation that removed monopoly power, the country began a process of unbundling state owned enterprises, paving the way for private participation in the energy sector. Liberalizing the sector offered the potential to remedy many of the challenges and drawbacks inherent in full state ownership. And privatization allowed for the creation of a competitive market with greater access to entry for private enterprises. The potential results of those efforts were greater efficiencies, increased supply and, ultimately, lower prices for both consumers and industry.

### Turkey's Power Sector Transformation

The 1984 legislation introduced several new investment models, including Build-Operate-Transfer, Build-Operate-Own, Transfer of Operating Rights, Independent Power Production, and auto-production. These models differed mainly in ownership conditions, but all allowed for the involvement of private firms in one form or another.

The Electricity Market Law of 2001 provided for the unbundling of state owned electricity assets, opened the market above a certain level of electricity consumption, and allowed third-party access to the grid. It also mandated that all generation capacity be sold to wholesalers, retailers, or directly to consumers, either directly or via a spot market.

With technical and financial assistance from the World Bank, the state owned generation and transmission company was unbundled and divided into three separate entities responsible for generation (EUAS), transmission (TEIAS), and wholesale (TETAS) (See figure above). At a later stage in the unbundling process, the wholesale component moved from being a single buyer of private generation to an individual participant in a competitive market. Since 2003 the number of wholesale actors



in the market has expanded rapidly, with some 156 private entities holding wholesale licenses today.

Further unbundling of the power sector, in both distribution and retail activities, resulted from the Electricity Market Law of 2013. In 2015, with technical assistance from the World Bank Group, the independent Energy Market Regulatory Authority—which issues licenses, approves tariffs, and performs other functions that facilitate private participation in the energy market—announced the establishment of the Turkish Energy Stock Market. That year 30 percent of total electricity was sold through the stock market, with the remaining electricity purchased through bilateral contracts.

### A Comprehensive World Bank Group Approach

In efforts to promote access to reliable energy and the associated economic benefits that come with it, the World Bank Group, including IFC, has actively supported and financed the liberalization and privatization of Turkey’s power sector and the creation of markets for electricity in the country.

As illustrated in the figure on page 3, the World Bank Group<sup>1</sup> provided technical policy assistance on market structure, regulation, and pricing, as well as financing toward the initial liberalization of the electricity market. By 2007 about 40 percent of the energy market was liberalized. In 2008 IFC made additional investments in private electricity companies—further promoting the participation of private firms in Turkey’s energy sector. The Multilateral Investment Guarantee Agency (MIGA) contributed \$300 million in guarantees. By 2015, total World Bank Group investments and commitments stood at over \$7 billion, with the power sector transformed into a fully competitive market.

Overall, IFC made considerable investments in Turkey’s power sector, in both distribution and generation, spurring innovation and market creation. Since 2008 IFC has committed \$3 billion (including \$1.2 billion from IFC’s own account and mobilization of \$1.8 billion). Four power generation companies—Enerjisa Enerji, ACWA, Akenerji, and Rotor

<sup>1</sup> The World Bank Group includes the World Bank, the International Finance Corporation and the Multilateral Investment Guarantee Agency.

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# Working as One Bank Group to Create Markets

We are strongest when we leverage the entire Group

## Sector Market Structure & Pricing

What are the rules for competition, and private service provision?

## Sector Institutional Capacity

What is the state of institutional capacity at the sectoral level?

## Complementary Investments

How are public good investments being addressed?

Forms of SD support

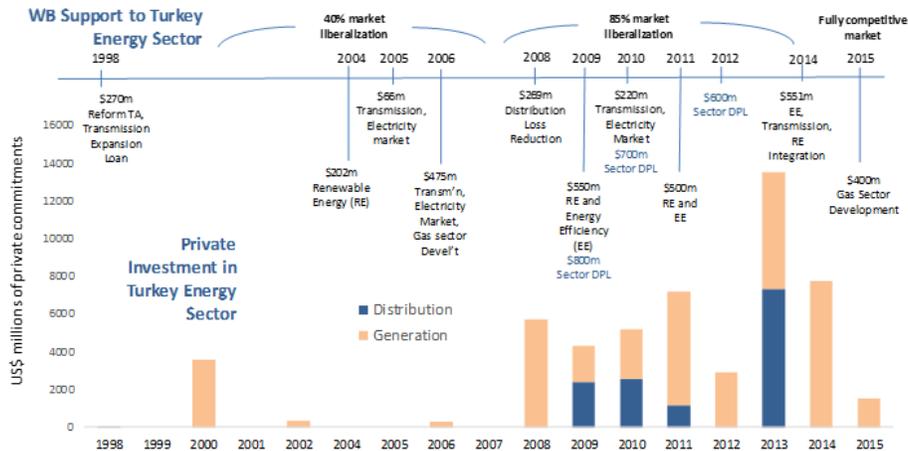
Technical Assistance on market structure, regulation and pricing

Capacity building, Procurement assessment, and strengthening

Public lending to catalyze private investment

- Expanded access for the poor
- Climate-smart investments

Policy Lending in Support of the Above



### Total WBG Energy Sector Support to Turkey

#### Power Sector

- IBRD: \$3.5 billion in Investment and T.A. lending
- IBRD: \$2.1 billion Sector Policy Financing
- IFC: \$1.5 billion in leading RE and Gas Generation
- MIGA: \$300m in Guarantees

**\$7.2 billion**

### Total PPI in Turkey Power Sector over 16 years

- 92% of investment in last 8 years, 10 years after 1<sup>st</sup> IBRD Sector Reform Loan & Transmission investment

**\$55.4 billion in Power + \$6 billion in Gas**

Elektrik—received a total of \$1.8 billion in loan capital, while a total of \$407 million in equity investments were made for Akfen Energy, Gama Enerji and UNIT Equity. A distribution company, SEDAS, received \$150 million in loan capital from IFC and an additional \$90 million sourced from international banks.

## Outcome and Lessons Learned

The effects of the World Bank Group's role in Turkey's power sector have been broad and far-reaching, contributing to the success of privatization. Direct investments into the sector have increased Turkey's total installed capacity. IFC-financed plants currently contribute over 4 percent of capacity, with approximately 3,000 megawatts operational and an additional 3,000MW under construction. The increase in Turkey's power fleet has also resulted in cheaper electricity tariffs for end-users; they fell from 3.5 percent in 2010 to 1.3 percent in 2015, when compared to a hypothetical situation in which IFC-financed capacity was not realized.

The macroeconomic impact of IFC and World Bank power sector investments have been substantial. With cheaper

electricity costs, industrial power use has increased, boosting GDP and employment growth. Around 20,000 new jobs have been attributed to IFC investments alone. In addition, the proportion of Turkey's population with access to electricity has increased from 62 percent in 1990 to 96 percent in 2009, with a noticeable reduction energy intensity.

World Bank and IFC investments in Turkey illustrate market creation in action. The World Bank Group was able to help correct market failures and imperfections in the power sector, ultimately allowing for the development of an open and competitive energy market by 2015. And IFC investments in private companies spurred new ideas and activities in the energy sector. In Turkey's case, a holistic approach that leveraged different members and capabilities of the World Bank Group was the best strategy. Comprehensively addressing market imperfections and structural challenges, building capacity, and providing both financial and technical assistance were necessary to foster successful and self-sustaining markets. ■

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