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Renewable energy: Going green

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With the aim of meeting the country's increasing demand for electricity, the Turkish government is devising alternatives to the heavy dependency on imported energy. As a country almost barren of oil and gas resources, Turkey's focus for local energy generation has shifted to renewables and nuclear power. Dependence on expensive energy imports makes the Turkish economy vulnerable to continuously fluctuating oil and gas prices. That is why attracting investment into local energy generation using other abundant natural resources is a viable alternative. To that end, investment is encouraged through new legislative changes in the renewables market. The regulatory environment is constantly being upgraded, and updated or new legislation is being introduced, as is the case for nuclear power.

The first significant shift in the energy markets was the introduction of the Electricity Market Act on March 3 2001. The Act was a milestone in the reformation process, where the aim was to provide a fully competitive market in production, wholesale and retail activities. Another target was regulating transmission and distribution activities, which are now divided among different territories. The transmission of electricity remained the only exception to the competitive energy market under the regulation of the Energy Market Regulatory Authority (Emra), an independent regulatory body. Since then, the government has been shaping the market through various regulatory changes. The last batch over the course of 2011 had a significant bearing on the renewable energy market as well as marking the first regulatory activity enabling the establishment and operation of nuclear power plants.

Licensing

Entry to the energy market is not free nor is it without restrictions. The path to becoming a player in the Turkish energy markets means obtaining licences for each and every specific activity to be carried out. Licence applications and licence acquisition are subject to the provisions of the Electricity Market Licence Regulation

(published in the Official Gazette on August 4 2002) (Licence Regulation).

Only limited liability companies and joint-stock companies established in Turkey can obtain electricity production licences. There are no restrictions on foreign ownership; applicant companies can have 100% foreign capital. The Licence Regulation requires the minimum capital of the applicant company to be equal to 20% of the total estimated investment amount.

The Licence Regulation imposes the inclusion of certain specific provisions to the articles of association of the applicant company, such as provisions on minimum required capital, registered shares, and requirement of the approval of Emra for amendments in the articles of association.

Licences are granted for a maximum period of 49 years, and, for production, transmission and distribution activities, there is a minimum licence period of 10 years. Licences can be renewed when the licence period expires.

Such requirements will apply generally for all energy sources, be it wind or solar, nuclear or geothermal; however, specific provisions for specific markets set forth additional requirements.

In addition to an activity-specific licence, licensees of renewable energy power plants are also required to obtain a document known as a renewable energy source (RES) certificate, in accordance with the provisions of the Regulation on Procedures and Essentials of Granting Renewable Energy Resource Certificate, published in the Official Gazette on October 4 2005. This practice resembles the former provisions relating to resource guarantee certificates of Directive numbered 2001/77/EC of the European Union. Every power plant to be constructed requires an Environmental Impact Report (an Environmental Impact – Positive Decision or an Environmental Impact – Not Required Decision certificate), which determines whether or not the operations of that power plant will have a negative impact on the environment.

Incentives

The government has been taking measures to give incentives to an otherwise heavily regulated activity. The Renewable Energy Law (numbered 5346 and dated May 18 2005) was amended on January 8 2011 with a view to providing for a more investor-friendly incentive scheme.

The amended Renewable Energy Law and the Licence Regulation introduce certain advantages which relate to feed-in tariffs, licence fees, land use or acquisition, use of local components, priority in

connection, purchase privilege for licensees based on RES, establishment of additional capacity, protective provisions for development plans, and exemption from being a balancing entity.

The cornerstone of the Renewable Energy Law is the feed-in tariff mechanism setting forth an obligation for the electricity suppliers to purchase their electricity firstly from accredited renewable energy power plants. The Renewable Energy Law now distinguishes among the type of renewable energy used to generate electricity. The tariffs listed in Table 1 will apply to power plants which come into operation before January 1 2016 and during the first 10 years of their operation. The cabinet of Ministers is authorised to set new prices for the feed-in tariff mechanism thereafter.

TABLE 1: Tariffs applied to various energy types

Renewable energy type	Fees (¢/kWh)
Hydroelectric	7.3
Wind energy	7.3
Geothermal energy	10.5
Solar energy	13.3

In a standard licence application, 1% of the licence fee is paid to Emra for the application to be evaluated; the remainder of the licence fee is paid after the application is found suitable for licence. However, the renewable energy licence applicants are exempt from paying the remainder of the licence fee. Moreover, renewable energy power plants will not be required to pay any licence fee for eight years as of the date the power plant goes into operation.

With regard to land rights, generally, if there are multiple licence applications for the same site, then TEIAS (the national grid company) opens a contest and the highest bidder signs an agreement with TEIAS. For solar energy licences, the Licence Regulation grants a priority to the land owner of the site of the project above other applicants for that site. Another incentive is the 85% discount on the consideration for the lease, right of use, or right of easement on the State owned land to be used for transportation and transmission. The incentive applies to the facilities, which commence operations before January 1 2016. The discount will apply during the first 10 years after the establishment of the power plant.

The Renewable Energy Law introduces an increase in the standard feed-in tariff for the local component used in a given renewable energy power plant. If a renewable energy power plant uses local components listed in the Renewable Energy Law, the feed-in tariff applied to that power plant will be increased by an additional ¢

0.4/kWh to $\text{€}3.5/\text{kWh}$ based on the local component used in that power plant. The range of the prices applied for components differs depending on the type of the component used in the renewable energy power plant. The advantage applies during the first five years of operations for facilities which begin to operate before January 1 2016. The cabinet of Ministers is authorised to set new prices for the local component addition to feed-in tariff mechanism thereafter. Investors willing to benefit from this advantage must prove that the components used are produced in Turkey and obtain a local component document from the Ministry of Energy.

Power plants holding a RES certificate will have the priority to be connected to the national grid over power plants using other energy sources.

The regulations also set out an electricity purchase privilege. Renewable energy power plants may purchase electricity from wholesale companies in order to cover the internal needs of the power plant. The amount of electricity they purchase cannot exceed the amount of the electricity required for the operation of the power plants. Power plants using other energy resources are not allowed to purchase any additional electricity. The renewable energy power plants are provided with such a right because the renewable energy sources they use are not sustainable such as the ones used by fossil power plants and from time to time renewable energy power plants may require such a purchase to assure the effectiveness of their own electricity production.

Renewable energy power plants can establish additional capacity of production without any requirements for additional licences. Such additional capacity should, however, be established in the same site of the power plant and the power loaded to the transmission system cannot exceed the maximum amount of established power granted with the licence.

Renewable energy power plants are exempt from being a balancing entity under the balancing and settlement mechanism. This mechanism aims to keep the supply and demand of power connected to the grid at balance, where almost every established power plant is required to be included in this mechanism. The balancing and settlement operator has the right to require those balancing entities to load electricity to the national grid in order to meet the electricity demand of the grid. The renewable power plants are exempt from the obligation to be a part of the balancing and settlement mechanism given that their resource is not sustainable and therefore a renewable energy power plant cannot be expected to produce electricity at any given time.

Source-specific regulations

There is a peculiar provision regarding the date of application for wind and solar licences. A company can apply to Emra for a licence only on the date reserved by the Authority for collecting wind or solar licence applications. Emra has not yet granted any solar licences, but has recently announced that applications for solar licences will be collected between June 10 and 14 2013. This expected announcement was supported with an earlier set of legislative actions including the publication of the recent Communiqué on Measurements Standards for Licences on Wind and Solar Energy (published in the Official Gazette dated February 22 2012 and numbered 28212), and the Regulation on Contests For Licence Applications in Relation to the Establishment of Power Plants Using Solar Energy (published in the Official Gazette dated May 29 2012 and numbered 28307). The Communiqué sets forth that 18 months' on-site measurement must be made respectively for solar and wind power plants. Meanwhile the Regulation sets forth the principles and procedures for the contests that will be conducted for licence applications of solar energy for the same site. The contest is held in a manner of a deduction procedure where the applicants submit their solar energy power plant deduction fees to be evaluated. These deduction fees are defined as the deduction of fees in ¢/kWh from the feed-in tariff applicable to the electricity produced per kWh by the solar power plants. The applicant company with the highest deduction fee offer wins the contests and is granted the right to make a connection to the national grid system in the defined region.

The production capacity restriction for each solar licence is restricted to 50 MW and the total capacity for the initial licences for the first batch of solar power plant applications will be a maximum of 600 MW.

Wind licence applications, which have been suspended since 2007, were issued in late 2011. There have been 13 contests for the wind power production facilities conducted by TEIAS. A total capacity of 5,500 MW has been distributed to 149 projects with the highest contribution margins.

Hydroelectric energy is very important in Turkey. According to statistics from 2010 (in *Environment and Clean Energy*, by Veysel Eroglu), 25% of electricity in Turkey is generated from this source. Emra and the Ministry of Energy and Natural Resources, as well as the General Directorate of State Water Affairs are key authorities regarding hydroelectric power plants. Regarding the land where hydroelectric power plants will be constructed, the Renewable Energy Law sets forth that a lease or easement right could be established or a utilisation permit could be granted by the Ministry

of Environment and Forestry or Ministry of Finance in exchange for remuneration, in the event that such land is of forest nature, or under private ownership of the treasury or under the disposal of the state in its entirety.

Companies operating within the scope of the related legislation are also obliged to sign a water use right agreement with the General Directorate of State Water Affairs after feasibility reports regarding the operation of hydroelectric power plants are approved by the General Directorate. This obligation and the provisions of the agreement are regulated under the Regulation on Procedures and Principles with regard to Signing Water Use Right Agreement for Generating Electricity in Electricity Market (published in the Official Gazette dated June 26 2003) which aims to protect the environmental exposures and water rights of other water users. This agreement provides essentials and the fees that will be paid to the General Directorate of State Water Affairs for the water used during operations.

With regard to geothermal energy, in addition to Emra and Ministry of Energy and Natural Resources, the General Directorate of Mining Affairs and General Directorate of Mineral Research and Exploration, as well as Provincial Special Administrations, are the key authorities. Separate licences must be obtained to explore geothermal sources and to operate those sources when discovered. Accordingly, exploration licences must be obtained from Provincial Special Administrations in order to conduct exploration activities aiming to find geothermal sources, and operation licences must be obtained, again from Provincial Special Administrations, in order to operate the power plant using the geothermal source explored within the scope of the exploration licence. Provincial Special Administrations obtain the opinion of the General Directorate of Mining Affairs for granting exploration licences and the opinion of General Directorate of Mineral Research and Exploration for granting operation licences.

Nuclear energy is not yet used in Turkey, but the first nuclear power plant is to be commissioned in Akkuyu, Mersin. The operator is Rosatom of Russia, by virtue of an international treaty signed between Russia and Turkey on May 12 2010. The Turkish government plans to establish four nuclear power plants in total. Law no 5710 on Establishment and Operation of the Nuclear Power Plants and the Energy Sale (published in the Official Gazette dated November 2007 and numbered 26707) together with the Communiqué on Granting Licences to Nuclear Installations issued by Council of Ministers (published in the Official Gazette dated December 19 1983 and numbered 18256) form the backbone of regulation in this respect. Secondary legislation is constantly being issued, such as the very recent Nuclear Material Counting and

Control Regulation and the Regulation on the Physical Security of the Nuclear Facilities and Nuclear Material of May 2012.

The Turkish Atomic Energy Authority, the core regulatory body for nuclear power, has issued several regulations and guidelines on safety measures addressing the requirements expected from investors. The Authority is the only entity authorised to distribute licences for nuclear power plants. Accordingly, Tetas (the Turkish Electricity Trade and Contract Corporation) will initiate a tender to determine the grant of the licence to establish and operate a nuclear power plant. The requirements for the applicants will be determined and reviewed by the Turkish Atomic Energy Authority, and Tetas will then present to the Chamber of Ministers its proposal as to the designated licensee. Only upon the approval of the Chamber will Emra issue the production licence for the relevant company. The permissions, approvals and licences required to install and operate a nuclear power plant are regulated under the Nuclear Energy Law along with the other related legislation. The licensing process for nuclear installations is completed in three phases: site licence, construction licence and operating licence. The site licence must be submitted to Emra in the application phase to obtain a production licence for a nuclear power plant.

The Nuclear Energy Law sets forth certain incentives which will be provided for investments in technology regarding the power plant to be constructed and the training of operational personnel. These incentives include land rights where free-of-charge constitution of servitude or right to use for state property is provided for the investor. Although the Nuclear Energy Law sets forth a tender procedure for the establishment of nuclear power plants as described, the government preferred to grant the right to establish the first nuclear power plant through a bilateral agreement signed between Russia and Turkey. The government has recently signed a letter of intent with Candu, a Canadian company, for the future establishment of a nuclear power plant in Sinop, and has also spoken to the Japanese and Korean governments in that regard. This gives a strong hint that the government will choose to enter into bilateral treaties for the establishment of future nuclear power plants rather than pursuing a tender process as prescribed in the legislation.

A final word

Turkey is still paving the path, through legislative changes, to attract further investment in renewable as well as nuclear energy. The incentives are significant and welcome. That being said, the Turkish electricity market is still evolving and there is still need for further legislative development. 2012 will see further increasing activity of the regulatory bodies and the legislature in introducing

new regulations and standards in the renewables market. Nuclear energy is another field where, with the new designations of operators, the legislative field will evolve. These are certainly exciting times both for incumbents and new investors looking into doing business in Turkey.

Serra Basoglu Gürkaynak



Mehmet Gun & Partners

Esentepe Mah. Kore Sehitleri Cad.
No:17 Sisli 34394
Istanbul

T: +90 212 354 00 00

F: +90 212 274 20 95

E: gun@gun.av.tr

W: www.gun.av.tr

Serra Basoglu Gürkaynak is a partner in Mehmet Gun & Partners' commercial and corporate law department, leading the corporate and transactions practice. She previously worked with White & Case in New York and Istanbul, focusing on mergers and acquisitions, bank finance transactions and capital markets projects, and in-house at Sabanci Holding where she enhanced her transactional expertise acting for, and advising, the likes of Akbank, Enerjisa, Advansa and other subsidiaries of the group in cross-border mergers and acquisitions and bank finance deals. During her role as the head of legal for Coca-Cola's international operations, Gürkaynak led legal affairs in the Middle East and the CIS, while continuing to focus on transactional law through joint ventures, acquisitions and finance packages of the beverage corporation in the region, including Turkey. A member of the Istanbul and New York Bars, Gürkaynak holds two LLM degrees, one in corporate law from New York University and another in EU law from Brussels Free University. She is fluent in English and speaks French.

Ali Ozan Karaduman



Mehmet Gun & Partners

Esentepe Mah. Kore Sehitleri Cad.
No:17 Sisli 34394
Istanbul

T: +90 212 354 00 00
F: +90 212 274 20 95
E: gun@gun.av.tr
W: www.gun.av.tr

Ali Ozan Karaduman is an associate in the corporate and commercial department, and the energy and natural resources and IT & telecommunications practice groups of Mehmet Gun & Partners. He has been with the firm since 2007 and his practice focuses on corporate and commercial law, preparation and negotiation of contracts, and telecommunication and energy law projects. Karaduman is a graduate of Galatasaray University in Istanbul and speaks English and French. He is a member of the Audit Board of the Galatasaray University Alumni Association.

Ömer Gürbüz



Mehmet Gun & Partners
Esentepe Mah. Kore Sehitleri Cad.
No:17 Sisli 34394
Istanbul

T: +90 212 354 00 00
F: +90 212 274 20 95
E: gun@gun.av.tr
W: www.gun.av.tr

Ömer Gürbüz is an associate in the corporate and commercial department, and the energy and natural resources and insurance and reinsurance practice groups of Mehmet Gun & Partners. He has been with the firm since 2010 and his practice focuses on corporate and commercial law, obligations law, preparation and negotiation of contracts, energy law projects, and insurance and reinsurance law dispute resolution. Gürbüz is a graduate of Bilkent University in Ankara and speaks English. He is a member of the Model United Nations Association in Turkey.

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