



## Solar and Wind Energy Implementations in Turkey

In recent years, investments in electricity generation from renewable energy resources have shown a remarkable growth. Turkey has set solid targets for 2023<sup>1</sup>, on generating energy from renewable energy sources. These targets are (i) increasing the margin of electricity generated from renewable energy sources from 25% to 30%; (ii) increasing the capacity of energy generated from wind power to 20,000 MW; and (iii) establishing new solar energy based power plants with an aggregate capacity of 3,000 MW.

The Ministry of Energy and Natural Resources (the "**MENR**") is the principal governmental body administering the energy sector in Turkey. Under the auspices of the MENR, the Energy Market Regulatory Authority ("**EMRA**") is the competent administrative and regulatory authority supervising the electricity market. EMRA's powers and duties can be summarized as issuing licenses; setting, amending, enforcing and supervising regulations on performance standards, distribution of power and customer services; setting out pricing principles; and maintaining the development and performance of infrastructure for implementation of new power trading and sale methods, etc.

The Law on Utilization of Renewable Energy Resources for Generating Electrical Energy<sup>2</sup> (the "**RER Law**") is the primary legislation on use of renewable energy resources under Turkish law<sup>3</sup>. After six years following the initial enactment of the RER Law, Law No. 6094<sup>4</sup> entered into force in 2011. Its enactment introduced the Renewable Energy Resources Support Mechanism (the "**RER Support Mechanism**") into the Turkish energy market. Another legislation on renewable energy generation activities in Turkey is the Electricity Market Law<sup>5</sup> (the "**EML**"). The EML addresses new issues that have long been expected in the market, such as the introduction of the 'preliminary license' mechanism for generation license applications.

Currently, no licensed solar energy based plants exist in Turkey and there are only unlicensed independent solar energy based plants generating power, up to a maximum capacity of 1 MW. Regarding wind energy based plants, as of August 2015, 93 licensed wind energy based plants actively operate in Turkey<sup>6</sup>.

Many new wind and solar energy based plant investments are in the pipeline. These investments will require investors to obtain a permanent power generation license from EMRA. Obtaining a preliminary license is a precondition for obtaining a permanent power

<sup>1</sup> 2023 will be the 100<sup>th</sup> anniversary of the establishment of the Republic of Turkey.

<sup>2</sup> Published in the Official Gazette dated 18 May 2005 numbered 25819

<sup>3</sup> For the purpose of regulating the implementation of the RER Law, the Regulation on Documentation and Support of Renewable Energy was published in the Official Gazette dated 1 October 2013 numbered 28782.

<sup>4</sup> Published in the Official Gazette dated 8 January 2011 numbered 27809

<sup>5</sup> Published in the Official Gazette dated 30 March 2013 numbered 28603

<sup>6</sup> [lisans.epdk.org.tr/epvys-web/faces/pages/lisans/elektrikUretim/elektrikUretimOzetSorgula.xhtml](http://lisans.epdk.org.tr/epvys-web/faces/pages/lisans/elektrikUretim/elektrikUretimOzetSorgula.xhtml)

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generation license for the investors. This preliminary license is used by investors to obtain the necessary permits, approvals, certificates and ownership or usufruct rights of the area, where they will build their power generation facility.

## **Solar Energy Preliminary Licenses**

In June 2013, EMRA invited new investors to apply for solar energy generation preliminary licenses, in order to accelerate solar energy investments in Turkey. The total designated capacity by EMRA for solar energy generation preliminary licenses was 600 MW. However, as a result of this application period, the aggregate capacity in sum of the applications reached nearly 8,900 MW. The State Transmission Entity ("TEİAŞ") held six contests in different regions of Turkey. The purpose of these contests was to determine the companies that will obtain a preliminary license for each relevant region. The first contest was held in 2014 and the following five contests were held in 2015:

Contest	Date	Region	Capacity
1 <sup>st</sup> Regional Contest	12 May 2014	Elazığ	8 MW
		Erzurum	5 MW
2 <sup>nd</sup> Regional Contest	29 January 2015	Siirt-Batman-Mardin	9 MW
		Şanlıurfa-Diyarbakır	7 MW
		Antalya 1	29 MW
		Antalya 2	29 MW
		Muğla-Aydın	20 MW
		Denizli	18 MW
		Burdur	26 MW
3 <sup>rd</sup> Regional Contest	30 January 2015	Konya 1	46 MW
		Konya 2	46 MW
4 <sup>th</sup> Regional Contest	28 April 2015	Adana-Osmaniye	9 MW
		Sivas	9 MW
		Kayseri	25 MW
		Niğde-Nevşehir-Aksaray	26 MW
5 <sup>th</sup> Regional Contest	29 April 2015	Kahramanmaraş-Adıyaman	27 MW
		Malatya-Adıyaman	22 MW
		Van-Ağrı	77 MW
		Bitlis	16 MW
6 <sup>th</sup> Regional Contest	30 April 2015	Karaman	38 MW
		Mersin	35 MW
		Isparta-Afyon	18 MW

## **Wind Energy Preliminary Licenses**

In April 2015, EMRA received applications from investors for wind energy generation preliminary licenses. The total designated capacity for new wind energy generation preliminary licenses was 3,000 MW until 2018. As of 12 August 2015, 1,032 projects with an aggregate capacity of 40,280.28 MW were proposed. If the aggregate capacity of the validly made applications exceeds 3,000 MW, then EMRA will organize contests in different regions of Turkey. The purpose of these contests will be to determine which investors will be entitled to obtain wind energy generation preliminary licenses in each relevant region. EMRA is currently evaluating the submitted applications<sup>7</sup>. Upon this evaluation, EMRA will decide

<sup>7</sup> <http://enerjienstitusu.com/2015/08/28/2015-yili-ruzgar-enerjisine-dayali-onlisans-basvurulari-yerlesim-analizi/>

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which applications are valid. The announcements for these prospective contests are expected in the beginning of 2016<sup>8</sup>.

## **Incentive Regime**

The rapid growth of the energy market in Turkey is expected to continue in the coming years. Turkey aims to create a liberal and competitive energy market for investors and to increase investment opportunities by introducing sector specific incentives. In 2011, the RER Support Mechanism was introduced. In order to benefit from the RER Support Mechanism, investors must obtain a renewable energy resource certificate ("**RER Certificate**"). RER Certificates enable EMRA to monitor and track the power generated from a renewable energy resource, at the time of the power's trade in domestic and international markets.

The RER Support Mechanism is about incentives that the state provides to RER Certificate holders. For example, renewable energy facilities having a RER Certificate may benefit from certain tax incentives<sup>9</sup>. Renewable energy facilities, roads and certain energy transmission lines may benefit from 85% discounts on the applicable land allocation fees, rental fees or utilization costs, to the extent they meet the conditions described in the RER Law. This discount is applicable for a period of ten years starting from the relevant facility's construction kick-off date.

No service fee is charged by EMRA to the facilities<sup>10</sup> generating power with a maximum capacity of 1 MW.<sup>11</sup> These facilities must be established to supply the individual energy needs of their owners only. For benefiting from this service fee incentive, the ultimate project, planning, master plan, preliminary examination or first study of the facility project must be prepared by the General Directorate of Electricity Work Etude Administration or the General Directorate of State Hydraulic Works.

Renewable energy companies that are subject to the RER Support Mechanism may further benefit from a purchase guarantee incentive by the state. This purchase guarantee incentive decreases the renewable energy companies' financial risk, as the surplus of the generated energy is purchased by the state:

<b>Facility Type</b>	<b>Applicable Price (USD cent/kWh)</b>
Hydroelectric	7.3
Wind	7.3
Geothermal	10.5
Biomass	13.3
Solar Power	13.3

The RER Support Mechanism provides additional feed-in tariff and incentives for different types of power generation facilities (wind, solar, hydroelectric, geothermal etc.). These additional incentives are calculated *pro rata* the amount of the domestically manufactured components in the power generating process. If the mechanical and/or electro-mechanical equipment used in the renewable energy generation facilities are manufactured domestically,

<sup>8</sup> <http://www.bloomberght.com/haberler/haber/1769707-epdkyilmaz-reslere-1400-civarinda-onlisans-basvurusu-bekliyoruz>

<sup>9</sup> Subject to a Council of Ministers' decree

<sup>10</sup> Applicable to isolated power generating facilities (*izole elektrik tesisi*) and power generating facilities with network support (*şebeke destekli elektrik üretim tesisi*).

<sup>11</sup> Renewable energy generation facilities with a maximum capacity of 1 MW are exempt from the requirement of obtaining a generation license.

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then the contributions listed below will be paid by the state. This incentive only applies (i) to facilities which started their operation before 31 December 2020 and (ii) for a period of five years starting from the operation of each generation facility. After 31 December 2020, guaranteed prices and the term of incentives will be re-elaborated by the Council of Ministers. The purchase price guarantee incentives listed above and the domestic product incentives listed below can apply together, if the conditions under the RER Support Mechanism are met.

Facility Type	Domestic Production	Contribution (USD cent/kWh)
Wind	Wing	0.8
	Generator and power electronics	1
	Turbine tower	0.6
	The mechanical equipment in rotor and nacelle groups	1.3
Photovoltaic solar	PV panel integration and solar structural mechanics production	0.8
	PV modules	1.3
	Cells forming the PV module	3.5
	Inverter	0.6
	Material focusing the solar rays onto the PV module	0.5
Intensified solar	Radiation collection tube	2.4
	Reflective surface plate	0.6
	Sun chasing system	0.6
	Mechanical accessories of the heat energy storage system	1.3
	Mechanical accessories of steam production system that collects the sun rays on the tower	2.4
	Stirling engine	1.3
	Panel integration and solar panel structural mechanics	0.6

## **What is next in the Pipeline?**

The EML stipulates the establishment of an energy stock exchange in Turkey. The energy stock exchange has not been established yet but the company who will administrate it was established in March 2015<sup>12</sup>. Given this move, the energy stock exchange is expected to be established quite soon.

Thanks to all new legislations and arguably attractive incentives, the number of solar and wind energy investments have increased in the past couple of years. Yet, the country is still more than ready to welcome new investments in the renewable energy sector.

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<sup>12</sup> Enerji Piyasaları Anonim Şirketi (EPİAŞ) / Energy Markets Management Entity