



INVESTOR'S GUIDE FOR ELECTRICITY SECTOR IN TURKEY

NATIONAL
ENERGY



REPUBLIC OF TURKEY
MINISTRY OF
ENERGY AND
NATURAL RESOURCES



www.enerji.gov.tr



FOREWORD

Turkey continues to be an island of stability and growth with nearly 6% annual economic growth over the past 15 years. During this economic boom period, energy sector grew and went through a reform and restructuring process starting with the legal framework set up in 2001. With the introduction of the independent regulatory authority (EMRA) the market has become a level playing field for market players. Ensuring non-discriminatory access to energy markets mobilized sizeable private sector investments and involvement in energy activities. Since then the installed capacity in electricity generation, for instance, has almost tripled and the energy landscape in Turkey's consumption and power generation patterns have altered.

Turkey's energy sector is in a transition to ensure self-reliance, robustness, diversification, supply security, competitiveness and low-carbon energy in compliance with its national circumstances. Accordingly, Turkey announced its new National Energy and Mining Policy which is built upon three main pillars: 1) Security of supply, 2) Localization by domestic and renewable resources, and 3) Predictable market conditions for investors. This policy introduced a new framework for conceptualizing the progress we have already achieved long ago into a more structured and clear pathway.

In light of the positive track record we have achieved in all sub-sectors of the energy sector, Turkey **has achieved a remarkable progress in creating a regulatory framework with a transparent and competitive market structure in convergence with EU markets. Political stability and good governance** have eased the movements of private sector investments in the field of energy.

Turkey will continue to be **a safe harbor and a leading actor** in its region for further investments. Taking this opportunity, I would like to invite all investors to take part in Turkey's lucrative energy future.



Fatih DÖNMEZ
Minister of Energy and Natural Resources

WHY INVEST IN TURKEY?

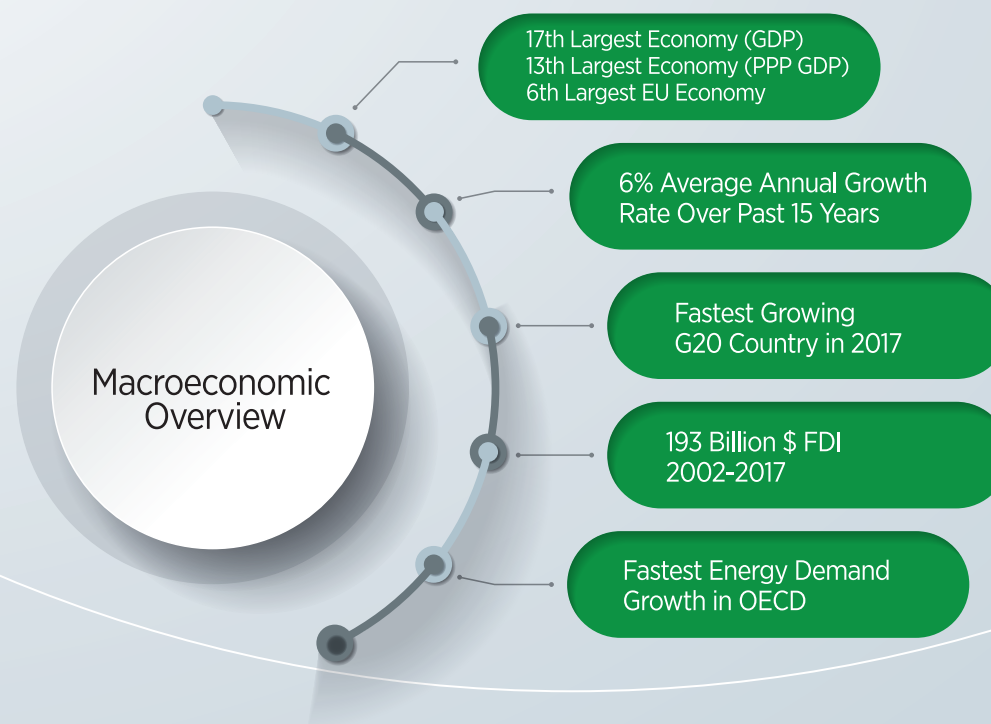
Turkey's Macroeconomic Overview

Over the past two decades, Turkey has emerged as a strong regional player with global ambitions to be one of the top ten economies in the world, achieving an **impressive annual growth rate of nearly 6% over the past 15 years**. Exceeding expectations, the Turkish economy grew by 7.4% in 2017, earning Turkey the title of fastest growing G20 country. With this achievement, Turkey's economic growth rate even surpassed China and India, which recorded 6.9% and 6.4% growth respectively in 2017.



Turkey is taking actions to improve its economic fundamentals. For instance, a series of government measures is set to reduce the current account deficit, with one such measure being that international investments can be used as leverage to support the localization of technologies and products. In addition, in priority sectors where Turkey is dependent on imports of intermediate goods, international companies are being attracted to the country to produce these goods locally. An example of this is the energy sector, which had a very high external dependence a decade ago. With the implementation of various measures, it is expected that the localization rate in the sector could rise to over 65% in the coming 5 to 10 years.

Turkey enacted the Foreign Direct Investment Law in 2003, enshrining equal treatment for all investors, both foreign and domestic, and providing them with certain guarantees, such as international arbitration, guarantee of profit transfer, and protection against expropriation. The economic development and structural reforms have made Turkey one of the most attractive destinations for FDI. FDI inflow to Turkey amounted to USD 193 billion in the 2002-2017 period. In the same period, **total FDI inflow to the energy sector stood at about USD 18 billion.** Similarly, **the number of companies with foreign capital in Turkey reached 58,400 in 2017, up from 5,600 in 2002.**



Turkey's Energy Outlook

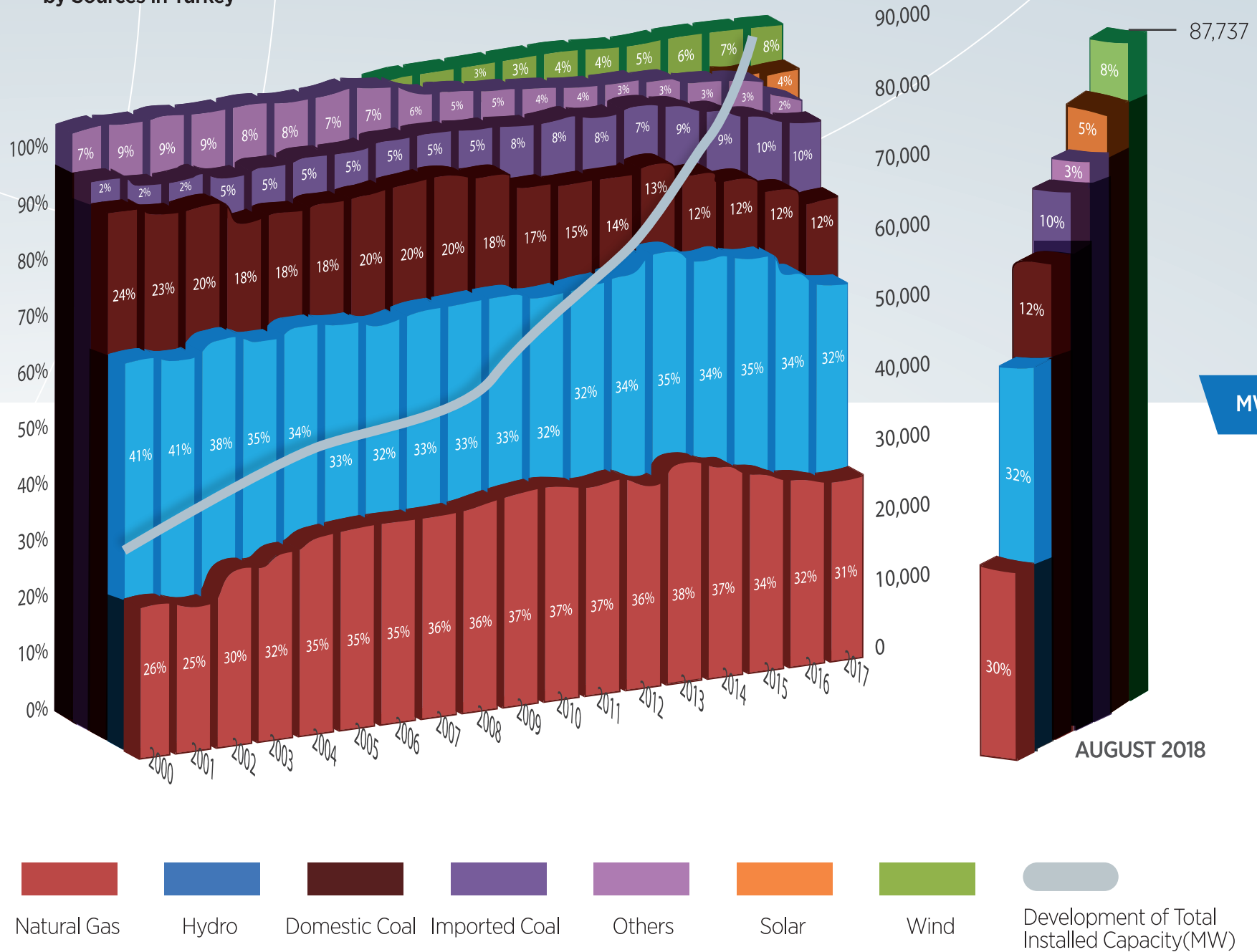
Demand for energy and natural resources has been increasing due to economic and population growth in Turkey. In recent years, Turkey has seen the fastest growth in electricity demand among OECD members, with an annual growth rate of 5.5% since 2002. Turkey will increase by 50% its energy use over the next decade. Moreover, the projections of the Ministry of Energy and Natural Resources (MENR) confirm that this trend will continue for the long-term. **Turkey's installed capacity has exceeded 87 GW, a threefold increase in 15 years.** Turkey has achieved an additional capacity increase of 6,700 MW in 2017 alone.

5.5% annual
demand
growth in
electricity
since 2002

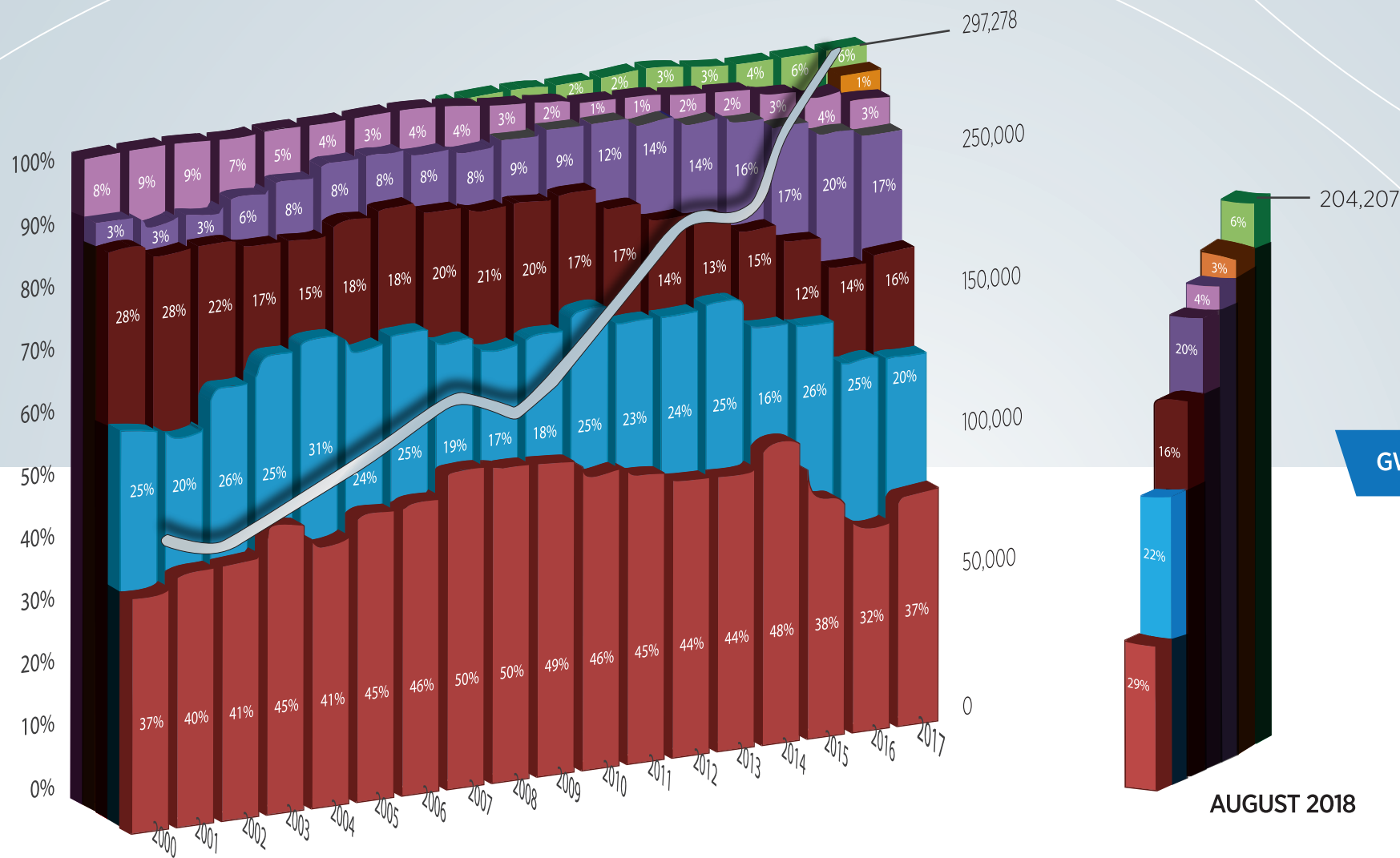
50% more
energy use
in next
10 years

6th largest
European
electricity
market

Installed Capacity Breakdown
by Sources in Turkey



Electricity Generation
Breakdown by Sources in Turkey



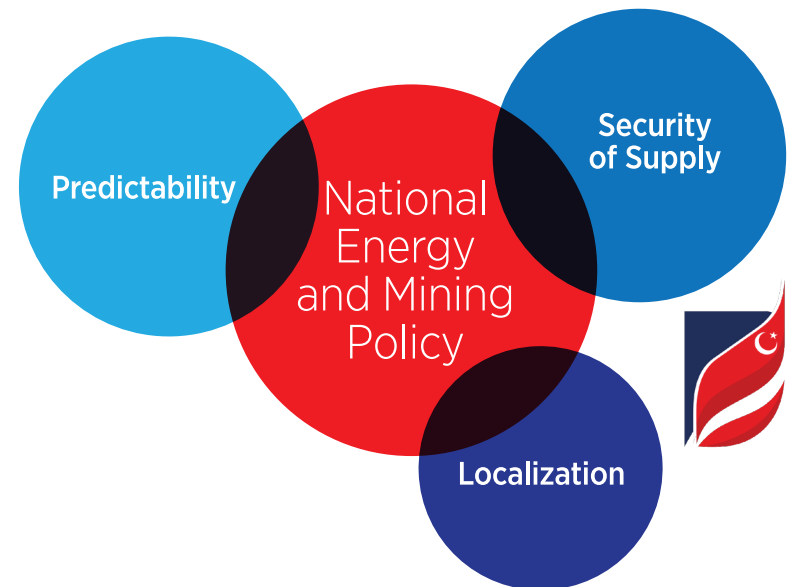
- Natural Gas
- Hydro
- Domestic Coal
- Imported Coal
- Others
- Solar
- Wind
- Development of Electricity Generation (GWh)

SHARE OF PRIVATE SECTOR IN ELECTRICITY GENERATION



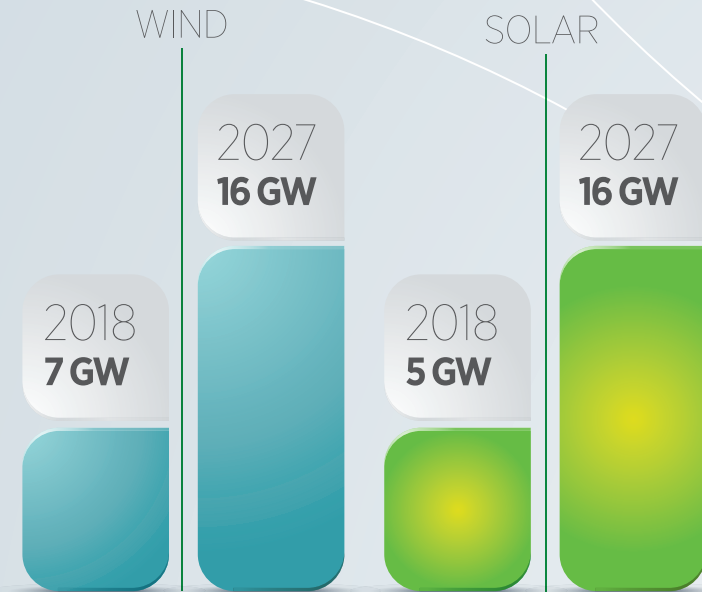
The majority of the capacity additions in Turkey have been realized in the last 15 years as a result of the investments made by the private sector. **The share of the private sector in electricity generation has risen from 40% in 2002 to 85.2% as of August 2018**, along with the shrinking share of Build-Operate and Build-Operate-Transfer power plants during the period.

In light of these developments, **Turkey announced the National Energy and Mining Policy in 2017** in order to increase the confidence in the energy sector and to update its targets. Ensuring security of supply, localization, and predictable market conditions are the main pillars of this policy. The top priority for Turkey is to decrease its import dependency by utilizing its domestic and renewable energy potential. Therefore, Turkey continues its efforts to increase the share of renewable energy sources and will add nuclear power to its energy mix. Furthermore, utilizing domestic and renewable energy potential is coupled with incentivizing local manufacturing of equipment, an example of which is the additional incentives for **locally manufactured renewable energy equipment**.



Turkey has substantial amount of renewable energy potential, and the utilization of this potential has been increasing over the last decade. As of the end of August 2018, hydro and wind resources constitute the vast majority of Turkey's renewable energy capacity, accounting for 28 GW and 7 GW respectively of the total installed capacity of more than 87 GW. Furthermore, Turkey's target is to develop **around 10 GW additional installed capacity each in solar and wind energy by 2026** compared to the 2016 baseline. Additionally, Turkey aims to increase **the share of domestic and renewable energy in power generation to 2/3 by 2023**. Renewable Energy Zones model was created for this purpose. Furthermore, a feed-in-premium mechanism (YEKDEM) is currently in place which is to be redesigned soon. Turkey also gives priority to the utilization of nuclear and coal resources as efficiently and environmentally-friendly as possible. Turkey will continue its studies towards utilizing domestic coal potential with clean coal technologies.

WIND AND SOLAR ENERGY TARGETS



Share of RE and domestic sources in electricity generation is targeted to be **2/3 by 2023.**

In terms of regulating **nuclear energy** and ensuring **nuclear safety**, in 1956, General Secretariat of Atomic Energy Commission was established in Ankara only to be restructured as Turkish Atomic Energy Authority (TAEK) in 1982 as the nuclear regulatory body. TAEK was responsible for ensuring nuclear safety and nuclear security by licensing and inspecting nuclear & radiation activities and facilities. In 2018, **Nuclear Regulatory Authority** was established to take over these duties from TAEK, leaving it in charge of only conduction, coordination and support for R&D activities in the nuclear field.

On the other hand, Turkey has been a **member of IAEA since 1957** as well as continuing the enhancement of its nuclear safety capacity by

virtue of the EU's Instrument for Nuclear Safety Cooperation (INSC). Building upon this background, for the purpose of reducing energy import dependency and combating climate change, Turkey has taken important steps to introduce the nuclear energy into its energy mix. Accordingly, Turkey has signed two intergovernmental agreements, one with the **Russian Federation** in 2010 and the other with the **Japanese Government** in 2013. These agreements aim for the construction of two nuclear power plants with **4,800 MW** and **4,480 MW** capacity respectively. Technical evaluations and assessments for the third nuclear power plant are ongoing and the share of nuclear energy in power generation is targeted to be around **10%** in the medium term in Turkey.



It is also worth mentioning that Turkey's natural gas sector has been steadily improving. Turkey commissioned two Floating Storage Regasification Unit (FSRU) terminals this year. One goal is to **expand Turkey's underground gas storage capacity to 11 bcm by 2023**, up from its current capacity of 3.3 bcm. Turkey will also begin exploration studies in its seas with a drill ship that has recently been purchased. Furthermore, the organized wholesale gas market operations started under the Energy Exchange Istanbul (EXIST) as of September 1, 2018.

All these developments pave the way towards a more competitive gas market. Last but not least, it is important to mention the steps Turkey has taken up until now and its goals in the field of energy efficiency. There is an important energy efficiency potential in Turkey. In the National Energy Efficiency Action Plan, which was adopted this year, Turkey aims to achieve **savings of USD 30.2 billion in total by 2033**. In this regard, an investment of approximately USD 11 billion will be made by 2023.

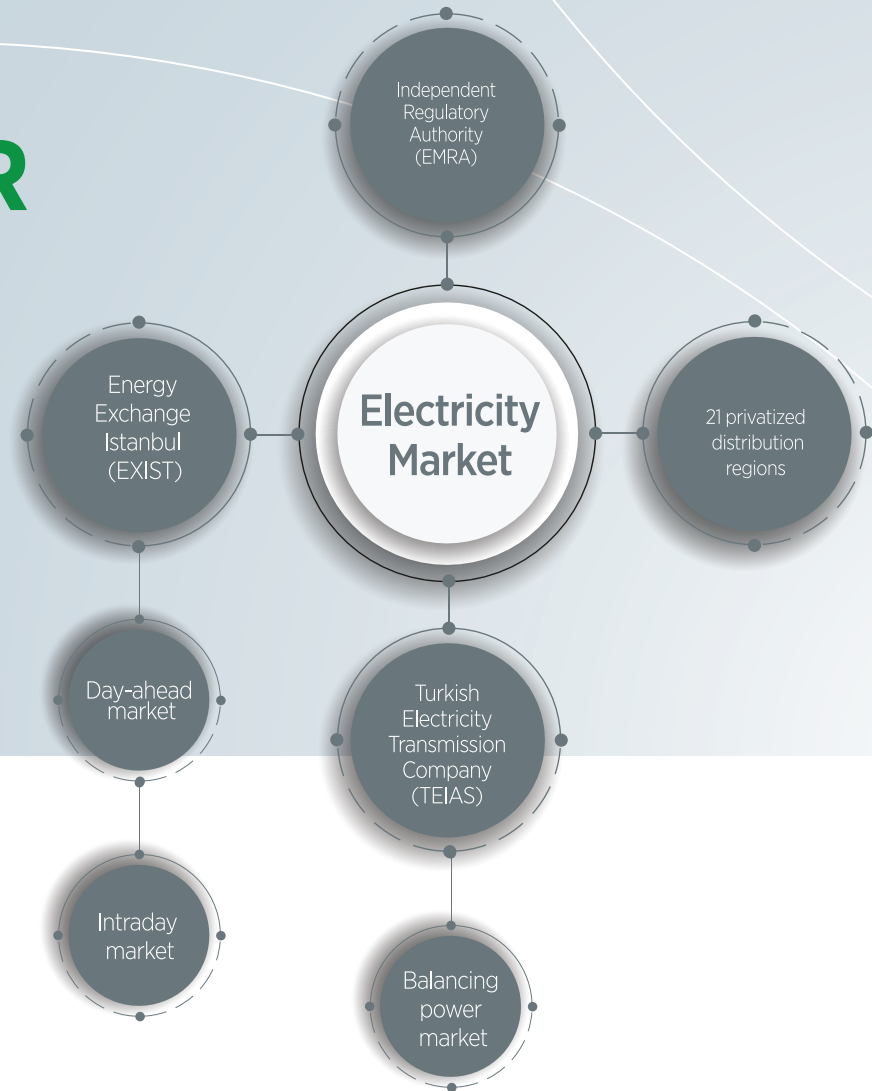
This will result in energy savings equivalent to 23.9 Mtoe. This saving is equal to reducing the primary energy consumption of Turkey by 14% in 2023 compared to the base scenario. As part of Turkey's efficiency efforts, Turkey will eliminate the need for USD 4.2 billion worth of power plant investments and also provide additional employment for 20,000 people by 2023.

WHY INVEST IN ELECTRICITY SECTOR IN TURKEY?

Turkish Electricity Market Overview

The Turkish electricity sector has gone through a significant transformation in the past two decades. Throughout this period, the electricity market underwent a liberalization process along with the establishment of a regulatory authority for the energy sector, went through reforms, and became a functional electricity market with large-scale private sector participation following privatization.

Seeking to become a full member of the European Union, Turkey took the initiative to open its electricity market to competition in 2001. This marked a turning point for Turkey, as the design and legal framework of the new market was adapted from that of the European Union. Since 2001, there have been some major developments in the market. In 2013, the new Electricity Market Law No. 6446 was published and the privatization processes of 21 distribution companies were completed.



Drawing upon these developments, trial synchronous parallel operation of the Turkish Power System with the **ENTSO-E Continental Europe Synchronous Area (CESA)** began in 2010. Following the fulfilment of ENTSO-E's standards/obligations by Turkish Electricity Transmission Corporation (TEIAS), the Long Term Agreement was signed in April 2015 that turned TEIAS into an integral part of European network. The Observership Agreement was signed between TEIAS and ENTSO-E on January 14, 2016.

Energy Market Regulatory Authority

Energy Market Regulatory Authority (EMRA) was established in 2001 in order to perform the regulatory and supervisory functions in the energy markets. The fundamental objective of EMRA is to ensure the development of financially sound and transparent energy markets operating in a competitive environment. It is also EMRA's responsibility to maintain the delivery of sufficient, high-quality, low-cost and environment-friendly energy to consumers and to ensure the autonomous **regulation**, **licensing** and **supervision** of electricity, natural gas, and downstream petroleum and LPG markets.



**Independent
regulatory authority**
in the Energy Market
since 2001:
EMRA





In 2015, EXIST was established to operate the organized wholesale markets. EXIST currently operates electricity and natural gas spot markets. It is also in charge of settlement of the balancing power market, ancillary services market, the system imbalances and the YEKDEM mechanism. Additionally, EXIST announces information on price and capacities traded on its transparency platform.

Wholesale Electricity Markets

As a part of the transition to a liberal and competitive energy market model, day-ahead, intraday, and balancing power markets were established to provide market participants a trading platform based on integrity, transparency, and competition. Day-ahead and intraday markets are operated by the independent market operator EXIST, and the balancing power market is operated by the transmission system operator Turkish Electricity Transmission Corporation (TEIAS). All three markets are subject to regulation by EMRA.

**2nd
highest**
turnover in Turkey
in 2017

The Day-Ahead Market

The day-ahead market is the main platform where the bulk of electricity trade takes place and the hourly market clearing price for the following day is reached. Imbalance settlement period is one hour. Market participants can place bids to balance the market positions of their portfolios and existing bilateral contracts. Bids can be hourly, flexible, or block-type (3-hour minimum) and lot size is 0.1 MWh. EXIST operates a price finding algorithm to review existing bids and provide a solution where the consumer, generator surplus, and energy trade volume are maximized.

All
non-household
consumers are
**Eligible
Customers**
in electricity

Eligibility
threshold is annually
2000 kWh
in 2018
down from
9 million kWh
in 2002

Intraday Market

The intraday market is set up to supplement the day-ahead market and to enable continuous trading close to real time. It serves as an additional trade platform for market participants to balance their positions and avoid imbalance charges. Bids can be hourly or block-type and the market operates on a first-come first-served basis, where any matching bids are realized starting with highest buying price and lowest selling price.

Balancing Power Market

The balancing power market is operated by TEIAS to balance power supply and demand in the system and to provide system security. “Balancing units”, with at least 10 MW capacity and the ability to alter production within 15 minutes, have to participate in the balancing power market. Loading and deloading bids are evaluated by TEIAS, and the system marginal price is found by the net volume and direction of TEIAS’s orders. The market works on the marginal pricing principle, but TEIAS has the right to skip bids and accept less price-suitable bids in a pay-as-bid manner based on location, need, and the participants’ prior actions.

EXIST
ENERGY EXCHANGE ISTANBUL

PTF (TL/MWh)	19:322.00 ▼	20:335.00 ▼	21:352.59 ▼	22:316.21 ▼	23:267.99 ▼	00:353.97 ▲	01:351.06 ▲	02:265.01 ▼	03:268.00 ▼	04:322.00 ▼			
SMF (TL/MWh)	14:---	15:---	16:---	17:---	18:---	19:---	20:---	21:---	22:---	23:---	00:348.00 ▲	01:351.06	
AOF (TL/MWh)	19:322.42 ▼	20:335.94 ▼	21:354.00 ▼	22:315.21 ▼	23:267.42 ▼	00:351.46 ▲	01:340.64 ▲	02:267.23 ▼	03:269.49 ▼	04:322.42 ▼			
GRF (TL / '000Sm³)	24/09/2018 : 1535.63			DGAF (TL / '000Sm³)			23/09/2018 : 1586.2			DGSF (TL / '000Sm³)		23/09/2018 : 1493.8	

RENEWABLE ENERGY



RENEWABLE ENERGY

Making full use of the RE potential is at the top of Turkey's agenda, and the potential is still to a large extent untapped. Turkey has an installed wind capacity of about 7 GW and more than 3 GW of licensed wind capacity is under construction. On the other hand, Turkey has **an onshore wind potential of 37 GW and a completely untapped offshore wind potential of 11 GW.**

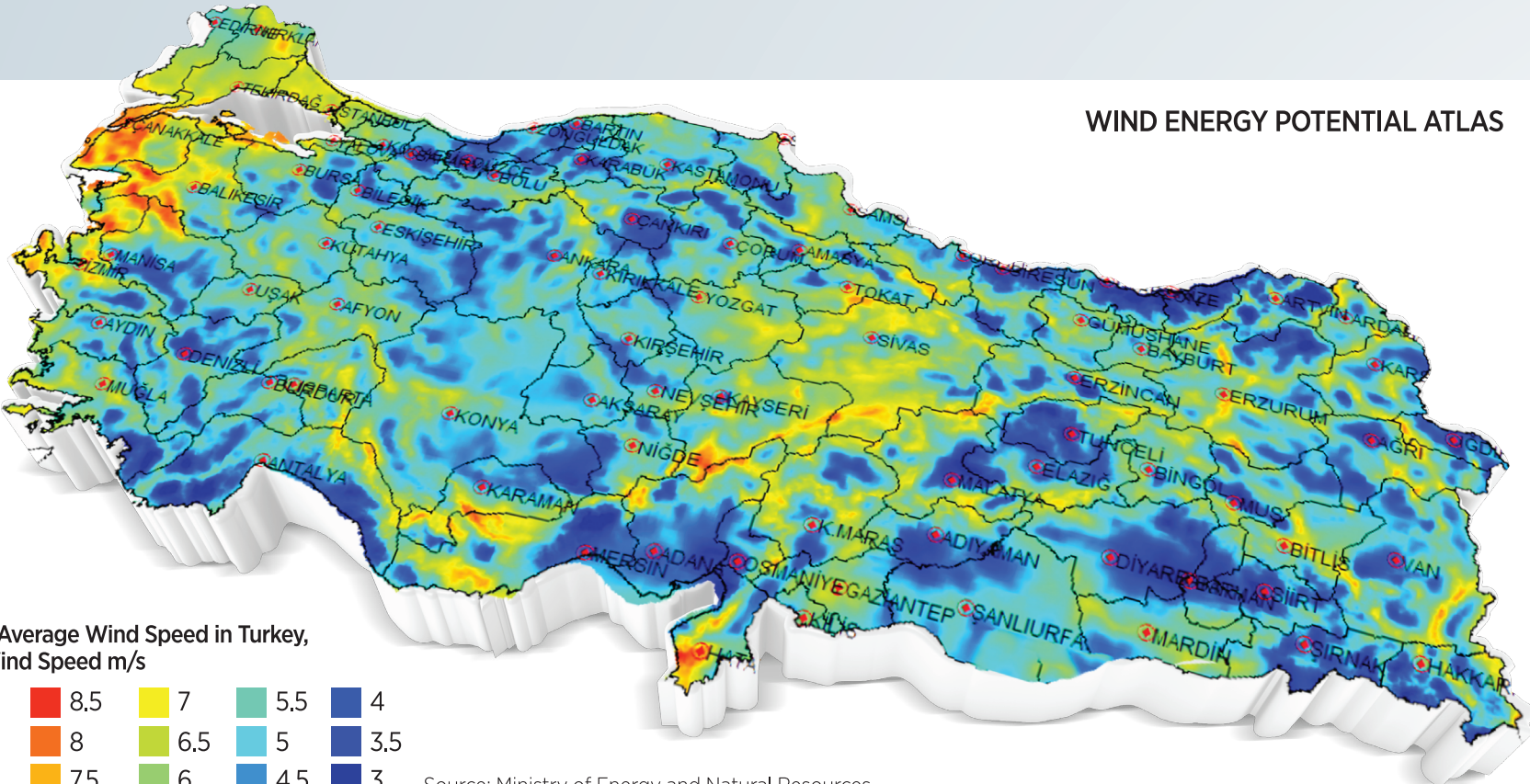
Current installed capacity in wind
7 GW

2027 Target
16 GW

Offshore Wind Potential
11 GW

Onshore Wind Potential
37 GW

WIND ENERGY POTENTIAL ATLAS

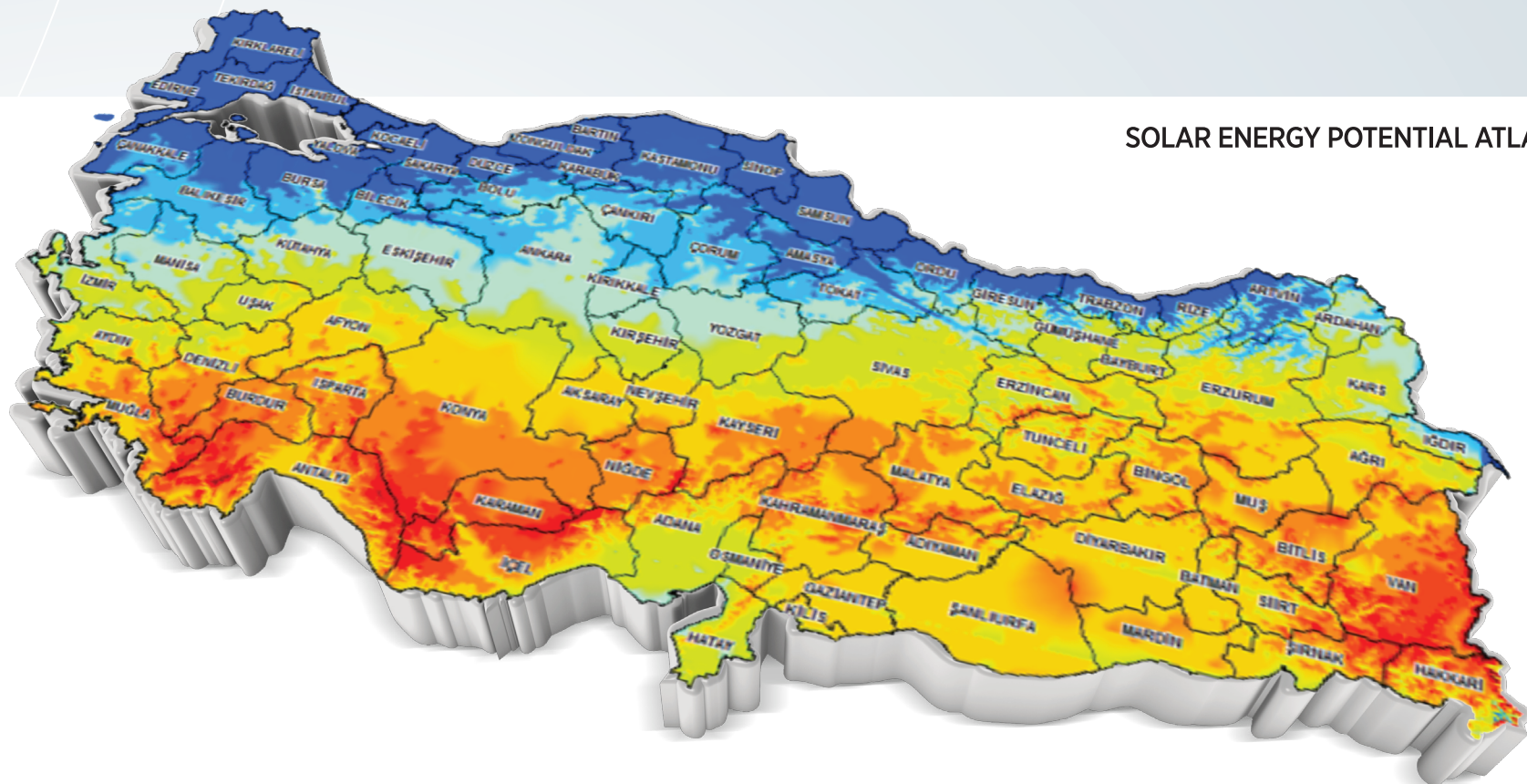


Source: Ministry of Energy and Natural Resources

As for the solar potential, **annual average daylight duration in Turkey is 7.5 hours and average annual radiation is 1,527 kWh/m²**, which is higher than most of Europe. Turkey's installed solar capacity is only around 5 GW, although solar power potential in Turkey is nearly twice the size of Northern Europe's. The effort to invest in RE will lead to growing demand for RE equipment such as turbines and photovoltaics (PV) panels. Turkey will continue to incentivize localization through providing bonuses for locally manufactured equipment.

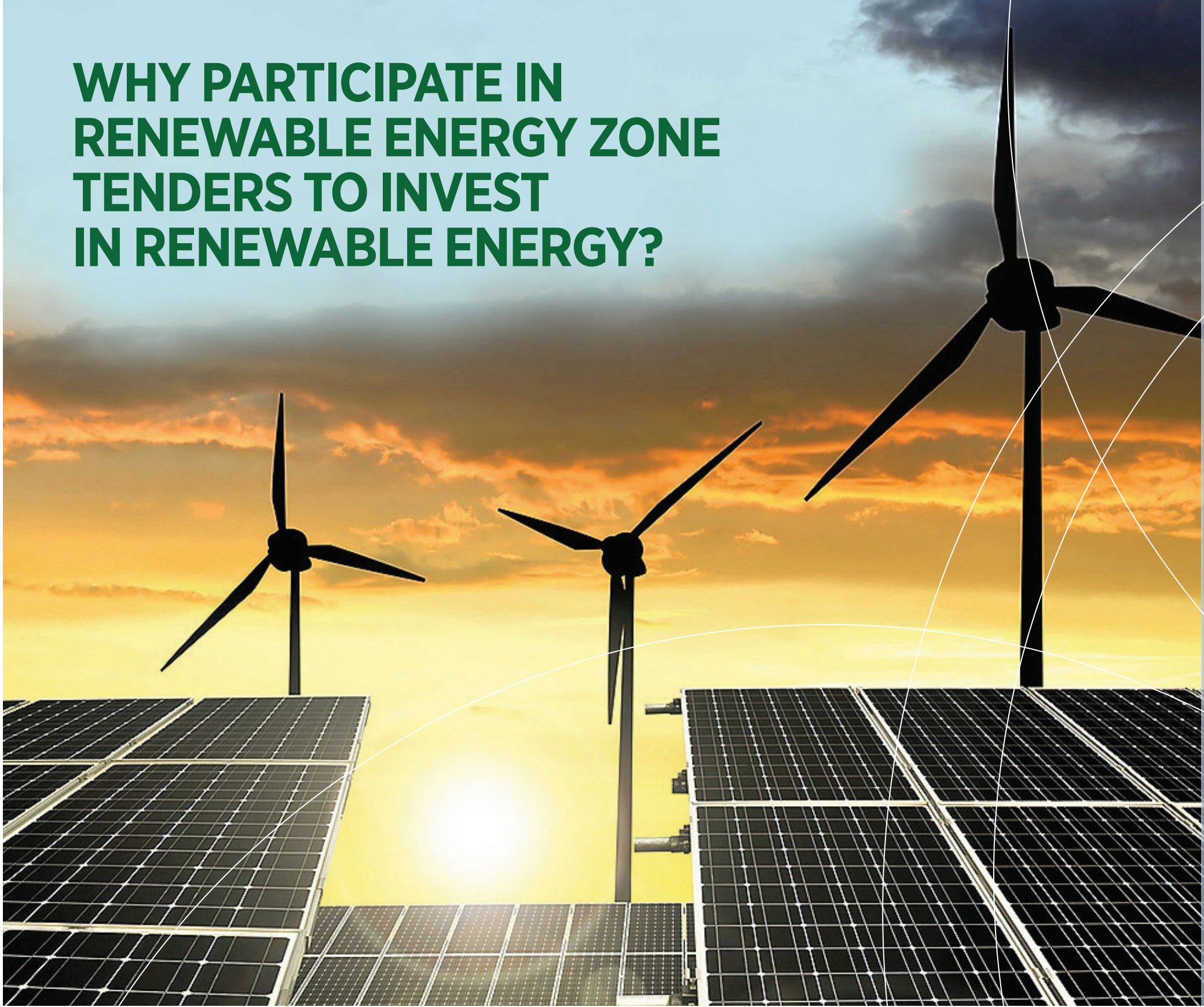
Total Solar Radiation KWh/m².a

1400 - 1450	1550 - 1600	1700 - 1750
1450 - 1500	1600 - 1650	1750 - 1800
1500 - 1550	1650 - 1700	1800 - 2000



Source: Ministry of Energy and Natural Resources

WHY PARTICIPATE IN RENEWABLE ENERGY ZONE TENDERS TO INVEST IN RENEWABLE ENERGY?

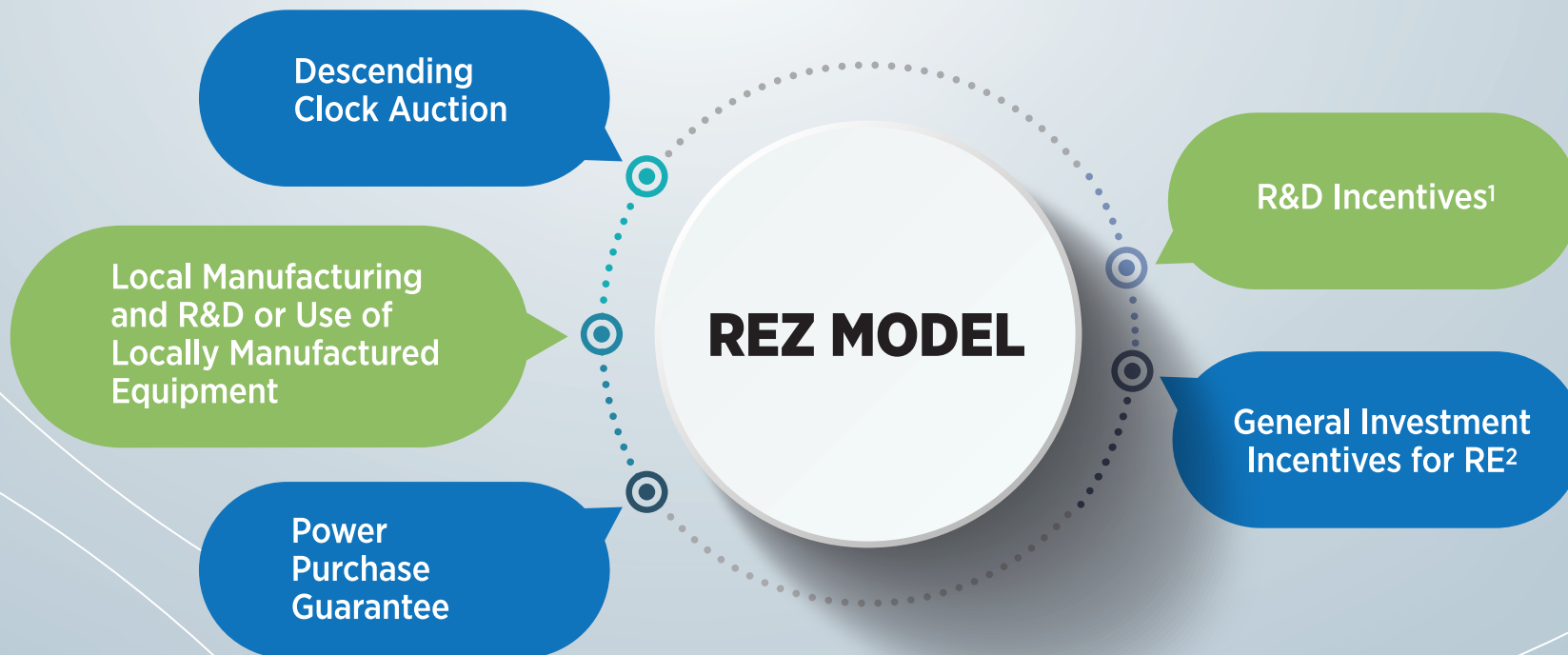


Renewable Energy Zones (REZ) Model

The REZ model was created by Turkey in order to ensure efficient and effective use of RE resources by setting up large scale REZs in selected areas. The model was designed in a way that also serves to help attain the localization target set in the National Energy and Mining Policy. The REZ model is in essence an auction mechanism where the winner of the tender is granted the right to generate and sell the electricity at a price determined as a result of the process. The tender involves the condition of the establishment of local manufacturing and R&D facilities or using locally manufactured equipment with an aim to ensure localization. The REZ model is important for Turkey

as it is a tool for fast tracking the realization of planned projects and technology transfer.

Turkey has been gearing up its RE investments, and one of the tools Turkey employs to this end is the REZ tenders. In 2017, Turkey held two tenders for solar and wind energy with 1 GW capacity each by using REZ auction. Moreover, in 2018, **Turkey launched a new tender for a 1.2 GW offshore wind project that will be the world's largest one.** A PV tender has been announced and possibly another wind tender will be announced this year.



COMPLETED

Wind Tender

Capacity **1GW**
Power production capacity
circa 3 billion kWh
Winning bid **US\$3.48 cent/kWh**
Siemens-Kalyon-Türkerler consortium
Expected total investment
\$1.1 billion
Auction date August 3, 2017

COMPLETED

PV Tender

Capacity **1GW**
Power production capacity
circa 1.7 billion kWh
Winning Bid
US\$6.99 cent/kWh
Hanwha Q Cells-Kalyon Energy consortium
Expected total investment
\$1.3 billion
Auction date March 20, 2017

Offshore Wind Tender

Capacity **1.2 GW**
Starting bid **US\$8 cent/kWh**
Application Deadline **October 23, 2018**
Possible locations
Saros, Kıyıköy, and Gelibolu

ONGOING

PV Tender

Capacity **1GW**
(500 MW Şanlıurfa Viranşehir,
200 MW Hatay Erzin, 300 MW Niğde-Bor)
Starting bid **US\$ 6.5 cent/kWh**
Application Deadline **January 31, 2019**

ONGOING

TURKEY'S TRACK RECORD OF REZ TENDERS

UPCOMING

Wind Tender

Capacity **1 GW**
Competition Announcement **Q4 2018**
Application Deadline **Q1 2019**

WHAT IS NEXT?

Future
potential tenders
with energy storage
technologies such as **Pumped Hydro Storage**
and **Battery Storage**



The main advantages of Renewable Energy Zone tenders

1

Resource abundant zones with high electricity generation potential are selected as REZs. As the projects are large scale (around 1 GW), the winner is expected to benefit from economies of scale.

2

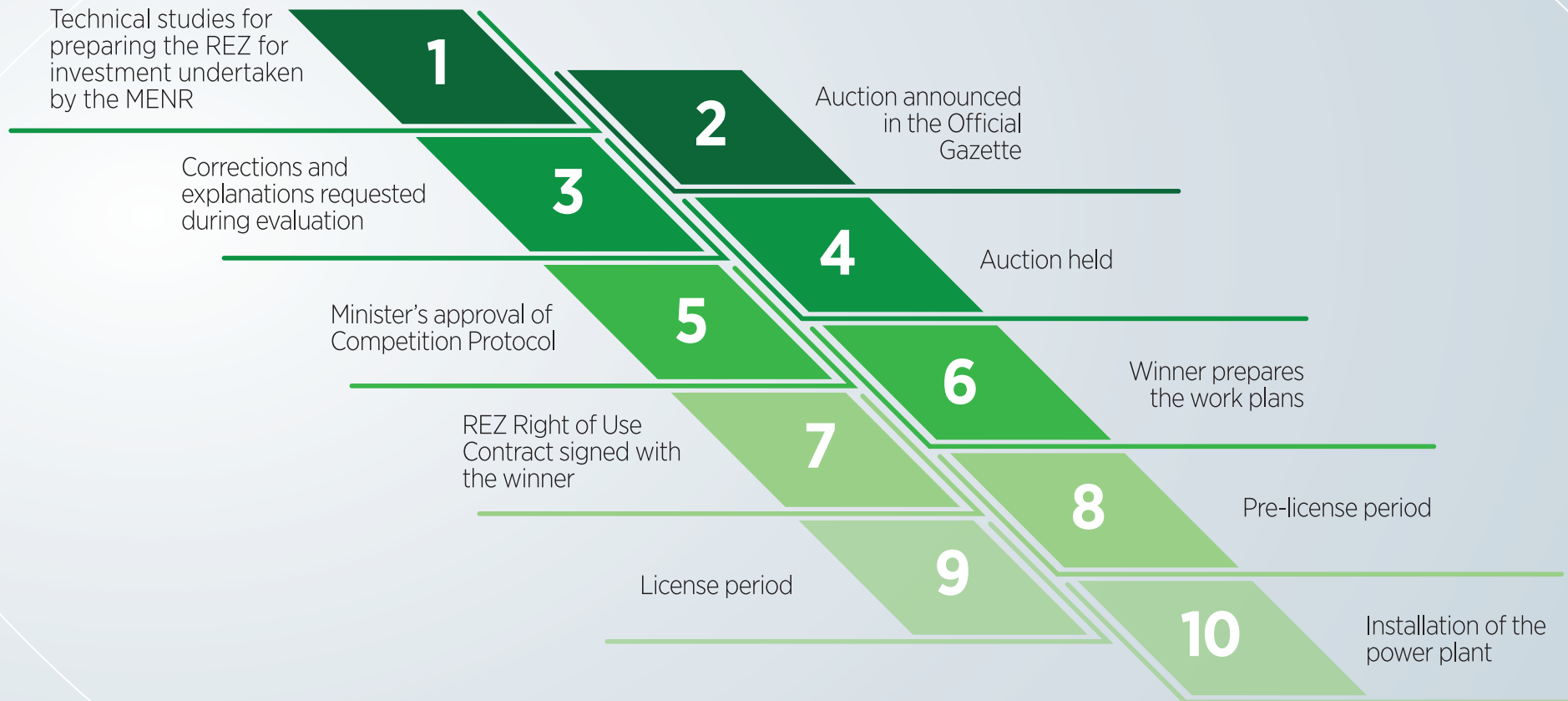
The winner is granted a fixed and foreseeable price for its generation for a fixed duration. (The first tenders involved a power purchase guarantee for a period of 15 years). The winner is granted the right to use the designated area and grid connection.

3

If the tender involves an R&D facility, it is eligible to benefit from the incentives provided for R&D centers. Other incentives envisaged in Turkey's incentive system may apply to the plants and/or the manufacturing facility.



HOW TO PARTICIPATE IN RENEWABLE ENERGY ZONE TENDERS?



STEP BY STEP RENEWABLE ENERGY ZONE TENDERS

1

REZ is determined

The first step of the REZ model is determining the resource zones. Either REZs are identified directly by MENR or following the allocation of grid connection capacity for REZs by MENR, zones are ascertained in cooperation with the tender winner.

2

Tender announcement is published

The “REZ Right of Use Competition Announcement” is published in the Official Gazette. The announcement includes technical details of the zone, administrative conditions, grid connection capacity, eligibility criteria, upper limit for the power purchase price, and the envisioned duration of power purchase, etc. Investors have 30 days to submit applications.

3

Technical evaluation is carried out

A committee established for technical evaluation reviews the technical documents submitted by applicants. Applicants may be asked to correct their application or provide more information. Applicants who passed the technical evaluation are invited to the tender.

4

Tender takes place and winner is determined

All eligible applicants participate in a descending clock auction. In each step applicants are asked if they are willing to decrease their bidding price to a price below that of the lowest bidder. Those who will not decrease their bidding price are assumed to have withdrawn. At the end of the competition session, all participants but the winner withdraw from the competition.

5

The result of the auction is approved by the Minister

Upon completion of the auction, the Committee prepares a protocol outlining the results of the auction which is in turn approved by the Minister. After this approval, winner can obtain the Letter of Bank Guarantee submitted during the application.

6

Winner outlines its work plan

The work plan includes the expected time for the establishment of manufacturing facility and the starting date of electricity generation. This is in turn approved by the Ministry.

7

REZ Right of Use Contract is signed with the winner

After the contract, the winner can start the licensing process.

8

Winner applies for pre-license

Within 45 days following the contract signature, the winner applies for a pre-license. The winner is exempt from submitting a wind or solar measurement report. The main responsibilities of the winner during this process are: (i) approval of zoning permits, (ii) preliminary project approvals, (iii) system utilization agreement with TEIAS, (iv) construction permit, and (v) environmental impact assessment decision.

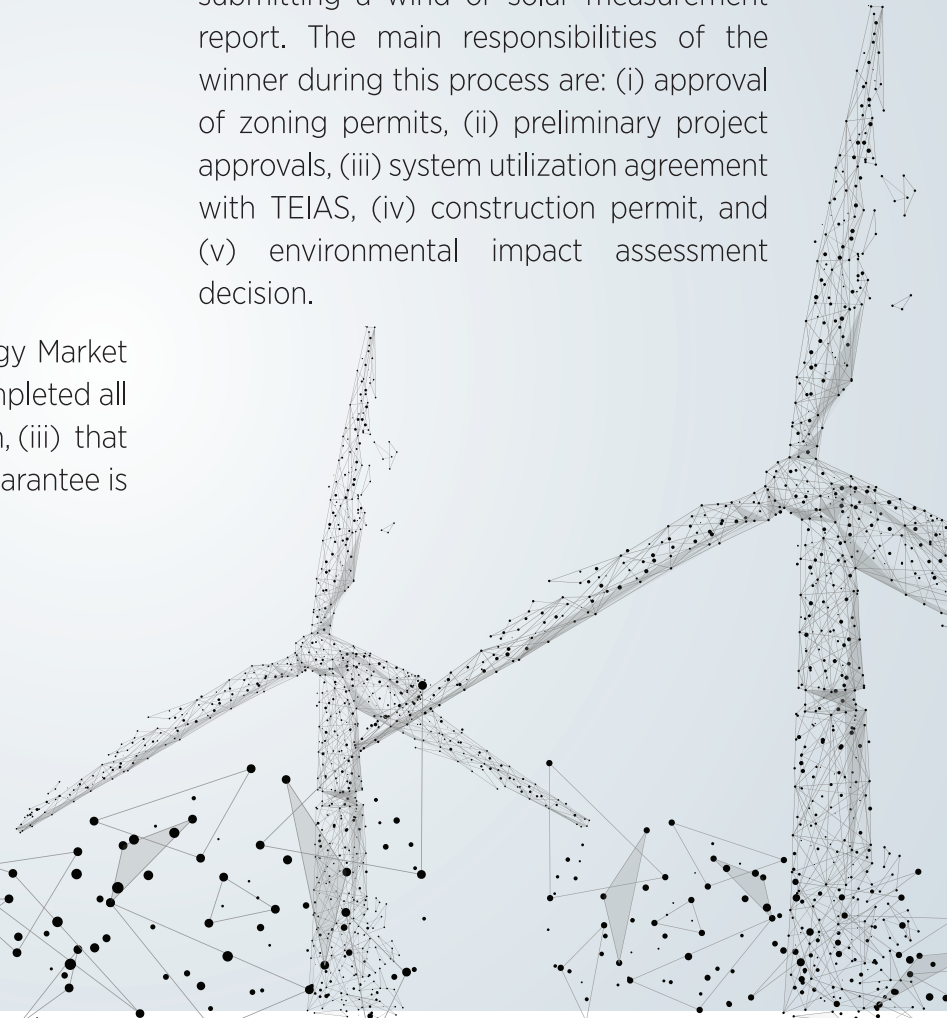
9

Winner applies and is granted a license

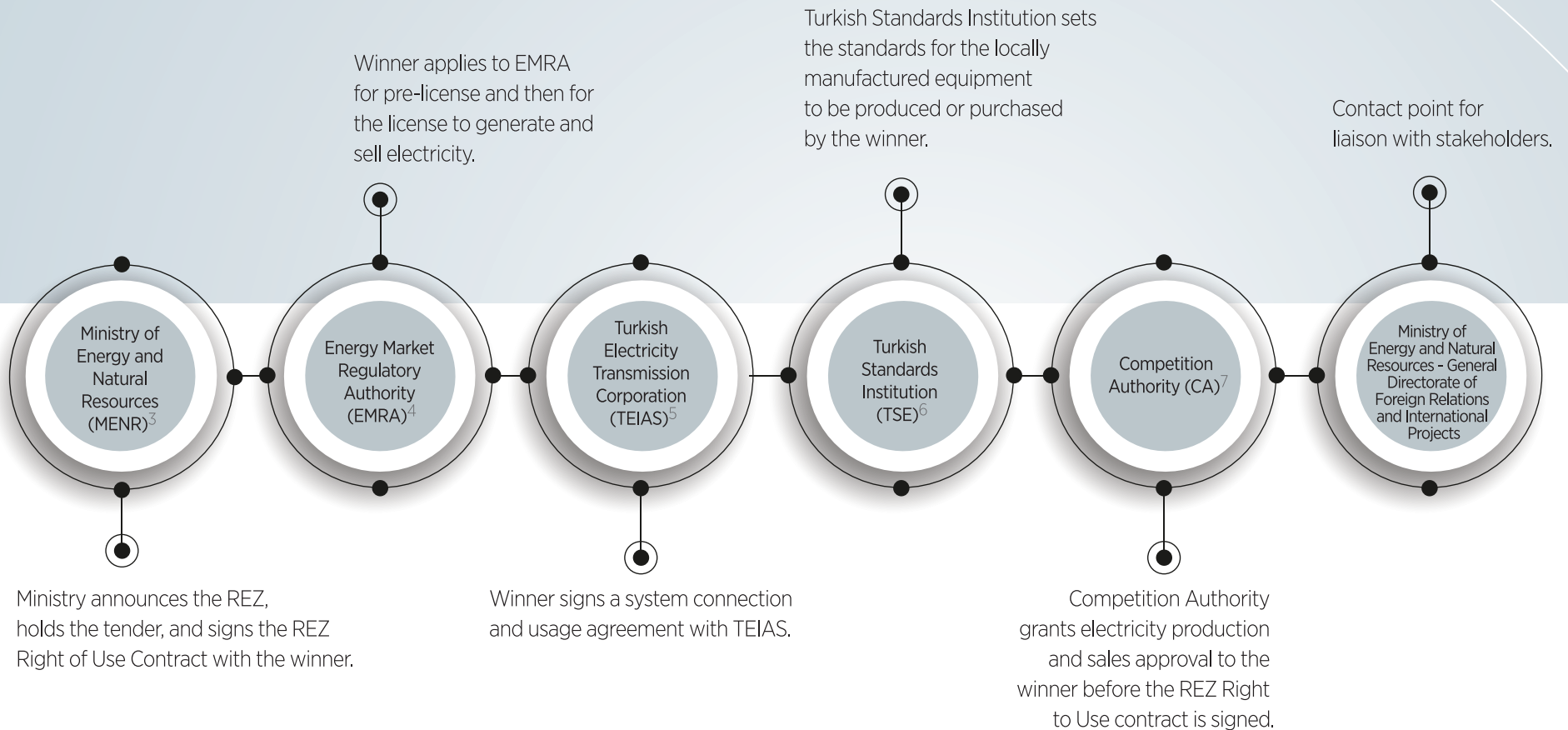
In order to obtain a license, the winner is expected to submit to Energy Market Regulatory Authority documents showing (i) that the applicant has completed all responsibilities during the pre-license period, (ii) timeline of construction, (iii) that minimum share capital is deposited, license fee is paid, letter of bank guarantee is obtained, etc.

10

Winner can start the installation of the power plant



WHO ARE MY STAKEHOLDERS FOR RENEWABLE ENERGY ZONE TENDERS ?



³<http://www.enerji.gov.tr> ⁴<http://www.epdk.org.tr> ⁵<https://www.teias.gov.tr> ⁶<https://www.tse.org.tr> ⁷<https://www.rekabet.gov.tr>



FAQ

How can I learn about the upcoming tenders?

Tenders are announced in the Official Gazette (www.resmigazete.gov.tr) at least 30 days before the application deadline as well as on the MENR's website (www.enerji.gov.tr). Terms of reference documents can be obtained from the Ministry.

What is the duration of the electricity sales?

Who buys the electricity?

Duration is identified in the terms of reference. It was 15 years in the past 2 tenders. Winner sells the electricity to the YEKDEM mechanism and is paid the tender amount plus a bonus for local equipment use.

Who can apply to participate in a REZ tender?

Those who satisfy the conditions set in the REZ Regulation and the terms of reference are eligible to apply. If there is to be any prerequisite of being legal person, a joint venture or a consortium, this is also ascertained in the terms of reference. The winner has to satisfy the conditions set for the legal persons in the Electricity Market License Regulation (date: 11/2/2013 O.G. No: 28809) to be able to obtain a pre-license.

Is the winner required to set up a factory and/or undertake R&D activities?

If the tender is conducted using the allocation in return for local production (and not for using local equipment), the winner is required to set up a factory and undertake R&D activities.

For how long is the REZ license?

Is it possible to extend this duration?

The duration of the REZ license is set in the terms of reference. It is not possible to extend this duration.

What happens if the winner decides not to sign the REZ Right of Use Contract?

The letter of guarantee submitted by the winner during the application is recorded as revenue. MENR might invite the 2nd and 3rd lowest bidders to sign the contract.

Does the winner have to install a power plant with an installed capacity equal to the grid connection capacity?

Minimum 70% of the allocated grid capacity has to be used by the winner as REZ.





COAL

COAL

WHY INVEST IN COAL-FIRED POWER GENERATION IN TURKEY?

Turkey aims to increase the share of domestic coal in electricity generation by transferring coal reserves to the private sector with the obligation of building and operating coal-fired power plants in the vicinity.

Coal still has a major share in the electricity generation mix of Turkey. As of the end of August 2018, electricity generated from domestic coal accounted for 16% (11 GW) of Turkey's total installed capacity of 87.7 GW.

The target is to add 12 GW to the current 11 GW domestic coal share in the medium term.

Target: Additional

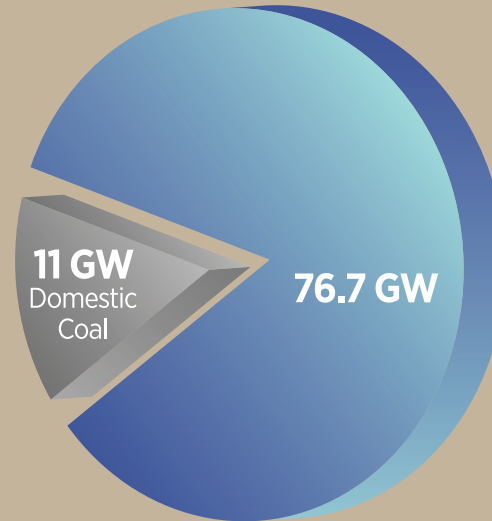
12 GW

domestic
coal in installed
capacity

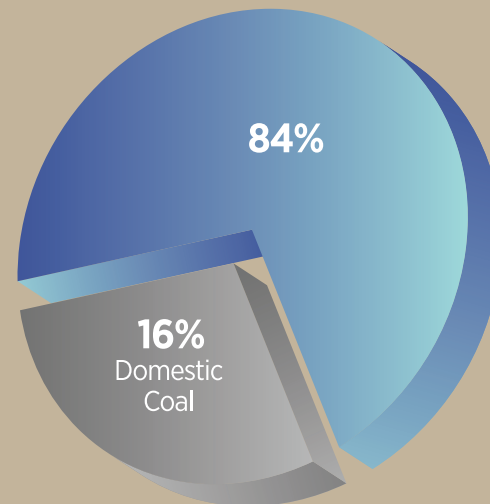




Turkey has a substantial amount of coal reserves, totaling 17.3 billion tons and composed of mostly lignite. Main coal reserves are located in Kangal, Orhaneli, Tufanbeyli, Soma, Tunçbilek, Seyitömer, Çan, Muğla, Çayırhan, Afşin-Elbistan, Karapınar, Tekirdağ, Alpu, and Afyonkarahisar. Among these reserves, the Afşin-Elbistan alone has 4.8 billion tons of lignite resources, which constitutes 28% of Turkey's total lignite reserves. The reserves to be tendered with auctions bear 6.4 GW of installed generation capacity potential.



Share of domestic coal in installed capacity as of August 2018



Share of domestic coal in electricity generation as of August 2018

WHERE TO INVEST IN COAL-FIRED POWER GENERATION IN TURKEY?

COMPLETED

Tender for Çayırhan-B Project contracted on July 11th, 2017 at US\$6.04 cents/kWh

ONGOING

Tender for Eskişehir **Alpu-B Project** announced

Some of coal fields are either currently under tendering/have been contracted or will be tendered soon. For instance, the first one that was successfully tendered was Çayırhan-B Project, which was contracted on July 11th, 2017 with a consortium at US\$6.04 cents/kWh. Also, Eskişehir Alpu Field (B) has been announced for tendering.

TURKEY'S TRACK RECORD OF COAL TENDERS

The coal reserves that are planned to be tendered by open auctions for thermal power plant - integrated investment projects are shown in the table.

WHAT IS NEXT?

	Region Basin	Total Reserves (Million Tons)	Planned Install Capacity (MW)	Current Status
1	Eskişehir Alpu	568	1,100	Tender Call Published
2	Konya Karapınar	1,580	1,500	To be tendered
3	Afyon Dinar	941	1,000	To be tendered
4	Kahramanmaraş Afşin Elbistan C-D	1,459	1,800	To be tendered
5	Tekirdağ Malkara	618	1,000	To be tendered
		TOTAL	6,400	

License Owner **EUAS**
Method of Mining **Underground**
License Area **12,750 ha**
Resource **618 M ton**
Net Calorific Value **2,317 kcal/kg**
Seam Depths **14-500 m**
Moisture Content **29%**
Ash Content **32%**
Sulphur Content **1.2%**

TEKİRDAĞ | MALKARA
Mine Properties

Geology, reserve, geotechnical, and hydrogeological studies are ongoing.
Planned Power **1,000 MW**

License Owner **EUAS**
Method of Mining **Underground Mining**
Reserve Area **1,787 ha**
Resource **568 M ton**
Net Calorific Value **1,937 kcal/kg**
Seam Depths **200-500 m**
Moisture Content **32.1%**
Ash Content **31.0%**
Sulphur Content **1.21%**

ESKİŞEHİR | ALPU
Mine Properties

All field studies have been completed.
Planned Power **1,100 MW**

License Owner **EUAS**
Method of Mining **Open Pit**
Reserve Area **10,600 ha**
Resource **1,580 M ton**
Net Calorific Value **1,214 kcal/kg**
Seam Depths **250-300 m**
Moisture Content **51%**
Ash Content **20.2%**
Sulphur Content **2.5%**

KONYA | KARAPINAR
Mine Properties

Geology, reserve, geotechnical, and seismic surveys have been completed.
Hydrogeological studies are continuing.
Planned Power **1,500 MW**

License Owner **EUAS**
Method of Mining **Underground**
License Area **7830 ha**
Resource **941 M ton**
Net Calorific Value **1,855 kcal/kg**
Seam Depths **500-600 m**
Moisture Content **41.78%**
Ash Content **16.54%**
Sulphur Content **1.37%**

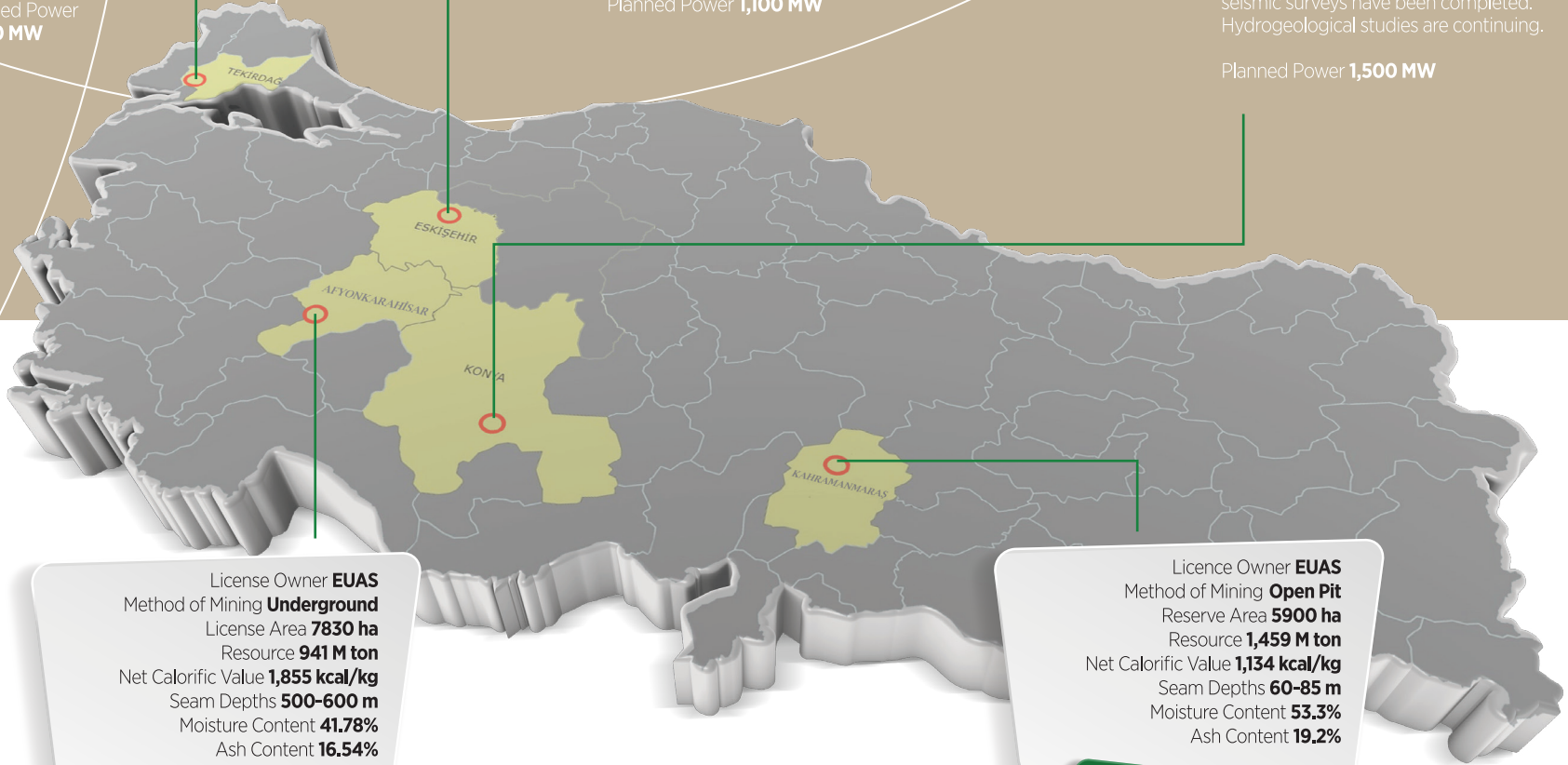
AFYON | DİNAR
Mine Properties

Geology, reserve, geotechnical, gas content, and spontaneous combustion studies are ongoing.
Hydrogeological, geotechnical, and seismic survey studies have been completed.
Planned Power **1,000 MW**

License Owner **EUAS**
Method of Mining **Open Pit**
Reserve Area **5900 ha**
Resource **1,459 M ton**
Net Calorific Value **1,134 kcal/kg**
Seam Depths **60-85 m**
Moisture Content **53.3%**
Ash Content **19.2%**

**KAHRAMANMARAS
AFŞIN ELBİSTAN C-D**
Mine Properties

Geology, reservoir, and hydrogeology studies have been completed.
Geotechnical survey studies are continuing.
Planned Power **1,800 MW**



HOW TO INVEST IN COAL-FIRED POWER GENERATION IN TURKEY?

Reserves are going to be tendered by an open auction procedure to be executed by the Privatization Administration (PA) in accordance with Article 18:5 of the Electricity Market Law No. 6446. Investors are expected to bid at the auctions and the winners will be awarded with transfer of operating rights for coal reserves as well as an obligation of building and operating coal-fired power plants in the vicinity with the specific incentives and obligations described on the next page.



WHY PARTICIPATE IN COAL TENDERS?

Up to **35
years**
operating rights⁸

**15
years**⁹
of power
purchase
guarantee¹⁰

Completed
Expropriation,
Environmental
Impact Assessment
(EIA), and Zoning
Permit¹²
procedures

EIA prepared
in line with
Turkish and
**EU
legislation**

Base load
power generation and
**foreseeable
revenue**

Flexible power
plant technology
and unit numbers
at the investor's
discretion

Exemption
from **carbon
taxes and
fees**¹¹

Resource and
Reserve Reports for
all fields prepared in
compliance with
**JORC
Standards**

Obligation to use **1%
of CAPEX**

for making the
power plant and coal mining
area operational for local and
national social responsibility
projects sponsored by
governmental
institutions and
organizations

⁸Starting from Transfer of Operating Rights Agreement (TORA) signature date.

⁹Including the investment period. This period will be followed by sales to the electricity market.

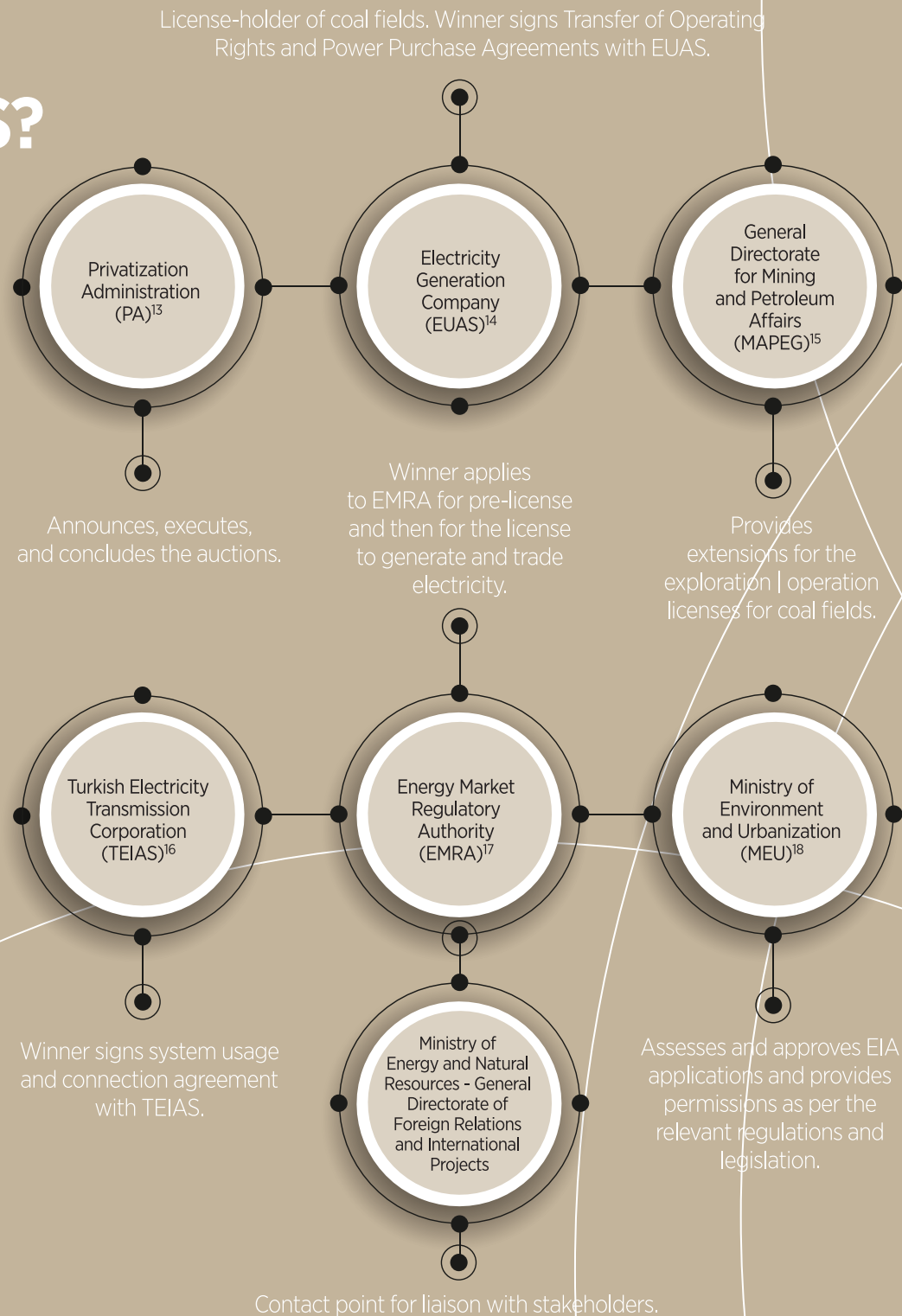
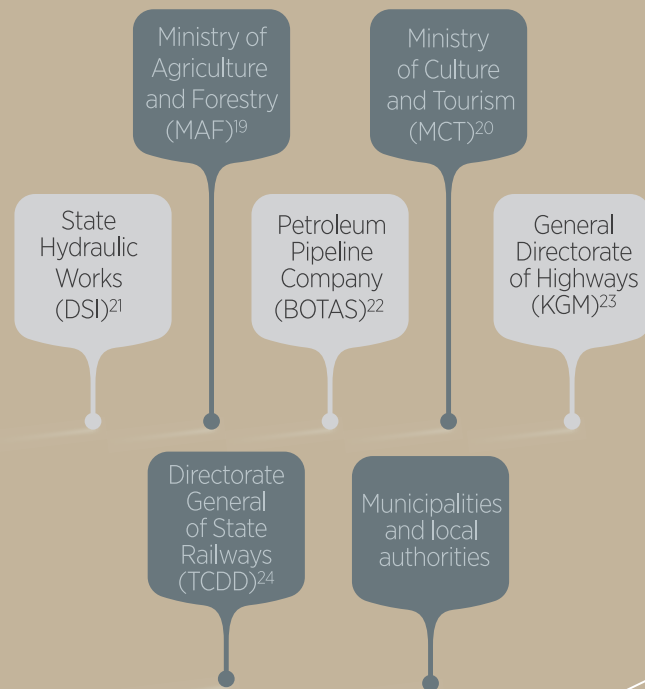
¹⁰As part of the PPA, for the first 15 years (incl. construction period), 6,500 hours of production will be purchased by EUAS from the determined price. 70% of the sales price will be paid in US\$/MWh terms (converted by CBRT US\$/TL selling rate). The remaining 30% will stay in TL/MWh terms and will be subject to PPI based yearly inflation adjustment. Also, the plants are eligible to sell its excess production to the market.

¹¹In case there is carbon tax or any another fee of that sort, EUAS will be responsible for the payment of the amount with regards to the purchased amount of electricity by EUAS until the end of the guaranteed power purchase period.

¹²All to be completed and transferred to the investor by EUAS. After the transfer of the EIA positive document, all the changes will be made by the investor and obligations arising from these changes will belong to the investor.

WHO ARE MY STAKEHOLDERS?

The winner may be required to obtain clearance on certain issues relevant to the functional responsibility areas falling under the competence of the following institutions:



¹³Privatization Administration. <http://www.oib.gov.tr/>

¹⁴Electricity Generation Company. <http://www.euas.gov.tr/Sayfalar/default.aspx>

¹⁵General Directorate for Mining and Petroleum Affairs <http://www.migem.gov.tr/>

¹⁶Turkish Electricity Transmission Corporation. <https://www.teias.gov.tr/en>

¹⁷Energy Market Regulatory Authority. <https://www.epdk.org.tr/Home/En>

¹⁸Ministry of Environment and Urbanization. <https://csb.gov.tr/>

¹⁹Ministry of Agriculture and Forestry. <http://www.ormansu.gov.tr/>

²⁰Ministry of Culture and Tourism. <http://www.kultur.gov.tr/>

²¹State Hydraulic Works. <http://en.dsi.gov.tr/>

²²Petroleum Pipeline Company. <https://www.botas.gov.tr/>

²³General Directorate of Highways.

<http://www.kgm.gov.tr/Sayfalar/KGM/SiteEng/Root/MainPageEnglish.aspx>

²⁴Directorate General of State Railways. <http://www.tcdd.gov.tr/>



The background of the page is a light blue color. It features several abstract, curved blue lines that sweep across the right side and bottom of the page. These lines vary in curvature and length, creating a dynamic, modern feel. One line starts near the top right and curves downwards. Another starts lower and curves more sharply. A third line is more horizontal, curving slightly upwards. They intersect and overlap, adding depth to the design.

INVESTOR'S GUIDE FOR ELECTRICITY SECTOR IN TURKEY

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NATIONAL
ENERGY



REPUBLIC OF TURKEY
MINISTRY OF
ENERGY AND
NATURAL RESOURCES

