Invest In Turkish Energy Sector
Remarkable energy actor seeks to enhance its capacity to satisfy growing economy and population.

6th largest electricity market in Europe with more than 100 GW

Population: 85,000,000
1st in Europe

7th in the Europe in wind energy capacity

FINAL ENERGY CONSUMPTION BY SECTOR (MTOE)

INDUSTRY

<table>
<thead>
<tr>
<th>Year</th>
<th>Industry</th>
<th>Residential</th>
<th>Service</th>
<th>Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>2025</td>
<td>57.6</td>
<td>30.7</td>
<td>21</td>
<td>39.2</td>
</tr>
<tr>
<td>2030</td>
<td>52.1</td>
<td>29.5</td>
<td>20.7</td>
<td>37.3</td>
</tr>
<tr>
<td>2035</td>
<td>45.4</td>
<td>26.9</td>
<td>18.9</td>
<td>32.7</td>
</tr>
</tbody>
</table>

New Capacity Addition - 2022

- 16% Non-Renewable
- 9% Hydro
- 23% Wind
- 2% Geothermal/Biomass
- 50% Solar

New E&P activities both Black Sea and Mediterranean

- 2022
- 710 Bm3 Gas Discovery
- 150 Mbbl Oil Discovery

First NPP

4,800 MW

16th in the world in solar energy capacity

4th in the world in geothermal energy capacity

invest.gov.tr
2035 is the first check point to reach ambitious 2053 net zero target.

In 2022, the Turkish government, at the COP27 climate summit, announced its strategy to reduce greenhouse gas emissions by 41 percent below business-as-usual levels by 2030 and achieve net-zero emissions by 2053.

Source: MENR
Electricity Market
Turkish electricity market reform began in March 2001 with the enactment of Electricity Market Law.

- Electricity Market Law
- Establishment of EMRA
- First Wind and Solar Power YEKA Tenders Completed
- Introduction of the new unlicensed generation regulation
- Second YEKA WPP tender completed
- Expiration of the majority of BO and BOT Agreements
- The new Mini YEKA SPP-3 tender completed
- Announcement of new Mini YEKA WPP-3 (2021) and Mini YEKA SPP-4 (2022)
- Announcement of The New Feed in Tariff Regulations
- Establishment of Power Futures Market
- Establishment of YEK-G Certificates & System

- 2001
  - First YEKA Tenders Announcement
  - Amendment of Renewable Energy Law
  - Power Purchase Guarantee for Lignite Power Plants
  - Start of unlicensed Electricity Generation
- 2006
  - New Electricity Market Law
  - Completion of the Privatization Process of Distribution Assets
- 2011
  - Establishment of the Organized Electricity Market
- 2013
  - EÜAS-TETAS Merger under EÜAS
  - Ancillary Services Market
  - Capacity Mechanism Enters Into Force
- 2016
  - Second YEKA WPP tender completed
- 2017
  - Capacity Mechanism Enters Into Force
- 2018
  - Bulk capacity allocation to industrial consumers.
- 2019
  - Installed capacity exceeds 100 GW.
- 2020
- 2021
- 2022

invest.gov.tr
Electricity Market Structure

Key public institutions are drivers of liberalizations.

**MENR**  
Strategy and Policy Maker  
The Ministry of Energy and Natural Resources is the main governmental body responsible for carrying out energy policies.

**EMRA**  
Independent Regulator  
The Energy Market Regulatory Authority is responsible for regulating and supervising the electricity, natural gas, and oil markets.

**TEIAS**  
Transmission Operator  
The Turkish Electricity Transmission Company is the state-owned monopoly that owns and operates electricity transmission market in the country.

**EUAS**  
Public Generation  
The Electricity Generation Company owns and operates the state-owned power plants and following July 2018 also took over the wholesale trading responsibilities of TETAŞ (former state-owned wholesale electricity company).

**EXIST**  
Market Operator  
The Istanbul Energy Exchange is the market operator responsible for operating the day-ahead, intra-day and balancing markets in the country, and has managed the eligible consumers in the spot markets since 18 March 2015.
Electricity Market Structure

**Market value chain**

**Generation**
- 1,888 power plants (EUAS, TOR and IPPs with increasing share)
  - State-owned monopoly TEIAS is the system operator, runs balancing market and ancillary services.

**Transmission**
- Physical and financial trading exist. Spot market operated by EXIST since 2015. OTC market is run through brokers.

**Wholesale**
- 21 distribution regions have been operated by private entities since 2013. These companies operate based on the operational rights contracts signed with TEDAS.

**Distribution**
- Regulated market for about 48 M consumers.

**Retail**

---

**Key Players:**
- EÜAS
- EXIST
- Private Wholesalers
- OTC Market

**Privatization Period**
- 2008-2013, resulting in deals with a total value of USD 13 bn.

**Transmission Line Length**
- 73,788 km

**Private Sector Share in Electricity Generation**
- 2002: 40%
- 2022: 85%

---

**In terms of the volume of traded electricity, Türkiye is the 3rd largest spot electricity market in Europe.**

**Distribution Line Length**
- 1,4 M km

**Eligible consumer limit is 1,100 kWh.**
A well-functioning and fully developed electricity market serves all parties.

- Currently operates electricity and natural gas markets,
- Settlement of the balancing power market, ancillary services market, the system imbalances and YEKDEM (Renewable Support Mechanism).
- Publish information on price and capacities of the commodities traded on transparency platform.

Main platform where the bulk of electricity trade takes place and the hourly market clearing price for the following day is reached.

Supplement the day-ahead market and to enable continuous trading close to real time.

Physically Settled Power Futures Market

Balance power supply and demand in the system and provide system security.

Turkish Power System with the ENTSO-E Continental Europe Synchronous Area (CESA) began in 2010.

Maintenance of the local distribution network, Development of the distribution network, Collecting metering data and engaging in the billing process, Forecasting electricity demand of the region.

An integral part of European network. The Observer Membership Agreement will be valid for a period of three years, effective January 1, 2023.

Regulatory and supervisory functions in the energy markets.
Installed capacity has expanded and diversified in the last decade, especially through the expansion of renewable energy sources between 2014 and 2022.

1. Non-hydro renewable capacity in Türkiye has increased significantly following the introduction of YEKDEM.

2. Installed capacity additions from thermal energy sources in the last twelve years came primarily from natural gas and coal.

Source: EMRA
Share of state-owned installed capacity has been shrinking since the early 2000s due to the increase of investments by IPPs as well as large scale privatizations.

Total Installed Capacity = 104 GW

- Hydro: 32 GW with 751 facilities
- NG: 25 GW with 345 facilities
- Coal: 22 GW with 67 facilities
- Wind: 12 GW with 360 facilities
- Solar: 10 GW with 9,635 facilities
- Other: 79,419 MW
- IPP: 79,419 MW
- EUAS: 20,995 MW
- TOR: 3,275 MW

2022
3.5 GW new capacity

Source: EMRA invest.gov.tr
Electricity Market

Rapidly growing market and changing production structure needs continuous investments.

Electricity Production by Source - 2022

Generated 326 TWh

Electricity Consumption Projections

2025: 380,2 TWh
2030: 455,3 TWh
2035: 510,5 TWh

Source: MENR, EMRA
Electricity Demand

Growing demand in line with growing population.

Electricity Demand Change Comparison (%)

Historical Electricity Demand (TWh)

CAGR = 4.6%

Number of consumers

2020 → 46,077,742
2021 → 47,311,976
2022 → 48,563,259

Source: IEA, EMRA
Electricity Demand

Net demand in Türkiye comes mostly from industrial production, which accounted for 44% of total demand in 2021 and has grown by 15% since 2018.

Electricity consumption per capita - 2021 (kwh)

- India
- Mexico
- Brazil
- South Africa
- Türkiye - 3,900 kWh
- United Kingdom
- China
- Germany
- Russia
- Japan
- France
- Australia
- Saudi Arabia
- South Korea
- United States
- Canada
- Sweden
- Qatar
- Norway
- Iceland

Invoiced Consumption by Consumer Type - 2021

- Industry: 44.09%
- Commercial: 24.25%
- Household: 24.24%
- Irrigation
- Li...

Total Invoiced Consumption 253 TWh

Source: World Bank
In the coming decades, growing population with higher incomes will drive a strong increase in power demand.
Five key factors are expected to drive future demand in the electricity market.

<table>
<thead>
<tr>
<th>Industry Development &amp; Economic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry sectors utilize raw materials and electricity to create value-added products. Increased production directly impacts the overall electricity utilized, and thus, demand. Higher industry production volumes will increase electricity demand in the long run, though higher efficiency and economic downturns might have opposite impacts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Government Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government subsidies can directly or indirectly impact electricity consumption. For example, the household consumption support mechanism subsidizes the electricity costs of 2 million households, effectively increasing consumption through government support.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wealth and Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>A large portion of the increase in global electricity demand comes from developing economies like Türkiye. This phenomenon is attributable to (i) Increases in wealth, which leads to higher demand for consumer goods, and (ii) Increases in population, as a higher number of consumers leads to higher consumption.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Efficiency in Electricity Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>While electricity demand continues to increase with rising wealth and a growing population, efficiencies from technological development and government policies are able to counter this increase. Türkiye's National Energy Efficiency Action Plan is expected to have a significant impact on electricity consumption in future years.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process of Electrification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrification is the process of shifting consumption from combustion-based raw resources to electricity. Examples of this include the introduction of electric vehicles, development of electric-arc furnaces and use of electric heating in households. Türkiye is expected to follow the global policy of shifting towards electrification in an effort to reduce its dependency on imported energy sources.</td>
</tr>
</tbody>
</table>
Unlicensed capacity increased, particularly through solar investments.

Total installed capacity of unlicensed power plants has increased significantly over the last couple of years, from around 0.4 GW by the end of 2015 to as high as 8.6 GW by December 2022.

**Why Solar?**
- Efficiency is not driven by scale
- Panel costs decreasing over time
- Türkiye's huge solar energy potential
- Simple operations compared to other technologies

**Source:** EMRA
Turkey has experienced impressive growth in renewables in the past decade driven by a favorable resource endowment, strong energy demand growth and supportive government policies. Accordingly, renewable electricity generation for Turkey has nearly tripled in the last decade.

Wind and solar power will remain the drivers of renewables growth in Turkey.

### Europe Renewable Installed Capacity (MW)

<table>
<thead>
<tr>
<th>Year</th>
<th>Europe</th>
<th>Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
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<tr>
<td>2014</td>
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<td>2015</td>
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<td>2016</td>
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<tr>
<td>2019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Source: IRENA |
Solar Market

Excellent solar energy potential

Solar Power Installed Capacity (MW)

Annual solar irradiation time: 2,741 hours

National Energy Plan: 52.9 GW projected solar energy capacity by 2035

High potential comes with ever increasing number of projects 9,635 Solar Projects

Source: World Bank, EMRA
Wind energy makes up 11% of the country’s total electricity installed power.

29.6 GW (24.6 GW onshore, 5 GW offshore) in wind power by 2035.

New wind installations in Europe per country in 2022 (MW)

- Plenty of room for offshore
- 8th in new investments

Added 800 MW in 2022

4,000+ wind turbines
300+ facilities
130+ investors

Onshore

Wind Installed Capacity (MW)
Hydro

8th in the world global capacity

Installed Hydro Capacity of Türkiye (MW)

Hydropower Global Capacity, Shares of Top 10 Countries and Rest of World, 2021

- 30% China
- 9% Brazil
- 7% Canada
- 7% United States
- 30% Rest of World
- 17%

Next 6 countries:
- Russian Federation 4%
- India 4%
- Norway 3%
- Turkey 3%
- Japan 2%
- France 2%

Source: EMRA, International Hydropower Association
Geothermal

National Energy Plan: 5.1 GW in geothermal and biomass power plants by 2035.

Türkiye Geothermal Map: 1,000 natural geothermal sources

World Geothermal Capacity (MW)

- Japan
- Iceland
- Italy
- Kenya
- Mexico
- New Zealand
- Turkey
- Philippines
- Indonesia
- United States

Conducive policies and regulatory reforms have allowed Türkiye to scale up geothermal development, increasing its geothermal electricity capacity from 15 MWe in 2008 to over 1.7 GWe in 2022.

Source: MENR, IRENA
Non-hydro renewable installed capacity in Türkiye grew substantially in the last decade due to continuous government support, particularly through YEKDEM.

<table>
<thead>
<tr>
<th>Development of Non-Hydro Renewables</th>
<th>December 2007</th>
<th>December 2022</th>
<th>% of Total Capacity as of December 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>148 MW</td>
<td>11,455 MW</td>
<td>11%</td>
</tr>
<tr>
<td>Large amount of investments due to attractive FIT Schemes under YEKDEM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar</td>
<td>0 MW</td>
<td>9,685 MW</td>
<td>9.3%</td>
</tr>
<tr>
<td>Strong growth in the past few years, mainly attributable to unlicensed generation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geothermal</td>
<td>23 MW</td>
<td>1,666 MW</td>
<td>1.5%</td>
</tr>
<tr>
<td>High number of geothermal sources in Türkiye which can be utilized for generation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>21 MW</td>
<td>2,200 MW</td>
<td>2%</td>
</tr>
<tr>
<td>Less interest due to high CAPEX and dependency on external source factors (waste collection).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The introduction of YEKDEM to the Turkish electricity market increased investments in renewable energy plants, as it provided the required framework and incentives for market players looking to engage in renewable investments.
The new YEKDEM entered into force by 1st of May, 2023.

A USD based floor price has been introduced.

<table>
<thead>
<tr>
<th>Source</th>
<th>FIT Price (TL cent / kWh)</th>
<th>Floor Price (US Dolar cent /kWh)</th>
<th>Cap Price (US Dolar cent /kWh)</th>
<th>Local Content (TL cent /kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reservoir</td>
<td>144.00</td>
<td>6.75</td>
<td>8.25</td>
<td>28.80</td>
</tr>
<tr>
<td>Run-of-the-river</td>
<td>135.00</td>
<td>6.30</td>
<td>7.70</td>
<td>28.80</td>
</tr>
<tr>
<td>Wind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Shore</td>
<td>106.00</td>
<td>4.95</td>
<td>6.05</td>
<td>28.80</td>
</tr>
<tr>
<td>Off-Shore</td>
<td>144.00</td>
<td>6.75</td>
<td>8.25</td>
<td>38.45</td>
</tr>
<tr>
<td>Geothermal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>202.00</td>
<td>9.45</td>
<td>11.55</td>
<td>28.80</td>
</tr>
<tr>
<td>Biomass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Gas/Waste Tires</td>
<td>106.00</td>
<td>4.95</td>
<td>6.05</td>
<td>28.80</td>
</tr>
<tr>
<td>Biomethanization</td>
<td>173.00</td>
<td>8.10</td>
<td>9.90</td>
<td>28.80</td>
</tr>
<tr>
<td>Thermal Disposal</td>
<td>134.90</td>
<td>5.75</td>
<td>8.00</td>
<td>21.58</td>
</tr>
<tr>
<td>Solar</td>
<td>106</td>
<td>4.95</td>
<td>6.05</td>
<td>28.80</td>
</tr>
<tr>
<td>ESS integrated with wind or solar</td>
<td>125.00</td>
<td>5.85</td>
<td>7.15</td>
<td>38.45</td>
</tr>
<tr>
<td>Pumped-storage hydraulic</td>
<td>202.00</td>
<td>9.45</td>
<td>11.55</td>
<td>38.45</td>
</tr>
<tr>
<td>Wave/Current</td>
<td>135.00</td>
<td>6.30</td>
<td>7.70</td>
<td>38.45</td>
</tr>
</tbody>
</table>

The correlation between the TRY based rates and USD escalation formula is increased and the escalation period is decreased to 1-month from 3-months.
Green Certificates

An important step towards promoting share of renewable energy and reducing carbon emissions.

- YEK-G certificates are issued in compliance with EU standards.
- YEK-G provides exporters with a tax exemption solution like the one the EU would normally apply based on carbon emissions.

Green Certificate (YEK-G Certificate)

- Every 1 MWh electricity production will correspond to a YEK-G Certificate.
- YEK-G Certificate Documentation will be valid only 12 months after electricity produced.
- Certificate will tell the source of electricity generated and inform about the environmental impact.

2 Main Advantages of The YEK-G Certificates

**Sustainability**

YEK-G certificates will be able to be used in the sustainability reports as a direct way of expressing carbon emission levels attained. YEK-G certificates will be issued in compliance with EU standards and provide exporters with a tax exemption solution like the one the EU would normally apply based on carbon emissions.

**Revenue for Renewable Assets**

Companies generating electricity using renewable resources will be able to generate additional income through the issuance and trade of YEK-G certificates
REZ Model

Installed capacities allocated to regions with specific renewable energy capabilities are shared between potential investors, based on their bids in tenders.

• Economies of scale
• Fixed and foreseeable price
• Incentives

The regulation on the new REZ investment model came into force 2016.

Step 1: Technical Studies
Step 2: Tender Announcement
Step 3: Evaluation
Step 4: Tender
Step 5: Approval
Step 6: Submit Work Plan
Step 7: Right of Use Contract
Step 8: Pre-License
Step 9: License
Step 10: Construction
The REZ model aims to ensure efficient and effective use of renewable energy resources by setting up large scale REZs in selected areas.

<table>
<thead>
<tr>
<th>REZ GES-1</th>
<th>REZ RES-1</th>
<th>REZ GES-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar</td>
<td>Wind</td>
<td>Solar</td>
</tr>
<tr>
<td>1 GW</td>
<td>1 GW</td>
<td>1 GW</td>
</tr>
<tr>
<td>$6.99 cent/kWh</td>
<td>$3.48 cent/kWh</td>
<td>21.5 TL Kurus/kWh</td>
</tr>
<tr>
<td>Locally Manufactured Components</td>
<td>Locally Manufactured Components</td>
<td>70% Localization</td>
</tr>
<tr>
<td>2017</td>
<td>2017</td>
<td>2021</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REZ RES-2</th>
<th>REZ GES-4</th>
<th>REZ RES-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>Solar</td>
<td>Wind</td>
</tr>
<tr>
<td>1 GW</td>
<td>1 GW</td>
<td>850 MW</td>
</tr>
<tr>
<td>$3.53 – $4.56 cent/kWh</td>
<td>37.5 – 59.7 TL Kurus/kWh</td>
<td>40.8 – 77.8 TL Kurus/kWh</td>
</tr>
<tr>
<td>51%–65% Localization</td>
<td>75% Localization</td>
<td>51%–70% Localization</td>
</tr>
<tr>
<td>2019</td>
<td>2022</td>
<td>2022</td>
</tr>
</tbody>
</table>
Akkuyu NPP Project is the first nuclear investment.

1. **IGA SIGNED**
   Following intergovernmental negotiations, an intergovernmental agreement between the two countries was signed in May 2010.

2. **10% OF DOMESTIC ELECTRICITY NEEDS**
   Once completed, the plant will fulfill about 10% of domestic electricity needs.

3. **PREVENT GHG EMISSIONS**
   Akkuyu will prevent around 35 million tonnes of greenhouse gas emissions per year.

4. **PROJECT STATUS**
   Construction of units 1-4 began in April 2018, April 2020, March 2021 and July 2022, respectively. So; the construction site is the largest of its kind around the globe. More than 25,000 people work at the Akkuyu NPP site.

5. **PROJECT CALENDAR**
   The first unit is due to start operations in the near term. The remaining three units are scheduled to be put into operation one year apart.
Wind Equipment Manufacturing

Best locations for cost of operating a wind turbine manufacturing facility

With the Turkish government’s strong ambitions to build out its wind manufacturing capacity, int’l companies have made commitments to the Turkish market over recent years.

~ 100 manufacturers

1 b €/a worth equipment export

Export to 45 countries

85% export

15% domestic market sales

20,000 direct labor force

*Labour costs required to operate a facility with 75 employees for a year.

Source: FDI Markets
Türkiye has many operational facilities, making it the fifth-largest wind turbine component producer in Europe.

Wind Turbine OEMs in Türkiye (December 2021)

- 6 tower producers
- 4 blade producers
- 2 casting producers
- Almost 300 operational wind energy plants
- İzmir is the wind energy capital of Türkiye and the surrounding geography in Eastern Europe.

Source: TUREB
Rapidly growing market and changing production structure needs continuous investments.

source: IRENA Renewable Cost Database

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost – 2021 (USD / kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>590</td>
</tr>
<tr>
<td>China</td>
<td>628</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>690</td>
</tr>
<tr>
<td>Germany</td>
<td>694</td>
</tr>
<tr>
<td>Italy</td>
<td>785</td>
</tr>
<tr>
<td>France</td>
<td>808</td>
</tr>
<tr>
<td>Türkiye</td>
<td>810</td>
</tr>
<tr>
<td>Spain</td>
<td>816</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>848</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>940</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1,022</td>
</tr>
<tr>
<td>Australia</td>
<td>1,023</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1,035</td>
</tr>
<tr>
<td>United States</td>
<td>1,085</td>
</tr>
<tr>
<td>Japan</td>
<td>1,693</td>
</tr>
</tbody>
</table>

Competitive cost structures continue to prevail in more recently established markets like Türkiye, where total installed costs declined 5% between 2020 and 2021.
Türkiye aims to reduce the cost of hydrogen production per kilogram to $2.4 by 2035 and to halve this figure by the 2050s.

<table>
<thead>
<tr>
<th>National Hydrogen Plan</th>
<th>Renewable Energy Potential</th>
<th>Project Based Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of hydrogen in the gas mixture for 2035 is set at 3.5%</td>
<td>Ready Port Infrastructure</td>
<td>Tailor-Made Incentives</td>
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<tr>
<td>Installed electrolyzer capacity will reach 2 GW in 2030, 5 GW in 2035</td>
<td>Export Route (Pipeline)</td>
<td></td>
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<tr>
<td>Geographic proximity EU&amp;MENA</td>
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Electrification

TOGG would be the main driver of electrification for Türkiye.

128 license holders as of May 2023
- Min. 50 units
- License fee: $33,000
- Necessary software
- Brand

15,000 EVs
2030 Projections: 1,000,000 EVs
TOGG has a huge potential

6,500 charging units
Increasing need of charging units both commercial and residential
Huge interest on licensing. Total license application volume is 221,000 MW.

- Teias – Distribution Company
- MENR
- Pre-License
- License

- Application Documentation
- Technical review
- Collateral

Total expected licensed capacity 35-40 GW

- Independent from intermittent resource capacity evolution
- Connection view can be generated independently of any capacity allocation competition.
- Does not require measurement for wind investments
Oil & Gas Market
Oil & Gas Infrastructure

Important for world oil flow and Europe.
Several important milestones of natural gas market in Türkiye took place in the last two decades.

- **2001**: Establishment of EMRA
- **2003**: Start of Greenfield Distribution Tenders
- **2004**: First Contract Release Tender, for 4 bcm, to Private Sector
- **2005**: Natural Gas Market Law
- **2009**: First LNG Cargo by Private Sector
- **2009**: Regulatory Framework Related to Third Party Access to Transmission Network
- **2017**: First FSRU Terminal Started Operating
- **2017**: Operating First Phase of BOTAŞ Tuz Gölü Storage Facility
- **2017**: The European connection of the Trans-Anatolian Natural Gas Pipeline Project (TANAP), the most important link of the Southern Gas Corridor, was opened.
- **2018**: Organized Wholesale Gas Trading Platform
- **2019**: Turk Stream Natural Gas Pipeline, that will carry Russian natural gas directly to Türkiye and to Europe through Türkiye, was launched.
- **2019**: FSRU in Dörtyol Started Operating
- **2019**: Power Futures Market (PFM) was launched.
- **2019**: Natural Gas Futures Market (NFM) was launched under the country’s energy exchange EXIST.
- **2020**: Silivri facility started to store NG.
- **2020**: Invest.gov.tr
Improved storage, diversification of import sources and flexibility in the natural gas network help strengthen Türkiye's position in negotiations with suppliers.

Natural gas is supplied via imports made through long-term pipeline and LNG contracts. Almost all of the natural gas supply is imported via long-term contracts.

**Total Demand:** 60 B cm3

**Natural Gas Imports Breakdown By Countries (2021):**
- Russia: 45%
- Azerbaijan: 15%
- Iran: 16%
- Algeria: 10%
- Nigeria: 3%
- Others: 11%

**Natural Gas Imports - 2021 (million cm3):**

Source: EMRA
In line with the growing energy needs, Türkiye continues to be a major gas consumer.

Number of consumers
2020 → 17,500,000
2021 → 18,500,000
2022 → 19,000,000
Incentives
Investment Incentives

Rapid development on project-based incentives.

General Investment Incentives
- Custom duty exemption
- Vat exemption

Regional Investment Incentives
- Customs Duty Exemption
- VAT Exemption
- Corporate Tax Reduction Social Security Premium
- Support (Employer’s Share)
- Land Allocation
- Interest Rate Support

Professional Investment Incentives
- Customs Duty Exemption
- VAT Exemption
- Corporate Tax Reduction Social Security Premium
- Support (Employer’s Share)
- Land Allocation
- Interest Rate Support
- VAT Refund

Strategic Investment Incentives
- Customs Duty Exemption
- VAT Exemption
- Corporate Tax Reduction Social Security Premium
- Support (Employer’s Share)
- Land Allocation
- Interest Rate Support
- VAT Refund

Cash Support
- VAT Exemption
- Customs Duty Exemption
- Corporate tax reduction up to 200% of investment expenditures
- Social security premium support for up to 10 years (employer’s share)
- Income tax withholding support for 10 years Qualified personnel support for up to 5 years
- Energy support for up to 50% of energy expenditures for up to 10 years
- 10 years Interest rate support for up to 10 years
- Capital contribution up to 49% of the investment amount
- Land allocation for 49 years Infrastructure support
  - Purchasing guarantee
  - Facilitation of authorization-permit-license
  - procedures
  - VAT refund for building-construction expenditures
Project Based Incentives

Tailor-made incentive mechanisms are available for selected investors.

### PROJECT BASED INVESTMENT INCENTIVE EXAMPLES

<table>
<thead>
<tr>
<th>Incentive</th>
<th>Eligibility Criteria</th>
<th>Supports</th>
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</table>
| Ford's Commercial Vehicle and Battery Production Investment (TRY 20.5 Billion) | Minimum fixed investment amount of TRY 1 Billion (~$2 Million USD) | - Cashback Support  
- VAT Exemption  
- VAT Refund  
- Customs Duty Exemption  
- Corporate Tax Reduction up to 200% of investment expenditures  
- Social Security Premium Support (Employer’s Share) for up to 10 years  
- Income Tax Withholding Support* for 10 years  
- Qualified Personnel Support for up to 5 years  
- Energy Support for up to 50% of energy expenditures for up to 10 years  
- Interest Rate Support for up to 10 years  
- Capital Contribution up to 49% of the investment amount  
- Land Allocation  
- Infrastructure Support  
- Purchasing Guarantee  
- Facilitation of Authorization / Permit / License Procedures |

| Kalyon’s Photovoltaic Solar Panel Production Investment (TRY 3.7 Billion) | Technology intensive and strategic products should be produced | - VAT Exemption  
- Customs Duty Exemption  
- VAT Refund  
- Corporate Tax Reduction (Support Rate 100%)  
- Social Security Premium Support - Employer’s Share (10 years)  
- Income Tax Withholding Support (10 years)  
- Qualified Personnel Support (TRY 100 Million)  
- Energy Support (TRY 300 Million) |

| Smart’s Photovoltaic Solar Panel Production Investment (TRY 7.7 Billion) | High added-value in investment and manufacturing  
Manufacturing focusing on import-dependent products (non-locally produced or locally produced at small quantities) | - VAT Exemption  
- Customs Duty Exemption  
- VAT Refund  
- Corporate Tax Reduction (Support Rate 70%)  
- Social Security Premium Support - Employer’s Share (10 years)  
- Income Tax Withholding Support (10 years)  
- Interest Rate Support (TRY 100 Million)  
- Energy Support (TRY 240 Million)  
- Land Allocation |