

# Turkey • Renewable energy • Geothermal, Solar, Wind

## Gross electricity generation from renewable sources by 2021, TWh (%)



- Bioenergy 6.45 (5.4)
- Hydropower 55.93 (47.2)
- Solar PV energy 13.94 (11.8)
- CSP energy 0.00 (0.0)
- Wind energy 31.44 (26.5)
- Geothermal energy 10.79 (9.1)

**Total: 118.56 (100)**

Source: Renewable Energy Statistics 2023 © IRENA



### CSP Tower type with thermal storage plants over 1 MW, MW:

- Greenway CSP Mersin, 1.0



### Double flash type geothermal power plants over 20 MWe, MWe:

- Gürmat-1 (Germencik), 47.4



### Combined type geothermal power plants over 20 MWe, MWe:

- Kızıldere 1-3, 260.0
- Gürmat-2 (Germencik), 123.3\*

\* under construction



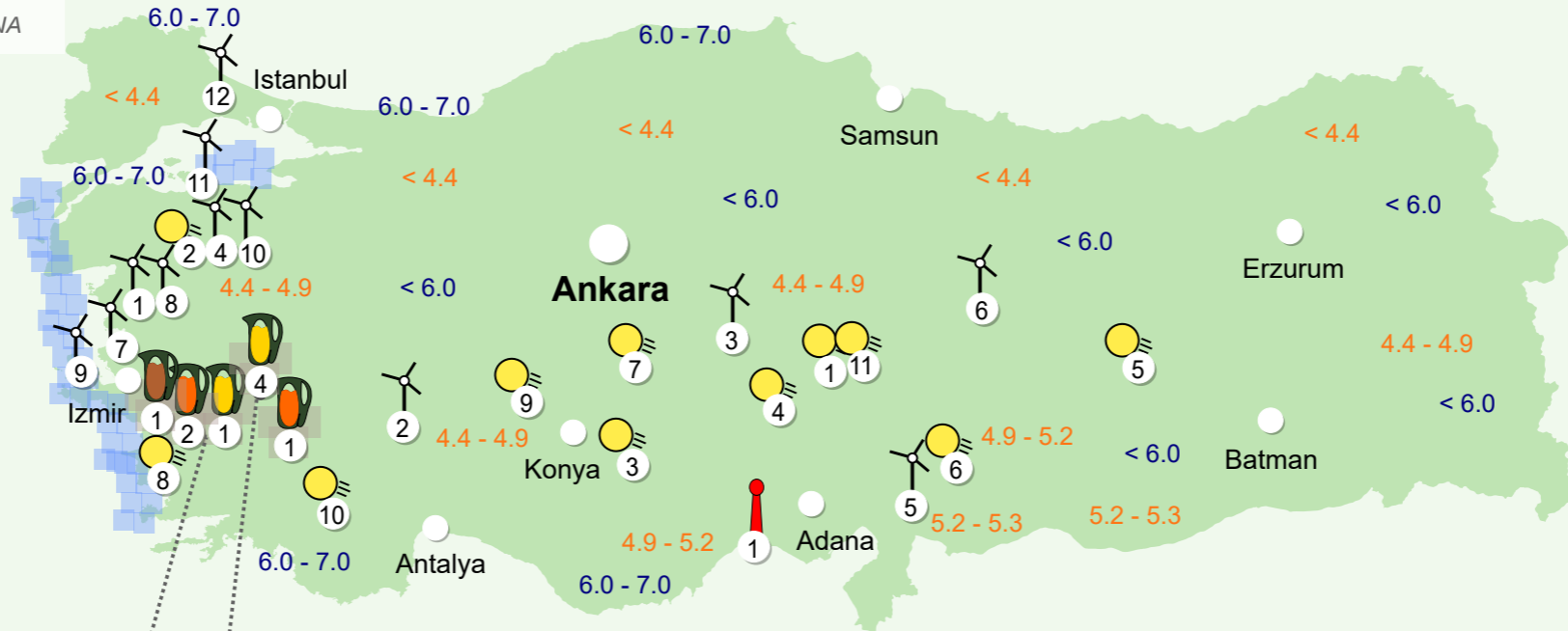
### Major wind farms over 90 MW, MW:

- Soma, 240.1
- Dinar, 200.2
- Geycek, 168.0
- Balikesir, 143.0
- Osmaniye Gökçedağ (Rotor), 135.0
- Kangal, 128.0
- Aliağa Bergama, 120.0
- Bilgin Enerji Soma, 120.0
- Karaburun, 120.0
- Şamlı, 114.0
- Şah, 105.0
- Çatalca, 93.0



### Binary type geothermal power plants over 20 MWe, MWe:

- Maren Enerji Complex (Irem, Sinem, Deniz, Kerem, Ken), 116.0
- Dora 1-4, 72.0
- Pamukören, 67.5
- Türkerler Alaşehir 1-2, 48.0
- Zorlu Enerji Alaşehir, 45.0
- Greeneco Denizli-Sarayköy, 25.6
- Enerjeo Kemaliye, 24.9
- Kubilay, 24.0
- Özmen 1, 23.5



### Key wind turbine manufacturers in Turkey:

- NORTHEL in Istanbul
- Soyut Enerji in Ankara

Sources: NORTHEL Elektromekanik A.S.; SoyutWind (Soyut Enerji).



### Solar PV power plants over 10 MWe, MWe:

- Kayseri OSB, 51.0
- Özkoyuncu Madencilik Balıkesir, 40.6
- Konya Kızören, 18.5
- Derinkuyu, 17.0
- Elazığ Kovancılar, 15.0
- Türkoğlu, 13.5\*
- Cihanbeyli, 12.0\*
- Aydın Savcilli, 10.8\*
- Makascı Mühendislik, 10.3
- Renoe Acipayam, 10.0
- Çiftlik (Kayseri), 10.0

\* under construction

### High activity areas:

The most common solar GHI intensity is 5.2 - 5.3 kWh/m<sup>2</sup> per day, distributed in south-central part of the country, between Gaziantep, Sanliurfa and Mardin provinces.

The most common wind speed is over 7.0 m/s at 50 m are distributed along the western coastline of Turkey with the Aegean Sea and Sea of Marmara.

0.0 kWh/m<sup>2</sup>/d Global Horizontal Irradiation (GHI)  
0.0 m/s Wind speed

Source: Energydata.info