



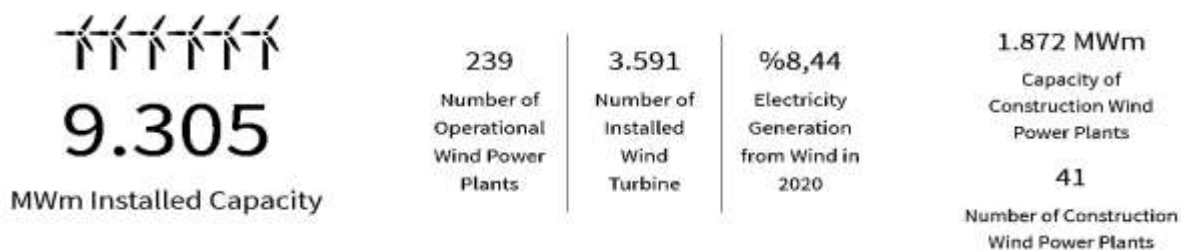
MINISTRY OF FOREIGN AFFAIRS
OF DENMARK
The Trade Council

Wind Energy Market in Turkey

Prepared by the Trade Council of Denmark in Istanbul, Turkey / 2021

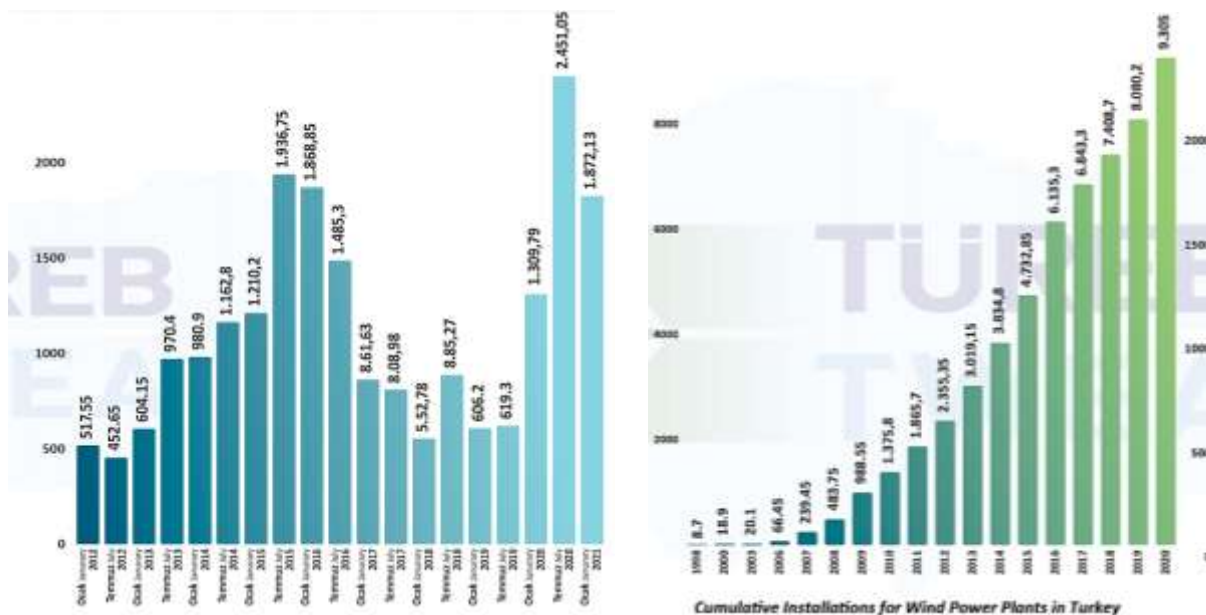


➤ Wind Energy Market in Turkey



- Turkey has reached a position where nearly 63% of its electricity produced throughout 2020 was produced from local and renewable resources.(including hydro power)
- Despite the covid-19 pandemic, with 1.224 MW new capacity in 2020, Turkey’s cumulative installed wind power capacity reached to 9.305MW.
- In 2020, the total electricity generation from wind has been 24.486.679 MW equals to 8.44% of the total electricity generation.
- In terms of renewable energy installed capacity, Turkey ranks 6th in Europe and 13th in the world.
- The country was also ranked among the top five countries in Europe in terms of large scale production plants for wind turbine equipment.
- Turkey has been ranked as the fifth-biggest wind power investor in Europe in 2020 with 1.6 billion Euro.

In April, the wind energy peaked in Turkey meeting 10.36% of the total electricity generation.

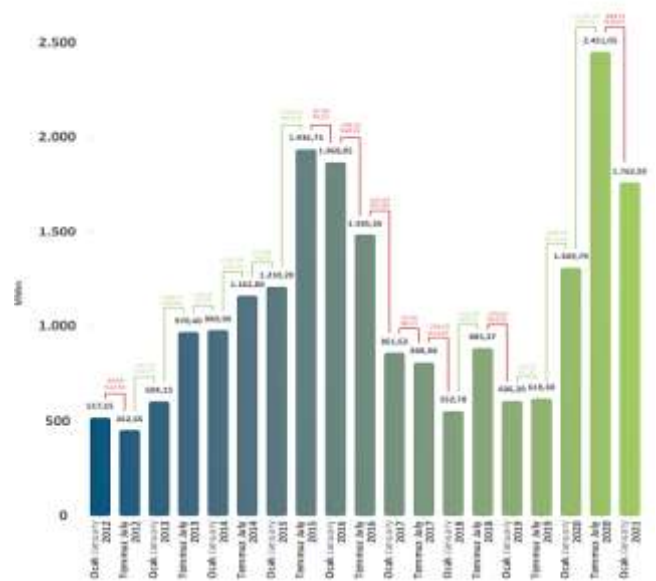
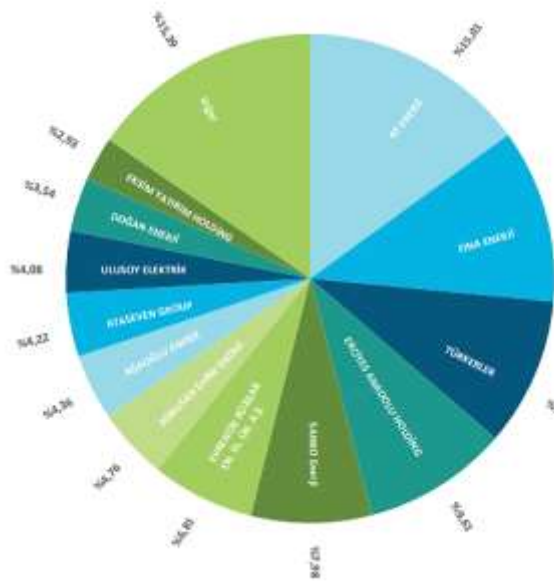


Source: Turkish Wind Energy Association; January 2021 Report.

In addition, 41 wind farms within the significant capacity of 1.872,13 MW are still under construction¹. The top 5 companies in the wind power plants under construction are respectively; RT Energy, Fina Energy, Türkerler, Erciyes Anadolu Holding and Sanko Energy.

¹ Turkish Wind Energy Association; www.tureb.com.tr

Source: WPP's under construction according to investors, Turkish Wind Energy Association; January 2021 Report.



From a sustainable perspective, the country targets producing 50% of its electricity from renewables. Volume of installed capacity of wind power will thereby reach 37,5 percent by 2023.

- Turkey's wind capacity and equipment production has grown to the extent that it now ranks as one of the 10 biggest markets globally.

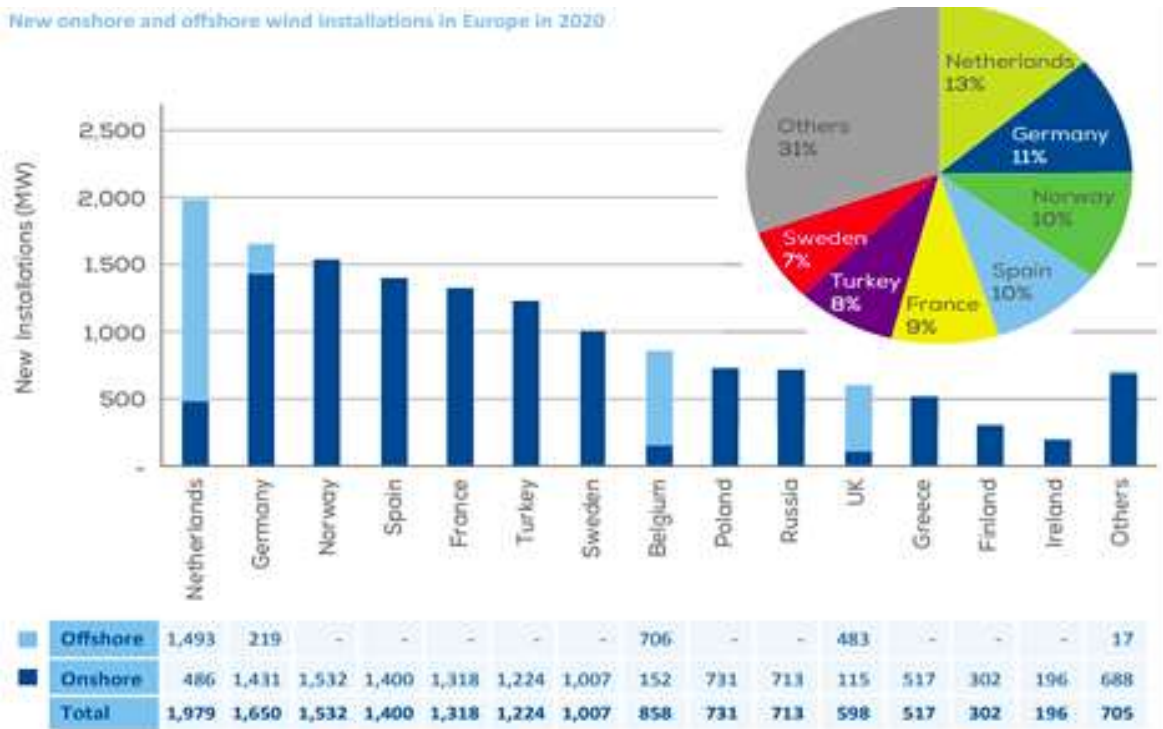


Total installed wind power capacity in Turkey 2008-2020: Between 2008 and 2020 the total installed wind power capacity in Turkey increased from 364 megawatts to over 8,800 megawatts.

Turkey ranked among the top five European countries that invested the most in wind energy with its over 1 billion euros (\$1.19 billion) of land wind energy investments in 2020. (Wind Europe)

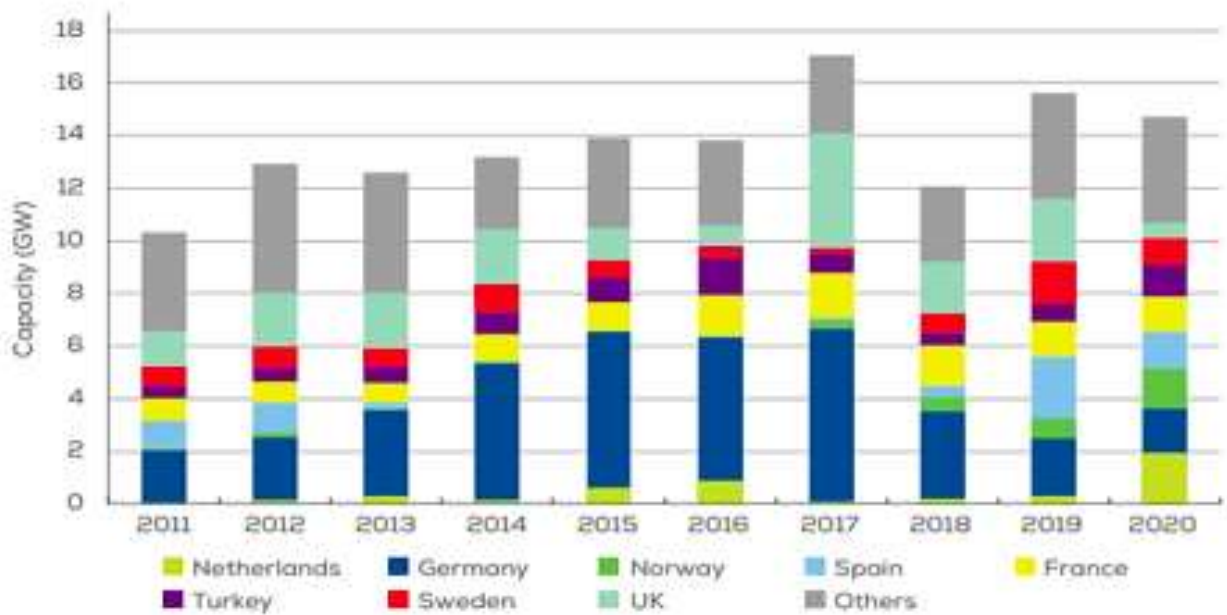


New onshore and offshore wind installations in Europe in 2020



Source: WindEurope

Distribution of the new wind installations in Europe



Source: WindEurope



➤ **Progress in SUPPLY CHAIN OF the wind industry**

Turkey has made a remarkable progress in the production of wind energy equipment in the last decade.

- It is the only energy source with the highest indigenoussness in its industry, with approximately 60-65% localization rate.
- Based on the ongoing industry inventory study made by Turkish Wind Industry Association, 80 active companies are producers in the wind energy sector and new investment plans have been made.
- Currently, Turkey has a strong industry that produces almost all parts such as blades, towers, gearboxes, generators, as well as blades, generator parts, bolts, gears, composite components.
- 80 companies operating in this field in Turkey both meet the domestic market needs and export wind energy equipment to 45 countries in 6 continents.
- The country is taking actions for the continuity of the wind industry, which currently employs 18 thousand people.

➤ **Incentives**

Turkey's Renewable Energy Support Scheme (YEKDEM)

- Previously, Turkey operated with the so-called FIT system (Feed-in-traffiff), as a power purchase guarantee, which was granted to licensed and unlicensed renewable energy investors in line with the Turkish Government's support policy for renewable energy resources. The system was set out of validity at the end of 2020.
- The previous YEKDEM scheme has played an instrumental role in building significant momentum and addressing the concerns of all stakeholders, while contributing to a giant leap in Turkish renewable energy capacity with impressive investments in almost all types of renewable energy sources.



The Turkish Presidency published a decree in 2021 on the new renewable energy resources support mechanism, which introduces the highly anticipated feed-in tariff scheme that will apply to renewable energy power plants becoming operational between 1 July 2021 and 21 December 2025 (inclusive). With the Decree, Turkey introduces the **new YEKDEM scheme**, addressing the long-awaited need for foreseeability for upcoming renewable investments in the region. The new YEKDEM scheme shifts the currency of previously US Dollar (USD)-denominated feed-in tariff and domestic components incentive premia payments to Turkish Lira (TRY), whilst still capping the price based on USD.

Chart: YEKDEM Prices (Excluding Domestic Components Incentive)

Type of Power Plant	Previous YEKDEM Price (USD/kWh)	New YEKDEM Price (TRY/kWh)	Change in the YEKDEM Price ¹
Hydroelectric	0.073	0.40	- 25%
Wind	0.073	0.32	- 40%
Geothermal	0.105	0.54	- 30%
Biomass	Landfill gas or waste tyre processing facility	0.133	- 67%
	Biomethanisation generation facility	0.133	- 44%
	Thermal disposal facility	0.133	- 49%
Solar	0.133	0.32	- 67%

¹ Calculated based on the USD-to-TRY exchange rate as at 30 January 2021, which was USD/TRY: 7.31.

Summary of the tariff (currency rate as of January 28, 2021 per year):

- Price of RES Supporting Mechanism, TL kurus/kWh: 54 TL/ kWh (around USD 0.0732/ kWh) for 10 years.
- Domestic manufacturing contribution share, TL kurus/kWh: 8 TL/ kWh (around USD 0.0108/ kWh) for 5 years.

Other supporting schemes

Support Measures	General Investment Incentive Scheme	Regional Investment Incentive Scheme	Large Scale Investment Incentive Scheme	Strategic Investment Incentive Scheme
VAT Exemption	✓	✓	✓	✓
Customs Duty Exemption	✓	✓	✓	✓
Tax Reduction		✓	✓	✓
Social Security Premium Support (Employer's Share)		✓	✓	✓
Income Tax Withholding Support *	✓	✓	✓	✓
Social Security Premium Support (Employee's Share) *		✓	✓	✓
Interest Support **		✓		✓
Land Allocation		✓	✓	✓
VAT Refund				✓

➤ **G2G RELATION BTW TURKEY & DENMARK on offshore Wind (2020-2022)**

- *1200 MW capacity YEKA tender on 23rd of October 2018 has been postponed due to immature tender conditions.*

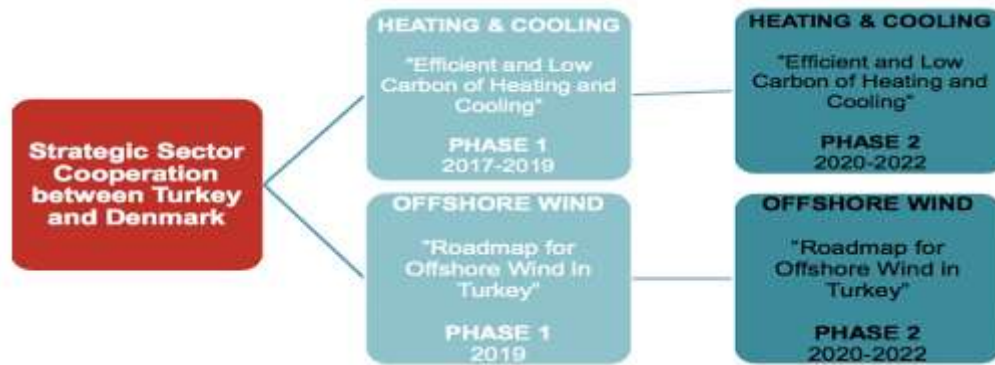
Offshore wind market in Turkey has the potential to play a substantial part of meeting energy demand in Turkey as initial assessments show great offshore wind potential along the Turkish coast. However, successful offshore wind development requires long term planning and investment by stakeholders.

Within this framework, **Danish Energy Agency** and **Turkish Ministry of Energy and Natural Resources** have signed a bilateral agreement in March 2019 to develop "Roadmap for Offshore Wind in Turkey".

The second phase covering 2020-2022 have been approved that will focus on sharing Denmark's experience in this sector, detailing the preparation of tenders and infrastructure and other related topics.



Strategic sector cooperation (SSC) between Turkey and Denmark: Heating and Offshore Wind:



Phase 2 outputs:

1. Tender design and procedures (2020- First half of 2021).
 - Best practices and lessons learned on the Danish one-stop-shop model.
 - Consenting procedures, permits and licenses.
2. Financial framework (Second Half of 2021).
3. Port facilities and infrastructure (First Half of 2021).
 - Study initiated in cooperation with COWI, a report from the study will be delivered in June 2021. The study will consider infrastructure development for 2 selected ports in Turkey for Offshore Wind development.
4. Roadmap for offshore wind in Turkey. (2021-2022).

➤ Opportunities for Danish companies

▪ Unique location

As the **intersection point of Europe**, Central Asia and Middle East, Turkey is a gate to these regions. More energy transformation projects will be adopted in the Middle East and North Africa Region. Thanks to geographical and cultural proximity, Turkey can be used as a **hub** to those growing markets.

▪ Skilled labour force

▪ Component sourcing

Turkey is advanced in producing components of wind energy industry; with the new YEKA investment model, which promotes local industry, Turkey will increase its capacity even more in the near future. For emerging markets around Turkey, energy components can be produced in Turkey.

- A great number of government incentives.
- Partnership and production opportunities with Turkish Companies.



- Strategic Sector cooperation Project and government-to-government cooperation between Turkey and Denmark on offshore and onshore wind will create the framework for business development for Danish companies.
- Partnerships with Turkish companies

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