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## DANISH-TURKISH ENERGY COOPERATION PLACES HIGH EMPHASIS ON DISTRICT HEATING AND OFFSHORE WIND

Ambitious Danish-Turkish energy cooperation aimed to support Turkey in increasing renewable energy share and decrease the country's import of fossil fuels.

Turkey is a country in growth both when it comes to its population and its economy. This fact leads to increased energy demand, which by 2026 is expected to grow by close to five percent annually. Currently, 75 percent of Turkey's energy consumption comes from imported fossil fuels. The Danish-Turkish cooperation support Turkey in its efforts to ease the dependency on energy imports by transforming a share of the country's heat and electricity supply to local, green and cost effective solutions in the form of district heating and offshore wind. Turkey is the home of slightly more than 83 million energy consumers and therefore represents a significant potential for green solutions.

Since 2017, Denmark has supported Turkey in the development of policies, strategies and solutions within district heating and cooling, which can help drive the green transition of the Turkish energy sector. In 2018, the cooperation was expanded to also include offshore wind. The potential along Turkey's long coastline is estimated to be at least 11 gigawatt. For comparison, Denmark by early 2021 had an offshore wind capacity of 2.3 gigawatt.

The background for the energy cooperation can be found in the Turkish Government's ambitions to decrease the country's dependency of imported energy and at the

same time increase its share of renewable energy. These ambitions have recently been strengthened through the country's ratification of the Paris Agreement. Furthermore, Turkey is an important partner as an EU candidate with increasing trade with EU member states. Energy is of significant geopolitical importance not least due to Turkey's dependency of fossil fuels imported from countries such as Russia and Iran. It is the government's aim to achieve a much larger share of domestically produced energy. The potential for locally produced green energy include geothermal, waste, solar, wind as well as surplus heat from industry and power plants.

### New initiatives in the heating sector

Turkey is witnessing a significant migration from rural to urban areas leading to increased urban energy demand. Currently, the majority of its buildings are heated by individual installations powered by imported natural gas. Together with the Turkish partners, the possibilities of harvesting unused surplus heating from industry and power generation have been analysed, and results show that in addition to providing stable heat supply, district heating can also prove economically favourable both for producers and consumers.



The primary focus of the cooperation is on development of policies and solutions necessary for a systematic roll-out of district heating and -cooling in Turkey. Denmark has many years of experience with green transition of heat supply. Therefore, the Turkish partners are very interested in gaining insights into the details and experiences from Danish municipal heat planning as well as an introduction to relevant national regulation adapted to local Turkish conditions.

## Embarking on the Turkish offshore wind adventure

In 2018, the Turkish energy authorities reached out to the Danish Embassy in Ankara with an interest in the possibilities within offshore wind. Currently, Turkey does not have any offshore wind but would like to benefit from Denmark's world renowned experiences.

Turkey is surrounded by water on three sides and has a coastline of more than 8,000 km. The country possess significant experience within onshore wind but is now looking for knowledge enabling a systematic offshore wind development due to the general higher effectiveness of wind turbines at sea. In addition, the wind flow offshore is different meaning offshore wind could complement electricity production from onshore wind farms. Within this field, Danish experiences with transparent tender processes, effective permitting systems, integration renewable energy and competitive electricity prices on the Nordic electricity market prove very relevant.

Danish framework experiences are being studied in detail in Turkey and despite that experiences from Denmark cannot be transferred directly, many crucial aspects can be adapted to a Turkish context. Lessons learned from the Danish development of ports and related infrastructure is also among the focus areas in the cooperation, which is expected to provide essential input for an efficient kick-off of the offshore wind sector in Turkey and also on the development of a roadmap for offshore wind for the long-term.

## Permanent competency development and increased trade

The purpose of the energy cooperation is to transfer Danish technical and institutional experiences to Turkish experts enabling an efficient transformation of the energy sector. In addition, the cooperation supports increased interaction between Danish and Turkish energy companies and already now it is evident that the private sector sees significant potential in the cooperation.

### FACTS

- The energy cooperation between Denmark and Turkey is financed by the Danish Ministry of Foreign Affairs and is managed by the Danish Energy Agency in cooperation with the Danish Embassy in Ankara.
- The authority cooperation started with a preparation phase in 2015 and until 2018 the focus was district heating after which offshore wind was added.
- The cooperation provide inspiration for new regulation on heating and implementation of district heating in Turkey and support the Turkish Ministry of Energy and Natural Resources in the development of a roadmap for the development of offshore wind.

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