



After the global energy sector was affected by lockdowns in 2020 when energy consumption fell by 4%, stimulus packages and vaccine roll outs allowed significant **economic activity** to recover in 2021. This paved the way 4.6% recovery in energy demand that is above pre-pandemic levels (IEA, Global Energy Review 2021, April 2021).

In contrast with the rest of Europe, electricity consumption in Turkey did not decline in 2020 and slightly increased. Moreover, it surged over 8% in 2021, largely driven by higher economic activity (IEA, Electricity Market Report, January 2022). In order to be able meet the increasing demand sustainably and affordably, owing to increased investments installed capacity reached 99.8 GW, 53.7 % of which is from **renewables** in 2021. Moreover, 98.4 % of the additional capacity commissioned in the last two years comes from renewables. Last year, solar + wind capacity addition reached almost 3 GW that exceeds the target to operationalise 1 GW solar and 1 GW wind every year (TEİAŞ, Monthly Installed Power Reports, 2022). Turkey is currently ranking the 5th in Europe in terms of renewable installed capacity (IRENA, Renewable Energy Statistics, August 2021).

Since Turkey's electricity demand is expected to increase in the coming period, nuclear will play an important role in meeting growing demand in a decarbonised manner. The first unit at the country's first nuclear power plant is expected to start up in 2023 with a capacity of 1.2 GW. The three remaining units are due to start operation by the end of 2026, at a rate of one per year to ultimately have a total installed capacity of 4.8 GW.

National Energy Efficiency Action Plan for the period of 2017-2023 is aimed to reduce the primary energy consumption by 14% by 2023. This saving corresponds to 66.6 million tones of CO2 equivalent emissions. Between 2017-2020, there were 4.8 billion dollars of investment on **energy efficiency** under the action plan and 3.19 million tones of oil equivalent energy was saved. This saving corresponds to 10 million tones of CO2 equivalent avoidance.

The Turkish electricity **market** has gone through a significant transformation in the past two decades and became functional with large-scale private sector participation. The share of the private sector rose to 83% in 2021 from 40%. Turkish electricity and natural gas **commodity prices** are among the lowest in Europe. Turkey supports renewables through two main **support mechanisms**- the Renewable Energy Resources Support Scheme (RERSS) and the Renewable Energy Resource Areas (RERA). While RERSS offers purchasing guarantee with certain tariffs, RERA offers tender processes to allocate certain capacity. Additively, energy efficiency projects in the manufacturing industry are supported through grants and tax incentives. The remaining sectors with a high share of primary energy demand, namely buildings, services and agriculture, were added to the scope by amending the law in the last days of 2021.

As a significant step to mitigate **climate change** threats and adapt to it, Turkish Parliament approved the ratification of the Paris Agreement in 2021 with a declaration to implement it as a developing country and in a way that will not jeopardise socio-economic development. Additively, Turkey has committed to achieving net-zero emission by 2053. New gas pipeline projects namely TANAP and Turk Stream, more LNG import, enhanced storage capacity, Floating Storage Regasification Unit terminals and Turkey's gas discovery in Black Sea diversified the sources and minimised the risks of **geopolitics**. In order to reveal the attractiveness level of the **investor environment**, it is worth to mention that energy sector has 11% share in foreign direct investments in Turkey (Investment Office of the Republic of Turkey).

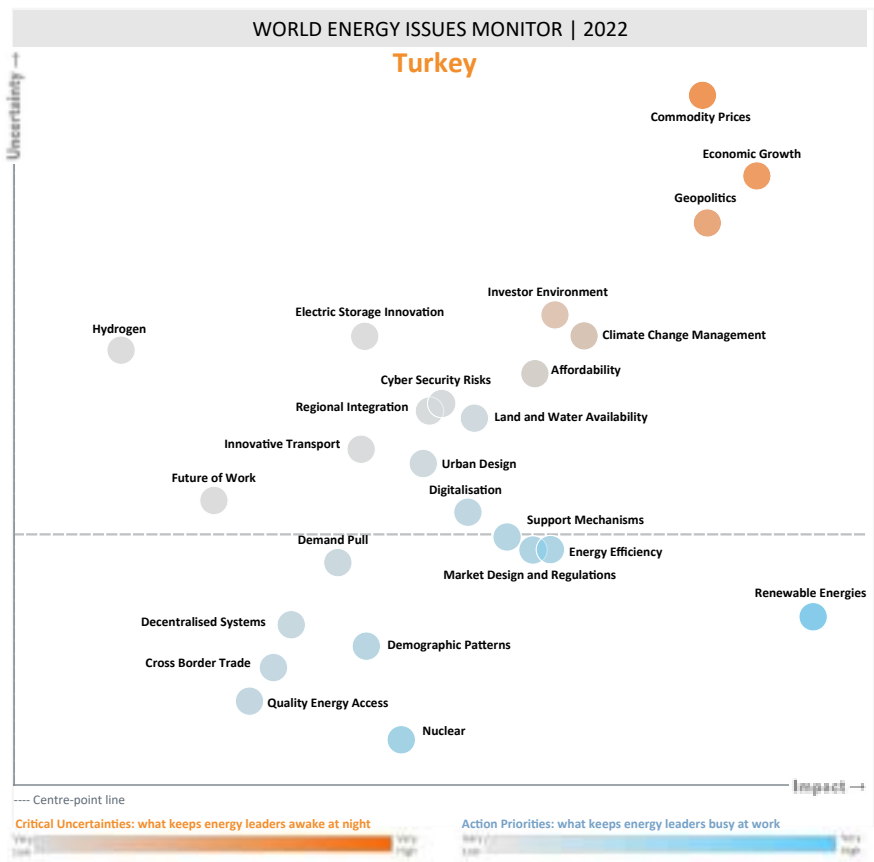
#### TESTING PERSPECTIVES WITH THE WEC TURKEY MEMBER COMMUNITY

The results of the World Energy Issues Survey were discussed with WEC Turkey members in February 2022. During the discussion, the key findings regarding Action Priorities and Critical Uncertainties were confirmed and the following three theses were highlighted:

1. Current statistics reaffirmed that electricity and natural gas demand in Turkey increases faster than Europe. The demand for electricity and natural gas increased due to economic activities and growth in 2021. The increase in electricity was more than 8%, that of natural gas around 21%. New investments to increase installed electricity capacity and the diversification of natural gas sources are making it possible to meet growing demand. The production of natural gas from Sakarya gas field will facilitate meeting demand while reducing foreign dependence.

2. Renewables and energy efficiency has been gaining utmost importance for the climate change mitigation. Turkey, a party to Paris Agreement and with a net-zero goal by 2053 has two powerful tools, namely renewable energy and energy efficiency, which serve not only to minimize dependence on fuel imports but also to avoid greenhouse gases emissions. There is a regulated and well-managed market for both renewable energy and energy efficiency in Turkey. The funding requirement may be the gap for new investments and further transition for the 2053 net-zero goal.

3. Localisation is essential for decarbonisation and digitalisation. Similar to the global agenda, Turkey's energy transformation should focus on decarbonisation and digitalisation. The development and transfer of Technologies for localization in technologies is essential to facilitate this transformation. Having the first and only integrated PV manufacturing facility in Ankara and strong solar energy R&D centres can be a good barometer of a what a healthy energy ecosystem should be like. The development of the technology cycle works at every stage of the energy system, from exploration to manufacturing, transmission, distribution, storage and end use is indispensable for the transformation.



**WORLD ENERGY COUNCIL**

**Acknowledgements**  
 Turkey Member Committee  
 Abdullah Bugrahan Karaveli