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Solar energy is the fastest growing form of renewable energy. The fact is that the climatic and geographical conditions of Turkmenistan allow us to widely use renewable energy sources in our country. For example, to receive solar energy and actively apply it in industry using photovoltaic converters and in thermal energy - using solar collectors.

Solar PV: Solar resource potential has been divided into seven classes, each representing a range of annual PV output per unit of capacity (kWh/kWp/yr). The bar chart shows the proportion of a country's land area in each of these classes and the global distribution of land area across the classes (for comparison).

At present, construction and installation work has been completed at the site of the combined solar and wind power station with a total capacity of 10 MW in Balkan velayat, and infrastructure is being formed for the preparation and delivery of electricity to consumers.

Masdar, one of the world's leading renewable energy companies, has signed a joint development agreement (JDA) with Turkmenenergo State Power Corporation of the Ministry of Energy of Turkmenistan (Turkmenenergo), to develop a 100 megawatt (MWac) solar photovoltaic (PV) plant, which will be the company's first project in Turkmenistan.

Turkmenistan has tremendous potential for harnessing solar energy. With more than 300 sunny days annually and with average annual intensity of solar radiation ranging between 700-800 watts per square meter (W/m<sup>2</sup>), the total technical potential of solar energy amounts to 655 GW (Seitgeldiev 2018; UNDP 2014).

UAE-based Masdar and Turkmenistan's Turkmenenergo State Power Corporation entered a joint development agreement to build a 100-megawatt alternating current. In a statement, Masdar said the agreement marks its first project in Turkmenistan.

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