

## SolarInnovate Energy Solutions

# Ukraine s new energy wind solar and storage

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## Overview

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Ukraine's National Renewable Energy Action Plan, adopted in August 2024, sets renewable energy targets of 27% of electricity consumption and 25% of generation (2022: 14.3%), to be achieved by 2030. How many solar power plants were installed in Ukraine in 2023?

As of early 2024, renewable energy capacity stood at 8.7 GW. Despite the war's challenges, in 2023, DTEK Networks connected over 1,400 new RES facilities to the system, commissioning 182.3 MW of wind and approximately 500 MW of solar power plants. In 2023, Ukrainian businesses invested around USD 150 mln in solar energy.

Does Ukraine have a solar power plant?

Ukraine's annual solar energy volume is higher than that of Germany, one of the industry leaders. From 2018 to 2020, solar energy capacity increased nearly fivefold. As of 2024, solar power plants account for about 75% of "green" energy production in Ukraine (excluding large hydropower plants).

How many wind power plants are there in Ukraine?

Before the full-scale invasion, Ukraine had 34 wind power plants with 699 wind turbines generating electricity at an average capacity of 3.5 MW. In 2023, the most significant new power plant commissioned was DTEK's Tiligul wind power plant in the Mykolaiv region, with a generating capacity of 78 MW.

How much electricity does Ukraine need in the winter?

Winter electricity needs stood at 26 GWh. By the winter of 2023-2024, production had plummeted by over 50% to 17.8 GWh, while peak consumption dropped by almost 30% to 18.5 GWh (UNHR, 2024). To mitigate the impact, Ukraine has received emergency from Poland, Romania and Slovakia (Polityuk, 2024).

How much solar insolation is needed in Ukraine?

Solar insolation in Ukraine ranges from 1100 to 1500 kWh/m<sup>2</sup>, making the entire country suitable for solar power plant deployment. The southern regions of the country are optimal for operation. Approximately half of all solar power plants are concentrated in six regions: Ivano-Frankivsk, Dnipropetrovsk, Vinnytsia, Khmelnytskyi, Kyiv, and Mykolaiv.

What kind of energy does Ukraine need?

Ukraine heavily depends on imported oil, coal and natural gas. Before the war, Ukraine's energy needs were met through a mix of domestic production and imports. According to the International Energy Agency (IEA), Ukraine's total energy supply in 2022 comprised coal (21.7%), nuclear (26.5%), natural gas (25.1%) and oil (18.6%).

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