Ukraine

Ukrainian nuclear industry

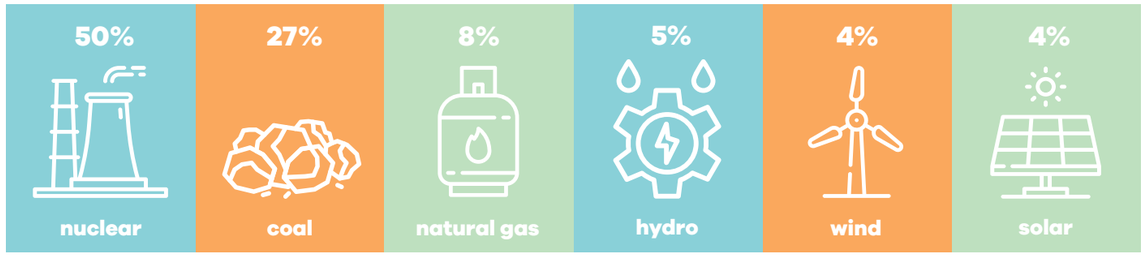
Overview

04
nuclear power plants

15
reactors in operation

02
nuclear reactors under construction

Generation mix



Nuclear facts on Ukraine

- Zaporizhzhia Nuclear Power Plant is the largest power plant in Europe and among the 10 largest in the world
- Nuclear energy allows Ukraine to ensure sustainable economic development, decent work, and high scientific and technological potential
- Nuclear energy is a guarantor of Ukraine's energy security, providing more than half of the total electricity production

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Viewpoint

Nuclear Energy remains the most cost-effective low-carbon energy source for developing countries

The impact of the nuclear energy sector on economic and energy security is difficult to overestimate, since nuclear power plants provide about 50% of all electricity in Ukraine. In terms of the share of nuclear generation in the total volume of electricity production, Ukraine is the second-largest player in the world after France, where the share of nuclear power plants exceeds 70%. Thus, environmentally friendly and cheap nuclear energy is one of the key elements of energy security of the state and a powerful factor to increase the competitiveness of the Ukrainian economy.

Globally about 10% of electricity among low-carbon sources in 2020 came from nuclear power and the Low-Carbon Development Strategy of Ukraine until 2050 emphasizes the importance of nuclear energy in the context of preventing climate change and achieving Ukraine's goals of the Paris Agreement.

In order to mitigate the impact of energy production on the environment, the search for alternatives to carbon energy sources shows that none of the types of generation can compete with nuclear energy in terms of both production capacity and the minimum level of impact on the climate. Nuclear energy is characterized by lower marginal costs than traditional energy, does not contribute to increasing CO2 emissions and ensures uninterrupted energy supply. Today, nuclear energy remains the unalterable source of energy with the lowest greenhouse gas emissions.

According to the Energy Strategy of Ukraine for the period up to 2035, an important role as one of the most cost-effective low-carbon energy sources is given to nuclear energy and its further development requires the study of new types of reactors to replace decommissioned power units.

Given the trends in the electricity supply market in the world, Ukraine plans to replace the existing water-water energetic reactor units with more economical and safer next-generation small modular reactors. On June 10, 2019, Ukraine's major national nuclear operator Energoatom, the nation's State Scientific and Technology Center, and Holtec International ratified a trilateral agreement on establishment of the international consortium to support activities for implementation in Ukraine of small modular reactor technology. As part of the expansion of the cooperation on the introduction of small modular reactors technology in Ukraine, a Memorandum of Understanding signed between the Energoatom and Studsvik Scandpower GmbH (Sweden) on July 17, 2019. Studsvik provides methodological support and transfer of computer codes for safety analysis.

Thus, maintaining the share of nuclear generation together with the gradual introduction of renewable energy sources remains as the key solution for Ukraine in facilitating the transition to a low-carbon economy. This will help not only to mitigate the effects of climate change, but also to achieve other goals, such as economic growth, infrastructure development and sustainable urban and community evolution.

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