

## **SOLAR ENERGY IN BELARUS**

Student Pilkovskaya M.R, Melkova A.S.

Scientific supervisor – lecturer Pinchuk I.V.

Belarusian National University of Technology

Minsk, Belarus

To consider such a topic as “solar energy” in Belarus, it is necessary to give a general definition of solar energy.

Solar energy is a branch of science and technology that develops the scientific foundations, methods and technical means for using the energy of solar radiation on the Earth and in the space to produce electrical, thermal or other types of energy and determines the areas and scales of the efficient use of solar energy in the country's economy.

This environmentally friendly solar energy, like most other renewable sources, is called "green". This means that it is friendly to nature, does not affect the environment negatively. Photovoltaics means no waste, saving fossil fuels and no emissions of harmful substances into the atmosphere. As for the disadvantages of solar energy, we can say that it depends on weather conditions - the less sun, the less efficiency, how much energy can be obtained from the sun is also affected by daily and seasonal cycles. Installation is also very expensive, which can scare investors.

The Republic of Belarus has the necessary conditions for the development of solar energy. And above all, sufficient insolation of the territory (the amount of light energy incident on a unit surface) despite the presence of only 30–35 sunny days a year. At first glance, it seems that the prospects for the development of solar energy in our country are as unlikely as sunshine on a chilly November day. However, in reality the situation is different. Even in cloudy conditions, solar panels are able to capture the scattered light needed to

generate electricity. The batteries also function during the full moon: about 2-3% of the power is reached. For large industrial enterprises, it is advisable to switch to partial replacement of traditional solar energy sources. In good sunny weather, batteries can provide lighting throughout the enterprise, and in bad weather, emergency lighting. Belarus has 95 commercial solar installations with a total capacity of 154.81 MW, most of which are located in the Grodno, Mogilev and Brest regions. One of the first solar photovoltaic installations in Belarus was created in 1996 to supply power to the Masana research station named after V.N. Fedorov in the Polesky State Radiation and Ecological Reserve. Commissioned in September 2021, the photoelectric power plant in the Cherikov region, located in the resettled area in the Rechitsa village council, is the most powerful in Belarus. Solar panels are located here on the area of 220 hectares: between the forests and the small river Volchas in the area of the evicted village of Blizhnyaya Rechitsa. "Green" energy is generated by 388,090 photovoltaic modules. The resulting alternative electricity is purchased by the Belenergo state association and supplied to the energy system of Belarus.

Also, a large solar power plant in Belarus is located in the Gomel region (Bragin). A1 built a solar power plant which has the size of 60 football fields. Each hour of the park's operation will allow Belarus to refuse 7,000 cubic meters of natural gas. The power plant occupies an area of more than 41 hectares, and its nominal capacity reaches a record 18.48 MW for Belarusian solar plants.

A1 also built a 4.5 km high-voltage transmission line with 22 towers and a transformer. This made it possible to connect the solar power plant with the Bragin substation. The state policy of Belarus ensures the active development of solar energy, which has a positive effect on the environment. It is expected that this will contribute to saving foreign exchange resources due to some reduction in oil and gas imports. The facilities will also serve the use of territories exposed to radiation in a result of the Chernobyl disaster.