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THE IMPORTANCE OF GREEN ENERGY IN WARTIME

russian troops are massively shelling Ukraine's critical infrastructure. Attempts are being made to destroy critical objects of the energy infrastructure: high-voltage networks, transformer substations, control centers, as well as power plants themselves, including renewable energy objects. In general, after nuclear energy facilities and power lines, renewable energy power plants became the second priority of destruction for russian invaders. Most of the renewable energy sources are located in the southern part of Ukraine, where active hostilities are taking place. According to experts' estimates, 30-40% of the renewable energy industry was affected by the beginning of the war.

Ukrainians learned the meaning of the term “blackout” during the war. The absence of light, communication and other benefits of civilization put civilians in difficult conditions. Currently, everything depends on electricity. Places for taking water and supplying it are no exception. In the event of a complete blackout, settlements will be left without water supply and drainage. The possibility of installing renewable energy sources is being considered at these infrastructure facilities. The purpose of these theses is to consider the work of these enterprises, from green energy, so that there is no dependence on industrial electricity. As an example, the water supply enterprise in Zelenodolsk was considered. (Fig.1). City Zelenodolsk (47°33′57″N 33°38′47″E).

For this enterprise, the possibility of using green energy from solar batteries was considered. The operation of this enterprise requires 74,621 kW. The output power of each module under standard conditions of use is in the range from 100 to 650 W. The enterprise needs 199-210 solar panels for full operation. If we take the average cost of solar batteries on the market, then we can calculate the necessary amount for this enterprise. $35 \cdot 10^3 – 40 \cdot 10^3$ $. Taking into account the amount of free territory around the enterprise, it is possible to install the necessary number of solar panels. This city is in the steppe zone of Ukraine. It has sufficient solar activity.

This analysis showed the possibility of using green energy for the work of critical infrastructure enterprises. During the war, these enterprises can work independently of industrial electricity. This means that even with damage to electrical infrastructure, city dwellers will have water.

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