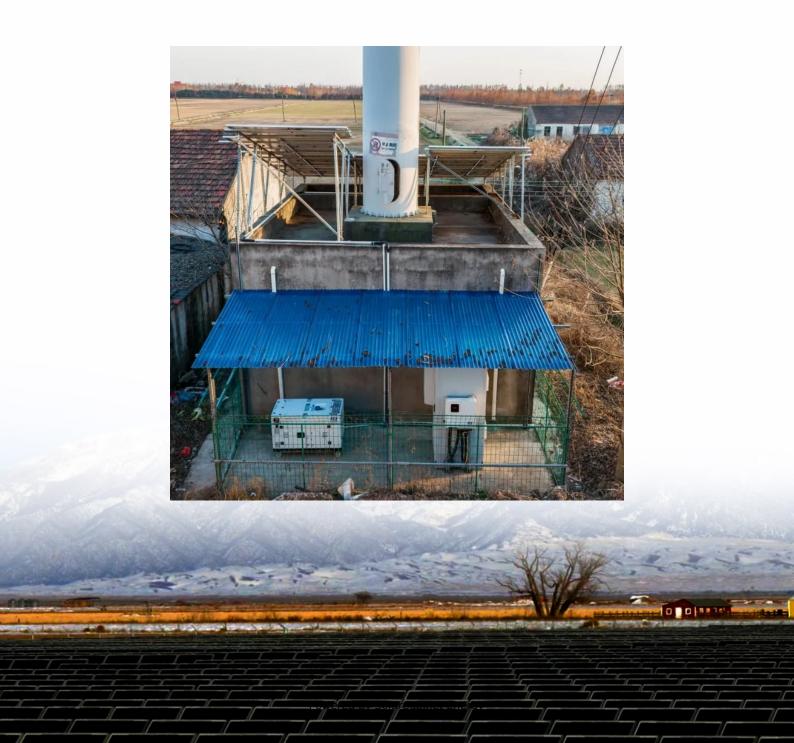


Poland s energy storage system is charged at night and used during the day





Overview

What time did the PV and energy storage installation deliver power?

Output power from the PV and energy storage installation on 29th May. On 29th May (Fig. 12) feed-in power from the grid was delivered to the household merely at around 4:30 a.m., probably to energize the installation.

Does a storage battery in the morning affect national-grid?

Energy was consumed from the own production to the end of the day by using the energy storage, self-sufficiency ratio was maximum nearly during all this time. On this day, applying storage battery in the morning didn't affect national-grid, but in the evening, it makes decrease of charging energy from the grid.

How much energy does a battery store?

The nominal battery voltage is 102.4 V, the nominal capacity is 30 Ah, the total energy is 3.1 kWh and the usable energy is 2.8 kWh. Battery cycle lifespan exceeds 6000 charges and discharges. The total weight of the energy storage is 42 kg. Battery depth of discharge (DoD) i.e., maximum battery discharge level has been set to 50 %.

What is energy storage & why is it important?

Energy storage through batteries primarily acts as a source of backup power when there are power outages. It also saves you from bearing time-of-use electricity rates which can be quite high during peak hours.

How does energy storage affect energy consumption?

During the evening peak using the energy storage caused declining the energy consumed from the grid ER, but only to 7 p.m. Fig. 7. Hourly data of PV production and consumption on 15th May. SC – self-consumed energy, ES – energy sent to the grid, ER – energy received from the grid, EC – total energy consumed, SC/EC – ratio SC/EC.



Can charging storage be used if value of energy production is higher?

Direction of further study: analyzing strategy of using charging storage at noon but not when value of energy production is higher than value of energy consumption. Marta Lis: Writing – review & editing, Writing – original draft, Methodology, Investigation, Data curation, Conceptualization.



Poland s energy storage system is charged at night and used during



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