## **SOLAR PRO.** Latvia nanogrid technologies

Develops state-of-the-art robotic, IoT technologies and provides wind turbine maintenance services worldwide. Technicians operate the robotic tools to perform inspections, repairs, and cleanings. The solution reduces turbine downtime, minimizes idle stay, optimizes costs, and enhances energy production efficiency, reducing greenhouse gas emissions.

There are a variety of technologies used with nanogrids, but the subject that dominates the nanogrid literature is converter topologies. Converters are responsible, within the nanogrid, for manipulating voltages to meet the requirements of a specific task.

One such structure is used to implement control of small scale DG, at a single house/small building level: the nanogrid. This paper explores the current nanogrid research, it collates the existing definitions and uses the knowledge to give a concise definition of a nanogrid.

The increase of electricity demand in Latvia could allow the connection of additional amounts of renewable energy sources (RES) to the transmission network, which was also evaluated in the study.

Lopez-Lorente, J, Xydas, CM, Makrides, G & Georghiou, GE 2022, Evaluating Voltage Estimation in a Nanogrid Using Digital Twin Models and Real-Time Smart Meter Data. in 2022 ...

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The Dual Power nanogrid could ensure the voltage stability, particularly for the SMPS loads, and guarantee power reliability and resiliency when the blackout occurred in the utility grid, especially during COVID-19 pandemic where all human activity are centered in residential sector (house).

Lopez-Lorente, J, Xydas, CM, Makrides, G & Georghiou, GE 2022, Evaluating Voltage Estimation in a Nanogrid Using Digital Twin Models and Real-Time Smart Meter Data. in 2022 International Conference on Smart Energy Systems and Technologies (SEST)., 9898490, IEEE/LEOS, pp. 1-6, 5th International Conference on Smart Energy Systems and Technologies ...

For nanogrid, the high penetration of RESs, high-power EV charging, and various electrical appliances like the air conditioner brings significant challenges to the stable, economic and efficient operation vision.



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