

Energy storage for microgrids warsaw

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Developers of the solution: Katarzyna Pończyńska and Teodor Sawicki

Teodor Sawicki and Katarzyna Pończyńska from the Faculty of Power and Aeronautical Engineering and the Power Engineering Student Research Group have developed a project of a microgrid powered only with renewable energy sources. Such a solution could provide energy self-sufficiency for buildings and even for cities.

The WUT team first built a model for a production park and then tried to rescale it for Warsaw. The students calculated that on average the capital uses 147 thousand MWh a month. For the Warsaw microgrid to be independent of the rest of Poland, it would have to be equipped with wind farms of the power of ca. 500 MW and ca. 500 MW PV installations.

- We calculated this on the basis of a simulation we developed - of wind power and PV power stations, using historical weather data, such as wind speed and sun hours - says Teodor Sawicki.

First tests at the Warsaw University of Technology

Of key importance in the project are an additional energy storage, balancing temporary and seasonal energy generation, and a control system.

- In the future we would like to run tests at one WUT faculty: we could build there solar panels, a small wind farm and devices for energy management - explains Teodor. - In this way we would make the building independent of electricity supply from the grid.

Our students were awarded a grant to complete this project within the programme Science ONDE Flow Innovation Academy.

The WUT team was represented by Teodor Sawicki at the celebration of award of the grants

Towards climate neutrality

After the test at the University, Teodor and Katarzyna want to develop their project. They emphasise that now this is concept work but they are convinced that it may bring about tangible results.

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