100% renewable village

Simris, Sweden - 300 inhabitants

Solar energy – Wind energy – local renewable energy system

The village of Simris, in the Skåne region, will be the location for Sweden's first local energy system based entirely on renewable energy.

Project in a Nutshell

This project is developed under the framework of InterFlex, a Horizon2020 project running until January 2020. It is exploring new ways to use various forms of flexibilities in the aim of optimizing the electric power system on a local scale.

A combination of wind power and solar cells already present in the area will be added to with a battery and renewable-powered reserve generator provided by the energy company Eon. The energy for the approximately 140 households comes from wind turbines with installed capacity of 500 kilowatts (kW) and photovoltaic panels with 440 kW, supported by a battery system with 800 kW capacity. The battery will be charged by wind and solar energy. According to Eon, in principle it could also disconnect from the national grid.

Impact & Next steps

The installed system will undergo an evaluation in 2020.

Replicability: Challenges & Success Factors

Being supplied entirely by sun and wind entails various challenges in balancing the electricity grid and keeping the power quality in terms of voltage and frequency. One of the project's aims is that customers connected to the local energy system in Simris will not experience a difference in the quality of power supplied.

In order to support the balancing of the local energy system, customers are engaged to become flexible, by producing energy through PV and battery systems. But they also need to have steerable load assets – like heat pumps. The system is able to cut power peaks and make generation more efficient. In order to ensure security of supply during the project phase, Simris can re-connected to the regional grid whenever necessary.

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