BEST PRACTICE

RENEWABLES NETWORKING PLATFORM

with the support of

Intelligent micro-grid

Wilspoldsried, Germany – 3 000 inhabitants

Micro-grid – Energy security – grid research

A traditional Bavarian village inspired one of the most progressive projects for renewable energy and grid research.

Project in a Nutshell

In 1999, the municipality put in place a 2020 vision with three main areas of focus: Renewable energy and saving energy; ecological construction of buildings using ecological building materials (mainly wood-based); protection of water and water resources and the ecological disposal of wastewater. In addition to five biogas plants, 4 983 kWp of photovoltaics, 11 wind turbines and a hydropower system, the town also hosts several municipal and residential biomass heating systems and 2 100 m² of solar thermal systems.

Together with the local energy provider and universities, the company Siemens tested the capabilities of the village's distribution grid in different scenarios. Thanks to a lithium-ion battery storage system, a diesel generator with vegetable oil operation, a backup diesel, a load bank, two controllable distribution transformers, a sophisticated measurement system, and a state-of-the-art communications infrastructure, the village's distribution grid has been turned into a smart micro grid.

Impact & Next steps

The inhabitants of Wildpoldsried are now "prosumers". Their solar panels, windmills, and a biogas-driven combined heat and power plant produce more than five times as much electrical energy as residents consume: In 2015, production was 34 344 megawatt-hours, while consumption stood at 6 406 megawatt-hours. The villagers transfer their surplus into the distribution grid and thus provide the neighbouring villages with renewable energy. They also save 330 000 litres of oil a year - previously used for energy supply. Thanks to this project, the village makes around EUR 4.7 million in annual revenue.

The town's energy transformation has attracted a new tourism industry, which in turn, has inspired the construction of a sustainable energy training centre built with passive solar design. Wildpoldsried aspires to be a model for other towns that want to become climate friendly energy leaders and has received numerous awards for this efforts.

The next step for Wilspoldsried is to achieve 100% Renewable heat and transportation by 2020.

Replicability: Challenges &Success Factors

Following the introduction of a new feed-in tariff in Germany, under the Renewable Energy Source Act in 2000, it became economically viable for citizens, small businesses and entrepreneurs to partake in the renewable energy business, especially solar. The project success also lays in the determination of the Mayor, the fruitful cooperation between local energy providers and universities and the citizens' support to the initiative.

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www.biocycle.net/2011/08/16/german-village-achieves-energy-independence-and-then-some/
info@wildpoldsried.de