The H2020 SERENE Project:
Delivering sustainable and integrated energy systems in local communities.

The H2020 SERENE project will help accelerate the green transition of Europe's energy system

Aalborg (DK), March 2022 – SERENE Project Consortium

The H2020 SERENE project will be developing and demonstrating cost-effective and customer centric solutions to enable local communities to meet their energy needs from local renewable sources. The project's goal is to establish locally integrated 'energy islands' in the villages of Skanderborg (Denmark), Olst (the Netherlands) and Przywidz (Poland).

Birgitte Bak Jensen, Aalborg University, project co-coordinator states: *"So far the focus of the green transition, has been on larger cities and heavy industry, but since local communities are responsible for significant amounts of energy consumption, it is important to work on making their consumption greener and more efficient. In addition, having a local focus increases the awareness and engagement levels of citizens towards the green transition".*

The aim of these 'energy islands' is to contribute to the decarbonisation of the local energy system via the optimal integration of multi-energy carriers through smart control and the balancing of systems and grids at the local level.

This approach will also increase the levels of renewable energy use, thereby enhancing the environmental, social, and economic conditions of the citizens.

Tailor-made for individual communities across Europe

Denmark, the Netherlands, and Poland, which have different geographic, socio-economic conditions, institutional structures and characteristics, and diverse energy resources are targeted for implementing the demonstration activities in the SERENE project.

Depending on the community, SERENE will produce control systems which can respond to local energy demand according to local levels of energy production. It will focus on increasing the hosting capacity and adding intelligence to the distribution networks of the energy system (i.e. district heating or the electrical grid). This includes the interaction of heat pumps, electrical vehicle charging and their control, adapted to the local levels of energy production.

The solutions developed by SERENE will be tested for mutual knowledge sharing and form the basis for the development of benchmark technical practices and solutions including business

models that have been tested for acceptability by the local citizens (including consumers, prosumers, property owners and tenants). The idea is that these tried and tested business models can then be replicated in similar communities across Europe.

This citizen engagement has already begun, a SERENE workshop was held in Olst, the Netherlands in October 2021. The Dutch researchers from Saxion University and the University Twente alongside industry partners Loqio presented their expertise in a common language and invited the citizens to co-design smart energy systems for their communities. Similar citizen level engagement is taking place in Poland and Denmark.

"Getting consumers to engage with and understand new technology and to change their behaviour can be very difficult. However, identifying the right business models can make a huge difference since these can provide cost effective solutions. This will in turn boost engagement levels with the green transition", concludes Birgitte.

About SERENE

SERENE - launched in May 2021, with a budget of over €5m from Horizon 2020, the EU Framework Programme for Research and Innovation, runs for 48 months.

The consortium, coordinated by Aalborg University (DK), consists of 14 beneficiaries from 4 countries: Skanderborg Kommune (DK), Aura A/S (DK), Neogrid Technologies Aps (DK), Suntherm Aps (DK), Bjerregaard Consulting Aps (DK), Universiteit Twente (NL), Stichting Saxion (NL), Vereniging Aardehuis Oost Nederland (NL), Loqio Services BV (NL), Instytut Maszyn Przeplywowych Im Roberta Szewalskiego Polskiej Akademii Nauk (PL), Gmina Przywidz (PL), Energa Operator SA (PL), STAY-ON Storage Engineering (PL).

SERENE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957682. Any communication activities of this project reflect only this consortium's view and the Agency and the Commission are not responsible for any use that may be made of the information it contains.

Contact

Prof. Birgitte Bak Jensen, Aalborg University, project coordinator email: bbj@energy.aau.dk , telephone: +45 9940 9274

SERENE webpage: www.h2020SERENE.eu

SERENE LinkedIn: @SERENE H2020 project
https://www.linkedin.com/company