SMart IsLands Energy system

SMILE

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HORIZON 2020

MADEIRA   ORKNEY ISLANDS   SAMSØ

Smart Islands Energy System (SMILE)

The development of Smart grids are an important prerequisite for the transition towards a clean, affordable and reliable energy system. The Smart Islands Energy System (SMILE) project will demonstrate nine different smart grid technologies on three different islands. The end goal of the project is to foster the market introduction of these nine technologies. https://www.h2020smile.eu/

Issues Faced

Europe's energy sector is experiencing severe transformations. Modernization of energy systems is vital for achieving Europe's energy targets, and smart grids are essential elements of this modernization. Smart grids are particularly important to face the need to flexibly, stably and reliably accommodate in the energy system.

Key Objectives

Expected key outcomes are:
- gather experience with new smart grid architectures in preparation of larger scale deployments;
- help grid operators and suppliers optimize the requirements and design of these systems, hence the cost of large scale deployments;
- propose innovative business models and regulations enabling the deployment of these systems at acceptable costs.

Main Results

The pilot islands are now testing different technologies to address their specific challenges. In Madeira, to maximize self-consumption from solar PV generation and support grid stability, 5 Battery Storage Systems have been installed in selected sites. The local partners are now implementing the Battery Management System. Also, specific algorithms are being implemented to test different smart charging solutions.

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- Quintal F, et al. (2019) *MyTukxi: Low Cost Smart Charging for Small Scale EVs*. doi:10.1145/3290607.3312874
- Scuri S, et al. (2019) *An HCI Perspective on Distributed Ledger Technologies for Peer-to-Peer Energy Trading*. doi: 10.1007/978-3-030-29387-1_6
- Three Master's thesis projects (Técnico Lisboa) based on SMILE.

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