

SmILES

Smart Integration of Energy Storages in Local Multi Energy Systems for maximising the Share of Renewables in Europe's Energy Mix



Key Facts



Funding Agency
EU HORIZON 2020



Project Call
LCE-33-2016



Duration
12/2016 - 11/2019



Coordinator
Karlsruhe Institute of
Technology (KIT)



Partners

- Austrian Institute of Technology (AIT)
- Danmarks Tekniske Universitet (DTU)
- EDF with its linked third party EIFER
- European Energy Research Alliance (EERA-AISBL)
- VITO Flemish Institute for Technological Research



Website
<https://www.ecria-smiles.eu/>

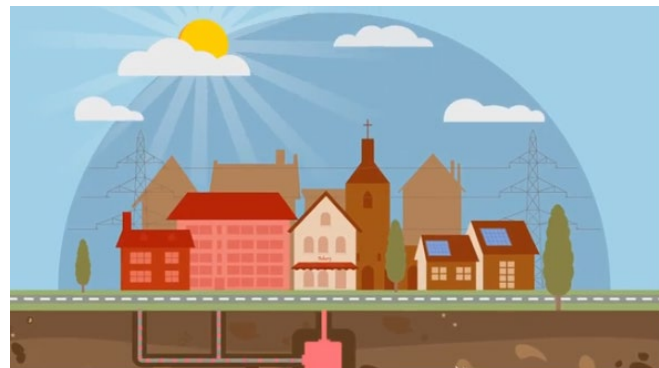
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Project Objectives

Current energy systems are operated and controlled with a focus on only one form of energy, such as electricity or heat. Future energy systems will be operated in highly integrated ways and must be controlled in smart ways in order to optimise the use of various forms of generation and storage technologies. Operation and control strategies for so-called hybrid energy systems currently exist only on a conceptual stage.

Various modelling tools and methods to simulate MES with storage are under development by the partners for local hybrid systems. The SmILES project deals with further development, comparison and in particular cross-testing of these models and algorithms.



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EIFER's Contribution

EIFER contributed to this project with its Energy System model ETEM. ETEM (Energy-Technology-Environment-Model) is written in GAMS and belongs to the TIMES-MARKAL model family. With ETEM, EIFER determines the overall long term costs of an urban eco-district. Different future scenario developments are considered, like electricity price, grid emission factor or CO₂ price evolution. The main goal is to find the optimal technology configuration for the eco-district under pre-defined assumptions for the future. The technologies implemented so far in ETEM are boilers, gas CHPs, heat storage, PV panels and heat pumps.

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