

Our Long-Term Objective

Our long-term goal is to build up knowledge and lessons learned on the integration of heterogeneous energy sources and their storage technologies, and to exchange best practices for modelling and simulation. Hereby the members of the SmILES project aim to strengthen the joint European research landscape.

We are active partners in four European Energy Research Alliance (EERA) Joint Programmes and follow the long-term goal of common cooperation in JP-overlapping subjects. The project team is committed to extending the work of the EERA network by bringing together additional EERA members and European stakeholders, energy suppliers and industry.

Our Research Objective

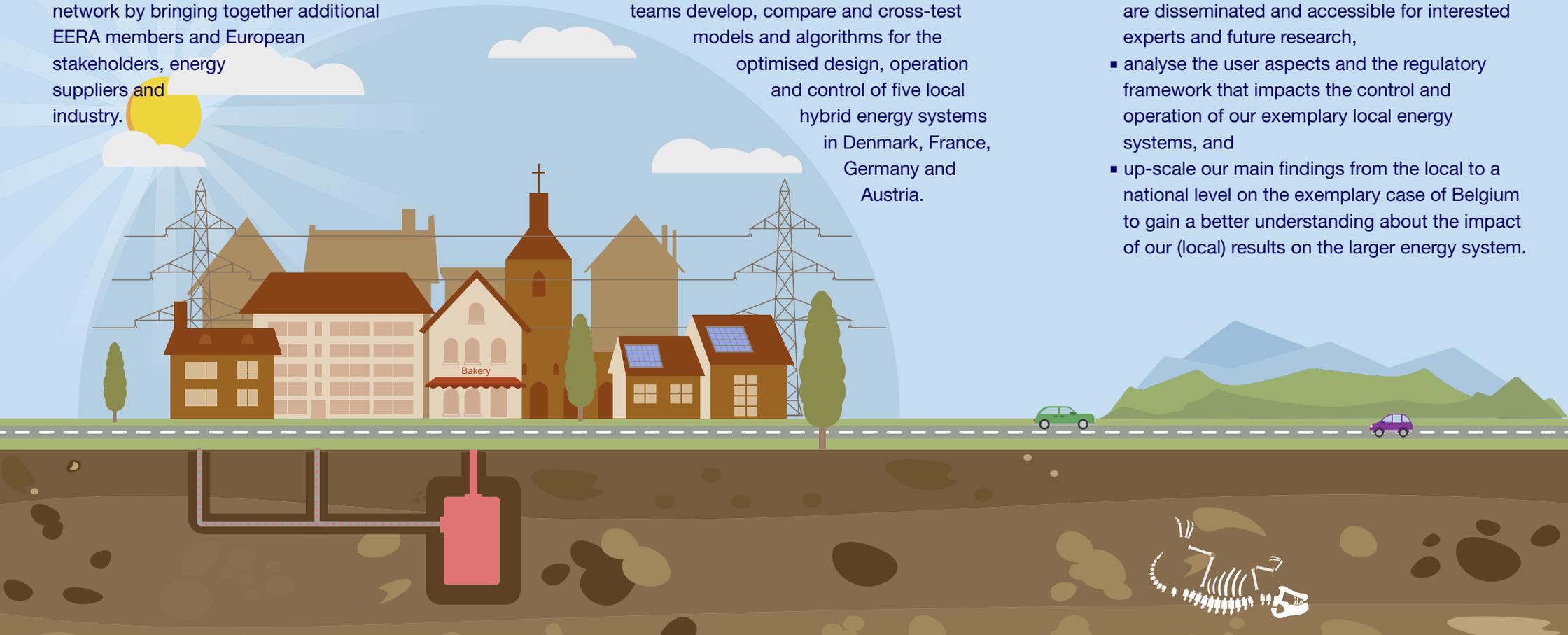
Current energy systems are operated and controlled with a focus on only one form of energy, such as electricity or heat. Future energy systems will be operated in highly integrated ways and must be controlled in smart ways in order to optimise the use of various forms of generation and storage technologies.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

Currently, various modelling tools and methods to simulate multi-energy systems with storage are under development. As part of this, our research teams develop, compare and cross-test models and algorithms for the optimised design, operation and control of five local hybrid energy systems in Denmark, France, Germany and Austria.

These cover different types of local systems, including urban neighbourhoods, a rural village, office buildings, and a small industrial production site. Thus, we think that there is much to learn from an exchange of experiences, and from a better coordination of these approaches.

In fact, local energy systems do not and will not operate in isolation from society or the larger energy network. To embed our research work in a larger context we will:

- set up a shared data and information platform to ensure that our results and the wealth of data are disseminated and accessible for interested experts and future research,
- analyse the user aspects and the regulatory framework that impacts the control and operation of our exemplary local energy systems, and
- up-scale our main findings from the local to a national level on the exemplary case of Belgium to gain a better understanding about the impact of our (local) results on the larger energy system.



The SmiLES Story – an animated video

Imagine a small town or a city district in your country. There are houses, small craft businesses such as bakers and perhaps a medium-sized company. They all require energy. Maybe they also produce energy – be it from the PV system on the rooftops or the waste heat from the bakery. Now, if you want to expand the share of renewables in the energy mix and make the system more efficient, you need to connect and manage these energy grids. Think of reusing waste heat and storing excess energy...

... Are you eager to know how the story goes on? Learn all about the idea behind the SmiLES project in our two-minute animated video. Just browse to ecria-smiles.eu/the-smiles-story or scan the QR-code below.



Consortium

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Further information

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Smart Integration of
Energy Storages in
Local Multi Energy Systems
for maximising
the Share of Renewables
in Europe's Energy Mix
towards best practices in
modelling and simulation

