

# INTERACT



Integration of innovative technologies of positive energy districts into a holistic architecture

## What we do

- assessing and evaluation of successful PED-approaches
- characterization of Energy Communities
- design of the *LINK*-based Energy Community
- contracting models
- roadmap for the implementation of INTERACT Energy Communities

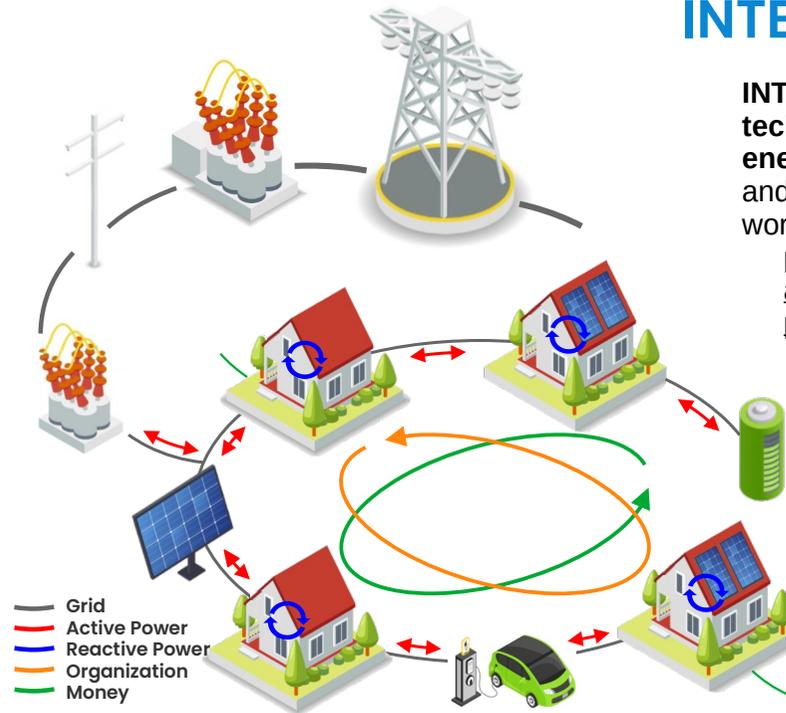
## PED – positive energy district

“Positive Energy Districts are energy-efficient and energy-flexible urban areas or groups of connected buildings which produce net zero greenhouse gas emissions and actively manage an annual local or regional surplus production of renewable energy. They require integration of different systems and infrastructures and interaction between buildings, the users and the regional energy, mobility and ICT systems, while securing the energy supply and a good life for all inline with social, economic and environmental sustainability.”

*White paper on PED Reference Framework, March 2020*

## INTERACT approach

INTERACT effectively integrates all innovative technologies of renewable and distributed energy resources in a holistic architecture, and thus designs the first Energy Community worldwide that works in harmony with the power grid. The used *LINK*-based holistic architecture unifies all interactions within the power system itself, between the network-, generation- and storage operators, consumers and prosumers, and the market. Through its standardised structure, this architecture facilitates all processes that are necessary for a reliable, economic and environmentally friendly operation of smart power systems in order to establish a beneficial situation for everyone. This creates maximum use of possibilities available in urban areas for effective energy and CO2 reduction.



## Energy Community

“Energy communities organise collective and citizen-driven energy actions that will help pave the way for a clean energy transition, while moving citizens to the fore. They have the potential to provide direct benefits to citizens by advancing energy efficiency and lowering their electricity bills. By supporting citizen participation, energy communities can moreover help in providing flexibility to the electricity system through demand-response and storage.”

*European Commission, published 14th of December 2020*

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## Goals and expected outcome

The overall project goal is – based on a competence network of successful PED approaches – to enable the focus regions to introduce the first worldwide Local Energy Communities and Sector Coupling based in a holistic approach. This creates maximum use of the possibilities available in urban areas for effective energy use and the maximum reduction in CO2 production. The INTERACT project will lay the foundation for the demonstration follow-up project, and will feed back its results to the PED/PEN competence network.

Within the project we will amongst others develop:

- Stakeholder Needs Evaluation
- Key success factors and requirements for INTERACT energy communities
- Common Inventory Methodology for recording current technologies
- Design of the Energy Community Organisation according to the LINK-solution
- Market Structure and its interfaces with the Energy Community
- Business cases for the INTERACT energy community
- Roadmap for the implementation of the designed energy community

**INTERACT – Integration of Innovative Technologies of Positive Energy Districts into a Holistic Architecture** – is an international research and innovation project with a cross-sectional collaboration between academia, municipalities, and businesses with participants from Austria, the Czech Republic, and Sweden.

INTERACT boosts the emergence of Energy Communities as one crucial building block to achieve Positive Energy Districts. The project will develop a roadmap for the Energy Community's secure and reliable embedding into the power system structure, focusing on two pilot regions in Sweden and Austria.

## Contact

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## Project consortium



## Two focus regions



**Großschönau / Austria**  
a rather small but very well-known rural municipality in Waldviertel has been since decades pushing towards sustainable and environmentally friendly ways of living.

Großschönau is rated an e5-municipality, was winning the European Energy Award in Gold for its achievements in energy efficiency, and has with the fair BIOEM and the permanent exhibition SONNENWELT two nationwide known showcase projects of sustainable thinking and acting.

**Fyllinge / Sweden**  
is one of a number of developing areas of Tornet Property Development AB. Fyllinge is part of the city of Halmstad, southwest in Sweden.



Fyllinge is of special interest since the municipality has invited for innovative solutions and new and somewhat „daring“ and „challenging“ concepts to really address and initiate a change of use for the limited resources at hand. The plans for Fyllinge include around 2000 apartments in combination with recreation areas and areas for urban farming.