

Local Energy Communities

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Background

- Increased electrification and distributed energy resources (such as photovoltaics) in the distribution grid.
- Local energy communities can be a way to share benefits and costs related to energy.
- The EU has issued two official definitions: Citizen energy communities and Renewable energy communities.

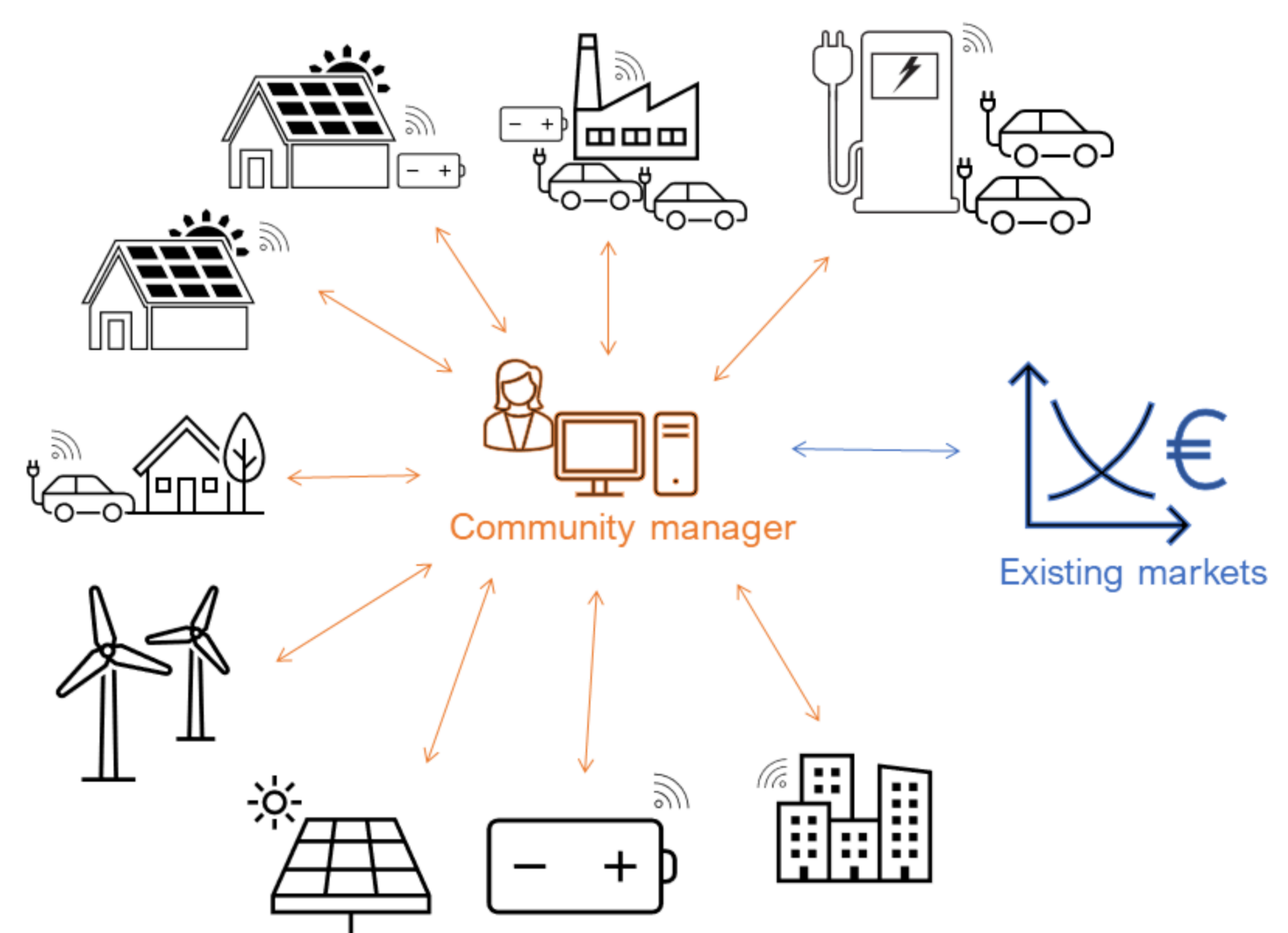
Objective

Investigate how local energy communities will impact the operation and investment planning of electricity distribution grids.

1. **Obtain knowledge** on the modelling and optimisation of local energy communities in research literature and **contribute** by creating a model which optimises the operation strategy of a local energy community.
2. **Identify** different flexibility services a local energy community can offer to an active distribution system operator (DSO) and contribute by creating a coordination scheme between the energy community and the DSO.
3. **Investigate** how different local energy communities will impact the distribution grid and the customers located outside the community.

Research tasks

1. Modelling and optimisation of local energy communities
2. Flexibility services and interaction with DSO
3. Case studies



Expected results

- Optimisation model of a local energy community
- Techno-economic analyses of how local energy communities will impact the distribution grid and customers located outside the community
- Input to country-specific regulations for local energy communities