GENTE

# D4.2 User engagement in co-design process

Summary of main contents and results

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Corinne Schwaller, Kathrin Leitner, Josephine Harris, Roman Lötscher

Lucerne University of Applied Sciences and Arts HSLU

www.genteproject.com
hello@genteproject.com

# Contents



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# Aims

Deliverable 4.2 aims to explore the possibilities and limits **of a co-design approach for creating a potential energy community**. The central question is to what extent stakeholders (tenants, property owners, others) in a potential energy community site can be **activated for active involvement in the development of an energy community**.

This summary presents, in anonymized form, the main findings and results of the **process initiated and accompanied in a municipality** in Switzerland (use case) **to activate stakeholders of a potential energy community**.

# Methodology: Co-design processes for energy transition

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The primary goals of co-design processes include **developing context-specific solutions** that are closely aligned with the needs and preferences of promoters, end-users or participants. This approach fosters the creation of more tailored responses and builds **trust and commitment** among those involved. By engaging participants early in the design process, co-design helps **identify and promptly address resistance, obstacles, and contradictions**. Additionally, this participatory method enhances the acceptance of the implemented solutions by ensuring they resonate well with the community. Furthermore, co-design promotes **knowledge sharing and self-empowerment**, enabling participants to contribute effectively and feel a sense of ownership over the outcomes.

Developing energy communities effectively hinges on thoroughly understanding consumers' diverse needs, desires, and behaviors. Since each community has unique characteristics and challenges, **context-sensitive approaches** to technology solutions are crucial rather than relying on a one-size-fits-all method. While standardizing approaches is difficult, **establishing and replicating good practices** can be beneficial.

# Methodology: QUBE Process Model

This project adapts in a limited scope the **"Socio-Technical Process Model for Energy Transformation in Neighborhoods"** that was developed as an outcome of the Innosuisse project **QUBE - Quartierbezogene Energiekooperationen** (Neighborhood-based energy co-operations)[1]. It is a socio-technical framework designed to coordinate the cooperative transformation of neighborhoods towards a renewable energy supply for existing buildings, encompassing electricity and/or heating.

The "QUBE Socio-Technical Process Model for Energy Transformation in Neighborhoods" encompasses four major phases, each incorporating both social and technical dimensions[2] .

[1] Alexa Bodammer, Christopher Young, Ulrike Sturm, Stefanie Müller, Nadja Hutmacher, Corinne Schwaller (2025). Quartierbezogene Energiekooperationen – Kurzbericht zum Projekt, Institut für Soziokulturelle Entwicklung, Hochschule Luzern - Soziale Arbeit, Luzern.
[2] Ibid.

# Methodology: QUBE Process Phases[3]



| QUBE Process Phases | Aims and components |
|---|---|
| **Initialization phase (focus of GENTE project)** | Comprises the stages of **analysis and activation** and marks the start of the project. The relevant **stakeholders are activated**, the **perimeters** for possible cooperative energy solutions are defined, and **technical and socially oriented analyses** are carried out. The project is presented in an **initial workshop** with the property owners in the neighbourhood and the socio-technical analysis is iteratively expanded to include local knowledge. The **content, objectives and interim results** of the process are publicised based on a locally adapted communication strategy. Ideally, these steps lead to an initial level of **consolidation and commitment**, and to the formation of a working or interest group that will pursue and organise the further process in a **self-organised** manner. (see next phase) |
| **Interest formation phase** | Establishment of one or more working or interest groups that further develop initial ideas and act informally as coordinating actors, taking responsibility for a self-organized further course of the process. |
| **Consolidation phase** | The property owners drive the process forward with the support of technical and other experts and consolidate the previously developed solutions and partnerships. |
| **Implementation phase** | Realization of the chosen technical solution, with the property owners forming a legal entity and defining the operating model for the provision of renewable energy. |
| **Operation phase** (outside of the socio-technical transformation process) | Operational phase in which the renewable energy solutions developed and implemented in the process are up and running. |

[3] Alexa Bodammer, Christopher Young, Ulrike Sturm, Stefanie Müller, Nadja Hutmacher, Corinne Schwaller (2025). Quartierbezogene Energiekooperationen – Kurzbericht zum Projekt, Institut für Soziokulturelle Entwicklung, Hochschule Luzern - Soziale Arbeit, Luzern

# Use case: GENTE approach to co-design



## QUBE

- Focus on an entire neighbourhood.
- Mostly individually owned single-family homes (partly subject to monument protection regulations), but also including various institutions as “big consumers”.
- Very comprehensive and holistic approach, addressing numerous stakeholders, pursuing a very open concept for possible forms of energy cooperation. Various sub-projects and "satellite projects" outside the original project perimeter. Long and highly complex participation process.

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- Adapting and testing the co-design process in a much **smaller project perimeter** with a few dozen buildings maximum.
- **Homogenous building structure**, consisting of relatively new buildings (built after 2000) with several flats in condominium ownership.
- Streamlining and accelerating the co-design process by both focusing on a smaller group of potential end-users and **concentration on the initial phase of the process**, aiming at **activating the interested end-users** of a potential energy community and **encouraging self-organization** from the outset.

# Use case: User engagement in co-design process

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## What is it

Test a co-design approach for activating and motivating a potential energy community for self-organization, focusing on:

- Extent to which stakeholders can be engaged
- Initial phase of stakeholder activation

## Approach (Process "Steps")[4]

- Definition of project parameter
- Socio-technical neighbourhood analysis
- Stakeholder mapping and analysis
- Communication strategy
- Networking
- Initial neighbourhood event
- Analysis of event and definition of next steps towards self-organization

[4] cf. Bodammer, A. et al. (2023). Abschlussbericht des Projekts Quartierbezogene Energiekooperationen. Unveröffentlichter Bericht, Hochschule Luzern.

# Use case: Definition of project perimeter and socio-technical neighborhood analysis

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## Objectives

- Assess the neighborhood's current situation and its potential regarding the implementation of energy community projects.
- Define the geographical scope of the project.
- Analyze energy, urban and social aspects of targeted project perimeter.
- Assess existing energy infrastructure and identify potentials and obstacles.
- Document local building types, construction date and renovation status.
- Identify the types of property ownership.

# Use case: Stakeholder mapping

| Stakeholders | Main roles and tasks |
|---|---|
| **Support Group:**<br>**GENTE Project team (HSLU)** | Manage the process to meet project goals.<br>Moderate meetings and workshops.<br>Ensure information flows and keep all parties informed. |
| **Public administration** | Officially support the project.<br>Send out letters, provide rooms and infrastructure. |
| **"Energy Pioneers"** | Inspire and activate for energy transition.<br>Advocacy and networking: Promote the benefits of the co-design process and help building alliances with stakeholders. |
| **End-users: Condominium owners within project perimeter** | Play a critical role in decision-making processes from planning to implementation.<br>Provide local insights for renewable energy projects.<br>Share information and resources with other homeowners to collaborate and strengthen the project.<br>Help fund renewable energy infrastructure. |
| **Energy experts and consultants** | Provide expert advice on energy, efficiency and sustainability, and regulatory frameworks.<br>Evaluate energy solutions for informed decision-making on project direction and investment. |

# Use case: Initial neighborhood event

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## Objectives of the event

- Provide **information** about the goals, possibilities, technical options, and advantages of joint energy solutions for the neighborhood.
- Collect **local knowledge, ideas, and concerns** regarding a transition to renewable energies.
- Inform about the **possibilities and limits** of the participatory process.
- Provide an overview of **climate objectives**, **political framework**, and **funding options** for the implementation of renewable energy solutions.
- **Clarify questions** and build a **shared understanding**.
- Enabling exchange and **networking** between neighbors and specialists.
- Inspire enthusiasm for a **collaborative approach**.

# Use case: Initial neighborhood event

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## Outcomes

- **Participants**
  - **18 homeowners** from within the project perimeter
  - Local council representative; Head of the Civil Engineering Department; Municipal administration employee; 2 researchers from the Urban and Regional Development Unit; 1 researcher from the Institute of Electrical Engineering, also a member of the Energy and Environmental Commission and a resident of the targeted project perimeter; Head of the Cantonal Energy Office; Energy consultant from the local energy provider; Owner and manager of an energy flagship housing complex in the region
- Analysis of the results of the event and creation of a set of **procedural next steps**
- **Communication** to all property owners in the perimeter summarising the workshop
- **Invitation** to all property owners to join working groups
- Creation of a **working group** to develop community-specific energy solutions
  - Establishment of a working group on joint electricity production and consumption with a goal of: Establishing a Local Energy Community (Lokale Energiegemeinschaft LEG)
  - Activation for self-organisation in the context of shared heating was not successful

# Learnings and recommendations: Key factors

| Key factors and components of the process | Why important |
|---|---|
| **Early community engagement** | Builds momentum and commitment from the outset |
| **Role of energy pioneers** | Enhances visibility, trust and acceptance within the community |
| **Embracing process unpredictability** | Accommodates diverse backgrounds and interests of stakeholders and dynamic nature of the co-design process |
| **Genuine participation** | Requires open and honest commitment to be successful |
| **Flexible scheduling & planning** | Adapts to ongoing developments and feedback; assimilates to slowdowns due to regulatory or personnel obstacles |
| **Step-by-step planning** | Ensures each phase builds upon the last and integrates feedback |
| **Role of technical experts** | Presenting feasible and tailored solutions while not overpowering the process<br>Adapting to differing technical & energy knowledge to ensure inclusivity |
| **Initial event** | Creates networking opportunities<br>Seeding the idea of collaborative energy transitions |
| **Increasing formalisation of self-organization** | Commitment of end-users to the process is decisive for the process to be successful<br>Becoming self-responsible for the process and community organization |

# Learnings and recommendations: Challenges and obstacles

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| Challenges and obstacles identified |
| --- |
| **Overall complexity** of renewable energy topics, accompanied by a **lack of expert knowledge** and **being dependent on external expert knowledge**. |
| **Improbability of establishing municipal renewable heating systems** such as lake heat or district heating. |
| Challenge of **engaging more property owners** within the project perimeter, particularly younger ones. |
| Navigating the **complex ownership structures** typical of condominiums, which can hinder the initiation of energy projects or complicate consensus and collective action for joint energy solutions. |
| **Heterogeneity of the buildings** regarding **year of construction** and **lifespans of heating systems**. |
| **Financial concerns**: doubts about the **cost-effectiveness**, **financial viability**, and **scaling** of proposed solutions, alongside the possible **high initial investment costs**. |
| **Uncertainties regarding future developments** in the energy sector, discouraging investment in new technologies. |
| Participatory processes, especially those with a high degree of openness to results and a high degree of self-organisation, are **time-consuming** and can only be controlled from the outside to a limited extent. The **time planning must be constantly revised and adapted** to the course of the process, the interim results and the possibilities and needs of the people involved. |
| With **many stakeholders involved**, organising and maintaining the process over a long period of time can be a major challenge. |

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