

Interoperable Digital Platforms for Residential Energy Communities

ABSTRACT

The Austrian pilot of DEDALUS shows how **interoperable digital platforms** can empower a **residential energy community** in Wiener Neustadt. Implemented in a multi-unit building complex, the pilot combines automated local energy optimisation and user-facing services, while also highlighting the importance of user onboarding and flexible engagement formats.



KEY POINTS

- Interoperable platforms to seamlessly connect diverse assets and manage residential energy communities.
- Automated local energy optimisation with user-friendly applications that drive active resident engagement.
- Successful validation of peer-to-peer trading and flexibility management in a real-life, multi-unit building complex.
- Practical insights for future replication of smart energy communities.

The Austrian pilot was implemented in a **multi-unit building complex** in Wiener Neustadt, comprising **84 apartments** and **20 offices**. The site includes photovoltaic systems, battery storage, smart meters and EV charging stations, providing a suitable real-life environment for testing **integrated energy community services**.

INTEGRATED TECHNOLOGIES AND SERVICES

The Austrian pilot combines a set of **interoperable digital tools** supporting the operation of a residential energy community:

- **OURPOWER peer-to-peer trading platform**, enabling community management, participant administration, billing and settlement, and local energy exchange among members.
- **Pre-aggregation platform with USG**, supporting secure data collection, local optimisation and flexibility management across distributed energy assets.
- **OURPOWER Community App**, providing users with historical and forecast energy insights, nudging suggestions and a community feed.
- **Integrated asset and data ecosystem**, including photovoltaic systems, battery storage, smart meters, EV charging stations and an energy database with API supporting the pilot services.

ENGAGEMENT

- **11 engagement activities** were implemented across the pilot.
- Engagement formats matured from initial co-creation workshops to practical user training and live demonstrations alongside operational training for community managers on the newly deployed OURPOWER peer-to-peer trading platform.
- Continuous collaboration with the building manager to troubleshoot and overcome practical implementation barriers such as technical issues with initial user onboarding.
- Post-test assessments revealed a **positive perception** among the Austrian participants, who specifically praised the newly deployed services for their exceptional “**ease of use**” and practical value.



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● KEY RESULTS

- Participants achieved a **48.26% reduction in energy costs** over the project lifecycle by sharing locally produced solar power within the energy community.
- Automated smart management of the building's solar panels and battery storage successfully boosted the **community's self-consumption by 16.89%**.
- **100 consumers engaged in residential DR**, achieving a **26% active user** rate following the public launch of the OURPOWER Community App on iOS and Android.

● REPLICATION RELEVANCE

- **Interoperability** should be treated as a core condition for replication.
- **Technical deployment and user uptake** should be developed in parallel rather than as separate steps.
- **Early onboarding** should be considered essential to support participation and understanding.
- **Community management, optimisation and user-facing** tools should be combined within one integrated system.

● RECOMMENDATIONS

- **Interoperable system design** should be prioritised from the outset.
- **Technical deployment** should be accompanied by continuous user engagement.
- **Clear preparatory materials and practical support** should be provided to users.
- **Participation formats** should be adapted to different user needs and levels of digital confidence.

REFERENCES

D5.4: DEDALUS impact and social acceptance analysis, 2026.