DEMO 3

Italy

Multiple locations across Northern and Central Italy, focusing on energy communities and low-voltage network flexibility management.

Technology

In Italy, the demo focuses on activating and managing flexibility by combining demand response strategies with forecasting tools based on localized weather data. IoT weather stations, sub-metering systems, and edge-based optimization algorithms for aggregators enable real-time prediction and control of energy flows.

The integration of distributed energy resources (DERs) into Areti's distribution grid supports a more resilient and efficient energy community model.

Key Use Cases

- Predictive load and RES forecasting for improved flexibility
- Real-time grid monitoring to prevent congestion
- Integration of market signals for flexibility activation
- Improved decision support for community operators and DSOs

HEDGE-IoT Tools Involved

- IoT/Edge infrastructure and forecast algorithms
- Real-time analytics services for flexibility management
- Semantic adapters and interoperability middleware
- Visualization dashboards and UI for community engagement

Target Audience/Beneficiaries

- DSO benefiting from community-based flexibility and real-time load balancing.
- Energy Communities organized locally with active prosumer participation.
- EV drivers through optimized charging and incentive mechanisms.
- Municipality and vulnerable citizens via access to surplus RES and energy poverty mitigation.

Partners involved

areti · dsi · Apio · Acea energia · E.ON Energy Research Center | RWTH AACHEN UNIVERSITY

Co-funded by the European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under the Grant Agreement number 101136216. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.