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

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.

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

Partners involved