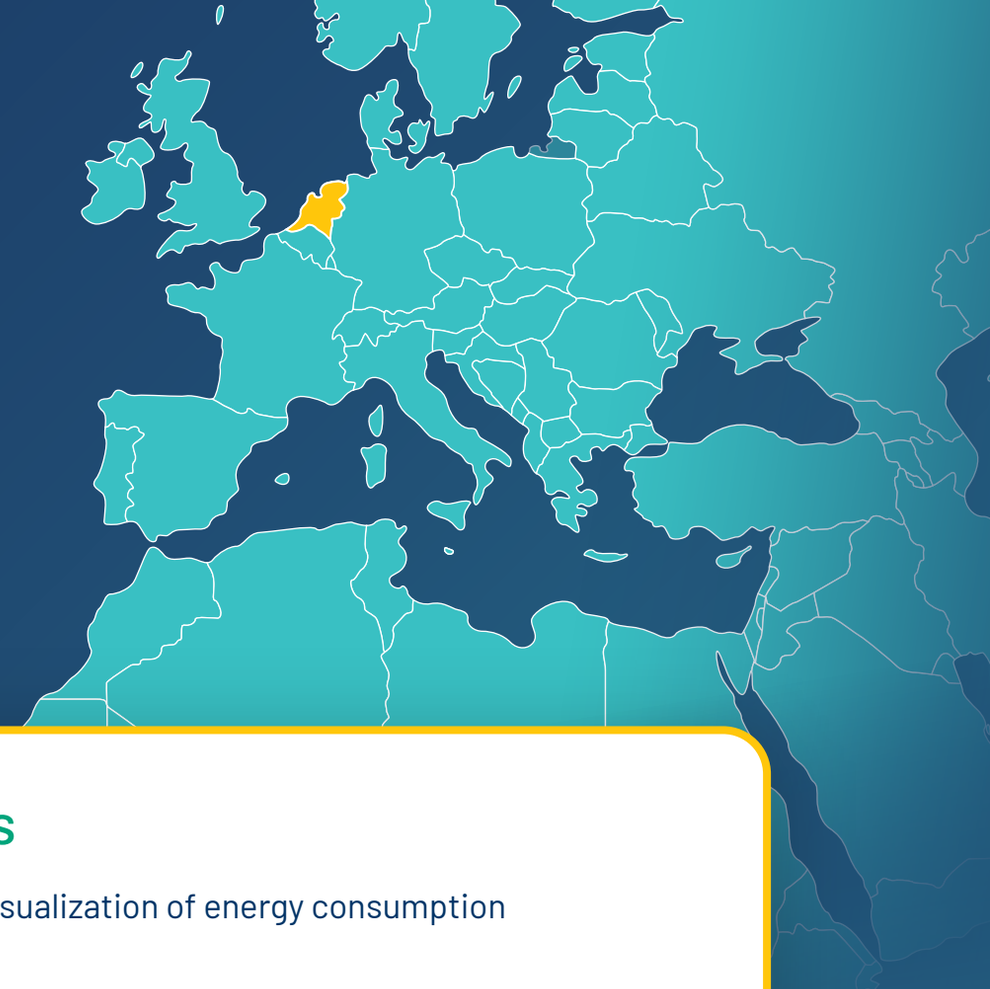
DEMO 4

The Netherlands

Located in the Arnhems Buiten Business Park, Arnhem – a 17-hectare mixed-use area under development as an Energy Innovation Campus.



Technology

The Dutch demo deploys smart meters, V2G charging stations, residential batteries, heat pumps, and solar PVs across 15 buildings. These assets are coordinated through Building and Energy Management Systems (BEMS/EMS) and enhanced with semantic adapters based on SAREF ontologies.

A Knowledge Engine and an edge-cloud IoT architecture allow seamless communication and control, enabling real-time energy optimization and flexibility operations at both the user and system level.

Key Use Cases

- Monitoring and visualization of energy consumption across buildings
- Semantic integration and alignment of distributed energy assets
- Flexibility services through predictive optimization and V2G
- Grid fault detection and predictive maintenance via anomaly detection

HEDGE-IoT Tools Involved

- Knowledge Engine (KE) with explainable AI on SAREF data
- Semantic adapters and data pipelines
- Data conversion pipelines into knowledge graphs
- Edge-based control, anomaly detection, and scheduling tools

Target Audience/Beneficiaries

- Building managers and facility owners involved in energy efficiency projects
- Residential users participating in energy shifting and flexibility trials
- EV users and tenants interacting with EMS and smart charging infrastructure
- DSOs and service operators accessing real-time insights for system balancing and flexibility

Partners involved

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