



Press Release  
Valencia (Spain), 30 October 2025

## **OPENTUNITY Reaches Key Milestones: Advancing Smart Grid Innovation Across Europe**

The Horizon Europe project OPENTUNITY, coordinated by ETRA I+D, has entered a decisive phase as it moves closer to its goal of creating a more reliable, flexible, and decarbonized European energy system. With little more than a year remaining, partners across Europe are finalizing developments and preparing pilot demonstrations that bring next-generation smart grid solutions closer to real implementation.

### **From Design to Demonstration: Pilot Sites Enter Full Deployment**

Over the past months, all OPENTUNITY pilot sites have reached a crucial stage of technical and operational readiness.

Partners have finalized their Deployment Plans, detailing completed and upcoming equipment installations, citizen engagement campaigns, and data-sharing schedules.

To ensure replicability and consistency across Europe, each pilot has defined tailored Test Cases, adapting the project's use cases to their specific local contexts, while Key Performance Indicators (KPIs) and baseline datasets were established to monitor progress and impact.

The Demonstration Plans now set the timeline for field validation, supported by comprehensive Pilot Site Characterization Documents that describe each site's scope, stakeholder roles, and feedback mechanisms.

### **Technical Achievements: Turning Innovation Into Real-World Solutions**

OPENTUNITY's technical work packages have successfully transitioned from research and design to fully developed and integrated technologies, now ready for deployment in the pilots.

#### WP3 – OPENDATA: Federated Data Exchange & Plug & Play Integration

One of the most significant outcomes is the creation of the Federated Data Exchange Infrastructure (FDEI), enabling secure, transparent, and standardized data sharing between different stakeholders.

This includes a proof of concept for trust services, dataspace connectors, and onboarding environments, paving the way for interoperable smart grid data management across Europe.

Additionally, the consortium developed a Plug & Play Asset Registration System, using QR code technology to onboard smart devices seamlessly into Home and Building Energy

Management Systems (HEMS/BEMS). This system supports the integration of flexibility data while aligning with emerging European ESPR/DPP requirements.

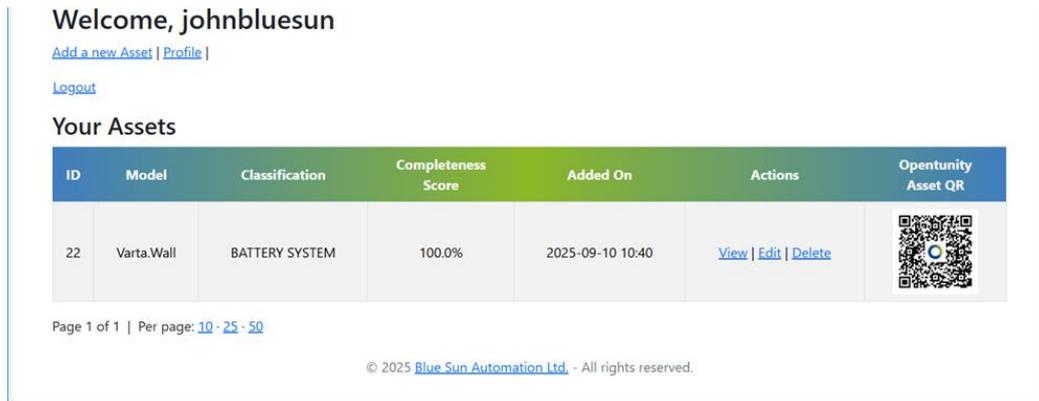


Figure 1- Plug and play software screenshot.

#### WP4 – OPENFLEX: Managing Flexibility with Intelligence

In the area of flexibility, OPENTUNITY achieved major progress with the creation of the Building Flexibility Management System (BFMS), designed to interact with HEMS/BEMS to forecast consumption, submit Demand Response (DR) bids, and dispatch flexibility automatically.

A standout innovation is the new Non-Intrusive Load Monitoring (NILM) module, which disaggregates household energy consumption into appliance-level insights, empowering users to understand and optimize their energy use.

Other developments include forecasting models for EV fleets and smart home devices, and algorithms for optimal market-based flexibility selection—laying the foundation for the project’s local flexibility market demonstrations.

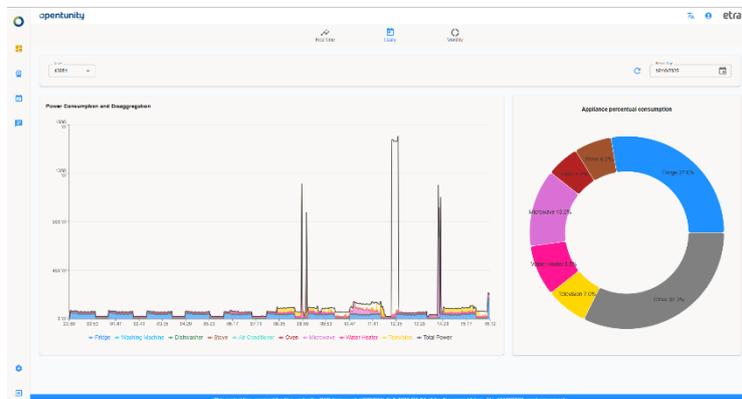


Figure 2 - NILM GUI

#### WP5 – OPENGRID: Intelligent Network Operation and Planning

OPENTUNITY has also delivered a set of advanced tools for DSOs and TSOs within an Advanced Distribution Management System (ADMS) framework.

Developments include:

- Topology Converter (open-source) and Topology Identification & State Estimation modules for real-time grid visibility.
- The Real-Time Thermal Rating (RTTR) module for dynamic line capacity management.

- Advanced Asset Management and Network Planning Tools to optimize maintenance and future grid investments.

Together, these tools enable operators to predict, plan, and prevent, ensuring more resilient and adaptive energy networks.

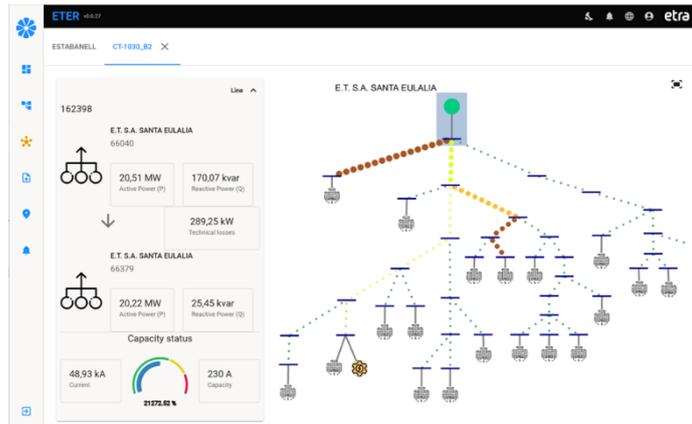


Figure 3 - Topology visualization

### Next Steps: From Lab to Field

With the core technologies finalized, the focus now shifts to pilot site integration and large-scale demonstrations.

Each pilot, from Slovenia to Spain, Greece, Switzerland and beyond, will test OPENTUNITY solutions under real conditions, demonstrating interoperability, user engagement, and market readiness.

### Further information:

Álvaro Nofuentes (Project coordinator) - [anofuentes.etraid@grupoetra.com](mailto:anofuentes.etraid@grupoetra.com)

Twitter: <https://twitter.com/OpentunityEU>

LinkedIn: <https://www.linkedin.com/company/opentunityeu>

Website: <https://opentunityproject.eu/>



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them. Horizon Europe Grant agreement N° 101096333.