ONENET

one network for Europe

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957739

What is OneNet?

OneNet (One Network for Europe) is an Horizon 2020 project responding to the call "Building a low-carbon, climate-resilient future". The project brings together a consortium of over 70 partners, including key IT players, leading research institutions and the two most relevant associations for grid operators.

Why OneNet?

While the electrical grid is moving from being a fully centralized lo a highly decentralized system, grid operators have to change their operative business to accommodate for faster reactions and adaptive exploitation of flexibility. OneNet aims at performing this critical step by creating the conditions for a new generation of grid services able to fully exploit demand response, storage and distributed generation while creating fair, transparent and open conditions for the consumer. The scope of OneNet is to create a fully replicable and scalable architecture that enables the whole European electrical system to operate as a single system.

The project in brief

72	23	28	3
Partners	Countries	Million of euros	Years duration

OneNet envisions a European electricity system that provides for the seamless near real time integration of all actors across countries, optimizing the overall energy management while creating an open and fair market structure and maximizing the consumer capabilities to participate in it.

Three Pillars

Definition of a common market design for Europe

Definition of a common IT Architecture and common IT Interfaces

Verification of the proposed solutions in large field tests

How will OneNet work?

7-Step OneNet Process

1. Define new and standardized products and services starting from project experience
2. Identify appropriate market structures in support of the defined products and services
3. Design open IT architecture supported by scalable data management enabling market structures
4. Implement architecture in a reference version to be used as basis for a European deployment
5. Verify in a set of large field tests the concepts and solutions proposed by OneNet
6. Create European level consensus thanks to GRIFOn open forum with all the key stakeholders
7. Push the result of OneNet in the standardization process for a significant market uptake

Four phases

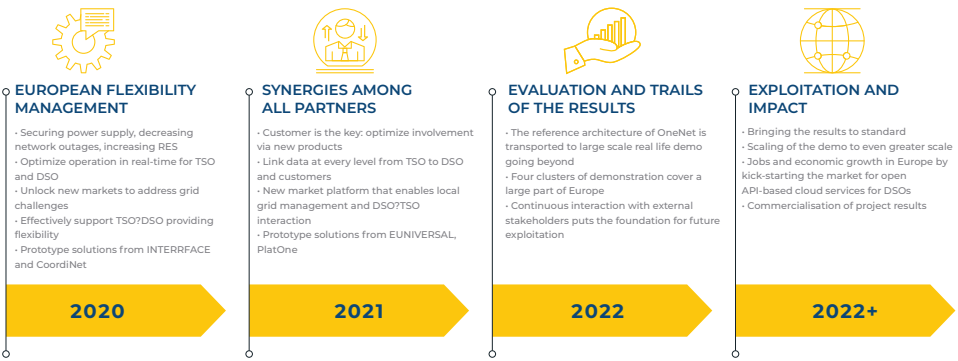
Phase 1: Defining the details of the project challenge to create a European answer to flexibility management.

Phase 2: Developing the concrete OneNet approach to create unique synergies among all system and market operators.

Phase 3: Demonstrating the proposed solutions and evaluating the project results.

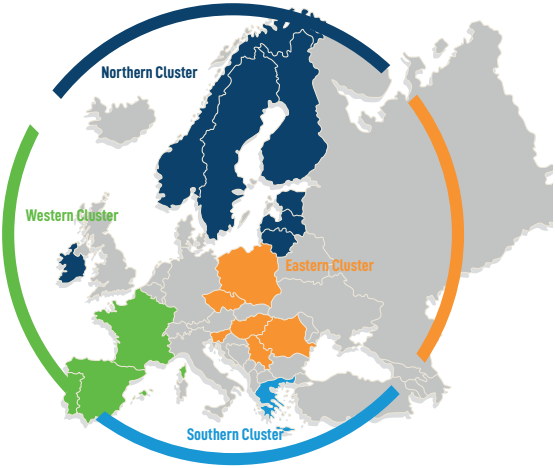
Phase 4: Beyond the project, fully exploiting the results and scaling the OneNet impact.

Timeline



Demos

The complete concept of OneNet is proven in 4 cluster demos involving 15 European countries.



Northern Cluster Demonstrator (WP7)

Ireland, Norway, Sweden, Finland, Estonia, Latvia, Lithuania

The Northern Demonstrator is an integrated effort by multiple TSOs and DSOs to enable market driven flexibility uptake by these networks in a coordinated way through multiple markets where liquidity can be reached due to scope or existing trading volumes. Through this demonstration, the project will be able to show mapping and management of network needs in multiple use cases over multiple networks.

Southern Cluster Demonstrator (WP8)

Greece and Cyprus

The objective of the Southern Demonstrator is to prescribe, develop, implement and evaluate two pilot projects in Greece and Cyprus dealing with balancing and congestion management challenges facing system operators in the clean energy era, in compliance with the OneNet overall architecture. The results will be evaluated to provide recommendations for future market reforms in the region and harmonization for a panEU electricity market.

Western Cluster Demonstrator (WP9)

Portugal, Spain and France

The Western Demonstrator will run in three different countries and will allow for the implementation of a wide range of flexibility mechanisms to address both DSO and TSO needs, including coordination between market mechanisms and the planning and real-time operation of the grids. Amongst the main goals to be achieved, increasing integration of renewables and anticipating operating scenarios are relevant priorities.

Eastern Cluster Demonstrator (WP10)

Czech Republic, Poland, Hungary, Slovenia

The Eastern Demostrator will develop an interoperable network of flexibility platforms to support the utilisation of various flexibility services, service integration and interaction, as well as the related data exchange. The development will be focused in particular on four areas: definition of new standardized flexibility services, elaboration of related market based product and grid prequalification processes, the conceptualisation of location-based service activation and the coordination of access to local and system-level services.

The Consortium

Project Coordinator
Prof. Antonello Monti, Ph.D.
antonello.monti@fit.fraunhofer.de

Email: info@onenet-project.eu
Website: onenet-project.eu