

Cluster organisations and the digital energy transition.



What is a cluster organisation?

A cluster is a geographically or sectorally concentrated network of firms - usually small and medium-sized enterprises (SMEs) - plus universities, technology centres and public bodies that collaborate while competing. Cluster organisations are the legal entities that orchestrate this collaboration, providing shared services, facilities and advocacy.

Silicon Valley, in California's San Francisco Bay Area, is a famous example of a cluster - a geographic concentration of interconnected companies, specialised suppliers, universities, and investors in the same sector.

Did you know?



There are 1500+ cluster organisations in 200+ EU regions, accounting for almost 25 % of EU employment [[REF](#)].



The [European Cluster Panorama 2024](#) reports that SMEs make up 83% of cluster members, with 45% of EU clusters focused on digital (27%) or renewable energy (18%) sectors.



Photo credit: [four people...](#) by Mapbox on [Unsplash](#)

Why focus on energy digitalisation?

Digital technologies (for example, smart meters, AI-driven energy-management systems (EMS), electric vehicle (EV) charging) enable companies to monitor, predict and optimise their energy use. Within a cluster, members can co-develop or share these tools, spreading costs and accelerating adoption.

- Smart meters and controls can cut energy use by up to 40 % when actively managed.
- Certified energy audits typically unlock 18 % savings.
- Full energy-management systems deliver 10–17 % annual reductions.

Cluster organisations and the digital energy transition.



Benefits for businesses joining a digital energy focused cluster

Innovation and R&D leverage

By pooling resources, members can access shared testing environments like living labs and jointly bid for innovation projects, reducing the cost and risk of experimentation.

Market access and visibility

Clusters act as collective “showrooms” for their members’ technologies, helping SMEs gain exposure they might not achieve alone.

Funding pathways

Many EU and national funding calls specifically support cluster-led consortia, improving members’ chances of securing grants.

Collective bargaining power

Clusters amplify the voice of their members in policy and regulatory discussions, influencing standards and laws.

A real-world cluster story

The Vrije Universiteit Brussel (VUB), Green Energy Park, and Flux50 have invested €3 million in the Smart Village Lab.

Smart Village Lab is a pioneering facility for smart, sustainable residential development that opened in autumn 2020.

Key features of the lab:

- Flexible homes for testing intelligent energy management systems.
- Smart energy grid enabling exchange of electrical and thermal energy with neighbourhood batteries and EV charging infrastructure.
- Integration of solar panels with appliances, EVs, and home batteries to optimise consumption — especially important with Belgium’s 2022 capacity tariffs (charging based on peak use).

Purpose:

- Provide real-world testing environments for Flemish and European research projects.
- Offer educational programmes for schools and the public.
- Demonstrate energy transition technologies.