

Energy communities: How to evaluate digital technologies.



Key criteria for evaluating digital technologies

Sustainability

Does the technology promote renewable energy and reduce environmental impact?

Does it support resource efficiency and circular economy principles?

Economic viability

Is it cost-effective for the community?

Will it provide a return on investment or create local jobs?

Social impact

Does it empower and include vulnerable groups in energy decision-making?

Technical feasibility

Is it compatible with existing infrastructure?

Data privacy & security

Does it comply with data regulations (e.g. GDPR) and offer transparent data practices?



Photo credit: [Siyuan Hu on Unsplash](#)

Why evaluate digital technologies?

Careful evaluation of digital technologies ensures that chosen technologies align with an energy community's shared goals and values.

Evaluation provides a structured way to anticipate both benefits and risks: from enabling new opportunities for renewable integration and energy sharing, to mitigating potential downsides such as exclusion of vulnerable groups, cybersecurity threats, or hidden costs.

By embedding evaluation into decision-making, energy communities can ensure that digitalisation contributes to sustainability, equity, and resilience rather than undermining them.



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Example: [Paraspori \(Greece\)](#)

The Paraspori project demonstrates how energy communities can harness digital technologies to deliver real impact. Completed in early 2024, **the initiative established a 99 kW photovoltaic system in Nafplion, connected to the grid through virtual net-metering.** This enables community members to benefit directly from remotely generated solar energy, reducing costs while promoting renewable integration.

The project highlights the importance of evaluating both the technical feasibility (grid connection, net-metering agreements) and the social and economic benefits (lower bills, clean energy access for members). It also shows how digital contracts and metering systems make collective ownership models viable. This illustrates the potential for technology to strengthen community-driven transitions to sustainable energy.

Did you know?



Smart meters not only track your household energy use but can also help entire communities balance renewable energy production and demand in real time.

Example: [Energy Cloud Platforms \(Flux50, Flanders\)](#)

Flux50's Energy Cloud Platforms initiative illustrates how energy data can become a powerful enabler for community energy transitions. **By combining IoT devices, sensors, and AI-driven applications, the platform allows households, businesses, and grid operators to share and use energy data in real time.**

This makes it possible to better match local renewable generation with demand, improve flexibility, and reduce waste. From a technical feasibility perspective, the project leverages Flanders' strong ICT expertise and living lab infrastructure to demonstrate that complex, connected, and self-learning systems can operate reliably at scale.

At the same time, data privacy and security remain at the core: the platform is designed to comply with GDPR and incorporates robust cybersecurity features to ensure trust and transparency. Beyond the technical layer, Energy Cloud Platforms also opens up new opportunities for innovative services and apps, allowing citizens, start-ups, and communities to create value from their energy data while advancing the broader sustainability goals of the region.