

Collaborating across the digital energy landscape: Data sharing.



Collaboration and data sharing

Collaboration in the context of data sharing refers to shared responsibility and mutual understanding between data producers (e.g. energy users) and data consumers (e.g. distribution system operators, researchers, or retailers). It must be based on:

- Clear communication on how data will be used.
- Ethical design of data collection and analysis tools.
- User empowerment through digital energy literacy.
- Agreements that safeguard privacy and reinforce mutual benefit.

The ethical challenge

Despite its promise, data sharing raises concerns. Misuse of energy data - such as inferring occupancy patterns - can infringe on privacy and autonomy. This makes trust, transparency, and digital energy literacy ever more crucial.



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Key benefits of community-level data sharing

Better forecasting and grid management: Aggregated data enhances predictions of electricity demand, congestion points, and local energy flows.

Fairer tariff design: Understanding usage patterns supports more equitable and flexible pricing schemes.

Optimised use of renewables: Accurate forecasting enables smarter use of intermittent energy sources like wind and solar.

Targeting energy poverty: Researchers can identify geographic or demographic hotspots that need intervention.



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European collaborative energy data sharing examples

InterStore project

Practice: Encourages users to share appliance-level energy consumption data in exchange for rewards or incentives. By breaking down usage by appliance (e.g., washing machines, fridges), households can see where savings are possible, with rewards motivating sustained participation.

Impact: Promotes shifts in consumption habits toward off-peak periods and improves demand-side flexibility, helping balance electricity supply and demand in real time.

European Distributed Data Infrastructure for Energy (EDDIE) project

Practice: Decentralised, open-source energy data space enabling secure, consent-based sharing of real-time and historical data across the EU. Users control what data they share and with whom.

Impact: Empowers consumers with data access; helps service providers create tailored, efficient energy solutions.

INSIEME project

Practice: Federated, interoperable infrastructure (Common European Energy Data Space) connecting national and regional platforms for secure, standardised energy data exchange.

Impact: Enhances market transparency and efficiency; supports renewables, sustainable business models, and energy security.

DATA CELLAR

Practice: Collaborative platform offering secure access to energy datasets and AI analytics for local energy communities. Combines production and consumption data with AI for optimisation and forecasting.

Impact: Improves efficiency, reduces waste, fosters innovation, and ensures ethical, regulatory, and cybersecurity compliance.