

# Making local energy markets smarter

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Credit: AI-generated image ([disclaimer](#))

One of Europe's main challenges is creating a low-carbon energy system that's efficient and secure. Our electricity networks in particular need to be upgraded to a system of highly efficient, flexible networks that match current production and consumption patterns and developments in technologies.

The EU-funded ERANet SmartGridPlus initiative is helping Europe

make progress towards meeting its short-, medium- and long-term [energy](#) targets. It has been working to support [deep knowledge](#) sharing between regional and European smart grid projects.

ERANet SmartGridPlus's support includes financing a number of transnational projects on applied research, piloting and demonstration in the field of smart grids. One of the projects financed by this initiative is called E-REGIO. E-REGIO aims to analyze, test and validate a new way of implementing local energy markets around energy storage units and flexible assets supervised by the local system operator (LSO). The concept's feasibility and business potential are being demonstrated in Sweden and Norway.

In E-REGIO, local market participants include the LSO and two types of customers: end users, and middle- and high-voltage-level customers. The LSO is responsible for conducting a joint optimization of energy flexibility loads, energy planning, energy storage scheduling and electrical vehicle scheduling for the local power grid and energy community. The aim of this optimization is to prioritize either community or grid services, or both, depending on customer preferences.

## **Advanced local energy market platform**

An advanced ICT platform developed for local energy markets as part of the E-REGIO project enables LSOs to deliver the necessary grid services. Through the platform, LSOs can serve as an aggregator, central market intermediary, local energy retailer, local energy storage manager, local services facilitator and electric vehicle operator. User-friendly mobile apps and websites incorporated into the platform make it possible for local market participants to easily participate in local energy trade.

Two industrial sites are being used to test the ICT platform. One of the pilots is a microgrid establishment on the premises of a Norwegian power grid company. Its aim is to explore grid service delivery related to the grid's resources. These include local consumers and prosumers (consumers producing electricity for their own consumption, and possibly for supplying to the grid), a stadium, local photovoltaic energy generation and energy storage.

The second pilot is found on the premises of one of Sweden's largest public building owners. It includes three multi-dwelling buildings in which photovoltaic units, stationary batteries and electric vehicle chargers are used through the ICT platform. The two pilots demonstrate how the [platform](#) can be used to engage [end users](#) and provide community and [grid](#) services in both industrial and residential environments.

ERANet SmartGridPlus (ERA-Net Smart Grids Plus: support deep knowledge sharing between regional and European Smart Grids initiatives) is furthering the development of smart grids by building on the knowledge base, R&D initiatives, and R&D facilities already in place in Europe. The project concludes in January 2020.

**More information:** ERA-Net Smart Energy Systems project website: [www.eranet-smartenergysystems.eu/](http://www.eranet-smartenergysystems.eu/)

E-REGIO project website: [www.eregioproject.com/](http://www.eregioproject.com/)

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