

Power to the people, by the people

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

European researchers are investigating 'smarter' solutions to meet growing demand for electricity and fundamental changes in the way power is produced and consumed.

As patterns of [power](#) generation and distribution rapidly shift towards a highly dispersed, less predictable system, [power providers](#) need to change how they operate their grids.

The new EU-funded DISCERN project ('Distributed Intelligence for Cost-Effective and Reliable Distribution Network Operation') is planning to use the latest technologies and approaches to remove some of the volatility in the [energy supply](#) chain.

Demand for electricity is growing worldwide. Burning more coal (fossil fuels) however is neither a sustainable nor environmentally sound option. The alternative is to develop renewable alternatives, such as wind, solar, tidal and hydro-thermal sources. Greater awareness on the demand side is also needed; efforts to reduce consumption and develop and use more efficient powered appliances.

Today in Europe, you see whole neighbourhoods with solar panels soaking up the power of the sun and converting it (photovoltaics) into power not only for their own use but also for others. Their surplus power is distributed back into the [power grid](#). This is good news for the planet and good news for the European Union, which has set ambitious sustainable energy and climate change targets, but it can be a problem for power companies and Distribution System Operators (DSOs) who need to keep up with the rapid changes.

While so-called 'intelligent' grid systems exist today, the sector is likely to become more complex as more and more decentralisation and co-generation enters the energy supply chain. Smarter solutions are needed to deal with low voltage grids, for example. DISCERN seeks to assess the optimal level of intelligence in the distribution network and to determine cost-effective, reliable technological options to enhance future distribution networks in Europe.

The DISCERN project is one of many European Energy research initiatives aimed at such themes as 'Smart energy networks' and 'Renewable electricity generation'. DISCERN will spend the next three years developing five demonstration projects operated by major DSOs in

Europe.

The demos bring together the latest technological approaches addressing different challenges, from more efficient appliances to better sensors reading power usage. DISCERN also plans to liaise with relevant smart grid innovation projects in Europe in a series of workshops aimed at leveraging their results.

As a result, DISCERN's outputs will enable DSOs to better manage their networks today and be prepared for the changes as more renewables and co-generation enter the energy supply chain. To achieve its objective, the project has built a strong European consortium including DSOs, technology providers, research institutes and universities as well as a technical consultancy from Germany, Sweden, Spain and the UK.

More information: DISCERN fact sheet on CORDIS
cordis.europa.eu/projects/rcn/106040_en.html

Provided by CORDIS

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