

NEWS

PROJECT

FED - Fossil Free Energy  
Districts (Closed)

📍 Gothenburg, Sweden

TOPIC

Energy Transition

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## Market design for local energy systems of the future

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website



On the last day of October 2019, the Fossil-free Energy Districts (FED) project will be completed. The collaboration has, during three years, designed and implemented a local market for heating, cooling and electricity on the campus of Chalmers University of Technology in Gothenburg, Sweden. Magnus Brolin from RISE - Research Institutes of Sweden, is one of the architects behind the system's market design and he is pleased with the result.

*"Of course there are many challenges to getting such a complex system to work, but I think it has been a very successful project in the sense that within three years and in the same project, we have managed to get this marketplace to actually work, all the way from a concept description to an implementation phase and even an operational phase. I think that is fantastic and quite unique I would say", says Magnus Brolin, researcher at RISE.*

The buildings in the campus area can be both consumers and producers of energy, for example there are biomass boilers in the area and several roofs have solar panels installed. In addition, there are a number of batteries and other energy storages. All these market participants are connected to the digital marketplace where programmed agents make decisions and trade energy with each other and the surrounding system. The result is a very flexible system that can efficiently predict and cut energy-intensive peaks, thus reducing fossil-based energy imports.

The FED project consists of nine local partners, all of whom have participated on the basis of their own areas of interest and competence, and together they have succeeded in incorporating a number of functionalities to control energy consumption in the system. But in order to be an attractive product on the market, Magnus Brolin believes that the system may need to be simplified.

*“From a market design perspective, one has to balance how complex and how transparent this market should be. What functionalities should sit in one scale pan and the understanding and acceptance of the different stakeholders in the other. In the FED-system we have gone quite far towards the complex side. It would be interesting to also look into less advanced solutions that can still reach quite far.”*

Local energy systems are predicted to become important parts of the solution in the energy transition that is needed, partly to meet the increased demand but also to take care of the growing share of energy from renewable sources.

*“There is a lot of ongoing development and interest around these issues. There are also a number of legislative proposals, initiated by the EU, on how so-called citizen energy communities should be implemented. So, I think we will see more of this type of local energy markets. The question is what form they will take in the future – that we will have to wait and see.”*

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