

Chalmers – Ero, app to plan energy usage

Participants: Chalmers tekniska högskola, Göteborg energi, HSB Göteborg

Category: Customer-side systems

Time plan: Started October 2018

Web: <https://www.chalmers.se/sv/styrkeomraden/energi/nyheter/Sidor/Ta-kontroll-%C3%B6ver-energif%C3%B6rbrukningen-med-smart-app.aspx>

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Location: HSB Living Lab, Göteborg

Possible to visit: Yes

Background

Ero is an app that has been developed by Chalmers in order to give end-users of electricity better control of their energy usage. The system is tested in HSB Living Lab in Gothenburg, where a residential building with about 30 tenants has been built to serve as a live-in laboratory. Energy is one of the areas where research is conducted to gain knowledge about behaviors and new technology. The residents in the living lab are a mix of students, guest researchers at Chalmers and HSB members.

Implementation of the project

The app makes use of data from different sources in order to give the user better knowledge about their energy usage and what choices they can make, based on for example available power sources. To monitor the electricity usage in each apartment, smart plugs have been installed to collect relevant energy data and link it to the building's system. Ero also downloads forecasts from the power grid, which allows for the user to see what type of power generation that will be available. The availability of energy also enables the user to plan when to use electric appliances.

Benefits

The system and app give the user ability to impact their electricity consumption and to plan it in a way that minimizes their carbon footprint in the generation phase. In addition to this, it also gives the grid operator valuable information about the behavior of the residents in the building. It is possible both to see whether they actually use the functionality to plan their electricity consumption based on the type of generation, and to gain knowledge about general trends in electricity usage. A better understanding about the energy system among the users is believed to lead to a more environment friendly energy usage and can also help shave peaks in power demand.

Scalability

Ero is in an early phase, and the scalability is uncertain. The app will be evaluated and possibly further built upon, which means that the final product could have other characteristics than this version.

Interoperability

The present system needs installation of smart plugs, and access to the energy system of the building. As it is in an early stage of development, it is not clear what the interoperability abilities of a final version will be. It is however possible that the app will be easier to integrate into buildings during their construction phase rather than fitting it into existing buildings.

Investment horizon

Ero is in an early research stage, which makes the investment horizon hard to estimate.

International potential

Smart buildings will be built throughout the world, and a system such as Ero could well become standard internationally.