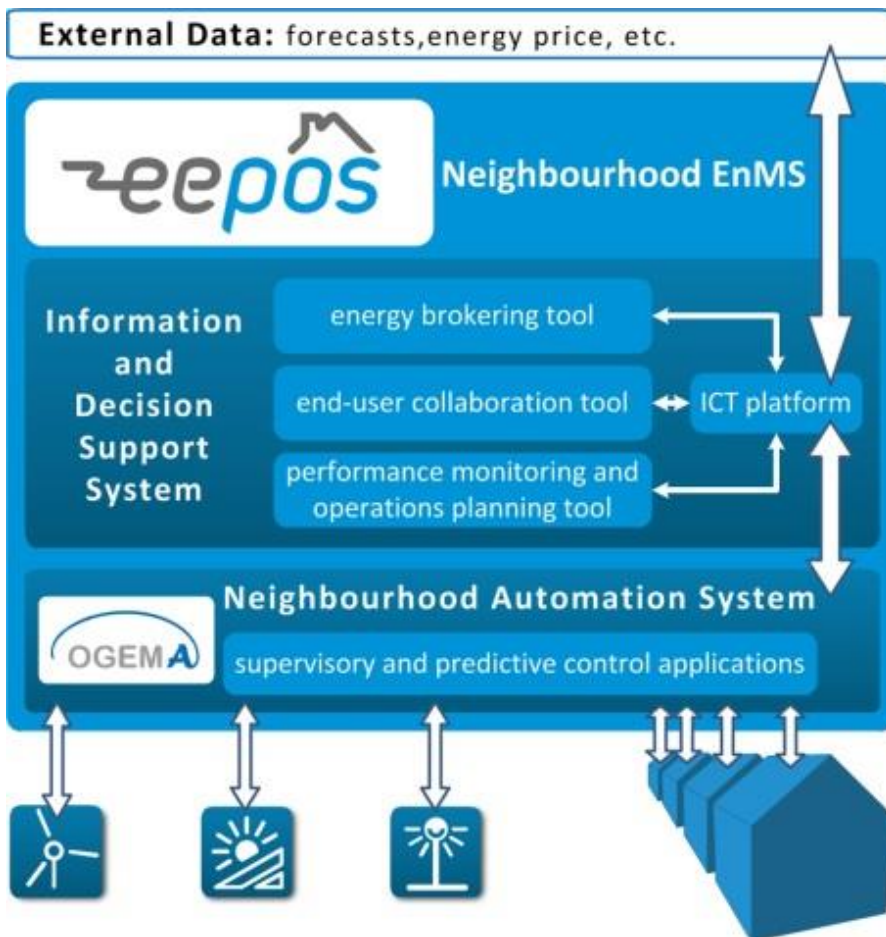


## Energy management and decision support systems for energy positive neighbourhoods

EEPOS is a research and development project aiming to put into effect the idea of energy positive neighbourhoods. The EEPOS consortium develops tools for energy optimisation and end user involvement to improve the management of energy generation and consumption on the neighbourhood level.



### Structure of the EEPOS Neighbourhood Energy Management System

The main idea is to develop technologies and business models that will support energy trading in the neighbourhood. The neighbourhood and users will profit from brokering and energy services. Business models will enable a win-win situation between the stakeholders of the electricity and heat trading chains. Information platform with user interfaces for different stakeholders plays a key role in stimulating users to reduce energy consumption without compromising comfort.

More information is available at our website:

[www.eepos-project.eu](http://www.eepos-project.eu)

The new EEPOS services will be transparent for both customers as well as providers and allow benefit sharing between them. This will improve customers' information basis to make decisions on energy consumption. The raising of awareness on energy consumption will reduce users' energy costs and reduce energy peaks in the grid.



Demonstration site in Germany

The developed energy management and decision support systems will be validated in two demonstration field tests in Helsinki, Finland and Langenfeld, Germany. Furthermore, a complementary simulation based virtual demonstration study will be carried out for the municipality of Asparrena in Spain.



Scheme of the virtual demonstration site in Spain

### Demonstration in Langenfeld, Germany

The German demonstration site in Langenfeld consists of 50 buildings with 820 dwellings. Here the integration of smart metering, building heat pump systems as well district heating provided by a combined heat and power wood chip plant will be demonstrated. All buildings have broad band internet access, which can be used to integrate the EEPOS interface for interaction with tenants.

The local heating network will be optimised in order to improve the efficiency of the heating distribution. The installed energy management system Smartbox will be used to obtain energy consumption data which will be used for the EEPOS system.

### Demonstration in Helsinki, Finland

The Finnish case study in Helsinki will demonstrate neighbourhood energy management in the low energy housing area Merenkulkijanranta, Finland. The area is designed as advanced area, where new technologies, like seawater cooling, are used. All apartments are connected through Caverion's building automation system to 24/7 service. District heating provides the total heating need.

In EEPOS we demonstrate the existing sea water system use for heat generation outside of cooling season. Heating, cooling, ventilation power and other systems are controlled through advanced building automation system that has a web based interface. End users can as well easily make effect on energy consumption, like by selecting the ventilation mode between absence, normal, or boost.



Demonstration site Merenkulkijanranta in Helsinki, Finland

The three different demonstration sites are located in different climate zones and are characterized by different energy generation and consumption habits of the consumers.

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3 years

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### Project coordinator

VTT Technical Research Centre of Finland, Finland

### Project partners

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