

Call for SME Engagement in “Microgrid operation and ICT solutions”, EIT ICT Labs activity “European Virtual Smart Grid Lab“ in 2014

Introduction

Within the 2014 “Microgrid operation and ICT solutions” task, EIT ICT Labs action line Smart Energy Systems (SES), activity “European Virtual smart Grid Lab” (EVSGGL), we are requesting the engagement of a Small and Medium Enterprise (SME) with relevant experience in building management.

The issuer of this call is the EIT ICT Labs partner Royal Institute of Technology (KTH), Sweden.

Scope of the Call

The “Microgrid operation and ICT solutions” task of the EVSGGL activity aims at addressing the need of microgrid operation entities, the development of microgrid control algorithms, and the application of use-cases, which will vary in terms of energy generation, storage, and loads as well as the strategies of operation. Both thermal and electrical energy management issues will be addressed. Among the expected outcomes of this task there are:

- Creation of a platform incorporating an optimization-based Building Energy Management System for improving the energy efficiency in Residential Microgrids;
- Definition of demand response policies for households to better manage all the electrical devices (e.g., heat pumps, HVAC as well as home appliances) while taking into account their comfort and preferences.

To achieve this goals, we plan to include an SME working in the Building Automation sector, which will bring the hardware (weather station, PLCs, light controllers) and the controllers currently used in most of the residential buildings (preferably in Sweden). A strong interaction is foreseen between the KTH and the SME: the SME shall provide hardware to be installed in the KTH HVAC test bed, as well as knowledge about the current practice of building management in Sweden; KTH can provide a more innovative control strategy to be deployed by the SME on existing buildings for a more effective building management.

SME Competences and Experiences

The following competences and experiences are required in:

- Usage of a combination of interconnected hardware (PLCs and electric meters) and IT solutions (SCADA systems and metering programs) for controlling and monitoring the operation of customer’s buildings;
- Access to existing buildings (either residential or commercial) in order to test innovative control solutions;
- Building retrofit and development of energy efficiency solutions.

Expected Results from the SME

We expect the SME to work and collaborate with KTH to:

- Integrate specific ICT components deployed by the SME into the existing KTH-HVAC test bed;
- Benchmark the energy use in a network of residential and commercial buildings Sweden wide: analysis and evaluation of the performance of Building Energy Management Systems with the aim of improving energy efficiency;
- Provide energy data from actual buildings to be used as inputs to the Microgrid Energy Management System;
- Support in development and implementation of a control algorithm for automatic adjustment of temperature setpoints;
- Evaluate the effect of temperature changes at heat supply to the building and the resulting change in room temperature and vice versa.

Duration of Involvement

The SME will take part in the EVSGL activity from January 1st until December 31st 2014.