

International Conference on Sustainability in Energy and Buildings

Invited Sessions

Title of Session: 'Smart' Buildings, 'Smart' Grids

Name of Chair: Dr Catalina Spataru, UCL Energy Institute

Description:

Across the world there are objectives and targets imposed by Governments which have brought new challenges which require investigation and consideration to allow informed decision making. Current plans to achieve significant reduction in carbon emissions rely heavily on future decarbonisation of the grid and increased use of electricity as a replacement for fossil fuels, for example electric heat pumps will be used to replace gas fired boilers and transport will be electrified.

- Renewable energy sources are expected to supply a considerable share of electricity consumption in the power system of the future.
- Worldwide electrical grids are expecting to become smarter in the next future in order to cope with new functionalities, as well as integration of renewable energy sources.
- Controlling the electrical demands for *heating* and *appliances* will make possible to manage power distribution peaks, balancing energy load in power distribution networks and achieve predictable large-scale energy-consumption profiles.
- Innovative controls and technologies can improve and reduce energy and costs in the system, but it needs to understand how inside smart buildings will interact with smart grids to achieve energy efficiency.

Therefore more understanding on research topics such as:

- implementation of micro and small scale generation in future 'smart' grids
- energy storage solutions for the integration of these sources
- diversity – modelling of energy demand and supply
- micro distributed technologies integration into the grid
- configuration, control and management of 'smart' grids
- automated controls & smart meters in 'smart' buildings
- reducing power demand
- participation of the end-user to the implementation of the 'smart' grid,
- monitoring systems for people to improve thermal comfort and help improve behaviour
- control challenges in combination with the grid restrictions for operability and overall system integration
- planning and development of smart grids projects
- practical experiences
- etc.

need to be done to assess the challenges.

This special session aims to bring together researchers with different background working in this area, in order to share knowledge and discuss strategies and future standards that will be needed in the transformation of the traditional grid towards the operation of a smart grid. We encourage authors to submit papers describing original work, including methods, techniques, systems descriptions, applications and recent advances.

Topics of interest include the one above, but are not limited to.

Submission procedure and deadlines:

All the instructions for paper submission are included in the conference website. <http://seb12.sustainedenergy.org>

Paper deadlines

Submission of Full Papers for Review: 1st May 2012

Notification of Acceptance/Revisions: 1st June 2012

Upload of Final Camera-Ready Publication Files: 1st July 2012

Website URL (if any):

Email & Contact Details: c.spataru@ucl.ac.uk