The International Renewable and Sustainable Energy Conference (IRSEC'13)

March 7-9, 2013, Ouarzazate, Morocco

Special session on:

Smart Grids and Information and Communication Technologies:

Modeling, Prediction, Control and Optimization

Proposed by:

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Short presentation:

Smart grid associated with Information and Communication Technologies (ICT) are the next-generation power grid that has an overlay of smart meters to enable real-time data exchange between consumers and power providers. A smart grid is an electrical grid enabling to achieve better reliability, greater efficiency of electricity production and consumption, as well as the continuity in the energy efficiency of operations of power systems with upgrading conventional grids.

The design of a smart grid thus needs new fundamental theories as well as new technologies in networking. In particular, some residential loads, like Electric Vehicles (EVs), home appliances, smart buildings, might be equipped with smart devices that can communicate with each other and also with the utility company over a network, and dynamically adjust their power consumption using feedback control. Also, solutions basing on supervision methods and diagnostic as an aid to predictive maintenance and evaluation of the operational status of a device are required. Development of optimization algorithms and methods basing on ICT will contribute effectively to an optimal management and consumption of energy. The use of

optimization algorithms and control methods allows these active systems for decision-making according to the requirements of the user and environmental parameters.

This session will emphasize Information and Communication Technologies, fundamental theories based on scientific approaches, real-time and prediction systems for interoperability and interaction of services in the domain of energy production, distribution and consumption. The session will provide a forum to investigate, exchange novel ideas and disseminate knowledge covering the broad area of management and organization through interaction, interoperability and collaborations of different and distributed services in the field of smart grid and energy. Experts and professionals from academia, industry, and the public sector are invited to submit papers on their recent research and professional experience on the subject. High quality papers reporting on relevant reviews of existing literature, theoretical studies, case studies, interdisciplinary research are all very welcome. The session topics appropriate for consideration include but are not limited to:

- Information and communication technologies for energy management
- Smart grid energy
- Smart buildings & energy efficient buildings
- Energy efficiency system with renewable energy sources
- Energy-saving techniques for information and communication technologies
- Electric vehicles and plug-in hybrid electric vehicles
- Vehicle-to-Grid technologies
- Modeling, control and optimization of energy consumption
- Optimal and prediction models for power flow
- Charging scheduling and online optimization

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Important dates

- Full Paper submission: December 05th , 2012
- Notification of Acceptance: December 30th, 2012
- Final Paper Submission: January 10th, 2013

For further information and author guidelines, please refer to:
http://www.med-space.org/irsec/