Sustainable and intelligent management of distributed energy resources in buildings and smart grids

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Type of talk: Invited keynote

Abstract

Ensuring current and future energy needs for dynamic economies and highly demanding societies raises environmental concerns. Smart grids put together renewable-based generation, demand response, distributed storage, and electric vehicles able to bring new solutions able to significantly reduce the environmental impact of traditional electrical energy generation and energy use. However, the actual use of such resources in an intensive way, poses new technical and business challenges to the power and energy sector. The keynote addresses the current and envisioned solutions for the management of these distributed energy resources, enabling the implementation of sustainable energy solutions in the frame of a user centric and market driven approach for smart grids and electricity markets.

Artificial intelligence based approaches bring important new possibilities enabling efficient individual and aggregated energy management. Such approaches can provide different players aiming to accomplish individual and common goals in the frame of a market-driven environment with advanced decision-support and automated solutions.

MARTINE (Multi-Agent based Real-Time INfrastruture for Energy), a platform to support real-time energy management and simulation of buildings and smart grids, will be described. The platform will be used as the basis to present different data-driven and cognitive approaches to support efficient energy management in buildings and smart grids.

Related References

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