

VISIONS OF FUTURE INTELLIGENT POWER GRIDS: SYNERGIES FOR COLLABORATION BETWEEN THE EUROPEAN UNION AND THE UNITED STATES

Debora Coll-Mayor¹, Mia Page², Eric Lightner³, Manuel Sanchez-Jimenez⁴

*¹Department of Physics, University of Balearic Islands,
Ctra. Valldemossa 7.5, Palma, E-07122, Spain*

*²Energy Science and Technology Directorate, Pacific Northwest National Laboratory,
P.O. Box 999, Richland, WA-99352, U.S.*

³United States Department of Energy Office of Electricity Delivery and Energy Reliability

⁴European Commission, Research Directorate-General

Keywords: intelligent power grids

ABSTRACT

The future of power grids is expected to involve an increasing level of intelligence and integration of new information and communication technologies in every aspect of the electricity system, from demand-side devices to wide-scale distributed generation to a variety of energy markets. The vision of this future in the United States and the European Union is known as GridWise™ and SmartGrids respectively. The results of the examination of similarities and complementarities of the two research programs are presented in this paper. Within the framework of a solid precedence for trans-Atlantic cooperation in energy research, the time would seem optimal to set in motion active collaboration and educational exchange on GridWise and SmartGrids research.

This paper will provide energy professionals with a comparison of the solutions developed in each case, to be aware of trans-Atlantic approaches, opportunities, and resources looking toward future, more intelligent and interconnected power grids.