

IEA DSM TASK XVII

Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages



Why Integration is Needed

When a country implements an energy policy to promote energy efficiency, distributed generation and renewable energy resources, the share of distributed energy will increase, including the intermittent energy sources such as wind, solar, small hydro and combined heat and power (small and micro-CHP). Due to the fact that intermittent types of electricity generation are difficult to predict, electrical networks and market are turning to integrated distributed energy resource as a solution. By combining distributed generation with energy storage and demand response, a country can decrease problems caused by distributed generation and increase the value of intermittent energy in the market.

How to integrate these components, however, is not an easy task. To begin to analyze how best to integrate distributed generation with energy storage and demand response, this new IEA DSM Task will undertake several activities.

Main Activities

The main objective of this Task is to study how to optimally integrate flexible demand (Demand Response, Demand Side Management) with Distributed Generation, Energy Storages and Smart Grids, thereby increasing the value of Demand Response, Demand Side Management and Distributed Generation and decreasing the problems caused by intermittent distributed generation. The Task will look at integration issues both at the local (distribution network and customer) level and at the transmission system level, for example where large wind farms are connected.

Subtasks

To conduct the work, Task XVII is divided into four Subtasks.

Subtask 1

This Subtask will analyze information on the characteristics of different types of Distributed Energy Resources (DER) in integrated solutions. The analysis will focus on integrated solutions where energy efficiency and demand response are combined (or seen possible to

combine) with at least one of the following technologies—distributed generation, energy storage or smart grid technology aspects.

Subtask 2

This Subtask will prepare a synthesis report with preliminary conclusions. It will include the state-of-the-art on integration of DER at customer, network, system and market level; pilot and research projects and actual applications, technical and market impacts, and needed improvements to enhance integration.

Subtask 3

This Subtask will hold a workshop for stakeholders to collect additional information and feedback on the preliminary conclusions. Proceedings will be prepared from this workshop.

Subtask 4

This Subtask will focus on finalizing the synthesis report with integration-based solutions and examples of best practices and preparing a detailed work plan for any additional work needed.

Participants

Finland Spain
Korea United States
Netherlands

Other countries are welcome to join this Task.

Operating Agent

Seppo Kärkkäinen
VTT Technical Research Centre of Finland
Telephone: +358 20 722 6406
E-mail: seppo.karkkainen@vtt.fi

Task XVII Web Site

<http://dsm.iea.org/ViewTask.aspx?ID=16&Task=17&Sort=0>