

Demand response in liberalized electricity markets: Analysis of aggregated load participation in the German balancing mechanism

E. Koliou, C. Eid, J.P. Chaves, R.A. Hakvoort

Abstract— Power systems are in the midst of radical changes as a result of steadily rising demand, advanced technology integration and increasing penetration levels of renewable energy sources. Such developments have brought about increasing recognition of consumer behavior and the provision of DR (demand response). The aggregation of small loads as a DR flexibility resource allows end-users to participate in electricity markets and aid in maintaining dynamic system stability. An analysis of the German balancing mechanism illustrates that DR is undermined by three mechanism design aspects: minimum bidding volume, minimum bid duration and binding up and down bids.

Index Terms— Balancing; Demand response; Markets; Policy; Aggregation

Due to copyright restriction we cannot distribute this content on the web. However, clicking on the next link, authors will be able to distribute to you the full version of the paper:

[Request full paper to the authors](#)

If your institution has an electronic subscription to Energy, you can download the paper from the journal website:

[Access to the Journal website](#)

Citation:

Koliou, E.; Eid, C.; Chaves, J.P.; Hakvoort, R.A. ; "Demand response in liberalized electricity markets: Analysis of aggregated load participation in the German balancing mechanism", Energy, vol.71, pp.245-254. July, 2014.