

Energy resource management under the influence of the weekend transition considering an intensive use of electric vehicles - DTU Orbit (08/11/2017)

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Energy resource scheduling is becoming increasingly important, as the use of distributed resources is intensified and of massive electric vehicle is envisaged. The present paper proposes a methodology for day-ahead energy resource scheduling for smart grids considering the intensive use of distributed generation and Vehicle-to-Grid (V2G). This method considers that the energy resources are managed by a Virtual Power Player (VPP) which established contracts with their owners. It takes into account these contracts, the users' requirements subjected to the VPP, and several discharge price steps. The full AC power flow calculation included in the model takes into account network constraints. The influence of the successive day requirements on the day-ahead optimal solution is discussed and considered in the proposed model. A case study with a 33-bus distribution network and V2G is used to illustrate the good performance of the proposed method.

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