

An interval-based bi-level day-ahead scheduling strategy for active distribution networks in the presence of energy communities

M. Tostado Véliz; Y. Liang; A.R. Jordehi; S.A. Mansouri; F. Jurado Melguizo

Abstract-

The decarbonization of the electricity sector calls for new operational schemes and businesses. In this context, traditional consumers have evolved towards prosumers, enabling the active participation of domestic installations in the system operation. A set of prosumers can be organized into energy communities to unlock different economic and energy benefits. This paper develops a bi-level scheduling strategy for robust optimal operation of energy management in communities at the lower level while managing distributed assets at the upper level. The uncertainties in demand,

Index Terms- Distributed generation; Energy community; Interval optimization; Stackelberg game

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