

Participation of intermittent renewable generators in balancing mechanisms: a closer look into the Spanish market design

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Abstract-

Renewable energy producers are increasingly displacing conventional generation units – traditional suppliers of balancing services – from the daily electricity dispatch. As a consequence, there is a growing need that renewable generators also contribute to electricity balancing so that system operational security is guaranteed at all times. In Spain, the government recently launched a reform allowing the participation of intermittent renewable producers in balancing markets. Nevertheless, current market designs may not be adapted to this participation. In this context, this paper provides a concise, complete and updated review of balancing arrangements in Spain and identifies market design aspects that may act as barriers to the participation of renewable producers in balancing mechanisms. Empirical data is used to support the discussion. Based on this analysis and existing alternative designs, the authors provide policy recommendations for the adaptation of Spanish balancing arrangements to the participation of renewable producers in electricity balancing. These recommendations can also be useful for European policy makers currently working on the development of the European network codes for electricity balancing. These network codes will be implemented in all European countries in the near future.

Index Terms- Balancing services; Renewable generators; Electricity markets

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