

Assessment of the cost associated with wind generation prediction errors in a liberalized electricity market

A. Fabbri; T. Gómez San Román; J. Rivier Abbad; V.H. Méndez Quezada

Abstract-

In this paper, a probabilistic methodology for estimating the energy costs in the market for wind generators associated with wind prediction errors is proposed. Generators must buy or sell energy production deviations due to prediction errors when they bid in day-ahead or hour-ahead energy markets. The prediction error is modeled through a probability density function that represents the accuracy of the prediction model. Production hourly energy deviations and their associated trading costs are then calculated. Three study cases based on real wind power installations in Spain are analyzed. The three study cases show that the error prediction costs can reach as much as 10% of the total generator energy incomes.

Index Terms- Ancillary services, electricity markets, short-term wind forecast, wind power.

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 you institution has a electronic subscription to IEEE Transactions on Power Systems, you can download the paper from the journal website:

[Access to the Journal website](#)

Citation:

Fabbri, A.; Gómez, T.; Rivier, J.; Méndez, V. "Assessment of the cost associated with wind generation prediction errors in a liberalized electricity market", IEEE Transactions on Power Systems, vol.20, no.3, pp.1440-1446, August, 2005.