

# A tool proposal to detect operating anomalies in the Spanish wholesale electricity market

Román-Collado R.

Cansino J.M.

Colinet M.J.

Dugo V.

The Spanish wholesale electricity market remains controversial due to the suspicion of there being collusive behaviour, as the main generation companies still share 55% of the wholesale market. Up to 2018, the Spanish National Competition Authority had to investigate all the complaints received, contributing to discouraging collusive behaviours in the electricity market but also employing a significant amount of resources. Since 2018, the ECN + Directive has given more independence to the National Competition Authorities of EU Member States and has allowed them to reject the complaints that are not considered a priority and choose the most relevant ones. This paper provides a tool that makes the supervision of the wholesale electricity market easier and enables a better use of resources. The tool is tested for a timespan including the same month (December) from 2012 to 2017. The period selected starts once non-conventional renewable technologies began to operate and lasts until the ECN + Directive came into force. In the first two steps, the tool allows a screening of the timespan, looking for possible anomaly periods based on the variance values of the daily electricity cost and the average monthly value. Secondly, the third tool step presents a methodology based on a spatial LMDI-I decomposition analysis. This approach allows analysing the key driver effects that explain the differences between the daily cost of electricity of some technologies and the monthly average of those periods pointed out in the two previous steps. To ensure robustness, the same approach has been tested on control periods prior to and after the anomaly month. © 2020 Elsevier Ltd

Electricity wholesale market

LMDI-I

National competition authority

Pool price

Spatial decomposition

Costs

Electric industry

Cost of electricity

Decomposition analysis

Electricity costs

Generation companies

National competition authorities

Renewable technology

Wholesale electricity markets

Wholesale markets

Power markets

anomaly

competition (economics)

decomposition analysis

detection method

electricity industry

energy market

energy resource

European Union

technology adoption

Spain