

Modelling realistic dispatch of thermal power plants during extreme events - application of Bayesian inference with MILP dispatch models

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Extended Abstract

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Abstract Summary

Our study focusses on power plant dispatch modelling applied to the example of German spot markets. We combined Bayesian inference with a Mixed Integer Linear Programming dispatch model to extract technical and behavioral parameters of individual power plants from historic generation data. Replacing standard literature values for power plant properties, such as start up costs, with the values fitted individually for every large thermal power plant in Germany improves the prediction quality of our dispatch model significantly. We apply the improved model framework to events of extreme spot prices in recent years in order to carve out fundamental reasons for low availability of thermal power plants during very high spot prices.

Presenting Author Biography

- Since 2019: Professor for Energy Economics at Biberach University of Applied Science
- Since 2023: freelance consultant inter alia with Agora Energiewende
- Head of flexibility commercialization at The Mobility House (2017-2019)
- Senior Analyst Energy Economics at Stadtwerke München (2014-2017)
- Energy Analyst at the International Energy Agency (Contributions to World Energy Outlook, 2011- 2014)
- PhD from the Department of Electrical Engineering at TU Munich (2014), Diploma in Physics (2008)