

Electricity prices under alternative system flexibility scenarios: A case study of small-scale biogas plant profitability in Germany

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Extended Abstract

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Abstract Summary

This study uses a fundamental European electricity market model to generate German spot price series, which then serve as input to assess the profitability of alternative operating modes for biogas plants. Covering the period from 2030 to 2050, the modeled scenarios vary system flexibility and are therefore expected to produce price series with different volatility. In the subsequent profitability assessment, the study evaluates three operating modes that differ in their reliance on support schemes and in the degree of price-responsive flexibility. While the comparison between modeled and observed electricity prices for the base year 2023 shows good agreement, full scenario results are not yet available at the abstract submission date and will be presented at the conference. The results are expected to confirm the growing importance of flexible, price-responsive operation for the profitability of biogas plants.

Presenting Author Biography

Professional activities

Since 05/2018	Research Associate at Chair of Energy Economics, TU Dresden
10/2016 - 06/2017	Research Assistant at Leipzig University, Kompetenzzentrum für kommunale Infrastruktur Sachsen, Institute of Public Finance and Public Management

Education

10/2015 - Leipzig University, Management Science (Study Focus: Sustainability
03/2018 Management), Degree: Master of Science (M.Sc.)

09/2012 - WelfenAkademie e.V., Integrated Degree Program Business Management
07/2015 (practical partner: Braunschweiger Versorgungs-AG & Co. KG), Degree:
Bachelor of Arts (B.A.), trained as an industrial clerk

Languages

German, English, French