TradeRES
New Markets Design & Models for 100% Renewable Power Systems

TradeRES Research Bulletin

Demand Response Flexibility: Forecasts and Expectations for 2030 and 2050

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Full paper: https://doi.org/10.1007/978-3-031-43559-1_25

Summary

The transformation of the electric grid is a widely recognized issue. To meet ambitious objectives aimed at preventing climate crises and increasing renewable generation participation without compromising power system reliability and security, demand-side flexibility and demand response presents themselves as effective solutions to enhance the needed adaptability. Nonetheless, it remains essential to forecast the system's future, a task that is more complex for smaller loads in times of intense changes. This work addresses forecasting techniques, predictions, and projections for achieving the net zero emission 2050 scenario, with a focus on the European market. Despite the significant challenges presented by this scenario, substantial efforts are underway, and rollout plans in several European countries are already well advanced. Policy adjustments will also need to accelerate in the coming decades.

Highlights

- Demand flexibility is key for renewable integration and reliability.
- Accurate forecasts support net-zero goals amid grid changes.
- European rollout progresses; policy speed is essential.

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Info

The TradeRES project will develop and test innovative electricity market designs that can meet society's needs of a (near) 100% renewable power system. The market design will be tested in a sophisticated simulation environment in which real-world characteristics such as actors' limited foresight into the future and risk aversion are included.

Start date
1 February 2020

End date
30 November 2024

Overall budget: € 3 988 713,75

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 864276