

The electricity forward price: evidence from experimental markets

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Abstract:

With the growing share of sustainable energy sources, electricity markets experience increasing uncertainty and volatility. This motivates power agents to use forward contracts in order to mitigate risks and pricing of these contracts and modelling the risk premium gain importance under the integration of renewable energy sources. Forward price models can however not be universally applied across all electricity markets with different operational constraints, therefore there is not yet a definitive view on how decision making, expectations and risk premiums vary over markets and over time. We choose to apply an experimental approach to examine the impact of renewables on electricity forward prices. This allows us to evaluate market structures under various conditions and alter market design both from market and individual perspective. Results indicate the existence of a tipping point in the risk premium under the increasing share of volatile resources for which we discuss policy and managerial implications.