

The interplay between imbalance pricing mechanisms and network congestions - Analysis of the German electricity market

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Abstract— With a high penetration of intermittent energy sources in Europe, the relevance of the balancing mechanisms increases, as these sources may require additional balancing actions and increase network congestions. Germany has experienced a significant penetration of intermittent energy sources and network congestions. This paper analyses the functioning of the German balancing mechanisms, with a special focus on the interplay between imbalance pricing and network congestions. We demonstrate the existence of adverse price signals caused by a flawed design of imbalance pricing in relation to network congestions. This paper proposes alternative options for imbalance pricing that can improve price signals even in the situation of network congestion.

Index Terms— Electricity imbalance pricing; Internal congestions; Market designs; German electricity market

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