

Abstract

As global investments in renewable energy technologies continue to grow, their effects on electricity markets are a challenge for regulators and policymakers. The thesis examines the effects of forecast errors of Czech and German renewable energy sources on the size and volatility of the system imbalance of the Czech balancing market. Using a quantile regression and *ARFIMA-GARCH* models on hourly data, I found that higher solar and wind forecast errors increase the system imbalance in absolute terms and affect the volatility. The results show that the Czech solar and wind forecast errors have significantly higher effect than the German forecast errors on the size and volatility of the system imbalance. The strongest effect on the size and volatility of the system imbalance have the Czech solar forecast errors. Therefore, the Czech government should insist on improving the accuracy and availability of renewable energy forecasts from the transmission system operator ČEPS.

Klasifikace JEL C14, C50, Q42

Klíčová slova renewable sources, forecast errors, balancing market, system imbalance