Abstract

Thesis investigates the impact of German wind and solar energy on the dynamics of Czech electricity spot prices in the period between 2015 to 2018. Using pooled panel-GARCH model, a negative merit order effect of German wind and solar energy were observed. More specifically, one additional GW of power produced by wind and solar, reduces the spot price by 0.60 and 0.45 EUR/MWh, respectively. The negative merit order effect was also found in the case of Czech solar energy. Corresponding spot price reduction equals to 1.42 EUR/MWh per additional gigawatt hour. Next, increased volatility in the spot prices was found due to both German wind and Czech solar energy. I also observed that these effects differ during a day. Furthermore, I estimated total financial impact stemming from the negative merit order effect and compared it with the total costs of households that arise in surcharges to support renewable energy. While Czech households pay approximately 270 million euros annually in surcharges, the total financial impact stemming from the merit order is around 145 million euros. The value comprises the merit order effect of both Czech and German renewable sources. In other words, Czech and German households bear the costs of subsidized renewable energy while they do not necessarily profit on the merit order effect. Only spot market participants can make a profit on the negative merit order effect. It is up to national policymakers to set rules which will not promote one part of customers above the other.