

Energy Transition in Poland and Germany - A Comparative Analysis of Changes in The Structure of Electricity Production in the 2014-2022 Period*

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Abstract

Objectives: The main objective of the article is to analyze the pace and direction of changes in the structure of gross electricity production in Poland and Germany in light of EU energy and climate goals. **Expected results:** The study includes data from Eurostat for the period 2014-2022. The methodology uses taxonomic measures of structure variability. The analysis focuses on Poland and Germany, traditionally coal-based countries, compared to the rest of the EU-27. The study shows that the structure of gross available energy in Poland and Germany varied during the period analyzed. Between 2014 and 2022, the intensity of the rate of change in the analyzed structures was relatively low. However, the acceleration of the energy transition in 2022 resulted in an increase in the rate of decarbonization. It was confirmed that the EU's common climate and energy policy significantly accelerated changes in the energy mix, both in Poland and Germany. The analysis showed an increase in diversification resulting in a significant increase in the share of renewable and low-carbon sources. The taxonomic analysis additionally showed that a process is also taking place to make the energy mix of the EU-27 countries more similar. The limitation of the study is the availability of data. The originality of the study lies in filling the research gaps in the analysis of the degree of change in the gross electricity production concentration structure of EU countries, with a particular focus on Poland and Germany, and in particular in the study of the degree of intensity of its commonality. **Implications:** The results of the study can be used in the energy policy of traditionally coal-based countries to identify energy policy goals and methods and ways to achieve them based on the experience of other countries.

Keywords: energy transition management, renewable energy sources, energy mix, taxonomy of structures

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