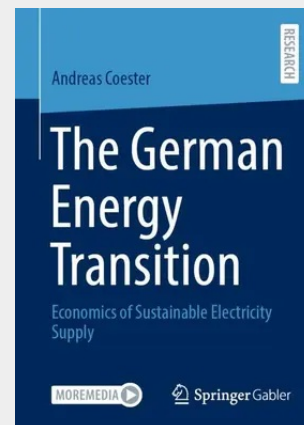


The German Energy Transition

Economics of Sustainable Electricity Supply

The industrial activities that our modern civilization depends upon have increased CO₂ and other greenhouse gas emissions significantly. There is considerable consensus that this increase in emissions has been contributing to climate change. In order to limit global warming, a comprehensive and fast transition to lower emissions in all industrial sectors is crucial. Despite the strong increase in renewable energies capacity over the past years, there are various challenges associated with the further transition to a 100% renewable energies supply. One of the challenges is the fluctuating supply of renewable energies due to the intermitted nature of wind and sunshine. Another challenge arises from the low marginal costs of renewable energies that lead to a reduction of the electricity price, which impairs a profitable operation of both conventional and renewable energies power plants. Against this backdrop, the main question of this research is which policy scenario can ensure an economic efficient and ongoing expansion of renewable energies together with a secure level of electricity supply? The research focusses on Germany, as Germany has to find sustainable and economically feasible policy scenarios in the short-term due to its strong expansion of renewable energies and its decision to phase-out both nuclear and coal power plants.

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