

Macroeconomic effects of energy transition

Topic: Thematic IO analysis: Energy and Environment

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In order to determine the macroeconomic impacts of the energy transition in Germany in the past and future, two model-based scenarios are compared. The Energy Transition Scenario (ETS) represents a world in which the energy transition since the year 2000 developed as it actually took place and in which the targets of the energy transition will be achieved in the future. The Counterfactual Scenario (CFS) represents a consistent alternative development that can be described as follows: Since the year 2000, no support for renewable energy and energy efficiency took place and will not take place in the future. Only those technologies will be used for energy transformation that are market-driven.

The ETS and CFS scenarios are implemented into the macroeconomic model PANTA RHEI, combining a time series of national IO tables with national accounts and energy balances. The comparison of the macroeconomic results in the two scenarios shows consistently positive effects of the energy transition. Results have been calculated until the end of 2018 in a project for the German Ministry of Economic Affairs and Energy. The results are in the same order of magnitude and point in the same direction as our own previous studies and other related studies, both at the national and international level. In contrast to previous studies, the energy transition starts already in 2000 and ex-post results have been calculated. Also recent developments such as the excellent macroeconomic situation, which could foster crowding out of investment in the energy transition are accounted for. Sensitivity analyses with restrictions on the labour market and on the financing of additional investments show that these aspects should also be observed more closely in the future.