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an der Johannes Kepler Universität Linz

Abstract for

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Title:

Quantifying macroeconomic, ecologic and energetic effects: Simulation model of the (Upper) Austrian economy with main emphasis on energy – MOVE

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The Energy Institute at the Johannes Kepler University of Linz undertakes applied research and modelling in different areas of energy and environmental economics, also in the areas of renewable energy, energy efficiency and energy storage. The presentation covers the description and examples of the application of the simulation model MOVE.

The simulation model MOVE allows the estimation of various economic and structural changes within (Upper) Austria and the analysis of economic, ecologic and energetic effects due to political decisions. The main emphasis lies on energy which enables comprehensive and complex studies of all aspects of the (local) energy market. The model was principally designed for Upper Austria, but is suitable for the entire Austrian area accounting for special structural characteristics. MOVE was already applied in several regional and national projects (financed e.g. by the Austrian Climate and Energy Fund, regional institutions and energy providers) particularly for the economic analysis of energy and environment related research questions.

The model MOVE does not only cover the final energetic consumption of households and the different economic sectors, but also assesses energy flows regarding the production of secondary energy sources, the generation of primary energy and the energetic trade balance of (Upper) Austria. The degree of aggregation was taken from the energy balances provided by Statistics Austria. The economic module covers 13 economic sectors. Since the use of energy implicates the generation of (greenhouse gas) emissions, MOVE also contains an emissions tool which calculates the emissions changes due to the energetic use in (Upper) Austria. Within the energy module 24 energy sources are modelled whose emissions can finally be displayed in the ecologic module. Via this tool the quantity changes of carbon dioxide emissions, sulphur dioxide emissions, fluor emissions, nitrous oxide emissions, methane emissions, nitric oxide emissions and nonmethane volatile organic compounds emissions can be displayed.