

Input-output-based allocation of energy-related GHG emissions by end use

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By using an end-use approach, emissions in energy sectors are re-allocated to the end users of energy in order to investigate the link between energy use in an economy and the emissions in the energy sectors. An end-use approach differs from a consumption-based accounting approach in which not only emissions in energy production, but also emissions in non-energy production are re-allocated to final consumers. The allocation of emissions to end users is usually done by an iterative procedure on the basis of energy usage data in physical units obtained from energy statistics. This paper presents an input-output-based end-use approach by using data on energy use in monetary terms obtained from National Accounts. The approach is illustrated with the calculation of the greenhouse gas (GHG) emissions by end-use in the EU-27 in 2006. About 41% of EU-27 GHG emissions, which occurred in the energy sectors, were re-allocated to manufacturing and commercial and residential sectors mainly. The paper goes into the main differences between the two end-use allocation methods, which are the use of monetary versus physical data on energy usage, treatment of transport emissions and sectoral classification. After that, further applications of the National Accounts-based end-use approach are sketched and a preliminary time-series analysis of GHG emissions by end use in EU-27 in the period 2000-2006 is presented. The paper ends with some recommendations.