



Interdisciplinary Understanding of Macro-Rebound Effects

Hans Jakob Walnum, Western Norway Research Institute Environmental Research and Aalborg University department for Planning and Development, Norway and Denmark

ABSTRACT

Rebound effects have mainly been addressed at the micro-level. However, we must gain a better understanding of rebound effects at the macro-level if we aim to find effective policy strategies to meet key environmental goals. Macro-rebound effects (also called economic-wide) are discussed within energy economics. Where there is a disagreement in connection to prevails on detail questions, such as the scope of the output elasticity of energy (namely, how energy as a factor of production leverages overall economic growth), the degree of substitutability of all factors of production, or the relationship between efficiency increases and product/service innovation. It is difficult to prove or disapprove how the dynamics between energy efficiency and growth is based on macro-economic growth models. The results of the models depend on underlying assumptions. While energy economist's deals with how increases in energy efficiency influence economic growth are other researchers more concerned of how economic growth combined with technological and sociological structures outstrips the efficiency gains. In the workshop "Interdisciplinary understanding of macro rebound effects. How can we understand and mitigate them?", arranged by Aalborg University at the 15th of August, we will dive into some of the core controversies in understanding of macro rebound effects, addressing the importance of interdisciplinary understanding of rebound effects. Thus we will attempt broadening the perspective and more comprehensively investigate why the current environmental and sustainability policies fails, by further discussing the interrelationship between efficiency, energy, and related environmental problems, and the current and dominating growth policy. In our presentation we will address main findings from the workshop.