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Modeling energy efficiency within industry using the IntERACT model

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The revision of the Energy Efficiency Directive in November 2018 has reaffirmed the focus on energy efficiency policies within EU. However, from a modelling point of view, energy efficiency often appears like an elusive nexus: Where technical savings potential meets market barriers; where fuel cost savings meet demand rebound; and where policy scenarios meets spurious baselines. Nonetheless, the curious task of energy system modelers is to provide insights regarding how to prioritize energy efficiency policies, and what set of policy instruments has the best chance of meeting policy targets. This presentation demonstrates how a state-of-the-art hybrid model (the Danish IntERACT model) provides clarity regarding the interactions within the energy efficiency nexus. In particular, the

interaction between the energy system and the wider macro economy. In essence, IntERACT ensures clarity by using a technical energy system model to capture the technical effect, i.e. the choice of end-use technologies and their effect on energy service prices and investments flows. Whereas a general equilibrium model determines activity and price affects associated with changes in energy service prices and investment flows. The presentation demonstrate how keeping track of the activity, price and technological effects, allows IntERACT to provide a unique degree of consistency in assessing the additionality (in terms reduction in final energy demand) associated with an energy efficiency policy.

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