

Modelling the energy sector in a computable general equilibrium model of the Danish economy

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The paper develops a model of the Danish energy sector using plant-level information from the Danish energy system model RAMSES. The model framework is developed, to allow for a direct integration into a larger computable general equilibrium (CGE) model. We show that our modelling approach nests the traditional linear programming approach in bottom-up models in the limit. To realistically capture trade flows for electricity, we develop a new trade mechanism similar to trade on the wholesale power market, using plant data on neighboring European countries and information on transmission capacities. Finally, the bottom-up model fully accounts for intermittent energy production by modelling energy production at the hourly frequency.