

Deriving Economic Indicators from a Multi-Sector, Multi-Region Bottom-Up MARKAL Model

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Traditional bottom-up (technological) models are usually confined to compute the gross costs of investment and operations, leaving aside other costs such as loss of consumer welfare, changes in sectors revenues, etc. A new generation of bottom-up models allows for elastic economic demands, as well as for inter-regional trading of energy and some commodities. Along with these advances, they also allow the computation of a more complete set of costs, such as: loss of consumers welfare, incremental revenues by sector and by region, and trade flow variations. We will describe the full capabilities of the MARKAL model's cost computations, and illustrate them by means of a set of multi-regional runs simulating various GHG abatement scenarios. This research represents part of the on-going project of a Global Multi-regional Bottom-Up Model, based on the TIMES modelling system (The Integrated Markal-Efom System).