

## **otello: An Integrated Assessment and Allocation Model to Support the Development of Clean Air Strategies in Germany**

The purpose of our Integrated Assessment Modelling activities is to assess and support the development of future air policies in Germany. As our activities are granted by the German Federal Ministry for Education and Research within the research programme “economics for sustainability” a main task lies also on the development and adaption of new methodological concepts in integrated assessment modelling. Though the focus lies on air pollution control, greenhouse gas emission reduction is considered simultaneously as there are many interdependencies between these two aspects of environmental policy. The sectors industry, electricity generation, transport, housing, and agriculture are covered.

Definitely, for national clean air strategies the development of integrated assessment models on a country level offers several advantages compared to the activities on a European scale. National IAMs provide, e. g. the possibility to include national specifics. Creating a more detailed spatiotemporal picture of the emissions and their impacts, they allow for the development of strategies which are more appropriate to satisfy local requirements. For example it will be possible to relieve deposition overloads from sensitive regions or to reduce pollution peaks in certain seasons of the year.

In addition to these quite common national IAM considerations it is the aim of our IAM initiative to develop a model that reflects the dynamics in economic systems as well as the complex interdependencies between the abatement measures and the activities in different sectors. This approach necessitates the integration of a macroeconomic model. To be able to include dynamic processes such as learning curves and innovation processes in the model and to represent multiple feedbacks between abatement measures and activities, our IAM follows a system dynamics approach. This implies that the model’s focus will not lie on the idea of minimizing total costs. Instead, it will not only be possible to predict emission levels at a fixed time  $t$ , but also to simulate paths of future developments.

In order to represent the behaviour of different actors in the economy, our IAM will investigate the possibilities of integrating some features of agent based models to permit the analysis of behavioural patterns such as investment cycles or migration of firms. Another related field of work is the analysis of non-technical abatement measures. These measures will induce structural and behavioural changes which will be projected onto the model by means of system dynamics and agent based structures.

Short facts:

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Co-operating Institutes: Chair of Sustainable Management of Housing and Real Estate ÖÖW, Institute for Economic Policy Research IWW (all Universität Karlsruhe (TH)), Fraunhofer Institute for Systems and Innovation Research ISI, Federal Agricultural Research Centre FAL.

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Further information: [www.otello-project.info](http://www.otello-project.info) (not yet online)