

The World Gas Model Linked to an Integrated Assessment Model and A Two-Stage Stochastic Program

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We present the result of large-scale model interaction. The purpose of this research is to tune various large-scale models based on 650-ppm policy scenario in order to provide better assessment to impact of policy.

Global Change Assessment Model (GCAM), a global integrated assessment model, is used as starting point to generate various outputs to other models. The World Gas Model (WGM), a multi-period mixed complementarity model for global natural gas markets, is calibrated to natural gas consumption output from GCAM. At the end of model iteration, WGM iterates European natural gas prices as input to two-stage stochastic European electricity investment model.

We found that CO₂ costs have a significant impact to a production level in the global gas market. In addition differences in natural gas prices affect European power generation investment. This research is sponsored by Links (Linking Global and Regional Energy Strategies) funded by the Norwegian Research Council.

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