U.S. Department of Energy

2010 GTAP Advisory Board Report

GTAP-related activities within the U.S. DOE include:

Office of Energy Efficiency and Renewable Energy, Office of Biomass Programs (OBP)

OBP has been working with the Department of Agricultural Economics at Purdue University to develop biofuels land use change modeling using the GTAP data base and analytical framework. The GTAP-E-biofuels version of GTAP was used to produce changes in global land use, crop production, and other parameters in response to different technical and policy shocks of U.S. biofuel production. Simulations have been carried out to determine the global land use impacts of US corn to ethanol mandates. Final results are available in a report "Land Use Change Carbon Emissions due to US Corn Ethanol Production: A Comprehensive Analysis" at
https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=3288
http://www.transportation.anl.gov/pdfs/MC/625.PDF

Office of Policy and International Affairs (PI), Office of Climate Change Policy and Technology

Over the past year, PI has been working with GTAP to outline the development of GDYN-E, a novel CGE modeling framework for evaluating climate policy problems in which international exchange is a central feature. The detailed representation of energy technology, flexibility in regional disaggregation, and the unique treatment of capital flows will be the primary advantages of this model relative to others. The model will be used to evaluate the impacts of US carbon pricing policies on the macro-economy, including the impacts on GDP, consumption, and employment and on major industrial sectors. The model will be particularly useful in evaluating these impacts under different assumptions about international actions/reactions and will explicitly capture investment and emissions “leakage” effects. The model will also be used to evaluate the implications of different international climate architectures or international clean energy investment coordination. The model will allow analysis of the environmental and economic implications of different policy choices representing “common but differentiated” responsibilities, as well as the implications of more targeted investment choices that might result from clean energy cooperative agreements.