



**MIT Joint Program on the Science and Policy of Global Change
Massachusetts Institute of Technology, Cambridge, USA**

<https://globalchange.mit.edu>

GTAP-related activities, 2021

The MIT Joint Program on the Science and Policy of Global Change made extensive use of the GTAP data set for research and analysis conducted in the program over the past year (see the following publication list). GTAP data serves as the principal economic data for the Program's Economic Projection and Policy Analysis (EPPA) Model, a global CGE model of the world economy with details on the energy sector and on emissions of greenhouse gases and other air pollutants. The EPPA model was used for variety of applications.

2021 AND 2022 PUBLICATIONS BY MIT JOINT PROGRAM USING GTAP (AS OF MAY 2022)

Journal Publications:

Morris, J., D. Hone, M. Haigh, A. Sokolov, S. Paltsev, 2022, Future energy: In search of a scenario reflecting current and future pressures and trends, *Environmental Economics and Policy Studies*, in press.

Morris, J., J. Reilly, S. Paltsev, A. Sokolov, K. Cox, 2022, Representing Socio-Economic Uncertainty in Human System Models, *Earth's Future*, 10, 4, 1-25.

Paltsev, S., A. Ghandi, J. Morris, H. Chen, 2022, Global electrification of light-duty vehicles: Impacts of economics and climate policy, *Economics of Energy and Environmental Policy*, 11(1), 165-191.

Paltsev, S., J. Morris, H. Khashgi, H. Herzog, 2021, Hard-to-abate sectors: The role of industrial carbon capture and storage (CCS) in emission mitigation, *Applied Energy*, 300, 117322.

Gurgel, A., J. Reilly and E. Blanc, 2021, Challenges in simulating economic effects of climate change on global agricultural markets, *Climatic Change*, 166(29).

Smith, E., J. Morris, H. Khashgi, G. Teletzke, H. Herzog and S. Paltsev, 2021, The cost of CO₂ transport and storage in global integrated assessment modeling, *International Journal of Greenhouse Gas Control*, 109, 103367.

Chen, Y.-H.H., J. Reilly and S. Paltsev, 2021, The role of shale gas in shaping the U.S. long-run CO₂ emissions, *Energy and Environment*, 32(4), 737-755.

Fajardy M., J. Morris, A. Gurgel, H. Herzog, N. MacDowell and S. Paltsev, 2021, The economics of bioenergy with carbon capture and storage (BECCS) deployment in a 1.5°C or 2°C world, *Global Environmental Change*, 68, 102262.

Morris, J., H. Khashgi, S. Paltsev and H. Herzog, 2021, Scenarios for the deployment of carbon capture and storage in the power sector in a portfolio of mitigation options, *Climate Change Economics*, 12(1), 215001.

Harmsen M., E. Kriegler, D. van Vuuren, K. van der Wijst, G. Luderer, R. Cui, O. Dessens, L. Drouet, J. Emmerling, J. Morris, F. Fosse, D. Fragkiadakis, K. Fragkiadakis, P. Fragkos, O. Fricko, S. Fujimori, D. Gernaat, C. Guivarch, G. Iyer, P. Karkatsoulis, I. Keppo, K. Keramidas, A. Koberle, P. Kolp, V. Krey, C. Kruger, F. Leblanc, S. Mittal, S. Paltsev, P. Rochedo, B. van Ruijven, R. Sands¹⁷, F. Sano, J. Strefler, E. Vasquez Arroyo, K. Wada and B. Zakeri, 2021, Integrated assessment model diagnostics: key indicators and model evolution, *Environmental Research Letters*, 16, 054046.

Reilly, J., H. Chen and H. Jacoby, 2021, The Covid-19 effect on the Paris Agreement, *Humanities & Social Sciences Communications*, 8(Article 16).

Hong, W.-H., H.-C. Chai, Y.-H.H. Chen, J. Reilly and S. Paltsev, 2021, Will using newer input-output data for general equilibrium modeling provide a better estimate for the CO₂ mitigation cost? *Economic Systems Research*, 33(2), 157-170.

MIT Reports:

Chen H., E. Ens, O. Gervais, H. Hosseini, C. Johnston, S. Kabaca, M. Molico, S. Paltsev, A. Proulx and A. Toktamyssov (2022): Transition Scenarios for Analyzing Climate-Related Financial Risk. MIT Joint Program Report 356. (<http://globalchange.mit.edu/publication/17757>)

Paltsev, S., A. Gurgel, J. Morris, H. Chen, S. Dey and S. Marwah (2021): Economic analysis of the hard-to-abate sectors in India. MIT Joint Program Report 355. (<http://globalchange.mit.edu/publication/17673>)

Morris, J., A. Sokolov, A. Libardoni, C. Forest, S. Paltsev, J. Reilly, C.A. Schlosser, R. Prinn, H. Jacoby (2021): A consistent framework for uncertainty in coupled human-Earth system models. MIT Joint Program Report 349. (<http://globalchange.mit.edu/publication/17574>)

Morris, J., J. Reilly, S. Paltsev and A. Sokolov (2021): Representing socio-economic uncertainty in human system models. MIT Joint Program Report 347. (<http://globalchange.mit.edu/publication/17576>)