



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

<https://globalchange.mit.edu>

**GTAP-related activities, 2020**

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.

**2020 AND 2021 PUBLICATIONS BY MIT JOINT PROGRAM USING GTAP (AS OF MAY 2021)**

*Journal Publications:*

Paltsev, S, A. Ghandi, J. Morris and H. Chen, 2021, Global electrification of light-duty vehicles: Impacts of economics and climate policy, *Economics of Energy & Environmental Policy*, in press.

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

Smith, E., J. Morris, H. Kheshgi, G. Teletzke, H. Herzog and S. Paltsev, 2021, The cost of CO<sub>2</sub> transport and storage in global integrated assessment modeling, *International Journal of Greenhouse Gas Control*, in press.

Chen, Y.-H.H., J. Reilly and S. Paltsev, 2021, The role of shale gas in shaping the U.S. long-run CO<sub>2</sub> emissions, *Energy and Environment*, in press.

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. Kheshgi, 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. Sands<sup>17</sup>, 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 CO<sub>2</sub> mitigation cost? *Economic Systems Research*, 33(2), 157-170.

Ghandi, A. and S. Paltsev, 2020, Global CO<sub>2</sub> impacts of light-duty electric vehicles, *Transportation Research Part D*, 87(Article 102524).

Kapsalyamova, Z. and S. Paltsev, 2020, Use of natural gas and oil as a source of feedstocks, *Energy Economics*, 92, 104984.

Makarov, I., H. Chen and S. Paltsev, 2020, Impacts of climate change policies worldwide on the Russian economy, *Climate Policy*, 20(10), 1242-1256.

Faehn, T., G. Bachner, R. Beach, J. Chateau, S. Fujimori, M. Ghosh, M. Hamdi-Cherif, E. Ianzi, S. Paltsev, T. Vandyck, B. Cunha, R. Garaffa and K. Steininger, 2020, Capturing key energy and emission trends in CGE models: Assessment of status and remaining challenges, *Journal of Global Economic Analysis*, 5(1), 196-272.

Paltsev, S., 2020, Projecting Energy and Climate for the 21st Century, *Economics of Energy and Environmental Policy*, 9(1), 43-62.

Winchester, N. and J. Reilly, 2020, The economic and emissions benefits of engineered wood products in a low-carbon future. *Energy Economics*, 85, 104596.

#### *MIT Reports:*

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>)

Arbabzadeh, M., E. Gençer, J.M. Morris, S. Paltsev and R.C. Armstrong (2020): Plausible Energy Futures: An MIT Energy Initiative Working Paper. MIT Energy Initiative Working Paper. (<https://energy.mit.edu/wp-content/uploads/2020/07/MITEI-WP-2020-02.pdf>)

Morris, J., D. Hone, M. Haigh, A. Sokolov and S. Paltsev (2020): Future energy: In search of a scenario reflecting current and future pressures and trends. MIT Joint Program Report 344.  
(<http://globalchange.mit.edu/publication/17501>)