

Oliver Fricko  
Research Scholar  
Integrated Assessment and Climate Change (IACC) research group  
Energy, Climate, and Environment (ECE) program  
International Institute for Applied Systems Analysis (IIASA)  
2361 Laxenburg, Austria

Email: [fricko@iiasa.ac.at](mailto:fricko@iiasa.ac.at)  
Tel.: +43 2236 807 225  
ORCID ID: [0000-0002-6835-9883](https://orcid.org/0000-0002-6835-9883)  
Scopus Author ID: 57120021700  
Researcher ID: rid78748

Google Scholar Citations ID: [d6MAyR8AAAAJ&hl](https://scholar.google.com/citations?hl&user=d6MAyR8AAAAJ)

## SUMMARY

Oliver Fricko joined IIASA in 2012. He is a research scholar in the Integrated Assessment and Climate Change (IACC) Research Group of the Energy, Climate, and Environment Program.

He is one of the core developers of the Model for Energy Supply Strategy Alternatives and their General Environmental Impact (MESSAGEix<sup>1</sup>) framework and a central modeler of IACC. He is involved in numerous multi-model inter-comparison studies, including the Shared Socioeconomic Pathways<sup>2</sup> (SSPs), the Energy Modeling Forum (EMF-30 and EMF-33), as well as projects funded by the European Commission (ADVANCE, CD-Links, ENGAGE, and ELEVATE). He also acts as a technical advisor to numerous other projects.

He has co-authored close to 50 publications that have been cited over 8,000 times and has an h-index of 30. He was acknowledged as a Highly Cited Researcher by Clarivate in 2020, 2021, 2022, and 2023.

As the lead global energy modeler, Mr. Fricko maintains and coordinates the development of the IACC global energy model (MESSAGEix-GLOBIOM<sup>3</sup>). Currently, he is coordinating/implementing the development of updated SSP scenarios within IACC.

Mr. Fricko developed and maintains the soft linkage between MESSAGEix and the IIASA Global Biosphere Management Model (GLOBIOM<sup>4</sup>) and is currently integrating information on non-CO<sub>2</sub> greenhouse gas and pollutant emissions from the Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS<sup>5</sup>) model into MESSAGEix. He developed an approach for incorporating national policies in the global energy model, for example, Nationally Determined Contributions (NDCs) or the

---

<sup>1</sup> <https://docs.messageix.org/en/latest/>; [https://github.com/iiasa/message\\_ix](https://github.com/iiasa/message_ix)

<sup>2</sup> <https://doi.org/10.1016/j.gloenvcha.2016.05.009>; <https://doi.org/10.1016/j.gloenvcha.2016.06.004>

<sup>3</sup> <https://docs.messageix.org/projects/global/en/latest/index.html>

<sup>4</sup> <https://iiasa.ac.at/models-tools-data/globiom>

<sup>5</sup> <https://iiasa.ac.at/models-tools-data/gains>

net-zero targets and has enhanced the modeling framework to account for energy system wide water requirements.

Mr. Fricko has collaborated with various institutions to develop and train national capacities. This includes several institutions from India such as the National Institution for Transforming India (NITI-Aayog) and TERI-University. Recently, he coordinated and partly implemented IIASA related work within the Strategic Partnerships for the Implementation of the Paris Agreement (SPIPA)-India project, which aims to support EU-India collaboration on the development of modeling capacities to improve the quality of modeling tools and integrated modeling analysis frameworks developed by modeling teams in India.

## CORE COMPETENCES AND EXPERIENCE

General:

- Medium- and long-term energy strategy development for cities (e.g., for Vienna, Salzburg and Wels in Austria) and countries (Austria, India).
- Global model and scenario development for climate change and mitigation analysis.
- Development of supply (e.g., crude oil and natural gas transport-infrastructure including pump- and compressor stations in Islamic Republic of Iran or district heating networks in the Ukraine) and demand (e.g. building renovation in cities) side energy efficiency strategies through use of scenario analysis.
- Carrying out economic and ecologic energy strategy evaluations.
- Physical energy security analysis for energy infrastructure components.
- Portfolio-management and trade in the gas sector.
- Experience with innovative & renewable energy forms (hydropower & pump-storage; wind power; solar- und photovoltaic; smart grids; energy self-sufficiency concepts; use of waste heat; bioenergy).
- Conducting feasibility studies for business market entry concepts (e.g., retrofitting of CHP plants in Romania).

Modelling:

Scenario development using:

- Dynamic systems-optimization modelling framework **MESSAGEix** (**M**odel for **E**nergy **S**upply **S**trategy **A**lternatives and their **G**eneral **E**nvironmental **I**mpacts).
- Simulation model **MAED**<sup>6</sup> (**M**odel for **A**nalysis of **E**nergy **D**emand).

Maintaining and enhancing the ECE global energy model **MESSAGEix-GLOBIOM**:

- to account for water requirements in the energy sector<sup>7</sup>;
- soft linkage with the land-use model GLOBIOM;

---

<sup>6</sup> See <https://www.iaea.org/publications/7430/model-for-analysis-of-energy-demand-maed-2>

<sup>7</sup> See <https://doi.org/10.1088/1748-9326/11/3/034011>

- contribute to linking air pollution from GAINS;
- implementation of policies for analysis of the Intended Nationally Determined Commitments (INDCs)<sup>8</sup>
- conceptualization and development of energy-cadasters e.g., for the visualization of the energy demand.

---

<sup>8</sup> See <https://doi.org/10.1038/ncomms15748>

## EDUCATION

- 2005 Master of Arts in Management & International Business  
Southampton Solent University, Southampton, United Kingdom
- 2002 Bachelors of Arts in International Business  
Southampton Institute (Nottingham Trent University), Southampton,  
United Kingdom

## PROFESSIONAL APPOINTMENTS

- since 2012 Research Scholar at IIASA, Integrated Assessment and Climate Change  
research group (IACC), Energy, Climate, and Environment (ECE)  
program, Laxenburg, Austria
- 2011-2013 Proprietor; Energy Consultant & Project Manager at ENZO-Energy  
Consulting Services e.U., Vienna, Austria
- 2008-2011 Energy Consultant at Fichtner IT Consulting AG, Berlin, Germany
- 2007-2008 Energy Consultant at IRM Consulting & Services GmbH, Vienna,  
Austria
- 2006-2007 Energy Consultant at IRM Integrated Resource Management GmbH,  
Vienna, Austria

## RESEARCH EXPERIENCE

- Since 2023 Modeler, SSP - Shared Socioeconomic Pathways
- Since 2023 Modeler, ELEVATE – Supporting International Climate Policy, European  
Union’s Horizon Europe Research and Innovation Programme funded  
research project, (<https://www.elevate-climate.org/>)
- 2019-2023 Modeler, ENGAGE – Feasibility of Climate Pathways, Horizon 2020  
funded research project, (<https://www.engage-climate.org/>)
- 2016-2019 Modeler, CD-LINKS – Linking Climate and Development Policies –  
Leveraging International Networks and Knowledge Sharing, FP-7 funded  
research project, (<http://www.cd-links.org/>)
- 2015-2016 Modeler, ADVANCE – Advanced Model and Validation for the  
Improved Analysis of Costs and Impacts in Mitigation Policies, FP-7  
funded research project, (<http://www.fp7-advance.eu/>)
- 2015-2019 Modeler, EMF-33 - Global Bio- Energy and Land Use  
([https://emf.stanford.edu/events/emf-334-global-bio-energy-and-land-  
use](https://emf.stanford.edu/events/emf-334-global-bio-energy-and-land-use))
- 2015-2019 Modeler, EMF-30 - Short Lived Climate Forcers / Air Quality  
([https://emf.stanford.edu/projects/emf-30-short-lived-climate-forcers-air-  
quality](https://emf.stanford.edu/projects/emf-30-short-lived-climate-forcers-air-quality))
- 2013-2016 Modeler, SSP - Shared Socioeconomic Pathways  
([http://www.iiasa.ac.at/web/home/research/researchPrograms/Energy/SS  
P\\_Scenario\\_Database.html](http://www.iiasa.ac.at/web/home/research/researchPrograms/Energy/SSP_Scenario_Database.html))
- 2010 Modeler, Energy Infrastructure for the train of the future.  
Forschungsförderungsgesellschaft (mbH); Energie der Zukunft; Januar,  
2010

- 2008 Modeler, COUNTERACT - Cluster Of User Networks in Transport and Energy Relating to Anti-terrorist ACTivities, EC 5<sup>th</sup> FP funded project, (<http://www.uitp.org/content/counteract-0>)
- 2007 Modeler, SUPWIND – Decision Support for Large Scale Integration of Wind Power, EC 6<sup>th</sup> FP funded project, (<http://supwind.risoe.dk/>)

## **INTERNATIONAL EXPERIENCE – WORK CARRIED OUT LOCALLY:**

Europe	Austria, Germany, United Kingdom
Asia	Malaysia

## **INTERNATIONAL PROJECTS CARRIED OUT FOR CUSTOMERS LOCATED IN:**

Europe:	Germany, Austria, Switzerland, United Kingdom
Eastern Europe:	Ukraine, Romania
Middle East:	Iran
Asia:	Malaysia, India

## **CUSTOMER TYPES**

International utilities  
Municipal utilities  
Federal ministries, government agencies or public authorities  
Research institutes and universities  
Public transport companies  
European Union  
Private small and medium sized companies

## **AWARDS**

2023	Highly Cited Researcher in the field of Cross-field from Clarivate
2022	Highly Cited Researcher in the field of Cross-field from Clarivate
2021	Highly Cited Researcher in the field of Cross-field from Clarivate
2020	Highly Cited Researcher in the field of Cross-field from Clarivate
2015	Outstanding Poster “Energy Sector Adaptation in Response to Water Scarcity” at the 2015 Annual IAMC Meeting

## **PUBLICATIONS**

### **Refereed Journal Articles**

2024 Nishiura, O., Krey, V., **Fricko, O.**, van Ruijven, B. & Fujimori, S. (2024). Integration of energy system and computable general equilibrium models: An approach complementing energy and economic representations for mitigation analysis. *Energy* 296, p. 131039. 10.1016/j.energy.2024.131039.

2024 Awais, M., Vinca, A., Byers, E., Frank, S., **Fricko, O.**, Boere, E., Burek, P., Poblete Cazenave, M., Kishimoto, P.N., Mastrucci, A. et al. (2024). MESSAGEix-GLOBIOM nexus module: integrating water sector and climate impacts. *Geoscientific Model Development* 17 (6), 2447-2469. 10.5194/gmd-17-2447-2024.

- 2023 Dekker, M.M., Daioglou, V., Pietzcker, R., Rodrigues, R., de Boer, H.-S., Dalla Longa, F., Drouet, L., Emmerling, J., Fattahi, A., Fotiou, T. **Fricko, O.**, et al. (2023). Identifying energy model fingerprints in mitigation scenarios. *Nature Energy* 10.1038/s41560-023-01399-1.
- 2023 Gidden, M.J., Brutschin, E., Ganti, G., Unlu, G., Zakeri, B., **Fricko, O.**, Mitterrutzner, B., Lovat, F. & Riahi, K. (2023). Fairness and feasibility in deep mitigation pathways with novel carbon dioxide removal considering institutional capacity to mitigate. *Environmental Research Letters* 18, e074006. 10.1088/1748-9326/acd8d5.
- 2021 Riahi, K. , Bertram, C., Huppmann, D. , Rogelj, J. , Bosetti, V., Cabardos, A.-M., Deppermann, A., Drouet, L., Frank, S. , **Fricko, O.**, et al. (2021). Cost and attainability of meeting stringent climate targets without overshoot. *Nature Climate Change* 11, 1063-1069. 10.1038/s41558-021-01215-2.
- 2021 van Soest, H., Aleluia Reis, L., Baptista, L., Bertram, C., Despres, J., Drouet, L., den Elzen, M., Fragkos, P., **Fricko, O.**, Fujimori, S. et al. (2021). Global roll-out of comprehensive policy measures may aid in bridging emissions gap. *Nature Communications* 12 (1), e6419. 10.1038/s41467-021-26595-z.
- 2021 Drouet, L., Bosetti, V., Padoan, S.A., Aleluia Reis, L., Bertram, C., Dalla Longa, F., Després, J., Emmerling, J., Fosse, F., Fragkiadakis, K. et al. (2021). Net zero-emission pathways reduce the physical and economic risks of climate change. *Nature Climate Change* 11, 1070-1076. 10.1038/s41558-021-01218-z.
- 2021 Kikstra, J., Vinca, A., Lovat, F., Boza-Kiss, B., van Ruijven, B., Wilson, C., Rogelj, J., Zakeri, B., et al. (2021). Climate mitigation scenarios with persistent COVID-19-related energy demand changes. *Nature Energy* 6, 1114-1123. 10.1038/s41560-021-00904-8.
- 2021 Roe, S., Streck, C., Beach, R., Bush, J., Chapman, M., Daioglou, V., Deppermann, A., Doelman, J., et al. (2021). Land-based measures to mitigate climate change: Potential and feasibility by country. *Global Change Biology* 27, 6025- 6058. 10.1111/gcb.15873.
- 2021 Huppmann, D., Gidden, M., Nicholls, Z., Hörsch, J., Lamboll, R., Kishimoto, P., Burandt, T., **Fricko, O.**, et al. (2021). pyam: Analysis and visualisation of integrated assessment and macro-energy scenarios. *Open Research Europe* 1, e74. 10.12688/openreseurope.13633.1.
- 2021 Bertram, C., Riahi, K., Hilaire, J., Bosetti, V., Drouet, L., Fricko, O., Malik, A., Nogueira, L.P., et al. (2021). Energy system developments and investments in the decisive decade for the Paris Agreement goals. *Environmental Research Letters* 16 (7), 074020. 10.1088/1748-9326/ac09ae.

- 2021 Harmsen, M., Kriegler, E., van Vuuren, D.P., van der Wijst, K.-I., Luderer, G., Cui, R., Dessens, O., Drouet, L., et al. (2021). Integrated assessment model diagnostics: key indicators and model evolution. *Environmental Research Letters* 16 (5), E054046. 10.1088/1748-9326/abf964.
- 2021 Rafaj, P., Kiesewetter, G., Krey, V., Schöpp, W., Bertram, C., Drouet, L., **Fricko, O.**, Shinichiro, F., et al. (2021). Air quality and health implications of 1.5–2°C climate pathways under considerations of ageing population: A multi-model scenario analysis. *Environmental Research Letters* 10.1088/1748-9326/abdf0b. (In Press)
- 2020 Smith, S.J., Chateau, J., Dorheim, K., Drouet, L., Durand-Lasserve, O., **Fricko, O.**, Fujimori, S., Hanaoka, T., et al. (2020). Impact of methane and black carbon mitigation on forcing and temperature: a multi-model scenario analysis. *Climatic Change* 10.1007/s10584-020-02794-3.
- 2020 Fofrich, R.A., Tong, D., Calvin, K.V., de Boer, H.S., Emmerling, J., **Fricko, O.**, Fujimori, S., Luderer, G., et al. (2020). Early retirement of power plants in climate mitigation scenarios. *Environmental Research Letters* 15 (9), e094064. 10.1088/1748-9326/ab96d3.
- 2020 Roelfsema, M., van Soest, H.L., Hamsen, M., den Elzen, M., Höhne, N., Iacobuta, G., Krey, V., Kriegler, E., et al. (2020). Taking stock of national climate policies to evaluate implementation of the Paris Agreement. *Nature Communications* 11, e2096. 10.1038/s41467-020-15414-6.
- 2020 Zhou, W., McCollum, D., **Fricko, O.**, Fujimori, S., Gidden, M., Guo, F., Hasegawa, T., Huang, H., et al. (2020). Decarbonization pathways and energy investment needs for developing Asia in line with 'well below' 2 °C. *Climate Policy* 20 (2), 234-245. 10.1080/14693062.2020.1722606.
- 2019 Luderer, G., Pehl, M., Arvesen, A., Gibon, T., Bodirsky, B.L., de Boer, H.S., **Fricko, O.**, Hejazi, M., et al. (2019). Environmental co-benefits and adverse side-effects of alternative power sector decarbonization strategies. *Nature Communications* 10 (1) 10.1038/s41467-019-13067-8.
- 2019 Roe, S., Streck, C., Obersteiner, M., Frank, S., Griscom, B., Drouet, L., **Fricko, O.**, Gusti, M., et al. (2019). Contribution of the land sector to a 1.5 °C world. *Nature Climate Change* 9, 817-828. 10.1038/s41558-019-0591-9.
- 2019 Harmsen, M., **Fricko, O.**, Hilaire, J., van Vuuren, D.P., Drouet, L., Durand-Lasserve, O., Fujimori, S., Keramidis, K., et al. (2019). Taking some heat off the NDCs? The limited potential of additional short-lived climate forcers' mitigation. *Climatic Change* 10.1007/s10584-019-02436-3.
- 2019 Harmsen, M., van Vuuren, D.P., Bodirsky, B., Chateau, J., Durand-Lasserve, O., Drouet, L., **Fricko, O.**, Fujimori, S., et al. (2019). The role of methane in future climate strategies: mitigation potentials and climate impacts. *Climatic Change* 163, 1409-1425. 10.1007/s10584-019-02437-2.



- 2019 Fujimori, S., Hasegawa, T., Krey, V., Riahi, K., Bertram, C., Bodirsky, B., Bosetti, V., Callen, J., et al. (2019). A multi-model assessment of food security implications of climate change mitigation. *Nature Sustainability* 2 (5), 386-396. 10.1038/s41893-019-0286-2.
- 2019 Zhou, W., McCollum, D., **Fricko, O.**, Gidden, M., Huppmann, D., Krey, V., & Riahi, K. (2019). A comparison of low carbon investment needs between China and Europe in stringent climate policy scenarios. *Environmental Research Letters* 14 (5), 054017. 10.1088/1748-9326/ab0dd8.
- 2019 Gidden, M., Riahi, K., Smith, S., Fujimori, S., Luderer, G., Kriegler, E., van Vuuren, D.P., van den Berg, M., et al. (2019). Global emissions pathways under different socioeconomic scenarios for use in CMIP6: a dataset of harmonized emissions trajectories through the end of the century. *Geoscientific Model Development Discussions* 12 (4), 1443-1475. 10.5194/gmd-2018-266.
- 2019 Huppmann, D., Gidden, M., **Fricko, O.**, Kolp, P., Orthofer, C., Pimmer, M., Kushin, N., Vinca, A., et al. (2019). The MESSAGEix Integrated Assessment Model and the ix modeling platform (ixmp). *Environmental Modelling & Software* 112, 143-156. 10.1016/j.envsoft.2018.11.012.
- 2019 Parkinson, S., Krey, V., Huppmann, D., Kahil, T., McCollum, D., **Fricko, O.**, Byers, E., Gidden, M., et al. (2019). Balancing clean water-climate change mitigation tradeoffs. *Environmental Research Letters* 14 (1), e014009. 10.1088/1748-9326/aaf2a3.
- 2018 Bauer, N., Rose, S.K., Fujimori, S., van Vuuren, D.P., Weyant, J., Wise, M., Cui, Y., Daioglou, V., et al. (2018). Global energy sector emission reductions and bioenergy use: overview of the bioenergy demand phase of the EMF-33 model comparison. *Climatic Change* 163, 1553-1568. 10.1007/s10584-018-2226-y.
- 2018 Luderer, G., Vrontisi, Z., Bertram, C., Edelenbosch, O., Pietzcker, R.C., Rogelj, J., De Boer, H.S., Drouet, L., et al. (2018). Residual fossil CO<sub>2</sub> emissions in 1.5–2°C pathways. *Nature Climate Change* 8 (7), 626-633. 10.1038/s41558-018-0198-6.
- 2018 McCollum, D., Zhou, W., Bertram, C., de Boer, H.-S., Bosetti, V., Busch, S., Despres, J., Drouet, L., et al. (2018). Energy investment needs for fulfilling the Paris Agreement and achieving the Sustainable Development Goals. *Nature Energy* 3 (7), 589-599. 10.1038/s41560-018-0179-z.
- 2018 Grubler, A., Wilson, C., Bento, N., Boza-Kiss, B., Krey, V., McCollum, D., Rao, N., Riahi, K., et al. (2018). A low energy demand scenario for meeting the 1.5 °C target and sustainable development goals without negative emission technologies. *Nature Energy* 3 (6), 517-525. 10.1038/s41560-018-0172-6.

- 2018 Vrontisi, Z., Luderer, G., Saveyn, B., Keramidas, K., Lara, A.R., Baumstark, L., Bertram, C., de Boer, H.S., et al. (2018). Enhancing global climate policy ambition towards a 1.5 °C stabilization: a short-term multi-model assessment. *Environmental Research Letters* 13 (4), e044039. 10.1088/1748-9326/aab53e.
- 2018 Rogelj, J., Popp, A., Calvin, K.V., Luderer, G., Emmerling, J., Gernaat, D., Fujimori, S., Strefler, J., et al. (2018). Scenarios towards limiting global mean temperature increase below 1.5 °C. *Nature Climate Change* 8 (4), 325-332. 10.1038/s41558-018-0091-3.
- 2017 Frank, S., Havlik, P., Soussana, J.-F., Levesque, A., Valin, H., Wollenberg, E., Kleinwechter, U., **Fricko, O.**, et al. (2017). Reducing greenhouse gas emissions in agriculture without compromising food security? *Environmental Research Letters* 12 (10), e105004. 10.1088/1748-9326/aa8c83.
- 2017 Rao, S., Klimont, Z., Smith, S.J., Van Dingenen, R., Dentener, F., Bouwman, L., Riahi, K., Amann, M., et al. (2017). Future air pollution in the Shared Socio-economic Pathways. *Global Environmental Change* 42, 346-358. 10.1016/j.gloenvcha.2016.05.012.
- 2017 Rogelj, J., **Fricko, O.**, Meinshausen, M., Krey, V., Zilliacus, J.J.J., & Riahi, K. (2017). Understanding the origin of Paris Agreement emission uncertainties. *Nature Communications* 8, e15748. 10.1038/ncomms15748.
- 2017 **Fricko, O.**, Havlik, P., Rogelj, J., Klimont, Z., Gusti, M., Johnson, N., Kolp, P., Strubegger, M., et al. (2017). The marker quantification of the Shared Socioeconomic Pathway 2: A middle-of-the-road scenario for the 21st century. *Global Environmental Change* 42, 251-267. 10.1016/j.gloenvcha.2016.06.004.
- 2017 Gambhir, A., Drouet, L., McCollum, D., Napp, T., Bernie, D., Hawkes, A., **Fricko, O.**, Havlik, P., et al. (2017). Assessing the Feasibility of Global Long-Term Mitigation Scenarios. *Energies* 10 (1), e89. 10.3390/en10010089.
- 2017 Popp, A., Calvin, K., Fujimori, S., Havlik, P., Humpenöder, F., Stehfest, E., Bodirsky, B.L., Dietrich, J.P., et al. (2017). Land-use futures in the shared socio-economic pathways. *Global Environmental Change* 42, 331-345. 10.1016/j.gloenvcha.2016.10.002.
- 2017 Marangoni, G., Tavoni, M., Bosetti, V., Borgonovo, E., Capros, P., **Fricko, O.**, Gernaat, D. E. H. J., Guivarch, C., et al. (2017). Sensitivity of projected long-term CO<sub>2</sub> emissions across the Shared Socioeconomic Pathways. *Nature Climate Change* 7 (2), 113-117. 10.1038/nclimate3199.
- 2017 Bauer, N., Calvin, K., Emmerling, J., **Fricko, O.**, Fujimori, S., Hilaire, J., Eom, J., Krey, V., et al. (2017). Shared Socio-Economic Pathways of the Energy Sector – Quantifying the Narratives. *Global Environmental Change* 42, 316-330. 10.1016/j.gloenvcha.2016.07.006.

- 2017 Riahi, K., van Vuuren, D.P., Kriegler, E., Edmonds, J., O'Neill, B., Fujimori, S., Bauer, N., Calvin, K., et al. (2017). The shared socioeconomic pathways and their energy, land use, and greenhouse gas emissions implications: An overview. *Global Environmental Change* 42, 153-168. 10.1016/j.gloenvcha.2016.05.009.
- 2016 Parkinson, S., Johnson, N., Rao, N., Jones, B., van Vliet, M., **Fricko, O.**, Djilali, N., Riahi, K., et al. (2016). Climate and human development impacts on municipal water demand: A spatially-explicit global modeling framework. *Environmental Modelling & Software* 85, 266-278. 10.1016/j.envsoft.2016.08.002.
- 2016 Nordström, E.-M., Forsell, N., Lundström, A., Korosuo, A., Bergh, J., Havlik, P., Kraxner, F., Frank, S., et al. (2016). Impacts of global climate change mitigation scenarios on forests and harvesting in Sweden. *Canadian Journal of Forest Research* 46 (12), 1427-1438. 10.1139/cjfr-2016-0122.
- 2016 Parkinson, S., Djilali, N., Krey, V., **Fricko, O.**, Johnson, N., Khan, Z., Sedraoui, K., & Almasoud, A.H. (2016). Impacts of Groundwater Constraints on Saudi Arabia's Low-Carbon Electricity Supply Strategy. *Environmental Science & Technology* 50 (4), 1653-1662. 10.1021/acs.est.5b05852.
- 2016 Jewell, J., Vinichenko, V., McCollum, D., Bauer, N., Riahi, K., Aboumahboub, T., **Fricko, O.**, Harmsen, M., et al. (2016). Comparison and interactions between the long-term pursuit of energy independence and climate policies. *Nature Energy* 1, e16073. 10.1038/nenergy.2016.73.
- 2016 **Fricko, O.**, Parkinson, S., Johnson, N., Strubegger, M., van Vliet, M.T.H., & Riahi, K. (2016). Energy sector water use implications of a 2°C climate policy. *Environmental Research Letters* 11 (3), e034011. 10.1088/1748-9326/11/3/034011.
- 2015 **Fricko, O.**, Parkinson, S., Johnson, N., Strubegger, M., van Vliet, M.T.H., & Riahi, K. (2015). Energy Sector Adaptation in Response to Water Scarcity. In: *Systems Analysis 2015 - A Conference in Celebration of Howard Raiffa*, 11 -13 November, 2015, Laxenburg, Austria.

## Project Reports

- 2018 Thambi, S., Bhattacharya, A., & **Fricko, O.** (2018). India's Energy and Emissions Outlook: Results from India Energy Model. NITI Aayog (National Institution for Transforming India)
- 2015 Gambhir, A., Napp, T., Hawkes, A., McCollum, D., **Fricko, O.**, Havlik, P., Riahi, K., Drouet, L., et al. (2015). Assessing the challenges of global long-term mitigation scenarios. AVOID 2
- 2012 **Fricko O**, Strubegger M, WIEN ENDBERICHT

- 2012 **Fricko O**, Strubegger M, (2012), Infrastructure development of the City of Wels. Final Report for Elektrizitätswerke Wels AG.
- 2011 **Fricko O.**, Strubegger M, (2011), Energy efficient City – Stadt Freiburg – Increasing Energy Efficiency and Increasing CHP. Final Report for Umweltschutzamt, Dezernat II, Freiburg im Breisgau.
- 2010 **Fricko O**, Reuter A, Strubegger M, Pluy J, Auer H, (2010), Energy Infrastructure for the train of the future. Forschungsförderungsgesellschaft (mbH); Energie der Zukunft.
- 2009 **Fricko O**, Musilek O. (2009), Analysis of costs and benefits of different surveillance techniques & Assessment of the feasibility of available pipeline safety & security system. Final Report: Safety and Security of Main Gas Transit Infrastructure, EuropeAid 123286/C/SER/MULTI.
- 2008 **Fricko O**, Basso G, Reuter A. (2008), Estimated Recovery Times for Energy Infrastructures Damaged by Terrorist Attacks. Final Report in the Framework of the EU-Counteract project.
- 2007 Bach, B., Biermayer, P., **Fricko, O.**, Haas, R., & Nakicenovic, N. (2007). Strategy Process Energy 2050: Intermediate Phase of Research Programme. Federal Ministry for Transport, Innovation and Technology (BMVIT), Vienna, Austria [2007]

## Other

- 2020 Krey, V., Havlik, P., Kishimoto, P., **Fricko, O.**, Zilliacus, J., Gidden, M., Strubegger, M., Kartasasmita, G., et al. (2020). MESSAGEix-GLOBIOM Documentation - 2020 release. IIASA.
- 2018 Parkinson, S., Krey, V., Huppmann, D., Kahil, T., McCollum, D., **Fricko, O.**, Byers, E., Gidden, M., et al. (2018). Balancing clean water-climate change mitigation tradeoffs. IIASA Working Paper. IIASA, Laxenburg, Austria: WP-18-005.
- 2018 Huppmann, D., Gidden, M., **Fricko, O.**, Kolp, P., Orthofer, C., Pimmer, M., Riahi, K., & Krey, V. (2018). The MESSAGEix IAM and the “ix modeling platform” for integrated and x-cutting analysis. In: *Indus Basin Knowledge Forum (IBKF)*, 31 May-2 June 2018, Laxenburg, Austria.
- 2017 **Fricko, O.**, Parkinson, S., Johnson, N., Strubegger, M., van Vliet, M.T.H., & Riahi, K. (2017). Energy Sector Adaptation in Response to Water Scarcity. In: *IIASA Institutional Evaluation 2017*, 27 February-1 March 2017, IIASA, Laxenburg, Austria.
- 2015 Kleinwechter, U., Levesque, A., Havlik, P., Forsell, N., Zhang, Y.W., **Fricko, O.**, & Obersteiner, M. (2015). Global food efficiency of climate

change mitigation in agriculture. In: *International Association of Agricultural Economists 2015 Conference*, 9-14 August 2015, Milan, Italy.

- 2008 **Fricko O**, Musilek O, Reuter A. (2008), A European Perspective on the Management of Threats to Critical Energy Infrastructure Components. In: *OSCE – Organization for Security and Co-Operation in Europe; Expert Meeting on Protecting Critical Energy Infrastructure from Terrorist Attacks*.
- 2007 Schratzenholzer L, **Fricko O**, Reuter A. (2007), Developing the Greater Mekong Subregion Energy Strategy. In: *ADB-BMF, WKO, OEKB Business Opportunities Seminar*, 5 November 2007, Vienna, Austria.

## RESEARCH LEADERSHIP

- 2021 Supervisor - IIASA Young Scientists Summer Program (YSSP): Osamu Nishiura (Japan), Macroeconomic and Household Impacts of Energy Transformation Pathways for Paris Agreement Temperature Goals
- 2016 Supervisor - IIASA Young Scientists Summer Program (YSSP): Eveline Vasquez-Arroyo (Brazil), Optimization of the Brazilian energy system expansion under water availability restrictions: The Southeast Region case study (Part I)
- 2015 Supervisor - IIASA Young Scientists Summer Program (YSSP): Zarrar Khan (Pakistan), Integrating water and energy models for optimal long-term resource management
- 2014 Co-Supervisor - IIASA Young Scientists Summer Program (YSSP): Miho Kamei (Japan): Urban energy systems and their increasing importance in global long-term energy strategies

## NON-ACADEMIC CERTIFICATION.

- 2009 Certified project manager (IPMA Level C) Competences: "Shall be able to manage projects with limited complexity and/or to manage a sub-project of a complex project in all competence elements of project management."
- 2009 Certified project expert (IPMA Level D) Competences: "Shall have project management knowledge in all competence elements."
- 2009 Winning Complex Sales Contents: „WCS workshops are designed to help account teams analyze and improve their sales process in current opportunities.”
- 2008 ARIS Workshop Contents: Basics in Business Process Management (BPM) and utilization of ARIS tools

## LANGUAGE SKILLS

German – Written/Spoken: Mother Tongue  
English – Written/Spoken: Mother Tongue  
French – Written/Spoken: Good  
Croatian – Written/Spoken: Beginner

## **IT-SKILLS**

Microsoft Office (incl. Visio, Project); Python; R-Script; Postgre-SQL