

# Volker Krey

Deputy Program Director  
Energy Program  
International Institute for Applied Systems Analysis (IIASA)  
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## EXPERTISE

Integrated Assessment Modeling of climate change and linkages to broader sustainable development objectives including air pollution and health, energy security, energy poverty, water availability and food security; energy systems analysis at different regional (national to global) and temporal scales (short- to long-term)

## EDUCATION

- 2006 Ph.D. (Doktor-Ingenieur) in Mechanical Engineering, Ruhr-University Bochum, Germany, Thesis: Comparison of short- and long-term oriented optimization approaches with a multi-regional energy systems model under consideration of stochastic parameters  
Advisors: H.-J. Wagner (Ruhr-University Bochum), N. Nakicenovic (TU Vienna, IIASA)
- 2002 Diploma in Physics, University of Dortmund, Germany, Thesis: Polarization of  $J/\Psi$  Mesons in B Decays

## PROFESSIONAL APPOINTMENTS

- since 2018 Adjunct Professor in Energy Systems Modeling, Norwegian University of Science and Technology (NTNU), Norway
- since 2011 Deputy Program Director, IIASA, Energy Program, Laxenburg, Austria
- 2007 – 2011 Research Scholar, IIASA, Energy Program, Laxenburg, Austria
- 2006 – 2007 Research Fellow, Institute of Energy Research, Systems Analysis and Technology Evaluation, Research Centre Jülich, Germany
- 2002 – 2005 PhD Candidate, Programme Group Systems Analysis and Technology Evaluation (STE), Research Centre Jülich, Germany

## PUBLICATIONS

Volker Krey has co-authored more than 100 publications that have been cited well over 9000 times in total. In 2018 and 2019 he has been acknowledged as a *Highly Cited Researcher* by Clarivate.

### Refereed Journal Articles

- In Review **Krey, V.**, Riahi, K., Hasegawa, T., Luderer, G., Ohashi, H., Parkinson, S., . . . Rogelj, J. Implications of the Paris agreement for achieving the Sustainable Development Goals. *Nature Climate Change*.

- 2020 Jewell, J., Emmerling, J., Vinichenko, V., Bertram, C., Berger, L., Daly, H. E., . . . , **Krey, V.**, . . . van Vuuren, D. Reply to: Why fossil fuel producer subsidies matter. *Nature*, 578(7793), E5-E7. doi:10.1038/s41586-019-1921-9
- 2020 Roelfsema, M., van Soest, H. L., Harmsen, M., van Vuuren, D. P., Bertram, C., den Elzen, M., . . . , **Krey, V.**, . . . Vishwanathan, S. S. Taking stock of national climate policies to evaluate implementation of the Paris Agreement. *Nature Communications*, 11(1). doi:10.1038/s41467-020-15414-6
- 2020 Vinca, A., Parkinson, S., Byers, E., Burek, P., Khan, Z., **Krey, V.**, . . . Riahi, K. The NExus Solutions Tool (NEST) v1.0: An open platform for optimizing multi-scale energy-water-land system transformations. *Geoscientific Model Development*, 13(3), 1095-1121. doi:10.5194/gmd-13-1095-2020
- 2020 Wang, H., Chen, W., Bertram, C., Malik, A., Kriegler, E., Luderer, G., . . . **Krey, V.** Early transformation of the Chinese power sector to avoid additional coal lock-in. *Environmental Research Letters*, 15(2). doi:10.1088/1748-9326/ab5d99
- 2020 Zhou, W., McCollum, D. L., Fricko, O., Fujimori, S., Gidden, M., Guo, F., . . . , **Krey, V.**, . . . Zhou, Y. Decarbonization pathways and energy investment needs for developing Asia in line with ‘well below’ 2°C. *Climate Policy*, 20(2), 234-245. doi:10.1080/14693062.2020.1722606
- 2019 Fujimori, S., Hasegawa, T., **Krey, V.**, Riahi, K., Bertram, C., Bodirsky, B. L., . . . van Vuuren, D. A multi-model assessment of food security implications of climate change mitigation. *Nature Sustainability*, 2(5), 386-396. doi:10.1038/s41893-019-0286-2
- 2019 Fujimori, S., Rogelj, J., **Krey, V.**, & Riahi, K. A new generation of emissions scenarios should cover blind spots in the carbon budget space. *Nature Climate Change*, 9(11), 798-800. doi:10.1038/s41558-019-0611-9
- 2019 Huppmann, D., Gidden, M., Fricko, O., Kolp, P., Orthofer, C., Pimmer, M., . . . **Krey, V.** The MESSAGEix Integrated Assessment Model and the ix modeling platform (ixmp): An open framework for integrated and cross-cutting analysis of energy, climate, the environment, and sustainable development. *Environmental Modelling and Software*, 112, 143-156. doi:10.1016/j.envsoft.2018.11.012
- 2019 Johnson, N., Burek, P., Byers, E., Falchetta, G., Flörke, M., Fujimori, S., . . . , **Krey, V.**, . . . Parkinson, S. Integrated solutions for the water-energy-land nexus: Are global models rising to the challenge? *Water (Switzerland)*, 11(11). doi:10.3390/w11112223
- 2019 **Krey, V.**, Guo, F., Kolp, P., Zhou, W., Schaeffer, R., Awasthy, A., . . . van Vuuren, D. P. Looking under the hood: A comparison of techno-economic assumptions across national and global integrated assessment models. *Energy*, 172, 1254-1267. doi:10.1016/j.energy.2018.12.131
- 2019 Li, N., Chen, W., Rafaj, P., Kiesewetter, G., Schöpp, W., Wang, H., . . . , **Krey, V.**, . . . Riahi, K. Air Quality Improvement Co-benefits of Low-Carbon Pathways toward Well Below the 2 °C Climate Target in China. *Environmental Science & Technology*, 53(10), 5576-5584. doi:10.1021/acs.est.8b06948
- 2019 Orthofer, C. L., Huppmann, D., & **Krey, V.** South Africa after Paris-fracking its way to the NDCs? *Frontiers in Energy Research*, 7(MAR). doi:10.3389/fenrg.2019.00020
- 2019 Parkinson, S., **Krey, V.**, Huppmann, D., Kahil, T., McCollum, D., Fricko, O., . . . Riahi, K. Balancing clean water-climate change mitigation trade-offs. *Environmental Research Letters*, 14(1). doi:10.1088/1748-9326/aaf2a3

- 2019 Rogelj, J., Huppmann, D., **Krey, V.**, Riahi, K., Clarke, L., Gidden, M., . . . Meinshausen, M. A new scenario logic for the Paris Agreement long-term temperature goal. *Nature*, 573(7774), 357-363. doi:10.1038/s41586-019-1541-4
- 2019 Zhou, W., McCollum, D. L., Fricko, O., Gidden, M., Huppmann, D., **Krey, V.**, & Riahi, K. A comparison of low carbon investment needs between China and Europe in stringent climate policy scenarios. *Environmental Research Letters*, 14(5). doi:10.1088/1748-9326/ab0dd8
- 2018 Byers, E., Gidden, M., Leclere, D., Balkovic, J., Burek, P., Ebi, K., . . . , **Krey, V.**, . . . Riahi, K. Global exposure and vulnerability to multi-sector development and climate change hotspots. *Environmental Research Letters*, 13(5). doi:10.1088/1748-9326/aabf45
- 2018 Fujimori, S., Hasegawa, T., Rogelj, J., Su, X., Havlik, P., **Krey, V.**, . . . Riahi, K. Inclusive climate change mitigation and food security policy under 1.5C climate goal. *Environmental Research Letters*, 13(7). doi:10.1088/1748-9326/aad0f7
- 2018 Grubler, A., Wilson, C., Bento, N., Boza-Kiss, B., **Krey, V.**, McCollum, D. L., . . . Valin, H. A low energy demand scenario for meeting the 1.5 °C target and sustainable development goals without negative emission technologies. *Nature Energy*, 3(6), 515-527. doi:10.1038/s41560-018-0172-6
- 2018 Huppmann, D., Rogelj, J., Kriegler, E., **Krey, V.**, & Riahi, K. A new scenario resource for integrated 1.5 °C research. *Nature Climate Change*. doi:10.1038/s41558-018-0317-4
- 2018 Jewell, J., McCollum, D., Emmerling, J., Bertram, C., Gernaat, D. E. H. J., **Krey, V.**, . . . Riahi, K. Limited emission reductions from fuel subsidy removal except in energy-exporting regions. *Nature*, 554(7691), 229-233. doi:10.1038/nature25467
- 2018 Kahil, T., Parkinson, S., Satoh, Y., Greve, P., Burek, P., Veldkamp, T. I. E., . . . , **Krey, V.**, . . . Wada, Y. A Continental-Scale Hydroeconomic Model for Integrating Water-Energy-Land Nexus Solutions. *Water Resources Research*, 54(10), 7511-7533. doi:10.1029/2017WR022478
- 2018 Luderer, G., Vrontisi, Z., Bertram, C., Edelenbosch, O. Y., Pietzcker, R. C., Rogelj, J., . . . , **Krey, V.**, . . . Kriegler, E. Residual fossil CO<sub>2</sub> emissions in 1.5–2 °C pathways. *Nature Climate Change*, 8(7), 626-633. doi:10.1038/s41558-018-0198-6
- 2018 McCollum, D. L., Echeverri, L. G., Busch, S., Pachauri, S., Parkinson, S., Rogelj, J., . . . Riahi, K. Connecting the sustainable development goals by their energy inter-linkages. *Environmental Research Letters*, 13(3). doi:10.1088/1748-9326/aaafe3
- 2018 McCollum, D. L., Wilson, C., Bevione, M., Carrara, S., Edelenbosch, O. Y., Emmerling, J., . . . , **Krey, V.**, . . . van Vuuren, D. P. Interaction of consumer preferences and climate policies in the global transition to low-carbon vehicles. *Nature Energy*, 3(8), 664-673. doi:10.1038/s41560-018-0195-z
- 2018 McCollum, D. L., Zhou, W., Bertram, C., De Boer, H. S., Bosetti, V., Busch, S., . . . , **Krey, V.**, . . . Riahi, K. Energy investment needs for fulfilling the Paris Agreement and achieving the Sustainable Development Goals. *Nature Energy*, 3(7), 589-599. doi:10.1038/s41560-018-0179-z
- 2018 Parkinson, S. C., Makowski, M., **Krey, V.**, Sedraoui, K., Almasoud, A. H., & Djilali, N. A multi-criteria model analysis framework for assessing integrated water-energy system transformation pathways. *Applied Energy*, 210, 477-486. doi:10.1016/j.apenergy.2016.12.142

- 2018 Rogelj, J., Popp, A., Calvin, K. V., Luderer, G., Emmerling, J., Gernaat, D., . . . , **Krey, V.**, . . . Tavoni, M. Scenarios towards limiting global mean temperature increase below 1.5 °c. *Nature Climate Change*, 8(4), 325-332. doi:10.1038/s41558-018-0091-3
- 2018 Vrontisi, Z., Luderer, G., Saveyn, B., Keramidas, K., Lara, A. R., Baumstark, L., . . . , **Krey, V.**, . . . Van Vuuren, D. Enhancing global climate policy ambition towards a 1.5 °c stabilization: A short-term multi-model assessment. *Environmental Research Letters*, 13(4). doi:10.1088/1748-9326/aab53e
- 2017 Rogelj, J., Fricko, O., Meinshausen, M., **Krey, V.**, Zilliacus, J.J.J., Riahi, K. Understanding the origin of Paris Agreement emission uncertainties. *Nature Communications* 8, 15748, doi: 10.1038/ncomms15748.
- 2017 Riahi, K., Van Vuuren, D.P., Kriegler, E., Edmonds, J., O'Neill, B., Fujimori, S., . . . , **Krey, V.**, . . . Tavoni, M. The Shared Socioeconomic Pathways and their Energy, Land Use, and Greenhouse Gas Emissions Implications: An Overview. *Global Environmental Change*, 42, 153-168. doi: 10.1016/j.gloenvcha.2016.05.009
- 2017 Fricko, O., Havlik, P., Rogelj, J., Klimont, Z., Gusti, M., Johnson, N., Kolp, P., Strubegger, M., Valin, H., Amann, M., Ermolieva, T., Forsell, N., Herrero, M., Heyes, C., Kindermann, G., **Krey, V.**, . . . Riahi, K. 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. doi: 10.1016/j.gloenvcha.2016.06.004
- 2017 Bauer, N., Calvin, K., Emmerling, J., Fricko, O., Fujimori, S., Hilaire, J., . . . van Vuuren, D. P. Shared Socio-Economic Pathways of the Energy Sector – Quantifying the Narratives. *Global Environmental Change*, 42, 316-330. doi: 10.1016/j.gloenvcha.2016.07.006
- 2017 Marangoni, G., Tavoni, M., Bosetti, V., Borgonovo, E., Capros, P., Fricko, O., . . . **Krey, V.**, . . . , Van Vuuren, D. P. Sensitivity of projected long-term CO 2 emissions across the Shared Socioeconomic Pathways. *Nature Climate Change*, 7(2), 113-117. doi: 10.1038/nclimate3199
- 2017 McCollum, D. L., Wilson, C., Pettifor, H., Ramea, K., **Krey, V.**, Riahi, K., . . . Fujisawa, S. Improving the behavioral realism of global integrated assessment models: An application to consumers' vehicle choices. *Transportation Research Part D: Transport and Environment*, 55, 322-342. doi: 10.1016/j.trd.2016.04.003
- 2017 Johnson, N., Strubegger, M., McPherson, M., Parkinson, S. C., **Krey, V.**, & Sullivan, P. A reduced-form approach for representing the impacts of wind and solar PV deployment on the structure and operation of the electricity system. *Energy Economics*, 64, 651-664. doi: 10.1016/j.eneco.2016.07.010
- 2016 Harmsen, M. J. H. M., van Den Berg, M., **Krey, V.**, Luderer, G., Marcucci, A., Strefler, J., & Vuuren, D. P. V. How climate metrics affect global mitigation strategies and costs: a multi-model study. *Climatic Change, In Press*. doi: 10.1007/s10584-016-1603-7
- 2016 Jewell, J., Vinichenko, V., McCollum, D., Bauer, N., Riahi, K., Aboumahboub, T., Fricko, O., Harmsen, M., Kober, T., **Krey V.**, . . . Cherp, A. Comparison and interactions between the long-term pursuit of energy independence and climate policies. *Nature Energy*, 1, 16073. doi: 10.1038/nenergy.2016.73
- 2016 Leibowicz, B.D., **Krey, V.**, & Grubler, A. Representing spatial technology diffusion in an energy system optimization model. *Technological Forecasting and Social Change*, 103, 350-363. doi: 10.1016/j.techfore.2015.06.001

- 2016 McCollum, D.L., Jewell, J., **Krey, V.**, Bazilian, M., Fay, M., & Riahi, K. Quantifying uncertainties influencing the long-term impacts of oil prices on energy markets and carbon emissions. *Nature Energy*, 16077. doi: 10.1038/nenergy.2016.77
- 2016 McCollum, D. L., Wilson, C., Pettifor, H., Ramea, K., **Krey, V.**, Riahi, K., . . . Fujisawa, S. Improving the behavioral realism of global integrated assessment models: An application to consumers' vehicle choices. *Transportation Research Part D: Transport and Environment, In Press*. doi: 10.1016/j.trd.2016.04.003
- 2016 Parkinson, S. C., Djilali, N., **Krey, V.**, Fricko, O., Johnson, N., Khan, Z., . . . Almasoud, A. H. Impacts of Groundwater Constraints on Saudi Arabia's Low-Carbon Electricity Supply Strategy. *Environmental Science and Technology*, 50(4), 1653-1662. doi: 10.1021/acs.est.5b05852
- 2016 Smith, P., Davis, S. J., Creutzig, F., Fuss, S., Minx, J., Gabrielle, B., Kato, E., Jackson, R.B., Cowie, A., Kriegler, E., Van Vuuren, D.P., Rogelj, J., Ciais, P., Milne, J., Canadell, J.G., McCollum, D., Peters, G., Andrew, R., **Krey, V.**, . . . Yongsung, C. Biophysical and economic limits to negative CO2 emissions. *Nature Climate Change*, 6(1), 42-50. doi: 10.1038/nclimate2870
- 2016 Van Vuuren, D. P., Van Soest, H., Riahi, K., Clarke, L., **Krey, V.**, Kriegler, E., . . . Tavoni, M. Carbon budgets and energy transition pathways. *Environmental Research Letters*, 11(7). doi: 10.1088/1748-9326/11/7/075002
- 2015 Harmsen, M. J. H. M., van Vuuren, D. P., van den Berg, M., Hof, A. F., Hope, C., **Krey, V.**, . . . Schaeffer, M. How well do integrated assessment models represent non-CO2 radiative forcing? *Climatic Change*, 133(4), 565-582. doi: 10.1007/s10584-015-1485-0
- 2015 Rogelj, J., Luderer, G., Pietzcker, R. C., Kriegler, E., Schaeffer, M., **Krey, V.**, & Riahi, K. Energy system transformations for limiting end-of-century warming to below 1.5 °C. *Nature Climate Change*, 5(6), 519-527. doi: 10.1038/nclimate2572
- 2015 Eom, J., Edmonds, J., **Krey, V.**, Johnson, N., Longden, T., Luderer, G., . . . Van Vuuren, D. P. The impact of near-term climate policy choices on technology and emission transition pathways. *Technological Forecasting and Social Change*, 90(PA), 73-88. doi: 10.1016/j.techfore.2013.09.017
- 2015 Johnson, N., **Krey, V.**, McCollum, D. L., Rao, S., Riahi, K., & Rogelj, J. Stranded on a low-carbon planet: Implications of climate policy for the phase-out of coal-based power plants. *Technological Forecasting and Social Change*, 90(PA), 89-102. doi: 10.1016/j.techfore.2014.02.028
- 2015 Kriegler, E., Petermann, N., **Krey, V.**, Schwanitz, V. J., Luderer, G., Ashina, S., . . . Van Vuuren, D. P. Diagnostic indicators for integrated assessment models of climate policy. *Technological Forecasting and Social Change*, 90(PA), 45-61. doi: 10.1016/j.techfore.2013.09.020
- 2015 Riahi, K., Kriegler, E., Johnson, N., Bertram, C., den Elzen, M., Eom, J., Schaeffer, M., Edmonds, J., Isaac, M., **Krey, V.**, . . . Edenhofer, O. Locked into Copenhagen pledges - Implications of short-term emission targets for the cost and feasibility of long-term climate goals. *Technological Forecasting and Social Change*, 90(PA), 8-23, doi: 10.1016/j.techfore.2013.09.016.
- 2014 McJeon, H., Edmonds, J., Bauer, N., Clarke, L., Fisher, B., Flannery, B.P., Hilaire J., **Krey V.**, . . . Tavoni, M. Limited impact on decadal-scale climate change from increased use of natural gas. *Nature*, 514(7523), 482-485. doi: 10.1038/nature13837
- 2014 Rogelj, J., Rao, S., McCollum, D. L., Pachauri, S., Klimont, Z., **Krey, V.**, & Riahi, K. Air-pollution emission ranges consistent with the representative concentration pathways. *Nature Climate Change*, 4(6), 446-450. doi: 10.1038/nclimate2178

- 2014 **Krey, V.** Global energy-climate scenarios and models: a review. *Wiley Interdisciplinary Reviews: Energy and Environment*, 3(4), 363-383. doi: 10.1002/wene.98
- 2014 Kriegler, E., Weyant, J. P., Blanford, G. J., **Krey, V.**, Clarke, L., Edmonds, J., . . . van Vuuren, D. P. The role of technology for achieving climate policy objectives: overview of the EMF 27 study on global technology and climate policy strategies. *Climatic Change*, 123, 353-367.
- 2014 **Krey, V.**, Luderer, G., Clarke, L., & Kriegler, E. Getting from here to there - energy technology transformation pathways in the EMF27 scenarios. *Climatic Change*, 123, 369-382.
- 2013 McCollum, D. L., **Krey, V.**, Riahi, K., Kolp, P., Grubler, A., Makowski, M., & Nakicenovic, N. Climate policies can help resolve energy security and air pollution challenges. *Climatic Change*, 119(2), 479-494.
- 2013 Sullivan, P., **Krey, V.**, & Riahi, K. Impacts of considering electric sector variability and reliability in the MESSAGE model. *Energy Strategy Reviews*, 1(3), 157-163. doi: <http://dx.doi.org/10.1016/j.esr.2013.01.001>
- 2013 Ekholm, T., Ghoddusi, H., **Krey, V.**, & Riahi, K. The effect of financial constraints on energy-climate scenarios. *Energy Policy*, 59, 562-572.
- 2013 Wilson, C., Grubler, A., Bauer, N., **Krey, V.**, & Riahi, K. Future capacity growth of energy technologies: Are scenarios consistent with historical evidence? *Climatic Change*, 118(2), 381-395.
- 2012 Calvin, K., Clarke, L., **Krey, V.**, Blanford, G., Jiang, K., Kainuma, M., . . . Shukla, P. R. The role of Asia in mitigating climate change: Results from the Asia modeling exercise. *Energy Economics*, 34(SUPPL. 3), S251-S260.
- 2012 Clarke, L., **Krey, V.**, Weyant, J., & Chaturvedi, V. Regional energy system variation in global models: Results from the Asian Modeling Exercise scenarios. *Energy Economics*, 34(SUPPL. 3), S293-S305.
- 2012 **Krey, V.**, O'Neill, B. C., van Ruijven, B., Chaturvedi, V., Daioglou, V., Eom, J., . . . Ren, X. Urban and rural energy use and carbon dioxide emissions in Asia. *Energy Economics*, 34(SUPPL. 3), S272-S283.
- 2012 van Vliet, O., **Krey, V.**, McCollum, D., Pachauri, S., Nagai, Y., Rao, S., & Riahi, K. Synergies in the Asian energy system: Climate change, energy security, energy access and air pollution. *Energy Economics*, 34(SUPPL. 3), S470-S480.
- 2012 McCollum, D. L., **Krey, V.**, & Riahi, K. Beyond Rio: Sustainable energy scenarios for the 21st century. *Natural Resources Forum*, 36(4), 215-230.
- 2011 **Krey, V.**, & Clarke, L. Role of renewable energy in climate mitigation: A synthesis of recent scenarios. *Climate Policy*, 11(4), 1131-1158.
- 2011 McCollum, D.L., **Krey, V.**, & Riahi, K. An integrated approach to energy sustainability. [10.1038/nclimate1297]. *Nature Clim. Change*, 1, 428-429.
- 2010 Ekholm, T., **Krey, V.**, Pachauri, S., & Riahi, K. Determinants of household energy consumption in India. *Energy Policy*, 38(10), 5696-5707.
- 2010 **Krey, V.**, & Minullin, Y. Modelling Competition between Natural Gas Pipeline Projects to China. *International Journal of Global Environmental Issues*, 10(1/2), 143-171.
- 2009 Clarke, L., Edmonds, J., **Krey, V.**, Richels, R., Rose, S., & Tavoni, M. International climate policy architectures: Overview of the EMF 22 international scenarios. *Energy Economics*, 31(Supplement 2), S64-S81.

- 2009 **Krey, V.**, & Riahi, K.. Implications of delayed participation and technology failure for the feasibility, costs, and likelihood of staying below temperature targets - greenhouse gas mitigation scenarios for the 21st century. *Energy Economics*, 31(Supplement 2), S94-S106.
- 2009 **Krey, V.**, Canadell, J.G., Nakicenovic, N., Abe, Y., Andrleit, H., Archer, D., . . . Yakushev, V.. Gas hydrates: entrance to a methane age or climate threat? *Environmental Research Letters*, 4(3), 034007.
- 2008 Martinsen, D., & **Krey, V.** Compromises in Energy Policy - Using Fuzzy Optimization in an Energy Systems Model. *Energy Policy*, 36(8), 2973-2984.
- 2007 Martinsen, D., **Krey, V.**, & Markewitz, P. Implications of high energy prices for energy system and emissions - The response from an energy model for Germany. *Energy Policy*, 35(9), 4504-4515.
- 2007 **Krey, V.**, Markewitz, P., Vögele, S. Energy transport and distribution (Energietransport und -verteilung). *BWK - Energiefachmagazin*, 59(Nr. 4), 55-64.
- 2006 Martinsen, D., **Krey, V.**, Markewitz, P., & Vögele, S.. A Time Step Energy Process Model for Germany. Model Structure and Results. *Energy Studies Review*, 14(1), 35-57.
- 2005 **Krey, V.**, Markewitz, P., Vögele, S. Energy transport and distribution (Energietransport und -verteilung). *BWK - Energiefachmagazin*, 57(Nr. 4), 49-57.
- 2003 **Krey, V.**, & Balaji, K.R.S. Polarized J/Psi production from B mesons at the Fermilab Tevatron. *Physical Review D*, 67(5), 054011.

### Edited Volumes (including Special Issues)

- 2014 Weyant, J., Kriegler, E., Blanford, G., **Krey, V.**, Edmonds, J., Riahi, K., . . . Tavoni, M. (Eds.). *The EMF27 Study on Global Technology and Climate Policy Strategies* (Vol. 123, Issues 3-4).
- 2012 Calvin, K., Clarke, L., & **Krey, V.** (Eds.). *The Asia Modeling Exercise: Exploring the Role of Asia in Mitigating Climate Change* (Vol. 34, Supplement 3).

### Assessment Reports

- 2014 Clarke, L., Jiang, K., Akimoto, K., Babiker, M., Blanford, G., Fisher-Vanden, K., . . . **Krey, V.**, . . . Vuuren, D. van. Assessing Transformation Pathways. In O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, J. Minx, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Salvolainen, S. Schlömer, C. von Stechow & T. Zwickel (Eds.), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
- 2014 Edenhofer, O., Pichs-Madruga, R., Sokona, Y., Kadner, S., Minx, J., Brunner, S., . . . **Krey, V.**, . . . Zwickel, T. Technical Summary. In O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, J. Minx, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Salvolainen, S. Schlömer, C. von Stechow & T. Zwickel (Eds.), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.

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- 2014 **Krey, V.**, Masera, O., Blandford, G., Bruckner, T., Cooke, R., Fisher-Vanden, K., . . . Zwickel, T. Annex II: Metrics & Methodology. In O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, J. Minx, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Salvolainen, S. Schlömer, C. von Stechow & T. Zwickel (Eds.), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
- 2012 Riahi, K., Dentener, F., Gielen, D., Grubler, A., Jewell, J., Klimont, Z., **Krey, V.**, . . . Wilson, C. Energy Pathways for Sustainable Development. *The Global Energy Assessment: Toward a More Sustainable Future.*: IIASA, Laxenburg, Austria and Cambridge University Press, Cambridge, UK.
- 2012 Grubler, A., Johansson, T.B., Mundaca, L., Nakicenovic, N., Pachauri, S., Riahi, K., . . . , **Krey, V.**, . . . Weinzettel, J.. Energy Primer. *The Global Energy Assessment: Toward a More Sustainable Future.*: IIASA, Laxenburg, Austria and Cambridge University Press, Cambridge, UK.
- 2011 Edenhofer, O., Pichs, R., S., Y., Seyboth, K., Arvizu, D., Bruckner, T., . . . , **Krey, V.**, . . . Zwickel, T.. Summary for Policy Makers (SPM). In O. Edenhofer, R. Pichs, Y. Sokona, K. Seyboth, P. Matschoss, S. Kadner, T. Zwickel, P. Eickemeier, G. Hansen, S. Schlömer & C. von Stechow (Eds.), *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation*. Cambridge: Cambridge University Press.
- 2011 Fishedick, M., Schaeffer, R., Adedoyin, A., Akai, M., Bruckner, T., Clarke, L., . . . , **Krey, V.**, . . . Luderer, G.. Chapter 10: Mitigation potential and costs. In O. Edenhofer, R. Pichs, Y. Sokona, K. Seyboth, P. Matschoss, S. Kadner, T. Zwickel, P. Eickemeier, G. Hansen, S. Schlömer & C. von Stechow (Eds.), *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation*. Cambridge: Cambridge University Press.
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### Project Reports

- 2015 Zhang, X., He, J., Riahi, K., **Krey, V.**, & McCollum, D. Opportunities for CCS Deployment in China under Low Carbon Transformation Scenarios *Technical Assistance Consultant's Report*. Manila: Asian Development Bank.  
<http://www.adb.org/sites/default/files/project-document/174991/46052-001-tacr-05b.pdf>

### Book Chapters



- 2013 **Krey, V., & Riahi, K.** Risk Hedging Strategies under Energy System and Climate Policy Uncertainties. In Raimand Kovacevic, Georg Pflug & Maria Vespucci (Eds.), *Handbook of Risk Management in Energy Production and Trading* (pp. 399-438): Springer.

## RESEARCH EXPERIENCE

- since 2019 Lead Author, IPCC 6th Assessment Report of Working Group III, Chapter 4: *Mitigation and development pathways in the near-to mid-term*
- since 2019 Member of the IPCC Task Group on Data Support for Climate Change Assessments (TG-Data) for the 6th Assessment Report cycle, <https://www.ipcc.ch/data/>
- since 2019 Co-Principal Investigator, ENGAGE Horizon 2020 project, <http://www.engage-climate.org/>
- since 2017 Co-Principal Investigator, SENSES project, <http://senses-project.org>
- 2015 – 2019 Co-Principal Investigator, CD-LINKS Horizon 2020 project, <http://www.cd-links.org>
- 2013 – 2016 Work Package leader, ADVANCE FP7 project, WP1 on *Model transparency, validation, and common database*, <http://fp7-advance.eu/>
- 2011 – 2018 Member of the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA) for the 5th Assessment Report cycle, <https://archive.ipcc.ch/activities/tgica.shtml>
- 2011 – 2014 Coordinating Lead Author, IPCC 5th Assessment Report of Working Group III, Annex II: Methods and Metrics  
Lead Author, Summary for Policymakers, Technical Summary, Chapter 6: *Assessing Transformation Pathways*
- 2010 – 2013 Member of the Steering Committee of the Energy Modeling Forum (EMF) 27 Exercise at Stanford University
- 2009 – 2012 Member of the Steering Committee of the Asian Modeling Exercise (AME) at Pacific Northwest National Laboratory (PNNL)
- 2009 – 2012 Lead Author, Global Energy Assessment, Chapter 17: *Energy Transition Pathways for Sustainable Development*
- 2009 – 2011 Lead Author, IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation, Summary for Policymakers and Chapter 10: *Mitigation Potential and Costs*

## TEACHING EXPERIENCE

- since 2019 Ph.D. course “Integrated Assessment Modelling” at the Department of Energy and Process Engineering, Norwegian University of Science and Technology (NTNU), Norway
- 2008 – 2017 Energy systems modeling as part of the course “Energy Models and Analysis” at the Institute of Energy Systems and Electrical Drives, Vienna University of Technology, Austria
- 2009 – 2017 MSc program on "Renewable Energy in Central and Eastern Europe" at the Vienna University of Technology, Austria

since 2008 (Co-)Supervisor of 16 Ph.D. students who participated for a period of three months in IIASA's Young Scientist Summer Program (<http://www.iiasa.ac.at/web/home/education/yssp/about.html>)

### **SELECTED OTHER PROFESSIONAL ACTIVITIES**

since 2018 Member of the International Advisory Board of the NTNU Energy Transition Initiative (<https://www.ntnu.edu/web/energytransition/management>)

since 2010 Associate Deputy Editor of the journal Climatic Change