Jessica Jewell

Energy Program
International Institute for Applied Systems Analysis (IIASA) jewell@iiasa.ac.at
Schlossplatz 1, 2361 Laxenburg, Austria +43 2236 807 445

Expertise

Political economy of energy transitions | Energy security | Nuclear energy

Education

2013 Ph.D. (*summa cum laude*) in Environmental Sciences and Policy, Central European University (CEU), Budapest.

2009 M.Sc. (*distinction*) in Environmental Sciences, Policy and Management, Lund University, University of Manchester and CEU

2004 B.A. (*with honors*) in Geological Sciences, Brown University

Professional Appointments

2013 – present Research Scholar, IIASA, Energy Program, Laxenburg, Austria

2017 – present Adjunct Associate Professor, Centre for Climate and Energy Transformations & Department of Geography, University of Bergen, Norway

2011 – 2013 Research Assistant, IIASA, Energy Program, Laxenburg, Austria

2011 Research Assistant, International Energy Agency, Energy Security and Markets, Paris, France

2006 – 2007 Geologist, Haley & Aldrich, McLean, USA

Publications

Peer-reviewed Articles

2018 **Jewell, J.**, McCollum, D., Emmerling, J., Bertram, C., Gernaat, D. E. H. J., Krey, V., et al. Limited emission reductions from fuel subsidy removal except in energy-exporting regions. Nature, 554 (7691), 229–233. doi

2018 Cherp, A., Vinichenko, V., **Jewell, J.**, Brutschin, E., & Sovacool, B. K. (2018). Integrating techno-economic, socio-technical and political perspectives on national energy transitions: A meta-theoretical framework. Energy Research and Social Science, 37, 175–190. doi

2017 Cherp, A., Vinichenko, V., **Jewell, J.**, Suzuki, M., & Antal, M. Comparing electricity transitions in Germany and Japan: A historical analysis of nuclear, wind and solar power in Germany and Japan. *Energy Policy*, 101, 612–628. doi

2016 McCollum, D. L., **Jewell, J.**, Krey, V., Bazilian, M., Fay, M., & Riahi, K. (2016). Quantifying uncertainties influencing the long-term impacts of oil prices on energy markets and carbon emissions. *Nature Energy*, 16077. doi

2016 **Jewell, J.**, Vinichenko, V., McCollum, D., Bauer, N., Riahi, K., Aboumahboub, T., Fricko, O., Harmsen, M., Krey, V., Kober, T., Marangoni, G.,Tavoni, M., van Vuuren, D., van der Zwaan, B., Cherp, A. Comparison and interactions between the long-term pursuit of energy independence and climate policies. *Nature Energy* 160703. doi

2016 Cherp, A., **Jewell, J.** Energy policy: Renewables targeted before Fukushima. *Nature* 533 (7601), 36. (Correspondence piece, editor-reviewed). doi

2016 Cherp, A., **Jewell, J.**, Vinichenko, V., Bauer, N., and De Cian, E. Global energy security under different climate policies, GDP growth rates and fossil resource availabilities. *Climatic Change* 136, 83-94. doi

2016 Stechow, von, C., Minx, J. C., Riahi, K., **Jewell, J.**, McCollum, D. L., Callaghan, M. W., et al. 2 °C and SDGs: united they stand, divided they fall? *Environmental Research Letters*, 11 (3), 1–15. doi

2015 Stechow, von, C., McCollum, D., Riahi, K., Minx, J. C., Kriegler, E., van Vuuren, D. P., **Jewell, J.** et al. Integrating Global Climate Change Mitigation Goals with Other Sustainability Objectives: A Synthesis. *Annual Review of Environmental Resources*, 40, 363-394. doi

2015 **Jewell, J**. Ates, S. Introducing nuclear power in Turkey: A historic state strategy and future prospects. *Energy Research & Social Science*, 10, 273-282. doi

2015 Tavoni, M., Kriegler, E., Riahi, K., van Vuuren, D., Aboumahboub, Bowen, A., A., Calvin, K., Campiglio, E., Kober, T., **Jewell, J.**, Luderer, G., Marangoni, G., McCollum, D., van Sluisveld, M., Zimmer, A., van der Zwaan, B. "Post-2020 climate agreements in the major economies assessed in the light of global models." *Nature Climate Change*, 5, 119-126. doi

2014 Cherp, A., **Jewell, J.** The concept of energy security: beyond the four A's. *Energy Policy*, 75, 415-421. doi

2014 **Jewell, J.**, Cherp, A. and Riahi, K. Energy security under de-carbonization scenarios: an assessment framework and evaluation under different technology and policy choices. *Energy Policy*, 65, 743-760. doi

2014 Leung, G., Cherp A., **Jewell, J.** and Wei, F. Securitization of energy supply chains in China. *Applied Energy*, 123, 316-326. doi

2013 **Jewell, J.**, Cherp, A., Vinichenko, V., Bauer, N., Kober, T., McCollum, D., van Vuuren, D. and van der Zwaan, B. Energy security of China, India, the E.U. and the U.S. under long-term scenarios: Results from six IAMs. *Climate Change Economics,* 4 (4), 1340011. doi

2013 Tavoni, M., Kriegler, E., Aboumahaboub, T., Calvin, K., De Maere, G., **Jewell, J.**, Kober, T., Lucas, P. Luderer, G., McCollum, D., Marangoni, G., Riahi, K. and van Vuuren, D. The distribution of the major economies' effort in the Durban platform scenarios. *Climate Change Economics* 4 (4), 1340009. doi

2011 Cherp, A. and **Jewell, J.** Three perspectives on energy security: intellectual history, disciplinary roots and the potential for integration. *Current Opinions in Environmental Sustainability*, 3 (4), 202-212. doi

2011 **Jewell, J.** Ready for nuclear?: An assessment of capacities, imperatives, and uncertainties for launching new national nuclear power programs. *Energy Policy,* 39, 1041-1055. doi

2011 **Jewell, J.** A nuclear-powered North Africa: Just a desert mirage or is there something on the horizon? *Energy Policy*, 39, 4445-4457. doi

2011 Cherp, A., **Jewell, J.**, and Goldthau, A. Governing global energy: Systems, transitions, and complexity. *Global Policy*, 2: 1, 75-88. doi

Book Chapters

2018 Brutschin, E. and **Jewell, J.** International political economy of nuclear energy. In *International Political Economy of Energy and Natural Resources*, edited by A. Goldthau, M. F. Keatin, and C. Kuzemko, 322-341. Edward Elgar.

2013 Cherp, A., and **Jewell, J**. Energy Security Assessment Framework and Three Case Studies. In *International Handbook of Energy Security*, edited by H. Dyer and M.J. Trombetta, 146-173. Edward Elgar. doi

2012 Cherp, A., Adenikinju, A., Goldthau, A., Hernandez, F., Hughes, L., Jansen, J.C., **Jewell, J.**, et al. Chapter 5 - Energy and Security. In *Global Energy Assessment*, 325-83. Cambridge University Press: Cambridge, UK and New York, NY, USA and the International Institute for Applied Systems Analysis: Laxenburg, Austria. link

2012 Riahi, K., Dententener, F., Gielen, D., Grubler, A., **Jewell, J.**, Klimot, Z., Krey, V. et al. Chapter 17 - Energy Pathways for Sustainable Development. In *Global Energy Assessment*, 1203-1306. *ibid*. link

2011 Cherp, A., and **Jewell, J**. Measuring Energy Security: From Universal Indicators to Contextualized Frameworks. In *The Routledge Handbook of Energy Security*, edited by B.K. Sovacool, 330-355. New York: Routledge. link

Policy Reports

2016 van Soest, H. , Reis, L. A. van Vuuren, D. … **Jewell, J.** … Regional Low-Emission Pathways from Global Models C. Milan: FEEM Working Paper No. 110.2015.

2015 **Jewell, J.** Can low-carbon societies deliver on energy security? In *Transition and Global Challenges Towards Low Carbon Societies*, edited by S. La Motta, J.C. Hourcade, S. Lechtenböhmer, T. Masui, J. Watson, 13-16. Rome: ENEA.

2015 Spencer, T., Pierfederici, R., Waisman, H., Colombier, M. …**Jewell, J.** …et al. *Beyond the numbers: understanding the transformation induced by INDCs.* Institute du développement durable et relation internationales, No 05/15. October.

2015 van Soest, H., Reis, L.A., van Vuuren, D., Bertram, C., Drouet, L., **Jewell, J.**, Kriegler, E., Luderer, G., Riahi, K., Rogelj, J., Tavoni, M., den Elzen, M.: 2015, *Regional low-emission pathways from global models*. Working Paper, Nota di Lavoro 110.2015, Italy (December).

2012 Nakicenovic, N., Kammen, D., **Jewell, J.** et al. *Technical report of Task Force 2 in support of doubling the global rate of energy efficiency improvement and doubling the share of renewable energy in the Global energy mix by 2030*. Sustainable Energy for All. April.

2012 Yumkella, K., Nakicenovic, N., Bazilian, M. and **Jewell, J.** "The sustainable energy for all initiative and climate change mitigation." *World Meteorological Bulletin*, 61:1. link

2011 IEA. (researched and written by **Jewell, J.** ...). *Measuring short-term energy security*. OECD/IEA: Paris. link

2011 **Jewell, J.** *The IEA Model of short-term energy security (MOSES): primary energy sources and secondary fuels*. OECD/IEA: Paris. link

Research Experience

2017-21 Principal investigator of project on Analyzing past and future energy industry contractions, funded by the Research Council of Norway (~€900,000)

2016-18 External partner in project on the Political Economy of Energy Transitions at Central European University

2014-5 Co-PI in knowledge network on the Politics of Energy Transitions, funded by the International Social Sciences Council's Transformation to Sustainability Program as part of the Future Earth initiative. (€30,000)

2013-6 Energy policy researcher, EU Seventh Framework Programme (FP7) ADVANCE project, leading work on energy subsidies and taxes

2012-4 Energy security researcher, EU FP7 LIMITS project, leading energy security research collaborations between seven institutions

2013 Contributing author on energy security and regional climate policy spillovers in Chapters 6, 7, 10 and 14 of the IPCC Fifth Assessment Report Working Group III

2011 Research consultant, the Global Energy Assessment (GEA), reviewed all 27 chapters to ensure consistency of policy analysis and recommendations

2010 Research Assistant, YSSP program, IIASA, Energy Program

2008-9 Lead Author, GEA, Energy security, led the development of database of >100 energy indicators to analyze energy security of >130 countries

2008-9 Lead Author, GEA, Sustainable energy pathways

2004-5 Research Assistant, Pennsylvania State University, Geological Sciences, US, field work in Kyrgyzstan and the continental US

2003-4 Research Assistant, Brown University, Department of Geological Sciences, US

Invited Talks

2017 When do policy choices drive energy transitions? Breakthrough Institute Dialogue East, Washington DC, US, November 17.

2017 Nuclear newcomers: Looking at history to understand the future, Center for Global Development, Washington DC, US, November 15.

2017 Why are energy transitions necessary and are they feasible?, Central European University, April 27.

2016 Bridging techno-economic and socio-political approaches to studying future energy: an example with nuclear energy, Linköping University, October 16.

2016 Interdisciplinary social science research on the future of nuclear energy. International workshop and seminar on Nuclear and energy from the perspective of social sciences and humanities, Collegium Civitas, Warsaw, April 7.

2015 Modeling energy security: Intellectual history and future prospects. Institute for Energy and Climate Research, Jülich Research Center, November 10.

2015 Energy security: Predictably irrational. Invited talk at Assessing the green paradox workshop. Leibniz Institute for Economic Research, University of Munich, July 3.

2015 The concept of energy security. Expert workshop on comprehensive energy security and conflicts. Webster University, Vienna, June 18-19.

2015 Connecting global climate to national energy policies: state of the art and future research agenda. University of Bergen, Norway, April 14.

2014 Energy security and climate mitigation: an asymmetric and transient marriage. Invited plenary presentation. Low-carbon research network annual conference, Rome, October 1.

2014 Energy politics: A mirror of geography or driver of change? Department of Humanities, Social and Political Sciences, ETH University, June 17.

2014 Energy politics: Shaping and being shaped by energy systems. Chalmers University, Physical Resource Theory Group. Gothenburg, Sweden, May 5.

2014 Energy security and the EU 2030 climate/energy goals: An issue of how and where. Invited talk at European Union Institute for Security Studies Workshop on: Achieving EU Energy Security in Light of the New 2030 Climate/Energy Goals, Brussels, April 10.

2014 The science of climate and politics of energy. Academic Council on the United Nations System. Vienna UN conference: facing changing realities: the evolution of UN policies, January 16.

2013 The global future of nuclear energy and newcomers: crystal ball or tarot cards. International Atomic Energy Agency, UN, Vienna, Austria, October 23.

2012 Taking the climate agenda to the national level. Lund University, Centre for Sustainability Studies, Lund, Sweden, November 16.

2011 Mind the gap: global visions and national plans. University of Maryland, Department of Public Policy, November 8.

2011 Energy security and climate change: tensions and synergies. Australian National University, Canberra Australia, May 11.

2010 Energy security under radical energy transitions. International Institute of Industrial Environmental Economics, Lund University, September 24.

Awards and Honors

2014	CEU Best Dissertation Award
2012	CEU Advanced Doctoral Student Award
2011	CEU Outstanding First-year Student Award
2010	IIASA Young Scientists Student Program Fellowship
2009	CEU Outstanding Academic Achievement Award
2009, 2005	Honorable Mention National Science Foundation Graduate Fellowship
2009-2013	CEU Doctoral student fellowship

2007-2009 Erasmus Mundus graduate fellowship

Conference and Workshop Activity

2015 Session organizer: Research session on Political economy of sustainable energy transitions. International Sustainability Transitions Conference, August 25-28.

2015 Dialogue session participant: Sustainable energy transitions as an object of political economy. International Sustainability Transitions Conference, August 25-28.

2015 Global visions: from planetary boundaries to national contours. International Geosphere-Biosphere Programme Scientific Symposium. IIASA, April 29.

2013 Energy security of China, India, the E.U. and the U.S. under long-term scenarios: Results from six IAMs. International Energy Workshop. Paris, June 19-21.

2012 Rapporteur for Session 1: Global Transformations: Understanding the World We Live in and its Possible Futures. International Institute for Applied Systems Analysis, World within reach: from science to Policy. Vienna, October 24-26.

2012 A framework for evaluating energy security under low-carbon transitions. New Energy Security Challenges Post-graduate Conference. London, May 10-11.

2011 Energy Security under low-carbon transitions. UK Energy Research Council summer school. Warwick, June 26 - July 2.

2010 Discussant. Contextualizing energy security and transition: concepts framing and empirical evidence. Standing Group on International Relations. Stockholm, September 9-11.

2010 Contextualizing the nuclear renaissance: Mapping different national potentials. IAEE European Conference: Energy Economy, Policies and Supply Security. Vilnius, August 25-28.

2010 Invited Commentator. Towards A Nuclear Renaissance? Global Public Policy Institute & Brookings Institution. Transatlantic Global Energy Governance Dialogue Series. Potsdam, Germany, March 4-5.

2010 Possible expansion of nuclear energy: An assessment of national capacities and imperatives for nuclear power implementation in non-nuclear countries. Sussex Energy Group Conference: Energy transitions in an interdependent World. Brighton, February 25-26.

2010 Possible expansion of nuclear energy: An assessment of national capacities and imperatives for nuclear power implementation in non-nuclear countries. Transatlantic Relations, Climate, and Energy Workshop. Freie University, Berlin, November 28 - December 6.

2009 Energy security and climate change: Can we kill two birds with one stone. Erasmus Mundus Conference on Climate Change and Higher Education. CEU, Budapest, February 26-27.

Advisory Boards

since 2017 Advisory Board Member of Routledge Energy Transitions Series

since 2016 Advisory Board Member of Bioenergy CCS Swedish Energy Agency funded project

since 2015 Editorial board member *Energy Research and Social Science*

2017 Expert evaluator, Energy Panel, Research Council Norway

2016 Member of Elsevier's Energy Forum

Teaching Experience and PhD Examinations

2016 Grading committee member, Lund Technical University, Environmental and Energy Systems Studies, André Månsson, PhD defense, *Energy and Security - Exploring Renewable and Efficient Energy Systems*.

2016 Grading committee member, Chalmers University, Department of Physical Resource Theory, Mariliis Lehtveer, PhD defense, *Modeling Energy Systems: Assessing the role of nuclear power and large-scale intermittent renewables*.

2014 Environmental careers. CEU, April.

2013 Invited seminar for PhD students on navigating interdisciplinary PhDs and careers. CEU, November.

2013 Invited lecture for MSc students on global energy challenges. CEU, November.

2013 Writing seminar for PhD summer students. IIASA, August.

2010 Teaching assistant. Strategic Environmental Assessment. CEU, Fall.

2004-5 Teaching assistant. Introduction to Earth Systems and Geology. Pennsylvania State University, US. Led weekly geology field trips and labs.

Selected Service and Review Activities

Journal reviews: *Nature Climate Change, Nature Energy, Climate Change Economics, Climate Policy, Energies, Energy Economics, Energy Policy, Energy Research and Social Science, Energy Strategy Reviews, Environmental Science and Technology, the Geographical Journal, International Journal of Electrical Power and Energy Systems, International Studies Review, Sustainability*

Grant reviews: European Research Council's Social Sciences and Humanities 3rd panel, Swiss National Science Foundation external reviewer

2018 Elected scientific representative of institutional renewal Task Force, IIASA

2017 Best reviewer award *Energy Research and Social Science*

2016 Moderator session on diversity with former Finnish president T. Halonen

2016 Internal Research Committee elected member, IIASA

2015 Staff Association Recognition Award for service related to Cultural Diversity and Building a Positive Work Environment, IIASA

2015 Member of the Selection Committee on the Head of HR and Secretary of Administration position, IIASA

2014-5 Chair of IIASA Committee on Cultural Diversity and Building a Positive Work Environment, IIASA

2009-11 Co-founder and co-leader of Energy Policy Research Group, CEU

Stakeholder and Policy Engagement

2016 A look at energy subsidies and climate objectives. ADVANCE stakeholder workshop. Brussels, October 24.

2014 Climate policies and other energy objectives. EU Modeling workshop in preparation for Lima. DG Clima, Brussels, November 18.

2014 An asymmetric marriage: Climate mitigation and energy security. LIMITS stakeholder workshop. Brussels, September 26.

2014 Invited external expert on nuclear Newcomers, International Atomic Energy Agency: Building a national position on nuclear power, January 21-22 & June 24-26.

2013 Invited energy security expert to an expert round-table on Energy and Security, International Peace Institute, Vienna Austria, June 28.

2013 Chair of stakeholder workshop session: Climate mitigation in the context of multiple policies. LIMITS Second Stakeholder Workshop. Amsterdam, February 13.

2012 Co-lead author and task force co-coordinator for the UN Sustainable Energy for All energy efficiency and renewable energy task force, November 2012-April 2013.

2011 Invited lead expert in multi-stakeholder workshop on Australia's National Energy Security Assessment, Canberra Australia, May 12-13.

2011 Presentations to the IEA's Standing Group on Emergency Questions on the Model of Short-term Energy Security, IEA, March 23 and June 24.

Selected Media Coverage and Online Presence

contributor to polet.network

2018 Scientific American: New study finds cutting oil subsidies will not stop climate change, February 8.

2016 ORF: Reducing energy imports bring little for the climate, June 6.

2014 Deutsche Welle: Interview on the impact of the South Stream on European Energy Security (article in Ukrainian), May 22.

2014 Economist: Letter to the editor on Ukrainian energy use, April 26.

2014 The Conversation: EU energy security is only as strong as its weakest link: the former Easter block, April 16.

2014 The Climate Bonus: Climate policy boosts energy security, January 6.

2013 The Conversation: Nations' nuclear ambitions not discouraged by few suppliers. December 11. (invited article)

2013 Economist.com: Balancing Act, December 3. (with A. Cherp)

2012 Oil in Russia: Integrating views and actions, June. (with A. Antonyuk)

2011 NewScientist: Dozens of countries queue up to go nuclear, June 24.

2011 Economist: Letter to the editor on nuclear power, March 31. (letter with A. Cherp)

Technical Skills, Courses and Languages

R, Adobe Illustrator, LaTeX

English (native); Spanish, French & Italian (proficient); German & Hungarian (survival)

Communication courses: Presenting data and information (E. Tufte); Science communication (Royal Society of London; A. Lewis); B. Tannenbaum (Public speaking)