Curriculum Vitae	Dr. Keywan RIAHI

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Work experience

Dates		
	2012-present:	Program Director, Energy (ENE) Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
	2008-2011:	Acting Program Leader, Energy (ENE) Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
	2006-present:	Visiting Professor for Energy Systems Analysis, Institute of Thermal Engineering, Graz University of Technology, Austria
	2000-present:	Senior Research Scholar, Transition to New Technologies (TNT) Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
	2005-2008:	Scientific Coordinator, Greenhouse Gas Initiative (GGI), International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
	1997-2000:	Research Assistant, Environmentally Compatible Energy Systems Project (ECS) International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
	1997-1997:	Energy Consultant, ESG Power Inc., Austria
	1996-1997:	Environment and Safety Consultant, Heresch & Heresch Environmental Engineering, Austria

Ongoing Academic Activities, Advisory Boards and Steering Committees

- Project Coordinator and member of Coordination Board, CD-LINKS (Linking Climate and Development Policies-Leveraging International Networks and Knowledge Sharing) EU Horizon 2020 project (2015-2019)
- Advisory Board, COMBI (Calculating and Operationalizing the Multiple Benefits of Energy Efficiency in Europe) EU Horizon 2020 project (2015-2018)
- Advisory Board, VIACS (Vulnerability, Impacts, Adaptation, and Climate Services) for CMIP-6 (Coupled Model Intercomparison Project-6) (2015-present)
- Coordination Board, MILES (Modelling and Informing Low Emission Strategies) EU Funded project (2014-present)
- Scientific Steering Group, ADVANCE (Advanced Model Development and Validation for Improved Analysis of Costs and Impacts of Mitigation Policies) EU FP-7 project (2013-2016)
- Committee Member, ICONICS (International Committee on New Integrated Climate Change Assessment Scenarios) (2011-present)
- Scientific Steering Committee, IAMC (Integrated Assessment Modeling Consortium) (2007-present)
- Co-chair, Working Group on SSPs (Scenarios for Shared Socioeconomic Pathways) IAMC (Integrated Assessment Modeling Consortium) (2009-present)

Past Activities

- Steering Committee of Meeting, Task Group on Data and Scenario for Impact and Climate Analysis (TGICA) (2015)
- Scientific Steering Group, Energy Modeling Forum Study 27, Stanford University, USA (2014)
- Advisory Board, Integrated Model to Assess the Global Environment version 3.0 (IMAGE 3.0) (2014)
- Core Writing Team, Synthesis Report of the IPCC Fifth Assessment Report (2014)
- Head reviewer, Austrian Panel on Climate Change Assessment Report (APCC) (2012-2014)
- Scientific Steering Group, EU FP-7 Assessment of Climate Change Mitigation Pathways and Evaluation of the Robustness of Mitigation Cost Estimates **(**AMPERE) project (2011-2014)
- Scientific Steering Group, FP-7 Low climate IMpact scenarios and the Implications of required Tight emission control Strategies (LIMITS) project (2011-2014)
- Lead Author, IPCC Fifth Assessment Report, Working Group III, Chapter 7: Energy Systems, Summary for Policymakers, Technical Summary (2010-2014).

- Scientific Organizing Committee, Post-Fifth Assessment Report Working Group III, IPCC Workshop to Explore the New SMA/SSP Approach, Seoul, Rep. of Korea, (2011).
- Scientific Organizing Committee, Shared Socioeconomic Pathways Workshop, US National Center for Atmospheric Research, Boulder, Colorado, USA (2011).
- Steering Committee, Asian Modeling Exercise (AME) - Pacific Northwest National Laboratory (PNNL) (2009-2012)
- Executive Committee, Global Energy Assessment, IIASA, Laxenburg, Austria (2006-2012)
- Coordinating Lead Author, Global Energy Assessment: Chapter 17: Energy Pathways for Sustainable Development (2006-2012)
- Review Editor, Chapter 10: Mitigation Costs and Potentials of the Special Report on Renewable Energy Sources and Climate Change (SRREN) of the Intergovernmental Panel on Climate Change (IPCC) (2009-2011)
- Lead Author, Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, Working Group III) (2005-2007)
- Core Writing Team, Synthesis Report of the IPCC Fourth Assessment Report (2007)
- Lecturer, Institute for Power Systems and Energy Economics, Vienna University of Technology, Austria (2004-2007)
- Lead Author, Special Report on Carbon Dioxide Capture and Storage of the Intergovernmental Panel on Climate Change (IPCC, Working Group III) (2003-2005)
- Lead Author, Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, Working Group III) (1999-2001)
- Lead Author, Special Report on Emissions Scenarios of the Intergovernmental Panel on Climate Change (IPCC, Working Group III) (1997-2000)

Member of Evaluation Board

- Evaluation Committee, Mercator Research Institute on Global Commons and Climate Change (MCC) (2016)
- Peer Reviewing Panel, POTEnCIA Modeling Tool Technical Peer Review Exercise (2016)
- Evaluation Committee, Integrated Model to Assess the Global Environment version 3.0 (IMAGE 3.0) (2014)
- Evaluation Committee, Laboratory for Energy Systems Analysis, Paul Scherrer Institute, ETH Zurich, Switzerland (2012)

Editorial boards

- Editorial Advisory Panel member in Social Science and Policy, Nature Energy (2015-present)
- Associate Editor, Energy Strategy Reviews (2015-present)
- Associate Editor, Energy Economics (2007-2012)

Special issues

- Co-editor, Special Issue on Shared Socioeconomic Pathways (SSPs): Quantification of the New SSPs for Climate Change Research, Global Environmental Change (2014-2016)
- Co-editor, Special Section on the AMPERE intermodel comparison on the economics of climate stabilization, Technological Forecasting and Social Change (2014-2015)
- Co-editor, Special Issue on the EMF27 Study on Global Technology and Climate Policy Strategies, Climatic Change (2014)
- Co-editor, LIMITS Special Issue on Durban Platform scenarios, Climate Change Economics (2013-2014)
- Co-editor, Special Issue on the Representative Concentration Pathways, Climatic Change (2011)
- Co-editor, Special Issue on Integrated Assessment of Uncertainties in Greenhouse Gas Emissions and their Mitigation, Technological Forecasting and Social Change (2007)

Member of Ph.D. Committees

- Utrecht University, Utrecht, Netherlands
- Vienna University of Technology, Vienna, Austria
- Berlin University of Technology, Berlin, Germany
- International Research Center on Environment and Development, (CIRED), Paris, France
- ETH Zurich, Switzerland

Education

- 1998-2003: Doctoral Study: Dr. tech. in Mechanical Engineering and Industrial Management. *Thesis: The Role of Technological Change in Emissions Mitigation,* Graz University of Technology, Graz, Austria
- 1989-1997: Dipl. Ing. in Mechanical Engineering and Industrial Management. *Thesis: Optimization of Costs and Resource Consumption of Combined Heat and Power Plants,* Graz University of Technology, Graz, Austria

Scientific Publications

2016

Cameron, C., Pachauri, S., Rao, N.D., McCollum, D., Rogelj, J., Riahi, K., 2016: Policy trade-offs between climate mitigation and clean cook-stove access in South Asia. *Nature Energy,* 1:15010

van Vliet, M.T.H., Wiberg, D., Leduc, S., Riahi, K., 2016: Power-generation system vulnerability and adaptation to changes in climate and water resources. *Nature Climate Change,* (in press). Published online on 4 January 2016. doi: 10.1038/nclimate2903

2015

Bertram, C., Johnson, N., Luderer, G., Riahi, K., Isaac, M., Eom, J., 2015: Carbon lock-in through capital stock inertia associated with weak near-term climate policies. Special section: AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change*, 90 (Part A): 62-72. doi:10.1016/j.techfore.2013.10.001

Eom, J., Edmonds, J., Krey, V., Johnson, N., Longden, T., Luderer, G., Riahi, K., van Vuuren.,D.P., 2015: The impact of near-term climate policy choices on technology and emission transition pathways. Special section: AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change,* 90 (Part A): 73-88. doi: 10.1016/j.techfore.2013.09.017

Gambhir, A., Napp, T., Hawkes, A., McCollum, D., Fricko, O., Havlik, P., Riahi, K., Drouet, L., Bosetti, V., Bernie, D., Lowe, J., 2015: Assessing the challenges of global long-term mitigation scenarios (C2a). The work in this report was supported by AVOID 2 program (UK Department of Energy and Climate Change) under contract reference no. 1104872. Available at: http://www.avoid.uk.net/2015/11/assessing-the-challenges-of-global-long-term-mitigation-scenarios-c2a/

Johnson, N., Krey, V., McCollum, D.L., Rao, S., Riahi, K., Rogelj, J., 2015: Stranded on a low-carbon planet: Implications of climate policy for the phase-out of coal-based power plants. Special section: AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change*, 90 (Part A): 89-102. doi: 10.1016/j.techfore.2014.02.028

Kriegler, E., Riahi, K., Bauer, N., Schwanitz, V.J., Petermann, N., Bosetti, V., Marcucci, A., Otto, S., Paroussos, L., Rao, S., Curras, T.A., Ashina, S., Bollen, J., Eom, J., Hamdi-Cherif, M., Longden, T., Kitous, A., Méjean, A., Sano, F., Schaeffer, M., Wada, K., Capros, P., van Vuuren, D.P., Edenhofer, O., 2015: Making or breaking climate targets: The AMPERE study on staged accession scenarios for climate policy. Special section: AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change,* 90 (Part A): 24-44. doi: 10.1016/j.techfore.2013.09.021

Kriegler, E., Riahi, R., Bosetti, V., Capros, P., Petermann, N., van Vuuren, D., Edenhofer, O., (guest eds), 2015: Special section: AMPERE intermodel comparison on the economics of climate stabilization. Technological Forecasting and Social Change, 90 (Part A) 1-354

Kriegler, E., Riahi, K., Bosetti, V., Capros, P., Petermann, N., van Vuuren, D.P., Weyant, J.P., Edenhofer, O., 2015: Introduction to the AMPERE model intecomparison studies on the economics of climate stabilization. Special section: AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change*, 90 (Part A): 1-7. doi: 10.1016/j.techfore.2014.10.012

O'Neill, B. C., Kriegler, E., Ebi, K.L., Kemp-Benedict, E., Riahi, K., Rothman, D. S., van Ruijven, B.J., van Vuuren, D.P., Birkmann, J., Kok, K., Levy, M., Solecki, W., 2015: The roads ahead: Narratives for shared socioeconomic pathways describing world futures in the 21st century. Global Environmental Change, (in press). Published online on 12 February 2015. doi: 10.1016/j.gloenvcha.2015.01.004

Riahi, K., Kriegler, E., Johnson, N., Bertram, C., den Elzen, M., Eom, J., Schaeffer, M., Edmonds, J., Isaac, M., Krey, V., Longdon, T., Luderer, G., Mejean, A., McCollum, D.L., Mima, S., Turton, H., van Vuuren, D.P., Wada, K., Bosetti, V., Capros, P., Criqui, P., Hamdi-Cherif, M., Kainuma, M., Edenhofer, O., 2015: Locked into Copenhagen pledges—Implications of short-term emission targets for the cost and feasibility of long-term climate goals. Special

section: AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change*, 90 (Part A): 8-23. doi:10.1016/j.techfore.2013.09.016

Riahi, K. van Vuuren, D., (guest eds.), 2015: Special Issue on SSPs: Quantification of the New SSPs for Climate Change Research, Global Environmental Change (submitted)

Schaeffer, M., Gohar, L., Kriegler, E., Lowe, J., Riahi, K., van Vuuren, D.P., 2015: Mid- and long-term climate projections for fragmented and delayed-action scenarios. Special section: AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change*, 90 (Part A): 257-268. doi:10.1016/j.techfore.2013.09.013

Spencer, T., Pierfederici, R., Waisman, H., …, Rogelj, J., Jewell, J., Riahi, K.,., et.al. 2015: Beyond the Numbers: Understanding the Transformation Induced by the INDCs. *A report of the MILES Project Consortium.* Available at: http://www.iddri.org/Publications/Collections/Analyses/Exe-summary_miles.pdf

Tavoni, M., Kriegler, E., Riahi, K., van Vuuren, D., Aboumahboub, T., Bowen, A., Calvin, K., Campiglio, E., Kober, T., Jewell, J., Luderer, G., Marangoni, G., McCollum, D., van Sluisveld, M., Zimmer, A., and van der Zwaan, B., 2014: Post-2020 climate agreements in the major economies assessed in the light of global models. Nature Climate Change, 5, 119-126 (2015). doi: 10.1038/nclimate2475

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2014

Ebi, K., Hallegate, S., Kram, T., Arnell, N., Carter, T.R., Edmonds, J., Kriegler, E., Mathur, R., O'Neill, B.C., Riahi, K., Winkler, H., van Vuuren, D.P., and Zwickel, T., 2014: A new scenario framework for climate change research: background, process, and future directions. Special Issue of Climatic Change on a framework for the development of new socioeconomics scenarios for climate change research. *Climatic Change,* 122(3): 363-372. doi: 10.1007/s10584-013-0912-3

Grubler, A., Fuss, S., McCollum, D., Krey, V., Riahi, K., 2014: Technology Portfolios: Modelling Technological Uncertainty and Innovation Risks (Chapter 7). In *Energy Technology Innovation: Learning from Historical Successes and Failures*, A. Grubler and C. Wilson (eds.). Cambridge University Press, New York, USA, pp. 89-102. ISBN: 9781107023222

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Kriegler, E., Tavoni, M., Aboumahboub, T., Luderer, G., Calvin, K., DeMaere, G., Krey, V., Riahi, K., Rosler, H., Schaeffer, M., van Vuuren, D.P., 2014: LIMITS Special Issue: What does the 2°C target imply for a global climate agreement in 2020? *Climate Change Economics,* (in press)

Kriegler, E., Weyant, J.P., Blanford, G.J., Krey, V., Clarke, L., Edmonds, J., Fawcett, A., Luderer, G., Riahi, K., Richels, R., Rose, S.K., Tavoni, M., and van Vuuren, D.P., 2014: The role of technology for achieving climate policy objectives: Overview of the EMF 27 study on global technology and climate policy strategies. *Climatic Change*, 123:3-4, 353-367. doi:

10.1007/s10584-013-0953-7

McJeon, H., Edmonds, J., Bauer, N., Clarke, L., Fisher, B., Flannery, B.P., Hilaire, J., Krey, V, Marangoni, G., Mi, R., Riahi, K., Rogner, H., Tavoni, M, 2014: Limited impact on decadal-scale climate change from increased use of natural gas. *Nature,* 514 (2014) 482–485. (in press). Published online on 15 October 2014. doi: 10.1038/nature13837.

McCollum, D.L, Bauer, N., Calvin, K., Kitous, A., and Riahi, K., 2014: Fossil resource and energy security dynamics in conventional and carbon-constrained worlds. Special Issue of Climatic Change on the EMF27 study on global technology and climate policy strategies. *Climatic Change*, 123:(3-4)413-426. doi:10.1007/s10584-013-0939-5

McCollum, D.L., Krey, V., Kolp, P., Nagai, Y., and Riahi, K., 2014: Transport electrification: A key element for energy system transformation and climate stabilization. Special Issue of Climatic Change on the EMF27 study on global technology and climate policy strategies. *Climatic Change,* 123(3-4):651-664. doi:10.1007/s10584-013-0969-z

McCollum, D.L., Nagai, Y., Riahi, K, Marangoni, G., Calvin, K., Pietzcker, R., van Vliet, J., van der Zwaan, B., 2014: Energy investments under climate policy: a comparison of global models. *Climate Change Economics*, (forthcoming). Accepted in November 2013.

O'Neill, B.C., Kriegler, E., Riahi, K., Ebi, K., Hallegatte, S., Carter, T., Mathur, R., van Vuuren, D., 2014: A new scenario framework for climate change research: The concept of shared socio-economic pathways. Special Issue of Climatic Change on a framework for the development of new socioeconomics scenarios for climate change research. *Climatic Change,* 122(3): 387-400. doi: 10.1007/s10584-013-0905-2

Rao, N.D., Riahi, K., Grubler, A.: 2014: Commentary: climate impacts of poverty eradication. *Nature Climate Change,* Vol. 4, 749-751.

Riahi, K. (Contributor): 2014: Annex 1 – Glossary, In *Climate Change 2014: Mitigation of Climate Change. IPCC Working Group III Contribution to AR5*, Mitigation of Climate Change. IPCC Working Group III Contribution to AR5.

Riahi, K., Kriegler, E., Johnson, N., Bertram, C., den Elzen, M., Eom, J., Schaeffer, M., Edmonds, J., Isaac, M., Krey, V., Longdon, T., Luderer, G., Mejean, A., McCollum, D.L., Mima, S., Turton, H., van Vuuren, D.P., Wada, K., Bosetti, V., Capros, P., Criqui, P., Hamdi-Cherif, M., Kainuma, M., and Edenhofer, O. 2014: Locked into Copenhagen pledges—Implications of short-term emission targets for the cost and feasibility of long-term climate goals. Special issue: Are short-term climate actions consistent with long-term goals? The AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change* (in press). Published online on 27 November 2013. doi:10.1016/j.techfore.2013.09.016

Riahi, K. (Contributing Author): 2014: What Emission Levels Will Comply with Temperature Limits? (Chapter 2) *In* Emissions Gap Report 2014: A UNEP Synthesis Report. United Nations Environment Programme (UNEP), Nairobi, Kenya. Available at: http://www.unep.org/publications/ebooks/emissionsgapreport2014/portals/50268/pdf/EGR2014_HIGHRES.pdf.

Riahi, K. (Contributing Author): 2014: Assessing Transformation Pathways (Chapter 6). In *Climate Change 2014: Mitigation of Climate Change. IPCC Working Group III Contribution to AR5*, Mitigation of Climate Change. IPCC Working Group III Contribution to AR5.

Riahi, K. (Lead Author): 2014: Energy Systems (Chapter 7). In *Climate Change 2014: Mitigation of Climate Change. IPCC Working Group III Contribution to AR5*, Mitigation of Climate Change. IPCC Working Group III Contribution to AR5.

Riahi, K. (Drafting Author): 2014: Summary for Policymakers, In *Climate Change 2014, Mitigation of Climate Change*. *Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*.

Riahi, K., (Lead Author): 2014: Technical Summary. In *Climate Change 2014: Mitigation of Climate Change. IPCC Working Group III Contribution to AR5*, Mitigation of Climate Change. IPCC Working Group III Contribution to AR5.

Riahi, K., (Contributor) : 2014: Prototype Global Sustainable Development Report, Policy Analysis Branch of the Division for Sustainable Development, UN Department for Economic and Social Affairs (DESA).

Riahi, K., Kriegler, E., Johnson, N., Bertram, C., den Elzen, M., Eom, J., Schaeffer, M., Edmonds, J., Isaac, M., Krey, V., Longdon, T., Luderer, G., Mejean, A., McCollum, D.L., Mima, S., Turton, H., van Vuuren, D.P., Wada, K., Bosetti, V., Capros, P., Criqui, P., Hamdi-Cherif, M., Kainuma, M., and Edenhofer, O., 2014: Locked into Copenhagen pledges—Implications of short-term emission targets for the cost and feasibility of long-term climate goals. Special issue: Are short-term climate actions consistent with long-term goals? The AMPERE

intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social Change* (in press). Published online on 27 November 2013. doi:10.1016/j.techfore.2013.09.016

Rogelj, J., Rao, S., McCollum, D.L., Pachauri, S., Klimont, Z., Krey, V., and Riahi, K., 2014: Air-pollution emission ranges consistent with the representative concentration pathways. *Nature Climate Change*, 4: 446-450. doi: 10.1038/NCLIMATE217

Rose, S.K., Richels, R., Smith, S., Riahi, K., Strefler, J., and van Vuuren, D.P., 2014: Non-Kyoto radiative forcing in long-run greenhouse gas emissions and stabilization scenarios. Special Issue of Climatic Change on the EMF27 study on global technology and climate policy strategies. *Climatic Change*, 123 (3-4): 511-525. doi:10.1007/s10584-013-0955-5

Schaeffer, M., Gohar, L., Kriegler, E., Lowe, J., Riahi, K., and van Vuuren, D.P., 2014: Mid- and long-term climate projections for fragmented and delayed-action scenarios. Special issue: Are short-term climate actions consistent with long-term goals? The AMPERE intermodel comparison on the economics of climate stabilization. *Technological Forecasting and Social* (in press). Published online on 31 October 2013. doi:10.1016/j.techfore.2013.09.013.

Tavoni, M., Kriegler, E., Aboumahboub, T., Calvin, K., De Maere, G., Jewell, J., Kober, T., Lucas, P., Luderer, G., McCollum, D.L., Marangoni, G., Riahi, K., and van Vuuren, D., 2014: The distribution of the major economies' effort in the Durban platform scenarios. accepted to *Climate Change Economics* (forthcoming).

Tavoni, M., Kriegler, E., Riahi, K., van Vuuren, D., Aboumahboub, T., Bowen, A., Calvin, K., Campiglio, E., Kober, T., Jewell, J., Luderer, G., Marangoni, G., McCollum, D., van Sluisveld, M., Zimmer, A., and van der Zwaan, B., 2014: Post-2020 climate agreements in the major economies assessed in the light of global models. *Nature Climate Change* (accepted).

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Weyant, J.P., Kriegler, E., Blanford, G.J., Krey, V., Edmonds, J., Riahi, K., Richels, R., Tavoni, M. (eds), 2014: Special Issue of Climatic Change on the EMF27 study on global technology and climate policy strategies. Climatic Change, 123(3-4) April 2014

2013

Ekholm, T., Ghodussi, H., Krey, V., and Riahi, K., 2013: The effect of financial constraints on energy-climate scenarios. *Energy Policy,* 59: 562-572. doi: 10.1016/j.enpol.2013.04.001

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McCollum, D.L., Nagai, Y., Riahi, K, Marangoni, G., Calvin, K., Pietzcker, R., van Vliet, J., and van der Zwaan, B., 2013: Energy investments under climate policy: a comparison of global models. LIMITS Special Issue, FP7 LIMITS project. Available at: www.feem-project.net/limits/docs/04.%20cce%20limits%20special%20issue_paper3.pdf.

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Riahi, K. (Contributor): 2013: The emissions gaps and its implications. In The Emissions Gap Report 2013: A UNEP Synthesis Report. United Nations Environment Programme (UNEP), Nairobi, Kenya. Available at http://www.unep.org/pdf/UNEPEmissionsGapReport2013.pdf.

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