

CURRICULUM VITAE  
PROF. DR. GUNNAR LUDERER  
DIPL.-PHYS., M.S.

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PERSONAL DETAILS

Gender: Male  
Nationality: German  
Marital status: In a relationship, two children

CURRENT EMPLOYMENT

since 09/2019                    **Technical University of Berlin**  
**Professor**, Chair of Global Energy Systems;  
joint appointment with  
Potsdam Institute for Climate Impact Research

since 12/2008                    **Potsdam Institute for Climate Impact Research**  
**Group Leader**, Global Energy Systems;  
**Lead Scientist** for the  
REMIND Energy-Economy-Climate Model

Primary Expertise                Integrated energy-economy-climate modeling  
Low-carbon transformation pathways  
The role of renewable energy sources  
Interrelation of near-term climate policies and long-term  
climate targets

EDUCATION

Jan 2004 – Sep 2007            **International Max Planck Research School on**  
**Atmospheric Chemistry and Physics,**  
**University of Mainz**  
Doctorate in Natural Sciences (Dr. rer. nat.;  
Advisor: Prof. Dr. M. O. Andreae)  
Research visits to University of Washington (Feb-Mar  
2004) and Hebrew University, Jerusalem (Jul-Aug 2004).

Oct 1998 – Dec 2003            **University of Heidelberg**  
Studies of Physics, with Economics as a minor.  
Specialization in Environmental Physics.  
Final grade (Diploma): excellent (1.0) on a scale from 1.0-5.0

- Sep 2001 – Oct 2003      **Oregon State University, Corvallis, USA**  
Graduate Student in Atmospheric Sciences.  
Master of Science, GPA: 3.97/4.00  
(Advisor: Prof. Dr. J. A. Coakley).
- Aug 1988 – Jun 1997      **Kepler Gymnasium, Tübingen**  
Abitur (general university qualification),  
Average grade: excellent (1.1) on a scale from 1.0-5.0

## PREVIOUS PROFESSIONAL EXPERIENCE

- Oct 2007 – Nov 2008      **Post-Doctoral Researcher**  
**Potsdam Institute for Climate Impact Research**  
Research Domain III – Sustainable Solutions
- Jun 2006 – Sep 2007      **Scientific Staff**  
**Federal Environment Agency, Dessau**  
Climate Change Unit and European Topic Centre on Air  
and Climate
- Jan 2004 – Jun 2006      **Research Assistant**  
**Max Planck Institute for Chemistry**
- Sep 2005 – Oct 2005      **Internship**  
**Öko-Institut – Institute for Applied Ecology, Berlin**  
Climate Policy Division, Berlin
- Jan 2002 – Sep 2002      **Graduate Research Assistant**  
**Oregon State University, Corvallis, USA**
- Mar 2000 – Aug 2001      **Research Assistantship**  
**University of Heidelberg**  
Institute for Environmental Physics  
(Supervisor: Prof. Dr. U. Platt)
- Mai 2000 – Jul 2001      **Teaching Assistant**  
**University of Heidelberg**
- Jul 1997 – Jul 1998      **Community Servant (Zivildienst)**  
**Öko-Institut – Institute for Applied Ecology, Freiburg**  
Energy Division.

## PROJECT MANAGEMENT AND FUNDRAISING (SELECTION)

- Since October 2017      Module leader “Energy Systems Scenarios, Sectoral Bottlenecks and Options”, Strategic Scenario Analysis, German-Australian Research Collaboration funded by BMBF. Funding volume: 680 k€ for PIK.
- Oct 2016 – Dec 2019      Work package leader “Environmental Impacts”, ENavi Kopernikus Projekt für die Energiewende funded by BMBF. Funding volume: 1600 k€ for PIK.
- Since August 2015      Work package leader and Coordination Board Member, “Linking Climate and Development Policies, Leveraging International Networks and Knowledge Sharing (CD-LINKS)”, [www.cd-links.org](http://www.cd-links.org), under EU Horizon2020. Funding volume: 613 k€ for PIK.
- April 2015 – Aug 2017      Project leader, UFOPLAN project “Globale Treibhausgasemissionspfade bis 2050” for the German Federal Environment Agency. Funding volume: 229 k€.
- Jan 2013 – Dec 2016      Project Director of the EU FP7 project ADVANCE [www.fp7-advance.eu](http://www.fp7-advance.eu) (involving 13 European research institutions, total funding volume 5.7 Mio €, 1.05 Mio for PIK)
- Jan 2011 – Apr 2013      Project leader, UFOPLAN Project “Scenarios on the feasibility of emissions reduction consistent with 2°C stabilization” for the German Federal Environment Agency. Funding volume: 183 k€.
- Jan 2012 – Jan 2013      Project leader, „Analyse des Klimaschutzpotentials der Nutzung von erneuerbarem Wasserstoff und Methan“ for Deutscher Verband des Gas- und Wasserfachs (funding volume 100 k€).
- March 2010 - June 2013      Work package leader, “Roadmaps towards sustainable energy futures (RoSE)” Funder: Mercator Foundation, Volume: 1.24 Mio €.
- April 2010- Oct 2013      Task Leader, cross-cut analysis on Renewable Energy Sources, Stanford Energy Modeling Forum 27 on the Role of Technologies for Climate Change Mitigation.
- Jan 2008 – Dec 2010      Scientific Coordinator, “Report on Energy and Climate Policy in Europe (RECIPE)” Funder: WWF and Allianz. Funding volume: 500 k€.

## PUBLICATIONS

Dr. Gunnar Luderer has published more than 90 articles in peer-reviewed journals, and contributed to many book chapters and scientific reports. An up-to-date list of publications is available from his website at <https://www.pik-potsdam.de/members/luderer/publications/gunnars-publications>

### Highlight results of past five years

- Luderer, Gunnar, Anders Arvesen, Michaja Pehl, Edgar G. Hertwich, and et al. (2019) “Environmental Co-Benefits and Adverse Side-Effects of Alternative Power Sector Decarbonization Strategies.” *Nature Communications*, 10, 5229 doi:10.1038/s41467-019-13067-8
- Luderer, Gunnar, Zoi Vrontisi, Christoph Bertram, Oreane Y. Edelenbosch, Robert Pietzcker, Joeri Rogelj, Harmen Sytze De Boer, et al. “Residual Fossil CO<sub>2</sub> in 1.5-2°C Pathways.” *Nature Climate Change* 8:626–633. doi: 10.1038/s41558-018-0198-6.
- Bertram, C., Gunnar Luderer, A Popp, Florian Humpenöder, J. C. Minx, William Lamb, Miodrag Stevanovic, A Giannousakis, and E Kriegler (2018) “Targeted Policies Can Compensate Most of the Increased 1 Sustainability Risks in 1.5°C Mitigation Scenarios.” *Environmental Research Letters*.
- Rogelj J, Popp A, Calvin KV, Luderer G et al (2018) Scenarios towards limiting global mean temperature increase below 1.5 °C. *Nature Climate Change* 1. doi: 10.1038/s41558-018-0091-3
- Luderer G, Pietzcker RC, Carrara S, et al (2017) Assessment of wind and solar power in global low-carbon energy scenarios: An introduction. *Energy Economics* 64:542–551. doi: 10.1016/j.eneco.2017.03.027
- Pehl M, Arvesen A, Humpenöder F, Popp A, Hertwich E, Luderer G (2017) Embodied Energy Use and Lifecycle Greenhouse Gas Emissions of Future Electricity Supply Systems. *Nature Energy* 2:. doi: 10.1038/s41560-017-0032-9
- Creutzig, F, Agoston P, Goldschmidt JC, Luderer G, Nemet G, Pietzcker RC. “The Underestimated Potential of Solar Energy to Mitigate Climate Change.” *Nature Energy* 2: nenergy2017140. <https://doi.org/10.1038/nenergy.2017.140>.
- Rogelj J, Luderer G, Pietzcker RC, et al. (2015) Energy system transformations for limiting end-of-century warming to below 1.5 °C. *Nature Clim Change* 5:519–527. doi: 10.1038/nclimate2572
- Bertram C, Luderer G, Pietzcker R, Kriegler E, Schmid E, Edenhofer O (2015). Complementing carbon prices with technology policies to keep climate targets within reach. *Nature Climate Change*.
- Luderer G, Krey V, Calvin K, Merrick J, Mima S, Pietzcker R, Vliet JV, Wada K (2014) The role of renewable energy in climate stabilization: results from the EMF27 scenarios. *Climatic Change* 123:427–441. doi:10.1007/s10584-013-0924-z.