

DR. CHRISTOPH BERTRAM

PROFESSIONAL EXPERIENCE

since 05/2023	Center for Global Sustainability (CGS), University of Maryland School of Public Policy (UMD), <i>College Park, USA</i> Associate Research Professor
03/2019 – 04/2023	Potsdam Institute for Climate Impact Research (PIK), <i>Potsdam, Germany</i> Team Lead International Climate Policy and Senior Scientist
since 04/2011	Potsdam Institute for Climate Impact Research (PIK), <i>Potsdam, Germany</i> Member of the Energy Systems Group (since 05/2023 as guest researcher)
06/2012 – 08/2012	International Institute for Applied Systems Analysis (IIASA), <i>Laxenburg, Austria</i> Research fellow in the Young Scientists Summer Program (YSSP)
05/2010 – 03/2011	Potsdam Institute for Climate Impact Research (PIK), <i>Potsdam, Germany</i> Research analyst for Professors Rahmstorf and Schellnhuber at the German Advisory Council on Global Change (WBGU)
11/2009 – 03/2010	Heinrich Böll Foundation, <i>Washington DC, USA</i> Short-term associate with the climate & energy program

SELECTED PROJECT RESPONSIBILITIES (*proposal writing* and project implementation)

2022 - 2026	ELEVATE, funded by EU Horizon Europe <i>Coordinating PIK input to proposal (grant total: 5m €; PIK: 0.6m €)</i>
2020 - 2022	NGFS climate scenarios (https://www.ngfs.net/ngfs-scenarios-portal/), funded by ClimateWorks Foundation and Bloomberg Philanthropies <i>Coordinating consortium proposals (grants total: 1.8m €; PIK: 0.5m €)</i> Lead of transition scenario modeling and coordination of consortium
2019 - 2023	ENGAGE (http://www.engage-climate.org/), funded by EU H2020 <i>Coordinating PIK input to proposal (grant total: 7.1m €; PIK: 0.7m €)</i> Lead of work package “Global pathways reflecting the Paris Agreement”
2019 - 2023	SHAPE (https://shape-project.org/), funded by JPI-Climate <i>Coordinating consortium proposal (grant total: 2.3m €; PIK: 0.6m €)</i>
2018 – 2021	COMMIT (https://themasites.pbl.nl/commit/), funded by EC’s DG CLIMA Co-Lead of work package “Preparation and selection of global scenarios in the context of the global stocktake”
2018 – 2020	SENSES (https://climatescenarios.org/toolkit/), funded by JPI-Climate Domain expert for finance and policy to assist in building stakeholder toolkit
2018 – 2020	UNEP-FI banking pilot I + II (https://www.unepfi.org/publications/banking-publications/extending-our-horizons/), funded by UNEP-FI

Coordinate consortium proposal (grant total: 100k €; PIK: 50k €)

Lead providing scenario data and advising participating banks

2015 – 2019

CD-LINKS (<https://www.cd-links.org/>), funded by EU H2020

Lead of task “Assessing carbon lock-ins”, and coordinating REMIND-MAGPIE modeling through-out the project

PUBLICATIONS

Co-authored 44 peer-reviewed journal articles (including 16 in *Nature* family of journals and *Science*) with a total of over 5,500 citations (over 1,400 of which in 2022), h-index 33 ([Scholar profile](#))

PEER-REVIEWED JOURNAL ARTICLES

- Ten papers highlighted with additional notes on CB’s contribution and/or relevance in bold -

Wang H, Chen W, Rauner S, Bertram C, Luderer G, Kriegler K (2023): The Double Dividend of International Cooperation for Climate Mitigation Cost Effectiveness and Public Health Cobenefits. [Environmental Science & Technology](#)

Pachauri S, Pelz S, Bertram C, Kreibiehl S, Rao N, Sokona Y, Riahi K (2022): *Fairness considerations in global mitigation investments*. [Science](#)

Hickmann T, Bertram C, Biermann F, Bruschtin E, Kriegler E, Livingstone JE et al. (2022): *Exploring global climate policy futures and their representation in integrated assessment models*. [Politics and Governance](#)

Franz S, Rottoli M, Bertram C (2022): *Wide range of possible aviation demand futures after the COVID-19 pandemic*. [Environmental Research Letters](#)

- Supervised master thesis work highlighting mitigation potential of behavioral change in aviation -

Malik A, Bertram C (2022): *Solar energy as an early just transition opportunity for India’s coal-bearing states*. [Environmental Research Letters](#)

- Supervised PhD work, expertise on India and subnational differences and policy options -

Luderer G, Madeddu S, Merfort L, Ueckerdt F, Pehl M, Pietzcker R et al. (2022): *Impact of declining renewable energy costs on electrification in low-emission scenarios*. [Nature Energy](#)

Riahi K, Bertram C, Huppmann D, Rogelj J et al (2021): *Cost and attainability of meeting stringent climate targets without overshoot*. [Nature Climate Change](#)

Drouet L, Bosetti V, Padoan SA, Aleluia Reis L, Bertram C, Dalla Longa F et al. (2021): Net zero-emission pathways reduce the physical and economic risks of climate change. [Nature Climate Change](#)

Bertram C, Riahi K, Hilaire J, Bosetti V, et al (2021): *Energy system developments and investments in the decisive decade for Paris Agreement targets*. [Environmental Research Letters](#)

- Key model inter-comparison paper on topic of financing the energy transition toward net zero -

Martin, M.A., Sendra, O.A., Bastos, A., Bauer, N., Bertram, C., Blenckner, T. et al. (2021): Ten new insights in climate science 2021-a horizon scan. [Global Sustainability](#)

van Soest HL, Aleluia Reis L, Baptista LB, Bertram C, Després J, Drouet L. et al. (2021): *Global roll-out of comprehensive policy measures may aid in bridging emissions gap*. [Nature Communications](#)

Hasegawa T, Fujimori S, Frank S, Humpenöder F, Bertram C, et al. (2021). *Land-based implications of early climate actions without global net-negative emissions*. [Nature Sustainability](#)

Duan H, Zhou S, Jiang K, Bertram C, et al (2021): *Assessing China's efforts to pursue the 1.5°C warming limit*. [Science](#)

Baumstark L, Bauer N, Benke F, Bertram C, Bi S, Gong C, Dietrich JP, et al. (2021). *REMIND2.1: Transformation and innovation dynamics of the energy-economic system within climate and sustainability limits*. [Geoscientific Model Development](#)

Bertram C, Luderer G, Creutzig F, Bauer N, Ueckerdt F, Malik A, Edenhofer O (2021): *COVID-19-induced low power demand and market forces starkly reduce CO₂ emissions*. [Nature Climate Change](#)
- Timely analysis on short-term potentials for accelerated fossil fuel phase-out in the power sector -

Soergel B, Kriegler E, Weindl I, Rauner S, Dirnaichner A, Ruhe C, et al. (2021): *A sustainable development pathway for climate action within the UN 2030 Agenda*. [Nature Climate Change](#)

Malik A, Bertram C, Kriegler E, Luderer G (2021): *Climate policy accelerates structural changes in energy employment*. [Energy Policy](#)
- Supervised PhD work, in-depth expertise on employment's role for just transition -

Rafaj P, Kieseewetter G, Krey V, Bertram C, Drouet L, 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](#)

Bauer N, Bertram C, Luderer G, Schultes A, et al (2020): *Quantification of an efficiency–sovereignty trade-off in climate policy*. [Nature](#)
- Key paper on international equity debate and role of differentiated carbon pricing with major contribution by CB -

Schaeffer R, Köberle A, van Soest H, Bertram C, Luderer G, Riahi K et al. (2020): *Comparing transformation pathways across major economies*. [Climatic Change](#)

Wang H, Chen W, Bertram C, Malik A, Kriegler E, Luderer G, Després J, Jiang K, Krey V (2020): *Early transformation of the Chinese power sector to avoid additional coal lock-in*. [Environmental Research Letters](#)
- Supervised guest researcher, expertise on national and global modeling results for China -

Roelfsema M, van Soest HL, Harmsen M, van Vuuren DP, Bertram C, et al (2020): *Taking stock of national climate policies to evaluate implementation of the Paris Agreement*. [Nature Communications](#)

Malik A, Bertram C, Després J, Emmerling J et al (2020): *Reducing stranded assets through early action in the Indian power sector*. [Environmental Research Letters](#)
- Supervised PhD work, expertise on national and global modeling results for India -

Fujimori S, Hasegawa T, Krey V, Riahi K, Bertram C, et al. (2019): *A Multi-Model Assessment of Food Security Implications of Climate Change Mitigation*. [Nature Sustainability](#)

Oshiro K, Gi K, Fujimori S, van Soest HL, Bertram C, et al. (2019): *Mid-Century Emission Pathways in Japan Associated with the Global 2°C Goal: National and Global Models' Assessments Based on Carbon Budgets*. [Climatic Change](#)

Krey V, Guo F, Kolp P, Zhou W, Schaeffer R, Awasthy A, Bertram C, et al. (2019): *Looking under the hood: A comparison of techno-economic assumptions across national and global integrated assessment models*. [Energy](#)

Bertram C, Luderer G, Popp A, Minx JC, Lamb W, et al (2018): *Targeted policies can compensate most of the increased sustainability risks in 1.5 °C mitigation scenarios.* [Environmental Research Letters](#)
- Sustainability effects of different long-term climate and development policy strategies -

Luderer G, Vrontisi Z, Bertram C, Edelenbosch O, Pietzcker R, Rogelj J, De Boer HS, et al. (2018): Residual fossil CO₂ emissions in 1.5-2°C pathways. - [Nature Climate Change](#)

Vrontisi Z, Luderer G, Savvyen B, Keramidas K, Aleluia Reis L, Baumstark L, Bertram C, et al. (2018): Enhancing Global Climate Policy Ambition towards a 1.5°C Stabilization: A Short-Term Multi-Model Assessment. - [Environmental Research Letters](#)

McCollum DL, Zhou W, Bertram C, de Boer HS et al (2018): *Energy investment needs for fulfilling the Paris Agreement and achieving the Sustainable Development Goals.* [Nature Energy](#)

Kriegler E, Bertram C, Kuramochi T, Jakob M, Pehl M, Stevanovic M, Höhne N, et al. (2018): Short term policies to keep the door open for Paris climate goals. - [Environmental Research Letters](#)

Jewell J, McCollum D, Emmerling J, Bertram C, et al (2018): *Limited emission reductions from fuel subsidy removal except in exporting regions.* [Nature](#)

Edenhofer O, Steckel J, Jakob M, Bertram C (2018): *Reports of coal's terminal decline may be exaggerated.* [Environmental Research Letters](#)

Edelenbosch OY, van Vuuren DP, Bertram C, Carrara S, Emmerling J, Daly H, Kitous A, et al. (2017): *Transport fuel demand responses to fuel price and income projections: Comparison of integrated assessment models.* [Transportation Research Part D: Transport and Environment](#)

McCollum D, Wilson C, Pettifor H, Ramea K, Krey V, Riahi K, Bertram C, et al. (2017): *Improving the behavioral realism of global integrated assessment models: An application to consumers' vehicle choices.* [Transportation Research Part D: Transport and Environment](#)

Kriegler E, Bauer N, Popp A, et al. (2017): Fossil-fueled development (SSP5): An energy and resource intensive scenario for the 21st century. [Global Environmental Change](#)

Edelenbosch O, McCollum D, van Vuuren DP, Bertram C, Carrara S, Daly H, Fujimori S, et al. (2017): *Decomposing passenger transport futures: Comparing results of global integrated assessment models.* [Transportation Research Part D: Transport and Environment](#)

von Stechow C, Minx JC, Riahi K, Jewell J, McCollum DL, Callaghan MW, Bertram C, Luderer G. (2016): *2°C and SDGs: United they stand, divided they fall?* [Environmental Research Letters](#)

Bertram C, Luderer G, Pietzcker R, Schmid E, Kriegler E, and Edenhofer O (2015): *Complementing carbon prices with technology policies to keep climate targets within reach.* [Nature Climate Change](#)
- Innovative assessment of different policy instruments and their interactions in an integrated assessment model -

Riahi K, Kriegler E, Johnson N, Bertram C, den Elzen M, Eom J, Schaeffer M, Edmonds J, et al. (2015): *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](#)

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.* [Technological Forecasting and Social Change](#)

Schwanitz J, Piontek F, Bertram C, Luderer G (2014): *Long-term climate policy implications of phasing out fossil fuel subsidies*. [Energy Policy](#)

Luderer G, Bertram C, Calvin K, Cian ED, Kriegler E (2013): Implications of weak near-term climate policies on long-term mitigation pathways. [Climatic Change](#)

Luderer G, Pietzcker R, Bertram C, Kriegler E, Meinshausen M, Edenhofer O (2013): *Economic mitigation challenges: how further delay closes the door for achieving climate targets*. [Environmental Research Letters](#)

SELECTED OTHER PUBLICATIONS

Bertram C, Edenhofer O, Luderer G (2021): *A Path to Zero*. [IMF F&D](#)

Bertram C, Hilaire J, Kriegler E, Beck T et al. (2021): *NGFS Climate Scenarios Database - Technical Documentation V2*. [NGFS scenario portal](#)

MILES consortium (2015): *Beyond the numbers: Understanding the transformation induced by INDCs*. [IDDRI report](#)

REVIEWING

Environmental Research Letters (Outstanding reviewer 2018 and 2019), Nature, Science, Nature Climate Change, Nature Energy, Science Advances, Nature Communications, One Earth, Energy Economics, Energy Policy, Climate Policy, Climatic Change, Energies, Renewable and Sustainable Energy Transition, International Environmental Agreements: Politics, Law and Economics, Sustainability Science, Climate Change Economics, Environmental Modelling and Software, Renewable Energy Focus, Climate and Development, SN Applied Sciences, Energy and Climate Change, npj | climate action
Grants: *Ikerbasque, Research Council of Norway*

SELECTED PRESENTATIONS

2021	Climate congress, parliament of North-Rhine Westphalia: keynote and panel discussion
2019	UNEP-FI regional roundtable, Luxembourg: invited talk and panel discussion
2018	IAMC meeting #11, Seville, Spain: talk and panel discussion in plenary session "The role of the financial sector in decarbonization"
2018	Chinese Energy Modeling Forum (CEMF), Beijing, China: invited talk "The impact of short-term mitigation policies on broader sustainability impacts"
2015	IAMC meeting #8, Potsdam, Germany: talk in introductory plenary session "Implications of the INDCs for reaching long term climate policy objectives"

SUPERVISION

Aman Malik	Day-to-day supervisor for PhD (2017-2021, thesis defended in 03/2022)
Huan Wang	Day-to-day supervisor for Research Exchange as part of CD-LINKS (2018/19)
Sebastian Franz	Day-to-day supervisor for Master thesis

ACADEMIC FUNCTIONS, MEMBERSHIPS AND ADVISORY ROLES

IPCC	Contributing Author for Chapters 3 and 15, AR6 WG3 (2022)
IAEE	Member
SBTi	Member of the Scientific Advisory Group
IMF FSAP	Expert consulted twice for Germany's FSAP (2021/2022)

EDUCATION

2011 – 2015	Technische Universität Berlin, Germany PhD in economics ("Dr. rer. oec."): "The effect of near-term climate policies on the achievability of ambitious long-term climate targets", supervised by O Edenhofer, G Luderer, and E Kriegler
2003 – 2009	Universität Tübingen, Germany Masters equivalent degrees in Physics ("Dipl.-Phys.") and Political Science with Minor in Spanish ("Staatsexamen")
2006 - 2007	Universidad Nacional de Córdoba, Argentina Study program funded by scholarship of Landesstiftung Baden-Württemberg

SKILLS

Languages	German (native), English (fluent), Spanish (fluent), French (intermediate)
Computer	GAMS, R, MS Office, Matlab, LaTeX, Inkscape

MEDIA APPEARANCES

Print/online	Spiegel online , Bild der Wissenschaft , Focus , Welt , Stern , Der Standard , New York Times , Umweltmagazin VDI , FAZ
Radio	Deutschlandfunk , SWR2 , NDR , MDR , HR , radio eins vom RBB , Deutsche Welle
Television	Bayrischer Rundfunk , ZDF , NTV , WDR

Full list of publications, projects and media appearances from 2010-2023 while at PIK available on: <https://www.pik-potsdam.de/members/bertram>

Last update: May 23, 2023