Curriculum Vitae

Nicolas T. Koch

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Professional experience

1/2025–	Head of "Policy Evaluation Lab", Research Department Climate Economics and Policy, Potsdam Institute for Climate Impact Research (*tenured*)
01/2020–12/2024	Head of "Policy Evaluation Lab", Mercator Research Institute on Global Commons and Climate Change (MCC)
10/2013–12/2019	Postdoctoral Researcher, Mercator Research Institute on Global Commons and Climate Change (MCC)
06/2009–09/2013	Doctoral Researcher, University of Hamburg

Other Affiliations and Positions

8/2017–	Research Affiliate at RWI - Leibniz Institute for Economic Research
11/2020–	Research Fellow at IZA - Institute of Labor Economics
1/2026–	Contributing Author to UNEP Emission Gap Report 2026

Education

9/2013	PhD in Economics (summa cum laude) University of Hamburg
5/2009	MSc (Diplom) in Economics (with distinction) University of Hamburg
	Undergraduate and Graduate Studies in Economics University of Hamburg (2006–09) Universite Paris I Pantheon-Sorbonne (2007–08) Christian Albrechts University Kiel (2005–06) Philipps-University Marburg (2003–05)

Research Visits

University of Southern California (05/2025), BEM Bordeaux Management School (03/2013), University of East Anglia (04-05/2012)

Research

Research Interest

Environmental and Energy Economics, Urban and Transportation Economics, Health Economics, and Applied Microeconomics

Journal Articles

Bento, A., Koch, N., Marmarelis, Z. (2026). EU-ETS emergency reserve price curbs coal use and shields consumers during natural gas price shocks. *Nature Communications*, 4637.

Kistinger, D., Koegel, N., Koch, N. Kalkuhl, M. (2026). The Electoral Impact of Housing Climate Policy: Evidence from Germany. *Environmental and Resource Economics*, 89 (51).

Wagner, F., Nachtigall, F., Milojevic-Dupont, N., Franken, L., Koch, N., Runge, J., Pereira, R., Gonzalez, M. Creutzig, F. (2026). Refining urban typologies: causal insights into urban form, car commuting, and related CO2 emissions. *Environmental Research Letters*, 21(10), 104031.

Baldenius, T., Klauber, H., Koch, N. (2025). Heat and Experienced Racial Segregation. *Journal of Environmental Economics and Management*, 103210.

Schaper, J., Franks, M., Koch, N., Plinke, C., Sureth, M. (2025). On the emission and distributional effects of a CO2eq-tax on agricultural goods - The case of Germany. *Food Policy*, 130, 102794.

Schmaus, A., Creutzig, F., Koch, N., Nachtigall, F., Molkenthin, N. (2025). An urban shared pooled mobility system cuts distance travelled by over 50%. *Transportation Research Part D: Transport and Environment*, 144, 104726.

Stechemesser, A., Koch, N., Mark, E., Dilger, E., Kloesel, P., Menicacci, L., Nachtigall, D., Pretis, F., Ritter, N., Schwarz, M., Vossen, H., Wenzel, A. (2024): Climate policies that achieved major emission reductions: Global evidence from two decades. *Science*, 385(6711), 884-892.

Klauber, H., Holub, F., Koch, N., Pestel, N., Ritter, N., Rohlf, A. (2024): Killing Prescriptions Softly: Low Emission Zones and Child Health from Birth to School, *American Economic Journal: Economic Policy*, 16(2), 220-248.

Haywood, L., Janser, M., Koch, N. (2024): The Welfare Costs of Job Loss and Decarbonization– Evidence from Germany's Coal Phase Out, *Journal of the Association of Environmental and Resource Economists* (in press), 11(3).

Kraus, S., Heilmayr, R., Koch, N. (2024): Spillovers to manufacturing plants from multimillion dollar plantations: evidence from the Indonesian palm oil boom, *Journal of the Association of Environmental and Resource Economists*, 11(3).

Doebbeling-Hildebrandt, N., Miersch, K., Khanna, T., Bachelet, M., Bruns, S., Callaghan, M., Edenhofer, O., Flachsland, C., Forster, P., Kalkuhl, M., Koch, N., Lamb, W., Ohlendorf, N., Steckel J., Minx, J. (2024): Systematic review and meta-analysis of ex-post evaluations on the effectiveness of carbon pricing, *Nature Communications*, 15, 4147.

Edmondson, D., Flachsland, C., aus dem Moore, N., Koch, N., Koller, F., Gruhl, H., Brehm, J. (2024): Anticipatory climate policy mix pathways: a framework for ex-ante construction and assessment applied to the road transport sector. *Climate Policy*, 1-30.

Chevance, G., Andrieu, B., Koch, N., Tonne, C., Nieuwenhuijsen, M., Bernard, P. (2024). How gasoline prices influence the effectiveness of interventions targeting sustainable transport modes?. *npj Sustainable Mobility and Transport*, 1(1), 17.

Helm, I., Koch, N., Rohlf, A. (2023): The Effects of Cash for Clunkers on Local Air Quality, *Journal of Urban Economics*, 138, 103576.

Koch, N., Naumann, L., Pretis, F., Ritter, N., Schwarz, M. (2022): Attributing agnostically-detected large reductions in road CO2 emissions to policy mixes, *Nature Energy*, 7, 844-853.

Koch, N., Themann, M. (2022): Catching up and falling behind: Cross-country evidence on the impact of the EU ETS on firm productivity, *Resource and Energy Economics*, 69, 101315.

Koch, N., Ritter, N., Rohlf, A., Scarazzato, F. (2022): When is the electric vehicle market self-sustaining? Evidence from Norway, *Energy Economics*, 110, 105991.

Kraus, S., Liu, J., Koch, N., Fuss, S. (2021): No aggregate deforestation reductions from rollout of community land titles in Indonesia yet, *Proceedings of the National Academy of Sciences*, 118 (43).

Khanna, T., Baiocchi, G., Callaghan, M., Creutzig, F., Guias, H., Haddaway, N., Hirth, L., Javaid, A., Koch, N., Laukemper, S., Loeschel, A., Zamora, M., Minx, J. (2021): A multi-country meta-analysis on the role of behavioral change in reducing energy consumption and CO2 emissions in residential buildings, *Nature Energy*, 6, 925-932.

Kraus, S., Koch, N. (2021): Provisional COVID-19 infrastructure induces large, rapid increases in cycling, *Proceedings of the National Academy of Sciences*, 118 (15).

Creutzig, F., Javaid, A., Koch, N., Knopf, B., Mattioli, B., Edenhofer, O. (2020): Adjust urban and rural road pricing for fair mobility, *Nature Climate Change*, 10, 591-594.

Rohlf, A., Holub, F., Koch, N., Ritter, N. (2020): The effect of clean air on pharmaceutical expenditures, *Economics Letters*, 192, 109-221.

Koch, N., Basse Mama, H. (2019): Does the EU Emissions Trading System induce investment leakage? Evidence from German multinational firms, *Energy Economics*, 81, 479-492.

Koch, N., zu Ermgassen, E., Wehkamp, J., Oliveira Filho, F., Schwerhoff, G. (2019): Agricultural Productivity and Forest Conservation: Evidence from the Brazilian Amazon, *American Journal of Agricultural Economics*, 101(3), 919-940.

Fuss, S., Flachsland, C., Koch, N., Kornek, U., Knopf, B., Edenhofer, O. (2018): An assessment framework for intertemporal economic performance of cap-and-trade systems: Lessons from the EU-ETS, *Review of Environmental Economics and Policy*, 12(2), 220-241.

Grosjean, G., Fuss, S., Koch, N., Bodirsky, B., De Cara, S., Acworth, W. (2018): Options to overcome the barriers to pricing European agricultural emissions, *Climate Policy*, 18(2), 151-169.

Golub, A., Fuss, S., Lubowski, R., Hiller, J., Khabarov, N., Koch, N., Krasovskii, A., Kraxner, F., Laing, T., Obersteiner, M., Palmer, C., Piris-Cabezas, P., Reuter, W., Szolgayova, J., Taschini, L. Wehkamp, J. (2018): Escaping the climate policy uncertainty trap: options contracts for REDD+, *Climate Policy*, 18(10), 1227-1234.

Wehkamp, J., Pietsch, S., Fuss, S., Gusti, M., Reuter, W., Koch, N., Kindermann, G., Kraxner, F. (2018): Accounting for institutional quality in global forest modeling, *Environmental Modelling & Software*, 102, 250-259.

Zimmer, A., Koch, N. (2017): Fuel Consumption Dynamics in Europe: Tax Reform Implications for Air Pollution and Carbon Emissions, *Transportation Research Part A: Policy and Practice*, 106, 22-50.

Wehkamp, J., Koch, N., Fuss, S., (2017): Governance and deforestation - A meta-analysis in economics, *Ecological Economics*, 144, 214-227.

Algieri, B., Kalkuhl, M., Koch, N. (2017): A tale of two tails: Explaining extreme events in financialized agricultural markets, *Food Policy*, 69, 256-269.

Koch, N., Reuter, W., Fuss, S., Grosjean, G. (2017): Permits vs. offsets under investment uncertainty, *Resource and Energy Economics*, 49, 33-47.

Koch, N., Grosjean, G., Fuss, S., Edenhofer, O. (2016): Politics matters: Regulatory events as catalysts for price formation under cap-and-trade, *Journal of Environmental Economics and Management*, 78, 121-139.

Koch, N., Fuss, S., Grosjean, G., Edenhofer, O. (2014): Causes of the EU ETS price drop: Recession, CDM, renewable policies or a bit of everything?—New evidence, *Energy Policy*, 73, 676-685.

Koch, N. (2014): Tail events: A new approach to understanding extreme energy commodity prices, *Energy Economics*, 43, 195-205.

Koch, N. (2014): Dynamic linkages among carbon, energy and financial markets: A smooth transition approach, *Applied Economics*, 46, 715-729.

Koch, N., Bassen, A. (2013): Valuing the carbon exposure of European utilities. The role of fuel mix, permit allocation and replacement investments, *Energy Economics*, 36, 431-443.

Basse-Mama, H., Koch, N., Bassen, A., Bank, T. (2013): Valuation effects of corporate strategic transactions in the cleantech industry, *Journal of Business Economics*, April 2013.

Working Papers

Fliegel, P., Hagen, A., Koch, N., Ritter, N. (2026). Carbon Pricing and Household Finance: How Banks Price Transition Risk in Auto Loans. CESifo Working Paper No. 12288.

Ziegler, K., Koch, N., Reckwitz, A. Wenz, L. (2026). Temperature impacts on the economy: Searching for evidence of adaptation using causal forests. WCERE 2026 Conference Paper.

Klauber, H., Koch, N., Pestel, N. (2025): The Immediate and Lasting Effects of Heat Waves On Workers. IZA Discussion Paper No. 18176.

Amberg, M. Kalkuhl, M., Koch, N., Ockenfels, A., Tiedemann, S. (2024): Managing an Energy Crisis: Large-Scale Evidence of Residential Natural Gas Savings Through Financial Rewards. SSRN Working Paper No. 5747645.

Amberg, M., Koch, N. (2025): Levers for Change? The Welfare Effects of a Large-scale Public Transport Subsidy in Germany. EAERE 2025 Conference Paper.

Jaeger, N., Plinke, C., Koch, N. (2025): The Biodiversity Impact of Agricultural Policies: A Global Study Using Machine Learning-Based Causal Inference. EAERE Winter School Paper.

Arlinghaus, J., Bittner, C., Goetz, M., Koch, N. (2023): Carbon pricing and credit reallocation. EAERE 2023 Conference Paper.

Koch, N., Ritter, N., Rohlf, A., Thies, B. (2023): Machine Learning from Big GPS Data about the Heterogeneous Costs of Congestion. SSRN Working Paper No. 4526796.

Klauber, H., Koch, N. (2023): Determinants of Heat Risk in an Aging Population: A Machine Learning Approach, IZA Discussion Paper No. 15996.

Arlinghaus, J., Koch, N. (2022): The Welfare Impact of Using Second-Best Uniform Taxes to Address Traffic Congestion. EAERE 2022 Conference Paper.

Bachelet, M., Kalkuhl, M., Koch, N. (2021): What If Working from Home Will Stick? Distributional and Climate Impacts for Germany, IZA Discussion Paper No. 14642.

Klauber, H., Kraus, S., Koch, N. (2020): Effects of thermal inversion induced air pollution on COVID-19, arXiv:2011.11127.

Burghaus, K., Koch, N., Bauer, J., Edenhofer, E. (2018): Lobbying, relocation risk and allocation of free allowances in the EU ETS, CPLC Conference Paper.

Koch, N., Markellos, R. (2016): The pricing of environmental risks with non-pecuniary benefits, EAERE 2017 Conference Paper.

Media coverage (selection)

CNN, CBC, Deutschlandfunk, The Economist, FAZ, Financial Times, France Culture, Forbes, Handelsblatt, Le Monde, Spiegel, Sueddeutsche Zeitung, Tagesspiegel, taz, The Times, The New York Times, Wall Street Journal, Washington Post, ZDF, Zeit

Research Grants

2022–31	"CERES: Political Economy for Inclusive Wealth Governance and Sustainability" funded by the Werner Siemens Foundation - Principal Investigator
2026–28	"EVIDENCE: Evidenzbasierte Forschung zu Politikreformen fuer mehr Klimaschutz in Schwellen- und Entwicklungslaendern" funded by the Federal Ministry for Economic Cooperation and Development (BMZ) - Principal Investigator
2024–27	"MELIUS: Verbesserung der Versorgungssituation fuer Allergiker*innen bei geaenderten UMwELtbedinIngUngen im Rahmen des Klimawandel" funded by the Innovation Committee of the Federal Joint Committee - Co-Project Leader
2023–26	"FAIRCLIP: Stranded assets, financial constraints, and the distributional impacts of climate policy" funded by Leibniz Collaborative Excellence - Co-Project Leader
2020–26	"Kopernikus-Projekt ARIADNE: Evidenzbasiertes Assessment fuer die Gestaltung der deutschen Energiewende" funded by the Federal Ministry of Research, Technology and Space (BMFTR) - Work Package Leader
2020–22	"Green & Inclusive Mobility Project" funded by the Sustainability Council of the Volkswagen Group - Project Leader
2018–20	"The Next Generation Policy Project" funded by the Sustainability Council of the Volkswagen Group - Project Leader
2017–20	"START: Australian-German Energy Transition Hub" funded by the Federal Ministry of Education and Research (BMBF) - Work Package Leader
2017–21	"RESTORE+: Addressing Landscape Restoration on Degraded Land in Indonesia and Brazil" funded by the Internationale Klimaschutzinitiative (IKI) of the Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMU) - Co-Principal Investigator

2016–20 "Delivering Incentives to End Deforestation: Global Ambition, Private/Public Finance and Zero-Deforestation Supply Chains" funded by the Norwegian Agency for Development Co-operation (NORAD) - Co-Principal Investigator

Professional service and other activities

2026– Steering committee member of the What Works Climate Solutions Summit sponsored by the Wellcome Trust

2025– Co-founder and co-organizer of the Transatlantic Seminar on Environmental and Energy Economics (TSEE) with University of Southern California, University of Maryland, NOVA, WU Wien, and CREST-ENSAE

2020– Co-organizer of the Research Seminar on Environmental, Resource and Climate Economics (RSERC) with TU Berlin, HU, DIW, Hertie, and RWI

2020–21 Local Scientific Committee of 25th and 26th Annual Conference of the European Association of Environmental and Resource Economists (EAERE)

Referee Service

American Journal of Agricultural Economics; *Climate Policy; Climatic Change; Ecological Economics; The Economic Journal, Economic Modelling; Energy Economics; Energy Journal; Energy Policy; Food Policy; Journal of Applied Statistics; Journal of Economic Behavior and Organization; Journal of Environmental Economics and Management; Journal of the Association of Environmental and Resource Economists; Nature Climate Change; Nature Sustainability; Macroeconomic Dynamics; Oxford Review of Economic Policy; Proceedings of the National Academy of Sciences; Resource and Energy Economics; Scandinavian Journal of Economics; World Development*

Austrian Science Fund (FWF); French National Research Agency (ANR)

Phd Advicing

Main supervisor: Christina Dirks (04/2026-), Nikolai Jaeger (10/2024-), Audrey Thenot (02/2024-,), Dorothea Kistinger (08/2023-), Maximilian Amberg (06/2023-), Patrick Kloesel (08/2022-)

Co-supervisor: Zoe Wang (02/2024-), Dr Johanna Arlinghaus, (2018-2023), Dr Hannah Klauber (2020-2022), Dr Valentin Guye (2019-2022), Dr Sebastian Kraus (2017-2021), Dr Johanna Wehkamp (2013-2017)

Committee member: Haibo Zhang (05/2024, University of East Anglia)

Teaching

The Distributional Effects of Environmental Policy (PhD)
Summer School Lecture (English)
Kiel Institute Summer School on Economic Policy, September 1-2, 2021

Climate policy analysis (Master)
Seminar (English) with Matthias Kalkuhl
University of Potsdam, Summer 2020, 2021, 2022, 2023, 2024

Statistics II – Time Series, Panel Data and Limited Dependent Variables (Master)
Lecture (English) with Jan Christoph Minx
Hertie School of Governance, Winter 2015 and 2016

The Economics of Climate Change (Lecture by Ottmar Edenhofer) (Master)
Tutorial (English) with Jan Steckel/Gregor Schwerhoff/Lion Hirth
Technical University of Berlin, Summer 2014 and 2015

Environmental, Social, Governance (ESG) and Capital Markets (Master)
Lecture (English)
BEM Bordeaux Management School, March 2013

Valuation (Bachelor)
Seminar (German)
University of Hamburg, Summer 2010 and 2013, Winter 2010, 2011, 2012

Investments (Bachelor)
Two tutorials (German)
University of Hamburg, Winter 2009, 2010, 2011, 2012

Financial Management (Executive Education)
Lecture (German)
University of Hamburg, Summer 2012, 2013, 2014, 2015, 2016, 2018, 2019

Environmental, Social and Corporate Governance (Bachelor)
Lecture (German) with Alexander Bassen
University of Hamburg, Summer 2010

Scholarships and Awards

2024	Deutscher Studienpreis of Koerber Stiftung for the paper Klauber et al. (2024)
2011–12	PhD scholarship of Wissenschaftsfoerderung der Sparkassen-Finanzgruppe e.V.
2009	David-Kopf Award for the best Master thesis

Scientific Policy Advice

2026–	Contributing author to the UNEP Emission Gap Report 2026, Chapter 6 "What works in climate policy and how action can be accelerated"
2025	Public hearing in the European Parliament's Committee on the Environment, Public Health and Food Safety (ENVI)
2025	Expert statement for the EU Climate Change Committee of the Directorate-General for Climate Action (DG CLIMA)
2024	Public hearing in the Committee on Economic Cooperation and Development of the German Bundestag
2020–21	Lead author, Versorgungs Report „Klima und Gesundheit", AOK
2018–22	Technical Advisor, Sustainability Council of the Volkswagen Group
2014	Co-lead author, Position Paper of European Council of Academies of Applied Sciences, Technologies and Engineering (Euro-CASE) on EU ETS (presented to European Commission)

Miscellaneous

Memberships

European Association of Environmental and Resource Economists (EAERE), European Economic Association (EEA), Verein fuer Socialpolitik (VfS), Association for Student Exchange Programs in Central and Eastern Europe (GFPS e.V.)

Languages

German (native), English (fluent), French (high proficiency), Polish (basic knowledge)

Programming Skills

R, Stata, MatLab, GAUSS, LaTeX

Personal

Born 1983. German citizen. Married with one child.

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