

## PUBLICATIONS

### RESEARCH INTERESTS AND ACADEMIC IMPACT

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Energy economics and policy, climate change economics, international environmental agreements, behavioural economics, economic simulation modelling

**Google Scholar:** 10.508 citations, h-Index = 52 (21.05.2024)

**Scopus:** 3.967 citations, h-Index = 37, 123 papers (21.05.2024)

**More than 100 articles in (Social) Sciences Citation Index Journals**, e.g., Canadian Journal of Economics, Ecological Economics (6), *Economica* (2), Economics Letters, Energy Research and Social Sciences (2), Energy Economics (18), Energy Policy (13), Environmental and Resource Economics (4), Environmental Research Letters (4), European Economic Review (2), Journal of Environmental Economics and Management (3), Journal of Economic Dynamics and Control, Journal of Economic Behavior and Organisation, Journal of the European Economic Association, Journal of Public Economics, Land Economics (2), Nature Climate Change (2), Nature Energy, Nature Geoscience, npj Climate Action or Proceedings of the National Academy of Sciences (PNAS), Resource and Energy Economics (5)

**Editorial board memberships:** Climate Policy, Energy and Climate Change, Energy Journal, Frontiers of Engineering Management, Perspektiven der Wirtschaftspolitik, Resource and Energy Economics

**Editor of Special Issues:** Applied Energy, China Economic Review, Climate Change Economics, *Economica*, Economics of Energy & Environmental Policy, Energy and Buildings, Energy Economics, Energy Policy, Frontiers of Engineering Management, Resources, Conservation & Recycling, Resource and Energy Economics

### EDITORSHIPS OF JOURNALS

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since 2022 Member of the Editorial Board "**Frontiers of Engineering Management**" published by the China Academy of Engineering (2022 IF 7,4)

since 2019 Member of the Editorial Board "**Energy and Climate Change**" (2022 IF 1,2)

since 2019 Member of the Editorial Board "**Perspektiven der Wirtschaftspolitik**" published by the association of German economists (2022 IF 0,5)

since 2018 Associate Editor of the Journal "**Resource and Energy Economics**" (2022 IF 3.6)

since 2017 Member of the Editorial Board of the Journal "**The Energy Journal**" (2022 IF: 3.5), Zeitschrift der IAEE - International Association for Energy Economics

since 2016 Member of the Editorial Board of the Journal "**Climate Policy**" (2022 IF: 7.1)

Editor of Special Issues of the Journals: **Resource and Energy Economics** (2024), **Frontiers of Engineering Management** (2022), **Applied Energy** (2021), **Resources, Conservation & Recycling** (2021), **Energy and Buildings** (2021), **Applied Energy** (2020), **China Economic Review** (2020), **Climate Change Economics** (2024), **Resource and Energy Economics** (2019), **Energy Economics** (2019), **Economics of Energy & Environmental Policy** (2019), **Energy Economics** (2017), **Energy Economics** (2015), **Energy Policy** (2014), **Economica** (2014), **Energy Policy** (2010)

### TEN REPRESENTATIVE JOURNAL ARTICLES

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Information Nudges, Subsidies, and Crowding Out of Attention: Field Evidence from Energy Efficiency Investments (with M. Rodemeier), **Journal of the European Academic Association (JEEA)**, forthcoming, 2024

What if? The macroeconomic and distributional effects for Germany of a stop of energy imports from Russia (with R. Bachmann, D. Baqaee, C. Bayer, M. Kuhn, B. Moll, A. Peichl, K. Pittel, M. Schularick), **Economica**, forthcoming, 2024.

Can self-set goals encourage resource conservation? Field experimental evidence from a smartphone app (with M. Rodemeier and M. Werthschulte), **European Economic Review**, 160, 104612, 2023.

A multi-country meta-analysis on the role of behavioral change in reducing energy consumption and CO<sub>2</sub> emissions in residential buildings (with T. Khanna, and eleven co-authors), **Nature Energy**, 6, 925–932, 2021.

On the role of present bias and biased price beliefs in household energy consumption (with M. Werthschulte), **Journal of Environmental Economics and Management (JEEM)**, 109, 102500, 2021.

On the Effects of Unilateral Environmental Policy on Offshoring in Multi-Stage Production Processes (with O. Schenker and S. Koesler), **Canadian Journal of Economics**, 51(4), 2018.

The long-term impact of matching and rebate subsidies when public goods are impure: Field experimental evidence from the carbon offsetting market (with M. Kesternich & D. Römer), **Journal of Public Economics**, 137, 70-78, 2016.

Inequality, communication, and the avoidance of disastrous climate change in a public goods game (with A. Tavoni, A. Dannenberg and G. Kallis), **Proceedings of the National Academy of Sciences (PNAS)**, 108(29), 11825-11829, 2011.

On the Self-interested Use of Equity in International Climate Negotiations (with A. Lange, C. Vogt and A. Ziegler), **European Economic Review**, 54(3), 359-375, 2010.

Decomposing Integrated Assessment of Climate Change: Methodology and Sample Application (with C. Böhringer and T. F. Rutherford), **Journal of Economic Dynamics and Control**, 31(2), 683-702, 2007

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#### ARTICLES IN JOURNALS OF THE (SOCIAL) SCIENCES CITATION INDEX (SSCI) IN SUBMISSION / IN PREPARATION

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Trust in scientists and their role in society: a global assessment (with V. Cologna, N. Mede, ... A. Löschel, more than 100 author as a multi-lab study), submitted

The role of co-benefits in motivating climate change mitigation (with C. Feldhaus, M. Gleue, P. Werner), submitted

The Hidden Costs of Infrastructure Investments: Changes in Daily Commute Patterns Trigger Stress and Impact Preferences (with M. Price, L. Razzolini, M. Werthschulte), in preparation

What Drives Energy Curtailment? COVID-19 as a Natural Experiment to Disentangle the Relative Importance of Attention and Income Shocks (with M. Price, L. Razzolini, M. Werthschulte), in preparation

Charitable Giving und Covid (with M. Price, L. Razzolini, M. Werthschulte), in preparation

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#### ARTICLES IN JOURNALS OF THE (SOCIAL) SCIENCES CITATION INDEX (SSCI)

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1. Information nudges, subsidies, and crowding out of attention: Field evidence from energy efficiency investments (with M. Rodemeier), **Journal of the European Economic Association**, forthcoming, 2024.
2. What if? The Economic Effects for Germany of a Stop of Energy Imports from Russia (with R. Bachmann, D. Baqaee, C. Bayer, M. Kuhn, B. Moll, A. Peichl, K. Pittel, M. Schularick), **Economica**, forthcoming, 2024.
3. Identity and Voluntary Efforts for Climate Protection (with M. Gleue, S. Harris and C. Feldhaus), **Journal of Economic Behavior and Organisation**, forthcoming, 2024.
4. Economics of cooling and heating (with C. Wei, W. Zhou, X.-B. Zhang), Editorial, **Climate Change Economics**, forthcoming, 2024.
5. The Demand for Voluntary Carbon Dioxide Removal – Experimental Evidence from an Afforestation Project in Germany (with H. Bartels and M. Kesternich), forthcoming, **Land Economics**, 2024.
6. The intrinsic value of decision rights: Field evidence from electricity contract choice automation (with C. Feldhaus, J. Lingens und G. Zunkers), **Resource and Energy Economics**, forthcoming, 2024.
7. Facing the storm: Developing corporate adaptation and resilience action plans amid climate uncertainty (with K. Hennes and D. Bendig), **npj Climate Action**, forthcoming, 2024.
8. Municipal building codes and the adoption of solar photovoltaics (with S. Carattini, B. Figge and Z. Gordon), **Journal of Environmental Economics and Management (JEEM)**, 124 (März), 102937, 2024.
9. Coal transitions – Part 2: Phase-out dynamics in global long-term mitigation scenarios (with J. Minx, J. Hilaire, F. Müller-Hansen et al.), **Environmental Research Letters**, 19, 033002, 2024.
10. Can self-set goals encourage resource conservation? Field experimental evidence from a smartphone app (with M. Rodemeier and M. Werthschulte), **European Economic Review**, 160, 104612, 2023.
11. Oil price crises, gas price crises, climate crises, Editorial, **GAIA** 32/3, 277, 2023.
12. Digital technology and energy sustainability: Recent advances, challenges, and opportunities (with C. Wei, C.-Z. Li, S. Managi and T. Lundgren), **Resources, Conservation and Recycling** 190, 106803, 2023.
13. Can a Catholic Institution Promote Sustainable Behavior? Field Experimental Evidence on Donations for Climate Protection (with M. Gleue and C. Feldhaus), **Journal of Behavioral and Experimental Economics**, 98, 101855, 2022.
14. Encouraging consumer activity through automatic switching of the electricity contract - A field experiment (with C. Feldhaus, J. Lingens, G. Zunker), **Energy Policy**, 164, 112855, 2022.
15. Energy transition toward carbon-neutrality in China: Pathways, implications and uncertainties (with Yong Yang, Hui Wang and Peng Zhou), **Frontiers of Engineering Management** 9(3), 358-372, 2022
16. Patterns and determinants of carbon emission flows along the Belt and Road from 2005 to 2030 (with Y. Yang, H. Wang und P Zhou), **Ecological Economics**, 192, 107260, 2022.
17. What motivates smart meter adoption? Evidence from an experimental advertising campaign in Germany (with S. Berger, F. Ehering, C. Feldhaus and A. Wyss), **Energy Research & Social Science**, 85, 102357, 2022.
18. Recent advances in energy demand for residential space heating (with C. Wei and Y. Huang), **Energy and Buildings**, 261, 111965, 2022.

19. On the role of present bias and biased price beliefs in household energy consumption (with M. Werthschulte), **Journal of Environmental Economics and Management (JEEM)**, 109, 102500, 2021.
20. A multi-country meta-analysis on the role of behavioral change in reducing energy consumption and CO2 emissions in residential buildings (with T. Khanna, G. Baiocchi, M. Callaghan, F. Creutzig, H. Guias, N. Haddaway, L. Hirth, A. Javid, N. Koch, S. Laukemper, M. Del Mar Zamora and J. Minx), **Nature Energy**, 6, 925–932, 2021.
21. The demand for global and local environmental protection – experimental evidence from climate change mitigation in Beijing (with B. Sturm, J. Pei, W. Ran, W. Buchholz and Z. Zhao), **Land Economics**, 97, 137-154, 2021.
22. Does demand-side flexibility reduce emissions? Exploring the social acceptability of demand management in Germany and Great Britain (with P. Grunewald, M. Gleue and J. Unterberg), **Energy Research & Social Science**, 82, 102290, 2021.
23. The changing role of global value chains in decoupling economic growth from CO2 emissions in 2000-2014 (with D. Zhang, H. Wang and P. Zhou), **Energy Economics**, 93, 105053, 2021.
24. Coal Transitions-Part 1: A systematic map and review of case study learnings from regional, national, and local coal phase-out experiences (with F. Diluiso, P. Walk, N. Manych, N. Cerutti V. Chipiga, A. Workman, C. Ayas, R. Cui, D. Cui, K. Song, L. Banisch, N. Moretti, M. Callaghan, L. Clarke, F. Creutzig, J. Hilaire, F. Jotzo, M. Kalkuhl, W. Lamb, F. Müller-Hansen, G. Nemet, P.-Y. Oei, B. Sovacool, J. Steckel, S. Thomas, J. Wiseman, J. Minx), **Environmental Research Letters**, 16 (11), 1003003, 2021.
25. Managing momentum in climate negotiations (with S Carattini), **Environmental Research Letters**, 16 (5), 051001, 2021.
26. Negotiating Weights for Burden Sharing Rules in International Climate Negotiations: An Empirical Analysis (with M. Kesternich and A. Ziegler), **Environmental Economics and Policy Studies**, 23(4), 309-331, 2021.
27. The future of coal in a carbon-constrained climate (with M. Jakob, C. Steckel, F. Jotzo, B. Sovacool, L. Cornelsen, R. Chandra, O. Edenhofer, C. Holden, T. Nace, N. Robins, J. Suedekum and J. Urpelainen), **Nature Climate Change**, 10, 704–707, 2020.
28. The rebound effect representation in climate and energy models (with G. Colmenares and R. Madlener), **Environmental Research Letters**, 15, 123010, 2020.
29. Emissions trading systems for global low carbon energy and economic transformation – Editorial (with X. Zhang, J. Lewis, D. Zhang and J. Yang), **Applied Energy**, DOI 10.1016/j.apenergy.2020.115858, 2020.
30. Recent advances in energy demand research in China (with C. Wei and S. Managi), **China Economic Review**, 63, 1-6, 2020.
31. Low-carbon Transitions: Economics and Policy– Editorial (with C. de Miguel, M. Filippini, X. Labandeira and J. Labeaga), **Energy Economics**, 84 (Suppl. 1), 1-3 (2019)
32. Conditional cooperation in the case of a global public good - experimental evidence from climate change mitigation in Beijing (with W. Ran, J. Pei, B. Sturm and Z. Zhao), **China Economic Review**, 56, 101308 (2019).
33. Do voluntary environmental programs reduce emissions? EMAS in the German manufacturing sector (with R. Kube, K.v. Graevenitz and P. Massier), **Energy Economics**, 84, 1-12 (2019).
34. Interdisciplinary synthesis report on the coal phaseout. The Kopernikus project ENavi informs the German coal commission (with M. Pahle et al.), **GAIA**, 28(1), 61-62, 2019.
35. Facing the Energy Transition - An Introduction (with M.T. Costa-Campi and E. Trujillo-Baute), **Economics of Energy & Environmental Policy**, 8(2), 1-6, 2019.
36. The European Union energy transition: key priorities for the next five years (with S. Tagliapietra, G. Zachmann, O. Edenhofer, J.M. Glachant and P. Linares), **Energy Policy**, 132, 950-954, 2019.
37. The Impacts of the EU ETS on Efficiency - An Empirical Analyses for German Manufacturing Firms (with B. Lutz and S. Managi), **Resource and Energy Economics**, 56, 71-95, 2019.
38. Recent Advances in Energy Demand Analysis – Insights for Industry and Households (with S. Managi), **Resource and Energy Economics**, 56, 1-5, 2019.
39. Processing trade, foreign outsourcing and carbon emissions in China (with J. Pei, J. Xue, G. Peters, Z. Zhao and Q. Chen), **Structural Change and Economic Dynamics**, 49, 1-12, 2019.
40. The Impact of a Feed-In Tariff on Wind Power Development in Germany (with C. Hitaj), **Resource and Energy Economics**, 57, 18-35, 2019.
41. Research trends in environmental and resource economics: Insights from four decades of JEEM (with R. Kube, H. Mertens and T. Requate), **Journal of Environmental Economics and Management**, 92, 433-464, 2018.
42. Reducing CO2 from Cars in the European Union (with S. Paltsev, Y.-H. Chen, V. Karplus, P. Kishimoto, J. Reilly, K. von Graevenitz and S. Koesler), **Transportation**, 45(2), 573-595, 2018.
43. China’s emissions trading takes steps toward big ambitions (with F. Jotzo, V. Karplus, M. Grubb, K. Neuhoff, L. Wu, F. Teng), **Nature Climate Change**, 8(4), 265-267, 2018.
44. On the Effects of Unilateral Environmental Policy on Offshoring in Multi-Stage Production Processes (with O. Schenker and S. Koesler), **Canadian Journal of Economics**, 51(4), 2018.

45. Establishing an expert advisory commission to assist the G20's energy transformation processes (with P. Großkurth et al.), **Economics E-Journal**, 12, 1–12, 2018.
46. Define limits for temperature overshoot targets (with O. Geden), **Nature Geoscience**, 10, 881-882, 2017.
47. The Effect of Globalisation on Energy Footprints: Disentangling the Links of Global Value Chains (with O. Kaltenecker and F. Pothen), **Energy Economics**, 68(S1), 148-168, 2017.
48. Informing the Transitions towards Low-carbon Societies – Editorial, **Energy Economics** (with C. de Miguel, M. Filippini and X. Labandeira), 68 (Suppl. 1), 1-3, 2017.
49. Casting Light on Energy Efficiency — Evidence on Consumer Inattention and Imperfect Information (mit M. Rodemeier and R. Kube), **Applied Economics Letters**, 24(21), 1575–1587, 2017.
50. Improving Voluntary Public Good Provision through a Non-Governmental, Endogenous Matching Mechanism: Experimental Evidence" (with C. Reif and D. Rübhelke), **Environmental and Resource Economics**, 67, 559–589, 2017.
51. Revealed preferences for voluntary climate change mitigation when the purely individual perspective is relaxed – evidence from a framed field experiment (with B. Sturm and R. Uehleke), **Journal of Behavioral and Experimental Economics**, 67, 149-160, 2017.
52. Energy Costs in Germany and Europe: An Assessment Based on a (Total Real Unit) Energy Cost Accounting Framework (with O. Kaltenecker, M. Baikowski and J. Lingens), **Energy Policy**, 104, 419-430, 2017.
53. The long-term impact of matching and rebate subsidies when public goods are impure: Field experimental evidence from carbon offsetting market (with M. Kesternich and D. Römer), **Journal of Public Economics**, 137, 70-78, 2016.
54. Pro-Environmental Households and Energy Efficiency in Spain (with A. Ramos and X. Labandeira), **Environmental and Resource Economics**, 63, 367–393, 2016.
55. Peeling the onion: Analyzing aggregate, national and sectoral energy intensity in the European Union (with F. Pothen and M. Schymura), **Energy Economics** 52 (Suppl. 1), S63-S75, 2015.
56. Frontiers in the economics of energy efficiency (with C. de Miguel and X. Labandeira), **Energy Economics** 52 (Suppl. 1), S1-S4, 2015.
57. Do Chinese individuals believe in climate change and why? An econometric analysis (with J. Dai, M. Kesternich and A. Ziegler), **Ecological Economics** 116, 310-321, 2015.
58. Invention in Energy Technologies: Comparing Energy Efficiency and Renewable Energy Inventions at the Firm Level, (with S. Rexhäuser), **Energy Policy** 83, 206-217, 2015.
59. On the Provision of Public Goods with Probabilistic and Ambiguous Thresholds (with A. Dannenberg, G. Paolacci, C. Reif and A. Tavoni), **Environmental and Resource Economics**, 61(3), 365-383, 2015.
60. Energy-saving and emission-abatement potential of Chinese coal-fired power enterprise: a non-parametric analysis (with C. Wei and B. Liu), **Energy Economics**, 49, 33–43, 2015
61. Emissions trading in China: emerging experiences & international lessons (with F. Jotzo), **Energy Policy**, 2014.
62. Designing an EU Energy and Climate Policy Portfolio for 2030: Implications of Overlapping Regulation under Different Levels of Electricity Demand (with F. Flues, B. Lutz and O. Schenker), **Energy Policy** 75, 91-99, 2014
63. Designing an Emissions Trading Scheme for China - An Up-to-date Climate Policy Assessment (with M. Hübler and S. Voigt), **Energy Policy** 75, 57-72, 2014.
64. The voluntary provision of international public goods – an overview (with D. Rübhelke), **Economica**, 81(322), 195-204, 2014.
65. The New IPCC Scenarios: What Does the Two-Degree Target Cost? - Die neuen Szenarien des IPCC: Was kostet das Zwei-Grad-Ziel?, **GAIA** 23/2, 73, 2014.
66. Incidence and Extent of Co-Authorship in Environmental and Resource Economics: Evidence from the Journal of Environmental Economics and Management (with M. Schymura), **Scientometrics**, 99, 631-661, 2014.
67. Did Fukushima Matter? Empirical Evidence of the Demand for Climate Protection in Germany (with C. Gallier and B. Sturm), **Applied Economics Letters**, 21(12), 846-851, 2014.
68. An empirical analysis of the CO<sub>2</sub> shadow price in Chinese thermal power enterprises (with C. Wei and B. Liu), **Energy Economics**, 40, 22-31, 2013.
69. The Demand for Climate Protection - Empirical Evidence from Germany (with B. Sturm and C. Vogt), **Economics Letters**, 415–418, 2013.
70. The EU decarbonisation roadmap 2050: What way to walk? (with M. Hübler), **Energy Policy**, 55, 190–207, 2013.
71. A new robustness analysis for climate policy evaluations: A CGE Application for the EU 2020 Targets (with C. Hermeling and T. Mennel), **Energy Policy**, 55, 27-35, 2013.
72. The Value-Added of Sectoral Disaggregation: Implications on Competitive Consequences of Climate Change Policies (with V. Alexeeva, C. Böhringer and Sebastian Voigt), **Energy Economics**, S127-S142, 2012.
73. Inequality, Communication and the Avoidance of Disastrous Climate Change (with A. Tavoni, A. Dannenberg and G. Kallis), **Proceedings of the National Academy of Sciences (PNAS)**, 108(29), 11825-11829, 2011.

74. On the Self-interested Use of Equity in International Climate Negotiations (with Andreas Lange, Carsten Vogt and Andreas Ziegler), **European Economic Review**, 54(3), 359-375, 2010
75. Auctioning of CO<sub>2</sub> Emission Allowances in Phase 3 of the EU Emissions Trading Scheme (with E. Benz and B. Sturm), **Climate Policy**, 10 (2010), 705–718.
76. Paying the Piper and Calling the Tune? A Meta-Regression Analysis of the Double-Dividend Hypothesis (with N. Anger and C. Böhringer), **Ecological Economics**, 69(7), 1495-1502, 2010.
77. Indicators of Energy Security in Industrialised Countries (with U. Moslener and D. Rübhelke), **Energy Policy**, 38(4), 1665-1671, 2010.
78. Energy security—concepts and indicators - Editorial (with U. Moslener and D. Rübhelke), **Energy Policy**, 38(4), 1607-1608, 2010.
79. EU Climate Policy Up to 2020: An Economic Impact Assessment (with C. Böhringer, U. Moslener and T. F. Rutherford), **Energy Economics**, 31(S2), 295-305, 2009.
80. Oil and Unemployment in Germany (with U. Oberndorfer), **Jahrbücher für Nationalökonomie und Statistik**, 229(2+3), 146-162, 2009.
81. Technological Uncertainty and Cost-Effectiveness of CO<sub>2</sub> Emission Reduction (with V. Otto), **Energy Economics**, SUPPL 1, 4-17, 2009.
82. A Symmetric Input-Output Table for EU 27: Latest Progress (with J. Rueda-Cantuche, J. Beutel, F. Neuwahl and I. Mongelli), **Economic Systems Research**, 21(1), 59-79, 2009.
83. Environmental Taxation and Induced Structural Change in an Open Economy: The Role of Market Structure (with C. Böhringer and H. Welsch), **German Economic Review**, 9(1), 17-40, 2008.
84. Employment impacts of EU biofuels policy: combining BU technology information and sectoral market simulations in an IO framework (with F. Neuwahl, I. Mongelli, L. Delgado), **Ecological Economics**, 447-460, 2008.
85. Directed technical change and differentiation of climate policy (with V.M. Otto and J. Reilly), **Energy Economics**, 30 (6), 2855-2878, 2008.
86. Extending Working Hours: Why not work 42 Hours rather than 38? – A CGE Analysis for Germany (with K. Conrad and H. Koschel), **Empirica**, 35, 255-266, 2008.
87. Climate Policy Induced Investments in Developing Countries: The Implications of Investment Risks (with C. Böhringer), **The World Economy**, 31(3), 367-392, 2008.
88. Energy Biased Technical Change - A CGE Analysis (with V. Otto and R. Dellink), **Resource and Energy Economics**, 29(2), 137-158, 2007.
89. Decomposing Integrated Assessment of Climate Change: Methodology and Sample Application (with C. Böhringer and T. F. Rutherford), **Journal of Economic Dynamics and Control**, 31(2), 683-702, 2007.
90. Efficiency Gains from “What”-Flexibility in Climate Policy - An Integrated CGE Assessment (with C. Böhringer and T. F. Rutherford), **The Energy Journal**, Multi-Greenhouse Gas Mitigation and Climate Policy, 405-424, 2006.
91. Computable General Equilibrium Models for Sustainability Impact Assessment: Status Quo and Prospects (with C. Böhringer), **Ecological Economics**, 60(1), 49-64, 2006.
92. Promoting Renewable Energy in Europe – A Hybrid CGE Approach (with C. Böhringer), **The Energy Journal**, Hybrid Modelling of Energy-Environment Policies: Reconciling Bottom-up and Top-down, 123 – 138, 2006.
93. Climate Policy Beyond Kyoto: Quo Vadis? A Computable General Equilibrium Analysis based on Expert Judgements (with C. Böhringer), **Kyklos**, 58(4), 467-493, 2005.
94. Recycling of Eco-Taxes, Labor Market Effects and the True Cost of Labor- A CGE Analysis (with K. Conrad), **Journal of Applied Economics**, 8(2), 259-278, 2005.
95. Assessing Emission Allocation in Europe: An Interactive Simulation Approach (with C. Böhringer, T. Hoffmann, A. Lange and U. Moslener), **The Energy Journal**, 26(4), 1-22, 2005.
96. Market Power and Hot Air in International Emission Trading: The Impacts of U.S. Withdrawal from the Kyoto Protocol (with C. Böhringer), **Applied Economics**, 35(6), 651-664, 2003.
97. Carbon Taxes and Joint Implementation - An Applied General Equilibrium Analysis for Germany and India (with C. Böhringer and K. Conrad), **Environmental and Resource Economics**, 24(1), 49-76, 2003.
98. Assessing the Costs of Compliance: The Kyoto Protocol (with C. Böhringer), in: *European Environment (now: Environmental Policy and Governance)*, 12(1), 1-16, 2002.
99. The Economic and Environmental Implications of the US Repudiation of the Kyoto Protocol and the Subsequent Deals in Bonn and Marrakech (with Z.X. Zhang), **Review of World Economics**, 138(4), 711-746, 2002.
100. Technological Change in Economic Models of Environmental Policy: A Survey, **Ecological Economics**, 43(2-3), 105-126, 2002.

## COMMISSIONED RESEARCH PROJECTS

### TEN REPRESENTATIVE PROJECTS

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- (second round) DFG Collaborative Research Centre (CRC)/Transregio (TRR) “Spatio-temporal Statistics for the Transition of Energy and Transport” (TRR 391), Ruhr University Bochum / TU Dortmund, German Science Foundation DFG, 2024– 2030, PI of the project “Targeting energy conservation”
- “Future Transmission Hub”, Research network funded by Amprion GmbH, 2023-2033, overall budget appr. 10.000 tEUR, Bochum budget appr. 800 tEUR, project coordinator Bochum
- DFG Research Group “Smart mid-sized cities” (FOR 5393), Ruhr University Bochum / University of Münster, German Science Foundation DFG, 2022– 2025, overall-budget appr. 2.100 tEUR, Bochum budget: appr. 300 tEUR, project coordinator Bochum
- “Global H2 Potentials (Hypat)”, Ruhr University Bochum, Federal Ministry of Education and Research, 3/2021-2/2024, Bochum budget: appr. 315 tEUR, Project coordinator Bochum
- “Monitoring Process ‘Energy of the Future’ – Independent Commission of the German Government on the Energiewende”, Ruhr University Bochum, commissioned by Federal Ministry of Economic Affairs and Energy, 10/2011 – ongoing, RUB/Münster/ZEW budget: 1000 tEUR, Chair of Expert Commission.
- “Virtual Institut Smart Energy” (VISE I and VISE II), University of Münster / University of Bochum, commissioned by European Commission - European Regional Development Fund, 7/2017 – 3/2021 and Ministry of Economic Affairs, Innovation, Digitalization and Energy (MWIDE), 1/2022 – 12/2024, overall-budget appr. 4.500 tEUR, Münster budget: appr. 750 tEUR, Overall Project coordinator
- “Integrated economic analysis of climate change protection and local air pollution” (INTEGRATE), University of Münster, commissioned by Federal Ministry of Education and Research, 12/2019 – 11/2022, Overall-budget appr. 1.400 tEUR, Münster budget: appr. 525 tEUR, Overall project coordinator
- “Strategic Scenario Analysis (START) - A first German-Australian focus project”, University of Münster, commissioned by Federal Ministry of Education and Research, 10/2017 – 12/2020, Overall-budget 2.130 tEUR, Münster budget: 560 tEUR, Co-director of HUB
- “Determinants of energy-relevant decisions and energy-relevant behaviour in the industrial sector” (ENERGY TRANS – Projekt D2), ZEW, University of Münster, commissioned by Helmholtz-Gemeinschaft Deutscher Forschungszentren, 07/2011 - 08/2016; Total budget project: 8.250 tEUR, own budget: approx. 1.560 tEUR, Project management ZEW, then Münster.
- “Economic instruments to achieve climate targets in Europe – ENTR’ACTE”, ZEW, commissioned by European Commission, FP7, 8/2012–7/2015, overall budget: 3.8 million EUR, ZEW budget: 550 tEUR, Project coordinator
- “Economics of an integrated and long-term climate and energy policy”, ZEW, Leibniz project as part of the Pact for Research and Innovation, 2010-2012, overall budget: 800 kEUR, ZEW budget: 500 kEUR, Project coordinator

### APPLICATION STAGE

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- (second round) DFG Collaborative Research Centre (CRC)/Transregio (TRR) “Spatio-temporal Statistics for the Transition of Energy and Transport” (TRR 391), Ruhr University Bochum / TU Dortmund, German Science Foundation DFG, 2024– 2030, PI of the project “Targeting energy conservation”

### ONGOING PROJECTS

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- “Future Transmission Hub”, Research network funded by Amprion GmbH, 2023-2033, overall budget appr. 10.000 tEUR, Bochum budget appr. 800 tEUR, project coordinator Bochum
- DFG Research Group “Smart mid-sized cities” (FOR 5393), Ruhr University Bochum / University of Münster, German Science Foundation DFG, 2022– 2025, overall-budget appr. 2.100 tEUR, Bochum budget: appr. 300 tEUR, project coordinator Bochum

- “Transition labels in climate finance: An empirical and experimental investigation (ClimLabels)”, Federal Ministry of Education and Research, 8/2022-7/2025, overall-budget appr. 750 tEUR, Bochum budget: appr. 220 tEUR, overall project coordinator
- “Global H2 Potentials (Hypat)”, Ruhr University Bochum, Federal Ministry of Education and Research, 3/2021-2/2024, Bochum budget: appr. 315 tEUR, Project coordinator Bochum
- “Transfer projekt H2 Sandboxes” (Trans4Real), Ruhr University Bochum, Federal Ministry of Education and Research, 4/2021-3/2026, Münster budget: appr. 350 tEUR, Project coordinator Bochum
- “Virtual Institut Smart Energy (VISE2)”, Ruhr University Bochum, Ministry of Economic Affairs, Innovation, Digitalization and Energy (MWIDE), 1/2022 – 12/2025, overall-budget appr. 2.200 tEUR, Bochum budget: appr. 600 tEUR, Overall Project coordinator
- “Monitoring Process ‘Energy of the Future’ – Independent Commission of the German Government on the Energiewende”, University of Münster, commissioned by Federal Ministry of Economic Affairs and Energy, 10/2011 – ongoing, Münster/ZEW budget: 900 tEUR, Chair of Expert Commission.

## COMPLETED PROJECTS

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- “Feasibility study on a German-Australian hydrogen supply chain based on renewable energies (HySupply)”, acatech - German Academy of Science and Engineering and the Federation of German Industries (BDI), commissioned by Federal Ministry of Education and Research, 11/2020 – 10/2022, Expert
- “Integrated economic analysis of climate change protection and local air pollution” (INTEGRATE), University of Münster, commissioned by Federal Ministry of Education and Research, 12/2019 – 11/2022, Overall-budget appr. 1.400 tEUR, Münster budget: appr. 525 tEUR, Overall project coordinator
- “Innovation Center for Global Value Chain Studies” (111 Innovation Center in UIBE), University of International Business and Economics (UIBE), sponsors: State Administration of Foreign Experts Affairs (SAFEA), Ministry of Education, P.R.China. 2018-2022, Leading Oversea Scholar
- “The political economy of a global coal phase out” (PEGASOS), University of Münster, commissioned by Federal Ministry of Education and Research, 12/2018 – 8/2022, Overall-budget appr. 775 tEUR, Münster budget: appr. 150 tEUR, Project coordinator Münster
- “The role of energy taxation and prices for the clean energy transition in the context of sector integration and carbon border mechanisms: Energy system modelling and future scenarios”, commissioned by European Commission, DG Energy, 8/2020 – 3/2022, Expert evaluator
- “The relevance of non-state actors for individual climate protection activities and climate policy” (NostaClimate), University of Münster, commissioned by Federal Ministry of Education and Research, 11/2018 – 10/2021, Overall-budget appr. 1.400 tEUR, Münster budget: appr. 100 tEUR, Project coordinator Münster
- “Virtual Institut Smart Energy” (VISE), University of Münster, commissioned by European Commission - European Regional Development Fund, 7/2017 – 3/2021, Overall-budget appr. 3.000 tEUR, Münster budget: appr. 500 tEUR, Overall Project coordinator
- “Strategic Scenario Analysis (START) - A first German-Australian focus project”, University of Münster, commissioned by Federal Ministry of Education and Research, 10/2017 – 12/2020, Overall-budget 2.130 tEUR, Münster budget: 560 tEUR, Co-director
- “Enabling the Energy Union through understanding the drivers of individual and collective energy choices in Europe” (ENABLE), University of Münster, commissioned by European Commission, FP7, 11/2016 – 10/2019, Overall-budget 3.337 tEUR, Münster budget: 325 tEUR, Project coordinator Münster
- “Kopernikus-Project for the Energy Transition – Theme 4: System integration of energy supply”, University of Münster, commissioned by the Federal Ministry of Education and Research (BMBF), 10/2016 – 09/2019; Overall-budget: 30.000 tEUR, Münster budget: 210 tEUR, Project coordinator Münster
- “Psychological, social and financial barriers to energy efficiency” (PENNY), University of Münster, commissioned by European Commission, FP7, 09/2016 – 08/2019, Overall-budget: 1.502 tEUR, Münster-budget: 426 tEUR, Project coordinator Münster
- “High-end Foreign Expert”, University of International Business and Economics (UIBE), sponsors: State Administration of Foreign Experts Affairs (SAFEA), P.R.China, 2015 –2018
- “Aspects for the Further Development of Research Topics and Funding Measures in Energy Research after Five Years of the Energy Turnaround Process” (EnFo-2030), commissioned by Federal Ministry of Economic Affairs and Energy, 10/2017 – 6/2018, budget: 9 tEUR, independent expert.
- “Preliminary Study for the Virtual Institute ‘Smart Energy’”, University of Münster, Client: Ministry of Economics, Energy, Industry, SMEs and Crafts (MWEIMH) of the State of North Rhine-Westphalia, 03/2016 - 02/2017; Overall Budget: 125 tEUR, Münster Budget: 63 tEUR, Project coordinator Münster.
- “Monitoring of the Swiss Energy Strategy 2050 - Expert Assessment”, commissioned by Swiss Federal Office of Energy, 06/2015 - 10/2016, budget 7 tEUR, independent expert.

"Analysis of the interruptions of the power supply ", commissioned by Federal Ministry of Economic Affairs and Energy (BMWi), 7/2016 - 9/2016, budget 7 tEUR, independent expert.

"Determinants of energy-relevant decisions and energy-relevant behaviour in the industrial sector" (ENERGY TRANS – Projekt D2), ZEW, University of Münster, commissioned by Helmholtz-Gemeinschaft Deutscher Forschungszentren, 07/2011 - 08/2016; Total budget project: 8.250 tEUR, own budget: approx. 1.560 tEUR, Project management ZEW, then Münster.

"Economic Evaluation of the Benefits of Environmental Policy Measures in Impact Assessment", commissioned by Federal Environmental Protection Agency (UBA), 1/2015 - 06/2016, budget 9 tEUR, independent expert.

"Economic instruments to achieve climate targets in Europe – ENTR'ACTE", ZEW, commissioned by European Commission, FP7, 8/2012–7/2015, overall budget: 3.8 million EUR, ZEW budget: 550 tEUR, Project coordinator

"The future of Europe's strategy to reduce CO2 emissions from road transport", commissioned by ZEW for BMW and Opel, 1/2015 - 4/2015, budget 8 tEUR, independent expert.

"Quantitative estimation of the employment effects of a 450MW hydropower plant in India", commissioned by KfW, 7/2012 - 1/2013, budget 8 tEUR, independent expert.

"The Relevance of Voluntary Efforts and Fairness Preferences for the Success of International Climate Policy", ZEW, commissioned by the Federal Ministry of Education and Research (BMBF), 2011-2013, Lead researcher

"Climate Policy and the Growth Pattern of Nations", ZEW, commissioned by the Federal Ministry of Education and Research (BMBF), 2011-2013, Lead researcher

„CO2-Reduktion in der Seeschifffahrt – Die Auswirkungen eines regionalen marktbasiereten Instruments für die EU“, ZEW, Auftraggeber: Bundesministerium für Verkehr, Bau und Stadtentwicklung (BMVBS), 10/2011 – 05/2013, Projektakquise und Gesamtprojektleitung

"Economics of an integrated and long-term climate and energy policy“, ZEW, Leibniz project as part of the Pact for Research and Innovation, 2010-2012, overall budget: 800 kEUR, ZEW budget: 500 kEUR, Project coordinator

World Bank Partnership for Market Readiness (PMR) / ICAP, Emissions Trading in Practice: A handbook on design and implementation, Auftraggeber: Weltbank, Motu und Environmental Defense Fund, Kernprojektteam

Sustainable Partners - Partners for Sustainability: Emerging Emission Trading Schemes in PRC, ZEW, Auftraggeber: Robert Bosch Stiftung, 5/2012 – 1/2015, Gesamtprojektleitung

Study on the Impacts on Low-Carbon Actions and Investments of the Installations Falling Under the EU Emission Trading System (EU ETS), ZEW, Auftraggeber: DG Climate Action, 10/2013-6/2014, Projektleitung ZEW.

Assessment of the Impacts of ETS Pilots in China, ZEW, Auftraggeber: DG Climate Action, 11/2012-5/2013, Projektleitung ZEW.

„Understanding the competitiveness implications of future phases of EU ETS, ZEW, Auftraggeber: Department for Business Enterprise and Regulatory Reform, UK, 7/2008-12/2009, Projektakquise und Gesamtprojektleitung

"KfW-ZEW-CO2 Market Barometer, ZEW, 12/2008-12/2012, Project coordinator

ZEW-Energiemarktbarometer, ZEW, 02/2002-12/2012, Project coordinator

World Input Output Database: Construction and Applications (WIOD), ZEW, commissioned by the European Commission, Directorate General Research, 05/2009-04/2012, Lead researcher

Monitoring der energiepolitischen Zielerreichung, ZEW, commissioned by Bundesverband der Deutschen Industrie (BDI), 2011-2012, Project coordinator

Die Bedeutung von Gerechtigkeitsprinzipien für erfolgreiche Kooperation – Eine Analyse der Auswahl und Wirkung von Verteilungsregeln in internationalen Klimaverhandlungen [The role of equity preferences for successful cooperation], ZEW, commissioned by the Federal Ministry of Education and Research (BMBF), 2010-2012, Project coordinator

Induced Climate-Related Innovations, Crowding Out, and Their Impacts on Competitiveness, ZEW, commissioned under the call Strengthening Efficiency and Competitiveness in the European Knowledge Economies (SEEK), 2010-2012, Lead researcher

A Sectoral Assessment of the EU Decarbonisation Roadmap 2050, ZEW, commissioned by the European Commission, Directorate General Enterprise and Industry (ENTR), 2010-2011, Lead researcher

Lösungsansätze zur systemeffizienten Ausgestaltung der nationalen Mittelverwendung der Einnahmen aus der Versteigerung von Zertifikaten im Rahmen des EU-ETS, ZEW, commissioned by the Hessian Ministry of Environment, Energy, Agriculture and Consumer Protection, 2010-2011, Project coordinator

A new Environmental Accounting Framework Using Externality Data and Input -Output Tools (EU), ZEW, commissioned by the European Commission, Directorate General Research, 02/2007-02/2011, Lead researcher

Full Costs of Climate Change, ZEW, commissioned by the European Commission, Directorate General Research, 2009-2011, Lead researcher

Design and Implementation of a Maritime Emission Trading Scheme, ZEW, commissioned by the Federal Ministry of Transport, Building and Urban Development (BMVBS), 11/2009-03/2010, Project coordinator



Possible risk of Carbon leakage induced by the third revision of the Emission Trading Scheme on Energy Intensive Industries, ZEW, commissioned by the European Commission, Directorate General Enterprise and Industry (ENTR), 2009-2010, Project coordinator

Die Entwicklung der Energiemärkte bis 2030 (Energieprognose 2009) [Energy scenarios for Germany up to 2030], ZEW, commissioned by the Bundesministerium für Wirtschaft und Technologie (BMWi), 05/2008-05/2009, Lead researcher

Global Sectoral Approaches: Sectoral Approaches as Part of a Post 2012 Framework, ZEW, commissioned by the European Commission, Directorate General Enterprise and Industry (ENTR), 05/2008-02/2010, Project coordinator

„The Fiscal Implications of Climate Change Adaptation“, ZEW, Auftraggeber: Generaldirektion Wirtschaft und Finanzen (ECFIN) der Europäischen Kommission, 10/2008 – 6/2010, Projektakquise und Projektleitung

Understanding the competitiveness implications of future phases of EU ETS, ZEW, commissioned by the Department for Business Enterprise and Regulatory Reform (BERR), GB, 07/2008-10/2008, Project coordinator

„Determinants of Innovation in Clean Coal Technologies“, ZEW, Auftraggeber: Organisation for Economic Cooperation and Development (OECD), Paris, 11/2008-12/2008, Projektleitung

Analysing the Economic Impacts of the Renewables and Climate Change Policy Implementation, ZEW, commissioned by the European Commission, Directorate General Enterprise and Industry (ENTR), 09/2007-02/2008, Project coordinator

Employment Impacts of Biofuels Promotion – An Input-output Analysis, Joint Research Centre - IPTS, commissioned by the European Commission, Directorate General Transport and Energy (TREN), 06/2006-11/2006, Scientific Officer

The Economy-wide Impacts of an Increased Use of Renewable Energy: A Quantitative Assessment with a Hybrid CGE Model, Joint Research Centre - IPTS, commissioned by the European Commission, Directorate General Enterprise and Industry (ENTR), 11/2005-11/2006, Scientific Officer

EU-wide Extended Input-Output Analysis Tools, commissioned by European Commission, DG Joint Research Centre, Institute for Prospective Technology Studies (IPTS), 01/2006 – 03/2007, Scientific Officer

The Development and Detailed Evaluation of a Harmonised “European Hydrogen Energy Roadmap” (HyWays), commissioned by European Commission, DG Research, 5/2004 – 4/2007, Co-researcher (until 08/2005)

Case Study Comparisons and Development of Energy Models for Integrated Technology Systems (Cascade Mints), commissioned by European Commission, DG Research, 1/2004 – 12/2006, Co-researcher (until 08/2005)

Future Use of the Kyoto Mechanisms, commissioned by Federal Environmental Agency (UBA), 12/2004 – 7/2006, Project coordinator (until 08/2005)

Integrated Climate Policy Programme Hessia 2012 (INKLIM), ZEW, commissioned by Hessian Ministry of Environment, Rural Development and Consumer Protection, Wiesbaden, 10/2004 – 12/2005, Project coordinator (until 08/2005)

Innovation and modern energy technologies (Modeling Experiment V of the Forum for Energy Models and Energy-Economic Systems Analysis in Germany), commissioned by the German Ministry of Economics and Labour (BMWA), 4/2004 – 6/2005, Project coordinator

Indicators and Quantitative Tools for Improving the Process of Sustainability Impact Assessment (IQ Tools), commissioned by European Commission, DG Research, 1/2004 – 6/2006, Co-researcher

„Ökonomische Bewertung von Maßnahmenvorschlägen zur Minderung von Treibhausgasen“, ZEW, Auftraggeber: Ministerium für Umwelt und Verkehr Baden-Württemberg (UVM), Stuttgart, 03/2003 – 02/2004, Projektakquise und Projektbearbeitung

Modelling the Transition to Sustainable Economic Structures (TranSust), commissioned by European Commission, DG Research, 2/2003 – 1/2005, Co-researcher

Climate and Energy Policy Assessment Model (CEPAM), commissioned by European Commission, DG Joint Research Centre, Institute for Prospective Technology Studies (IPTS), 1/2003 – 6/2005, Co-researcher

The Dynamics of Innovation and Investment and its Impact on Policy Design in Energy and Environment for a Sustainable Growth in Europe (DYN-GEM-E3), commissioned by European Commission, DG Research, 11/2002 – 10/2004, Co-researcher

„Geographical Extension of the GEM-E3 General Equilibrium Model Database (DAT-GEM-E3)“, ZEW, Auftraggeber: Generaldirektion Forschung (RTD) der Europäischen Kommission, 11/2002 – 04/2004, Projektakquise und Projektleitung

Methodologies for Integrating Impact Assessment in the Field of Sustainable Development (MINIMA-SUD), commissioned by European Commission, DG Research, 11/2002 – 10/2004, Lead researcher

Long-run Contribution of the German Energy Sector to European Climate Goals (Modeling Experiment IV of the Forum for Energy Models and Energy-Economic Systems Analysis in Germany), commissioned by the German Ministry of Economics and Technology (BMWi), 1/2003 – 6/2004, Co-researcher

„Klimaschutzoptionen im Verkehrsbereich“, ZEW, Auftraggeber: Volkswagen AG, Wolfsburg, 07/2002 – 06/2003, Projektakquise und Projektleitung

Environmental and Climate Protection in Liberalized Energy Markets (Modeling Experiment III of the Forum for Energy Models and Energy-Economic Systems Analysis in Germany), commissioned by the German Ministry of Education, Science, Research, and Technology (BMBF), 4/2001 – 3/2002, Co-researcher (from 12/1999)

Climate Change Policy and Global Trade (CCGT), commissioned by European Commission, DG Research, 2/2001 – 7/2002, Co-researcher

Greenhouse Gas Emission Control Strategies (GECS), commissioned by European Commission, DG Research, 9/2000 – 8/2002, Co-researcher

The Role of Innovation and Policy design in Energy and Environment for a Sustainable Growth in Europe (TCH-GEM), commissioned by European Commission, DG Research, 4/2000 – 3/2002, Co-researcher

Abandoning Nuclear Power - Effects of an Immediate or Gradual Renunciation of Electricity from Nuclear Power Stations in Germany (Modeling Experiment II of the Forum for Energy Models and Energy-Economic Systems Analysis in Germany), commissioned by the German Ministry of Education, Science, Research, and Technology (BMBF), 10/1999 – 6/2000, Co-researcher (from 12/1999)

Environmental Taxes, International Competition and Employment in a Simulation Model with Monopolistic Competition, commissioned by Volkswagen Foundation, 7/1998 – 6/2000 (from 12/1999)

Schwetzingen, June 2022