Volker Krey

List of Publications by Year
in descending order

101 papers	22,778 citations	36203 51 h-index	35952 97 g-index
108 all docs	108 docs citations	108 times ranked	21552 citing authors

#	Article	IF	Citations
1	The representative concentration pathways: an overview. Climatic Change, 2011, 109, 5-31.	1.7	5,871
2	The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview. Global Environmental Change, 2017, 42, 153-168.	3.6	2,966
3	RCP 8.5â€"A scenario of comparatively high greenhouse gas emissions. Climatic Change, 2011, 109, 33-57.	1.7	2,168
4	Biophysical and economic limits to negative CO2 emissions. Nature Climate Change, 2016, 6, 42-50.	8.1	973
5	Scenarios towards limiting global mean temperature increase below 1.5 Â°C. Nature Climate Change, 2018, 8, 325-332.	8.1	795
6	A low energy demand scenario for meeting the 1.5â€‰Â°C target and sustainable development goals without negative emission technologies. Nature Energy, 2018, 3, 515-527.	19.8	733
7	Energy system transformations for limiting end-of-century warming to below 1.5 Â°C. Nature Climate Change, 2015, 5, 519-527.	8.1	708
8	The marker quantification of the Shared Socioeconomic Pathway 2: A middle-of-the-road scenario for the 21st century. Global Environmental Change, 2017, 42, 251-267.	3.6	590
9	International climate policy architectures: Overview of the EMF 22 International Scenarios. Energy Economics, 2009, 31, S64-S81.	5.6	397
10	Residual fossil CO2 emissions in 1.5â€"2â€‰Â°C pathways. Nature Climate Change, 2018, 8, 626-633.	8.1	380
11	Energy investment needs for fulfilling the Paris Agreement and achieving the Sustainable Development Goals. Nature Energy, 2018, 3, 589-599.	19.8	377
12	The role of technology for achieving climate policy objectives: overview of the EMF 27 study on global technology and climate policy strategies. Climatic Change, 2014, 123, 353-367.	1.7	348
13	A new scenario logic for the Paris Agreement long-term temperature goal. Nature, 2019, 573, 357-363.	13.7	307
14	Locked into Copenhagen pledges â€" Implications of short-term emission targets for the cost and feasibility of long-term climate goals. Technological Forecasting and Social Change, 2015, 90, 8-23.	6.2	270
15	Connecting the sustainable development goals by their energy inter-linkages. Environmental Research Letters, 2018, 13, 033006.	2.2	263
16	Shared Socio-Economic Pathways of the Energy Sector â€" Quantifying the Narratives. Global Environmental Change, 2017, 42, 316-330.	3.6	247
17	Taking stock of national climate policies to evaluate implementation of the Paris Agreement. Nature Communications, 2020, 11, 2096.	5.8	241
18	Determinants of household energy consumption in India. Energy Policy, 2010, 38, 5696-5707.	4.2	220

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19	Limited impact on decadal-scale climate change from increased use of natural gas. Nature, 2014, 514, 482-485.	13.7	194
20	Getting from here to there â€“ energy technology transformation pathways in the EMF27 scenarios. Climatic Change, 2014, 123, 369-382.	1.7	181
21	The role of renewable energy in climate stabilization: results from the EMF27 scenarios. Climatic Change, 2014, 123, 427-441.	1.7	179
22	Global exposure and vulnerability to multi-sector development and climate change hotspots. Environmental Research Letters, 2018, 13, 055012.	2.2	162
23	A multi-model assessment of food security implications of climate change mitigation. Nature Sustainability, 2019, 2, 386-396.	11.5	152
24	Improving the behavioral realism of global integrated assessment models: An application to consumersâ€™ vehicle choices. Transportation Research, Part D: Transport and Environment, 2017, 55, 322-342.	3.2	140
25	Stranded on a low-carbon planet: Implications of climate policy for the phase-out of coal-based power plants. Technological Forecasting and Social Change, 2015, 90, 89-102.	6.2	132
26	Climate policies can help resolve energy security and air pollution challenges. Climatic Change, 2013, 119, 479-494.	1.7	129
27	The role of Asia in mitigating climate change: Results from the Asia modeling exercise. Energy Economics, 2012, 34, S251-S260.	5.6	126
28	Analysing interactions among Sustainable Development Goals with Integrated Assessment Models. Global Transitions, 2019, 1, 210-225.	1.6	126
29	Limited emission reductions from fuel subsidy removal except in energy-exporting regions. Nature, 2018, 554, 229-233.	13.7	125
30	Interaction of consumer preferences and climate policies in the global transition to low-carbon vehicles. Nature Energy, 2018, 3, 664-673.	19.8	122
31	A new scenario resource for integrated 1.5 Â°C research. Nature Climate Change, 2018, 8, 1027-1030.	8.1	120
32	The MESSAGE Integrated Assessment Model and the ix modeling platform (ixmp): An open framework for integrated and cross-cutting analysis of energy, climate, the environment, and sustainable development. Environmental Modelling and Software, 2019, 112, 143-156.	1.9	114
33	Future capacity growth of energy technologies: are scenarios consistent with historical evidence?. Climatic Change, 2013, 118, 381-395.	1.7	111
34	Looking under the hood: A comparison of techno-economic assumptions across national and global integrated assessment models. Energy, 2019, 172, 1254-1267.	4.5	107
35	Urban and rural energy use and carbon dioxide emissions in Asia. Energy Economics, 2012, 34, S272-S283.	5.6	105
36	Diagnostic indicators for integrated assessment models of climate policy. Technological Forecasting and Social Change, 2015, 90, 45-61.	6.2	104

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37	WHAT DOES THE 2Â°C TARGET IMPLY FOR A GLOBAL CLIMATE AGREEMENT IN 2020? THE LIMITS STUDY ON DURBAN PLATFORM SCENARIOS. Climate Change Economics, 2013, 04, 1340008.	2.9	103
38	An integrated approach to energy sustainability. Nature Climate Change, 2011, 1, 428-429.	8.1	102
39	Cost and attainability of meeting stringent climate targets without overshoot. Nature Climate Change, 2021, 11, 1063-1069.	8.1	102
40	Transport electrification: A key element for energy system transformation and climate stabilization. Climatic Change, 2014, 123, 651-664.	1.7	90
41	Impacts of considering electric sector variability and reliability in the MESSAGE model. Energy Strategy Reviews, 2013, 1, 157-163.	3.3	87
42	Global energyâ€climate scenarios and models: a review. Wiley Interdisciplinary Reviews: Energy and Environment, 2014, 3, 363-383.	1.9	82
43	Understanding the origin of Paris Agreement emission uncertainties. Nature Communications, 2017, 8, 15748.	5.8	82
44	Air Quality Improvement Co-benefits of Low-Carbon Pathways toward Well Below the 2 Â°C Climate Target in China. Environmental Science & Technology, 2019, 53, 5576-5584.	4.6	81
45	Gas hydrates: entrance to a methane age or climate threat?. Environmental Research Letters, 2009, 4, 034007.	2.2	73
46	Role of renewable energy in climate mitigation: a synthesis of recent scenarios. Climate Policy, 2011, 11, 1131-1158.	2.6	70
47	Implications of delayed participation and technology failure for the feasibility, costs, and likelihood of staying below temperature targetsâ€"Greenhouse gas mitigation scenarios for the 21st century. Energy Economics, 2009, 31, S94-S106.	5.6	64
48	The impact of near-term climate policy choices on technology and emission transition pathways. Technological Forecasting and Social Change, 2015, 90, 73-88.	6.2	64
49	Enhancing global climate policy ambition towards a 1.5â€‰Â°C stabilization: a short-term multi-model assessment. Environmental Research Letters, 2018, 13, 044039.	2.2	60
50	Comparison and interactions between the long-term pursuit of energy independence and climate policies. Nature Energy, 2016, 1, .	19.8	58
51	A multi-criteria model analysis framework for assessing integrated water-energy system transformation pathways. Applied Energy, 2018, 210, 477-486.	5.1	57
52	A Continentalâ€Scale Hydroeconomic Model for Integrating Waterâ€Energyâ€Land Nexus Solutions. Water Resources Research, 2018, 54, 7511-7533.	1.7	57
53	Synergies in the Asian energy system: Climate change, energy security, energy access and air pollution. Energy Economics, 2012, 34, S470-S480.	5.6	54
54	Co-designing Indus Water-Energy-Land Futures. One Earth, 2019, 1, 185-194.	3.6	54

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55	Carbon budgets and energy transition pathways. Environmental Research Letters, 2016, 11, 075002.	2.2	53
56	Air-pollution emission ranges consistent with the representative concentration pathways. Nature Climate Change, 2014, 4, 446-450.	8.1	52
57	Balancing clean water-climate change mitigation trade-offs. Environmental Research Letters, 2019, 14, 014009.	2.2	48
58	Mitigation Potential and Costs. , 2011, , 791-864.		41
59	Quantifying uncertainties influencing the long-term impacts of oil prices on energy marketsÂand carbon emissions. Nature Energy, 2016, 1, .	19.8	41
60	Energy system developments and investments in the decisive decade for the Paris Agreement goals. Environmental Research Letters, 2021, 16, 074020.	2.2	41
61	Effects of stochastic energy prices on long-term energy-economic scenarios. Energy, 2007, 32, 2340-2349.	4.5	40
62	Net zero-emission pathways reduce the physical and economic risks of climate change. Nature Climate Change, 2021, 11, 1070-1076.	8.1	39
63	Inclusive climate change mitigation and food security policy under 1.5â€‰Â°C climate goal. Environmental Research Letters, 2018, 13, 074033.	2.2	37
64	Integrated assessment model diagnostics: key indicators and model evolution. Environmental Research Letters, 2021, 16, 054046.	2.2	36
65	Regional energy system variation in global models: Results from the Asian Modeling Exercise scenarios. Energy Economics, 2012, 34, S293-S305.	5.6	35
66	Implications of high energy prices for energy system and emissionsâ€"The response from an energy model for Germany. Energy Policy, 2007, 35, 4504-4515.	4.2	33
67	Evaluating process-based integrated assessment models of climate change mitigation. Climatic Change, 2021, 166, 1.	1.7	33
68	A reduced-form approach for representing the impacts of wind and solar PV deployment on the structure and operation of the electricity system. Energy Economics, 2017, 64, 651-664.	5.6	31
69	The NExus Solutions Tool (NEST) v1.0: an open platform for optimizing multi-scale energyâ€"waterâ€"land system transformations. Geoscientific Model Development, 2020, 13, 1095-1121.	1.3	31
70	Energy Pathways for Sustainable Development. , 0, , 1205-1306.		29
71	A framework for national scenarios with varying emission reductions. Nature Climate Change, 2021, 11, 472-480.	8.1	29
72	A Time Step Energy Process Model for Germany - Model Structure and Results. Energy Studies Review, 2014, 14, .	0.2	28

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73	Comparing transformation pathways across major economies. Climatic Change, 2020, 162, 1787-1803.	1.7	27
74	Land-based implications of early climate actions without global net-negative emissions. Nature Sustainability, 2021, 4, 1052-1059.	11.5	27
75	Energy Primer. , 0, , 99-150.		26
76	Representing spatial technology diffusion in an energy system optimization model. Technological Forecasting and Social Change, 2016, 103, 350-363.	6.2	25
77	Renewable Energy and Climate Change. , 2011, , 161-208.		24
78	The effect of financial constraints on energy-climate scenarios. Energy Policy, 2013, 59, 562-572.	4.2	24
79	Integrated Solutions for the Water-Energy-Land Nexus: Are Global Models Rising to the Challenge?. Water (Switzerland), 2019, 11, 2223.	1.2	24
80	Impacts of Groundwater Constraints on Saudi Arabiaâ€™s Low-Carbon Electricity Supply Strategy. Environmental Science & Technology, 2016, 50, 1653-1662.	4.6	23
81	Early transformation of the Chinese power sector to avoid additional coal lock-in. Environmental Research Letters, 2020, 15, 024007.	2.2	23
82	What future for primary aluminium production in a decarbonizing economy?. Global Environmental Change, 2021, 69, 102316.	3.6	22
83	Air quality and health implications of 1.5 Â°Câ€“2 Â°C climate pathways under considerations of ageing population: a multi-model scenario analysis. Environmental Research Letters, 2021, 16, 045005.	2.2	19
84	Compromises in energy policyâ€"Using fuzzy optimization in an energy systems model. Energy Policy, 2008, 36, 2983-2994.	4.2	18
85	A comparison of low carbon investment needs between China and Europe in stringent climate policy scenarios. Environmental Research Letters, 2019, 14, 054017.	2.2	18
86	Decarbonization pathways and energy investment needs for developing Asia in line with â€˜well belowâ€™ 2Â°C. Climate Policy, 2020, 20, 234-245.	2.6	18
87	Uncertainty in an emissions-constrained world. Climatic Change, 2014, 124, 459-476.	1.7	17
88	How well do integrated assessment models represent non-CO2 radiative forcing?. Climatic Change, 2015, 133, 565-582.	1.7	17
89	Emissions of electric vehicle charging in future scenarios: The effects of time of charging. Journal of Industrial Ecology, 2021, 25, 1250-1263.	2.8	15
90	A new generation of emissions scenarios should cover blind spots in the carbon budget space. Nature Climate Change, 2019, 9, 798-800.	8.1	14

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91	Climate change scenario services: From science to facilitating action. One Earth, 2021, 4, 1074-1082.	3.6	14
92	A short note on integrated assessment modeling approaches: Rejoinder to the review of â€œMaking or breaking climate targets â€” The AMPERE study on staged accession scenarios for climate policyâ€. Technological Forecasting and Social Change, 2015, 99, 273-276.	6.2	11
93	How climate metrics affect global mitigation strategies and costs: a multi-model study. Climatic Change, 2016, 136, 203-216.	1.7	9
94	Role of energy storage in energy and water security in Central Asia. Journal of Energy Storage, 2022, 50, 104587.	3.9	9
95	South Africa After Parisâ€"Fracking Its Way to the NDCs?. Frontiers in Energy Research, 2019, 7, .	1.2	7
96	Beyond Rio: Sustainable energy scenarios for the 21st century. Natural Resources Forum, 2012, 36, 215-230.	1.8	6
97	Risk Hedging Strategies Under Energy System and Climate Policy Uncertainties. Profiles in Operations Research, 2013, , 435-474.	0.3	5
98	Reply to: Why fossil fuel producer subsidies matter. Nature, 2020, 578, E5-E7.	13.7	3
99	Modelling competition between natural gas pipeline projects to China. International Journal of Global Environmental Issues, 2010, 10, 143.	0.1	1
100	Technology Portfolios: Modelling Technological Uncertainty and Innovation Risks. , 0, , 89-102.		1
101	Regional Low-Emission Pathways from Global Models. SSRN Electronic Journal, 0, , .	0.4	1