Elmar Kriegler

List of Publications by Year
in descending order

127 papers	25,375 citations	23567 58 h-index	13771 129 g-index
144 all docs	144 docs citations	144 times ranked	17470 citing authors

#	Article	IF	Citations
1	The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview. Global Environmental Change, 2017, 42, 153-168.	7.8	2,966
2	Tipping elements in the Earth's climate system. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 1786-1793.	7.1	2,599
3	The Scenario Model Intercomparison Project (ScenarioMIP) for CMIP6. Geoscientific Model Development, 2016, 9, 3461-3482.	3.6	2,084
4	A new scenario framework for climate change research: the concept of shared socioeconomic pathways. Climatic Change, 2014, 122, 387-400.	3.6	1,698
5	The roads ahead: Narratives for shared socioeconomic pathways describing world futures in the 21st century. Global Environmental Change, 2017, 42, 169-180.	7.8	1,656
6	Biophysical and economic limits to negative CO2 emissions. Nature Climate Change, 2016, 6, 42-50.	18.8	973
7	Scenarios towards limiting global mean temperature increase below 1.5 Â°C. Nature Climate Change, 2018, 8, 325-332.	18.8	795
8	Energy system transformations for limiting end-of-century warming to below 1.5 Â°C. Nature Climate Change, 2015, 5, 519-527.	18.8	708
9	Land-use futures in the shared socio-economic pathways. Global Environmental Change, 2017, 42, 331-345.	7.8	645
10	A new scenario framework for Climate Change Research: scenario matrix architecture. Climatic Change, 2014, 122, 373-386.	3.6	510
11	Global emissions pathways under different socioeconomic scenarios for use in CMIP6: a dataset of harmonized emissions trajectories through the end of the century. Geoscientific Model Development, 2019, 12, 1443-1475.	3.6	496
12	Fossil-fueled development (SSP5): An energy and resource intensive scenario for the 21st century. Global Environmental Change, 2017, 42, 297-315.	7.8	418
13	The need for and use of socio-economic scenarios for climate change analysis: A new approach based on shared socio-economic pathways. Global Environmental Change, 2012, 22, 807-822.	7.8	382
14	Residual fossil CO2 emissions in 1.5â€“2â€‰Â°C pathways. Nature Climate Change, 2018, 8, 626-633.	18.8	380
15	Energy investment needs for fulfilling the Paris Agreement and achieving the Sustainable Development Goals. Nature Energy, 2018, 3, 589-599.	39.5	377
16	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.	3.6	348
17	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.	11.6	270
18	Assessing Chinaâ€™s efforts to pursue the 1.5Â°C warming limit. Science, 2021, 372, 378-385.	12.6	267

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19	A new scenario framework for climate change research: the concept of shared climate policy assumptions. Climatic Change, 2014, 122, 401-414.	3.6	266
20	Imprecise probability assessment of tipping points in the climate system. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 5041-5046.	7.1	263
21	Shared Socio-Economic Pathways of the Energy Sector â€“ Quantifying the Narratives. Global Environmental Change, 2017, 42, 316-330.	7.8	247
22	Achievements and needs for the climate change scenario framework. Nature Climate Change, 2020, 10, 1074-1084.	18.8	245
23	Taking stock of national climate policies to evaluate implementation of the Paris Agreement. Nature Communications, 2020, 11, 2096.	12.8	241
24	Climate model projections from the Scenario Model Intercomparison ProjectÂ(ScenarioMIP) of CMIP6. Earth System Dynamics, 2021, 12, 253-293.	7.1	236
25	Estimating and tracking the remaining carbon budget for stringent climate targets. Nature, 2019, 571, 335-342.	27.8	229
26	Impact of declining renewable energy costs on electrification in low-emission scenarios. Nature Energy, 2022, 7, 32-42.	39.5	196
27	Getting from here to there â€“ energy technology transformation pathways in the EMF27 scenarios. Climatic Change, 2014, 123, 369-382.	3.6	181
28	Future growth patterns of world regions â€“ A GDP scenario approach. Global Environmental Change, 2017, 42, 215-225.	7.8	179
29	A sustainable development pathway for climate action within the UN 2030 Agenda. Nature Climate Change, 2021, 11, 656-664.	18.8	179
30	Economic mitigation challenges: how further delay closes the door for achieving climate targets. Environmental Research Letters, 2013, 8, 034033.	5.2	172
31	A new scenario framework for climate change research: background, process, and future directions. Climatic Change, 2014, 122, 363-372.	3.6	169
32	Global fossil energy markets and climate change mitigation â€“ an analysis with REMIND. Climatic Change, 2016, 136, 69-82.	3.6	168
33	Post-2020 climate agreements in the major economies assessed in the light of global models. Nature Climate Change, 2015, 5, 119-126.	18.8	158
34	Bioenergy in energy transformation and climate management. Climatic Change, 2014, 123, 477-493.	3.6	154
35	Potential and costs of carbon dioxide removal by enhanced weathering of rocks. Environmental Research Letters, 2018, 13, 034010.	5.2	152
36	Long-term transport energy demand and climate policy: Alternative visions on transport decarbonization in energy-economy models. Energy, 2014, 64, 95-108.	8.8	149

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37	Land-use transition for bioenergy and climate stabilization: model comparison of drivers, impacts and interactions with other land use based mitigation options. Climatic Change, 2014, 123, 495-509.	3.6	140
38	Making or breaking climate targets: The AMPERE study on staged accession scenarios for climate policy. Technological Forecasting and Social Change, 2015, 90, 24-44.	11.6	132
39	The role of Asia in mitigating climate change: Results from the Asia modeling exercise. Energy Economics, 2012, 34, S251-S260.	12.1	126
40	Complementing carbon prices with technology policies to keep climate targets within reach. Nature Climate Change, 2015, 5, 235-239.	18.8	120
41	A new scenario resource for integrated 1.5 Â°C research. Nature Climate Change, 2018, 8, 1027-1030.	18.8	120
42	The impact of technological change on climate protection and welfare: Insights from the model MIND. Ecological Economics, 2005, 54, 277-292.	5.7	114
43	Is atmospheric carbon dioxide removal a game changer for climate change mitigation?. Climatic Change, 2013, 118, 45-57.	3.6	107
44	Looking under the hood: A comparison of techno-economic assumptions across national and global integrated assessment models. Energy, 2019, 172, 1254-1267.	8.8	107
45	Diagnostic indicators for integrated assessment models of climate policy. Technological Forecasting and Social Change, 2015, 90, 45-61.	11.6	104
46	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.	5.0	103
47	Cost and attainability of meeting stringent climate targets without overshoot. Nature Climate Change, 2021, 11, 1063-1069.	18.8	102
48	Simulating the Earth system response to negative emissions. Environmental Research Letters, 2016, 11, 095012.	5.2	98
49	Utilizing belief functions for the estimation of future climate change. International Journal of Approximate Reasoning, 2005, 39, 185-209.	3.3	90
50	Pathways limiting warming to 1.5Â°C: a tale of turning around in no time?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20160457.	3.4	84
51	Integrating Global Climate Change Mitigation Goals with Other Sustainability Objectives: A Synthesis. Annual Review of Environment and Resources, 2015, 40, 363-394.	13.4	83
52	The value of bioenergy in low stabilization scenarios: an assessment using REMIND-MAgPIE. Climatic Change, 2014, 123, 705-718.	3.6	81
53	Improving environmental change research with systematic techniques for qualitative scenarios. Environmental Research Letters, 2012, 7, 044011.	5.2	77
54	Afforestation to mitigate climate change: impacts on food prices under consideration of albedo effects. Environmental Research Letters, 2016, 11, 085001.	5.2	74

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55	Between Scylla and Charybdis: Delayed mitigation narrows the passage between large-scale CDR and high costs. Environmental Research Letters, 2018, 13, 044015.	5.2	73
56	Implications of possible interpretations of â€˜greenhouse gas balanceâ€™ in the Paris Agreement. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20160445.	3.4	72
57	Reduced Complexity Model Intercomparison Project Phase 1: introduction and evaluation of global-mean temperature response. Geoscientific Model Development, 2020, 13, 5175-5190.	3.6	70
58	Combining ambitious climate policies with efforts to eradicate poverty. Nature Communications, 2021, 12, 2342.	12.8	63
59	Quantification of an efficiencyâ€"sovereignty trade-offâ€„in climate policy. Nature, 2020, 588, 261-266.	27.8	61
60	Enhancing global climate policy ambition towards a 1.5â€‰Â°C stabilization: a short-term multi-model assessment. Environmental Research Letters, 2018, 13, 044039.	5.2	60
61	THE DISTRIBUTION OF THE MAJOR ECONOMIES' EFFORT IN THE DURBAN PLATFORM SCENARIOS. Climate Change Economics, 2013, 04, 1340009.	5.0	59
62	The impact of climate change mitigation on water demand for energy and food: An integrated analysis based on the Shared Socioeconomic Pathways. Environmental Science and Policy, 2016, 64, 48-58.	4.9	58
63	All options, not silver bullets, needed to limit global warming to 1.5 Â°C: a scenario appraisal. Environmental Research Letters, 2021, 16, 064037.	5.2	58
64	Preface and introduction to EMF 27. Climatic Change, 2014, 123, 345-352.	3.6	56
65	Alternative carbon price trajectories can avoid excessive carbon removal. Nature Communications, 2021, 12, 2264.	12.8	55
66	Implications of weak near-term climate policies on long-term mitigation pathways. Climatic Change, 2016, 136, 127-140.	3.6	54
67	Assessing global fossil fuel availability in a scenario framework. Energy, 2016, 111, 580-592.	8.8	54
68	Defining a sustainable development target space for 2030 and 2050. One Earth, 2022, 5, 142-156.	6.8	54
69	Carbon budgets and energy transition pathways. Environmental Research Letters, 2016, 11, 075002.	5.2	53
70	Harmonization vs. fragmentation: overview of climate policy scenarios in EMF27. Climatic Change, 2014, 123, 383-396.	3.6	50
71	Short term policies to keep the door open for Paris climate goals. Environmental Research Letters, 2018, 13, 074022.	5.2	48
72	Targeted policies can compensate most of the increased sustainability risks in 1.5â€‰Â°C mitigation scenarios. Environmental Research Letters, 2018, 13, 064038.	5.2	48

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73	Description of the REMIND Model (Version 1.6). SSRN Electronic Journal, 0, , .	0.4	46
74	Carbon dioxide removal technologies are not born equal. Environmental Research Letters, 2021, 16, 074021.	5.2	45
75	Role of technologies in energy-related CO2 mitigation in China within a climate-protection world: A scenarios analysis using REMIND. Applied Energy, 2014, 115, 445-455.	10.1	43
76	Efficient climate policies under technology and climate uncertainty. Energy Economics, 2009, 31, S50-S61.	12.1	41
77	Asia's role in mitigating climate change: A technology and sector specific analysis with ReMIND-R. Energy Economics, 2012, 34, S378-S390.	12.1	41
78	Energy system developments and investments in the decisive decade for the Paris Agreement goals. Environmental Research Letters, 2021, 16, 074020.	5.2	41
79	Mid- and long-term climate projections for fragmented and delayed-action scenarios. Technological Forecasting and Social Change, 2015, 90, 257-268.	11.6	39
80	Global roll-out of comprehensive policy measures may aid in bridging emissions gap. Nature Communications, 2021, 12, 6419.	12.8	37
81	Integrated assessment model diagnostics: key indicators and model evolution. Environmental Research Letters, 2021, 16, 054046.	5.2	36
82	Economic and Environmental Costs of Regulatory Uncertainty for Coal-Fired Power Plants. Environmental Science & Technology, 2009, 43, 578-584.	10.0	35
83	REMIND2.1: transformation and innovation dynamics of the energy-economic system within climate and sustainability limits. Geoscientific Model Development, 2021, 14, 6571-6603.	3.6	34
84	Evaluating process-based integrated assessment models of climate change mitigation. Climatic Change, 2021, 166, 1.	3.6	33
85	Carbon leakage in a fragmented climate regime: The dynamic response of global energy markets. Technological Forecasting and Social Change, 2015, 90, 192-203.	11.6	32
86	Climate targets under uncertainty: challenges and remedies. Climatic Change, 2011, 104, 783-791.	3.6	28
87	Using large ensembles of climate change mitigation scenarios for robust insights. Nature Climate Change, 2022, 12, 428-435.	18.8	28
88	Mitigation scenarios must cater to new users. Nature Climate Change, 2018, 8, 845-848.	18.8	27
89	Sensitivity Analysis of Emissions Corridors for the 21st Century. Climatic Change, 2004, 66, 345-387.	3.6	26
90	Will economic growth and fossil fuel scarcity help or hinder climate stabilization?. Climatic Change, 2016, 136, 7-22.	3.6	25

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91	Reducing stranded assets through early action in the Indian power sector. Environmental Research Letters, 2020, 15, 094091.	5.2	25
92	A New Toolkit for Developing Scenarios for Climate Change Research and Policy Analysis. Environment, 2014, 56, 6-16.	1.4	24
93	Economic impacts of alternative greenhouse gas emission metrics: a model-based assessment. Climatic Change, 2014, 125, 319-331.	3.6	23
94	Early transformation of the Chinese power sector to avoid additional coal lock-in. Environmental Research Letters, 2020, 15, 024007.	5.2	23
95	Bio-energy and CO2 emission reductions: an integrated land-use and energy sector perspective. Climatic Change, 2020, 163, 1675-1693.	3.6	23
96	Economic Growth Effects of Alternative Climate Change Impact Channels in Economic Modeling. Environmental and Resource Economics, 2019, 73, 1357-1385.	3.2	22
97	Experimental determination of the complete spin structure forpÂ¯pâ†’Î›Â¯Î›atppÂ¯=1.637GeV/c. Physical Review C, 2006, 74, .	2.9	21
98	Introduction to the RoSE special issue on the impact of economic growth and fossil fuel availability on climate protection. Climatic Change, 2016, 136, 1-6.	3.6	19
99	Anticipating Climate Threshold Damages. Environmental Modeling and Assessment, 2012, 17, 163-175.	2.2	18
100	How uncertainty in technology costs and carbon dioxide removal availability affect climate mitigation pathways. Energy, 2021, 216, 119253.	8.8	17
101	Measurement of Spin-Transfer Observables inpÂ¯pâ†’Î›Â¯Î›at1.637â€‰â€‰GeV/c. Physical Review Letters, 2002, 89, 212302.	7.8	15
102	Description of the REMIND Model (Version 1.5). SSRN Electronic Journal, 0, , .	0.4	14
103	ON THE REGIONAL DISTRIBUTION OF CLIMATE MITIGATION COSTS: THE IMPACT OF DELAYED COOPERATIVE ACTION. Climate Change Economics, 2014, 05, 1440002.	5.0	14
104	Climate change scenario services: From science to facilitating action. One Earth, 2021, 4, 1074-1082.	6.8	14
105	Climate Policy Under Uncertain and Heterogeneous Climate Damages. Environmental and Resource Economics, 2013, 54, 79-99.	3.2	13
106	Long history of IAM comparisons. Nature Climate Change, 2015, 5, 391-391.	18.8	13
107	Optimal international technology cooperation for the low-carbon transformation. Climate Policy, 2018, 18, 1165-1176.	5.1	13
108	Economic damages from on-going climate change imply deeper near-term emission cuts. Environmental Research Letters, 2021, 16, 104053.	5.2	13

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109	Can air pollutant controls change global warming?. Environmental Science and Policy, 2014, 41, 33-43.	4.9	11
110	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.	11.6	11
111	Climate policy accelerates structural changes in energy employment. Energy Policy, 2021, 159, 112642.	8.8	11
112	INTRODUCING THE LIMITS SPECIAL ISSUE. Climate Change Economics, 2013, 04, 1302002.	5.0	10
113	HOW TO MEASURE THE IMPORTANCE OF CLIMATE RISK FOR DETERMINING OPTIMAL GLOBAL ABATEMENT POLICIES?. Climate Change Economics, 2012, 03, 1250004.	5.0	7
114	Emissions and their drivers: sensitivity to economic growth and fossil fuel availability across world regions. Climatic Change, 2016, 136, 23-37.	3.6	7
115	Data on fossil fuel availability for Shared Socioeconomic Pathways. Data in Brief, 2017, 10, 44-46.	1.0	7
116	Bayesian learning for a class of priors with prescribed marginals. International Journal of Approximate Reasoning, 2008, 49, 212-233.	3.3	6
117	On the verge of dangerous anthropogenic interference with the climate system?. Environmental Research Letters, 2007, 2, 011001.	5.2	5
118	Results from PS185. Nuclear Physics A, 1999, 655, c173-c178.	1.5	4
119	Updating under unknown unknowns: An extension of Bayesâ€™ rule. International Journal of Approximate Reasoning, 2009, 50, 583-596.	3.3	4
120	Long-Term Transport Energy Demand and Climate Policy: Alternative Visions on Transport Decarbonization in Energy Economy Models. SSRN Electronic Journal, 2013, , .	0.4	4
121	En route to China's mid-century climate goal: comparison of emissions intensity versus absolute targets. Climate Policy, 2020, 20, 1274-1289.	5.1	4
122	Uncertainty of the role of carbon capture and sequestration within climate change mitigation strategies. , 2005, , 931-939.		4
123	Depolarization and spin transfer in with a polarized target. Nuclear Instruments & Methods in Physics Research B, 2004, 214, 167-170.	1.4	1
124	Regional Low-Emission Pathways from Global Models. SSRN Electronic Journal, 0, , .	0.4	1
125	Building consistency. Nature Climate Change, 2012, 2, 702-702.	18.8	0
126	Economic Impacts of Alternative Greenhouse Gas Emission Metrics: A Model-Based Assessment. SSRN Electronic Journal, 2013, , .	0.4	0

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127	Implications of Weak Near-Term Climate Policies on Long-Term Mitigation Pathways. SSRN Electronic Journal, 0, , .	0.4	0