Paul Denholm

List of Publications by Year
in descending order

76 papers	7,522 citations	87723 38 h-index	98622 67 g-index
96 all docs	96 docs citations	96 times ranked	6375 citing authors

#	Article	IF	Citations
1	Energy-Storage Modeling: State-of-the-Art and Future Research Directions. IEEE Transactions on Power Systems, 2022, 37, 860-875.	4.6	37
2	Exploring the design space of PV-plus-battery system configurations under evolving grid conditions. Applied Energy, 2022, 308, 118339.	5.1	12
3	Assessing the value of electric vehicle managed charging: a review of methodologies and results. Energy and Environmental Science, 2022, 15, 466-498.	15.6	39
4	A market feedback framework for improved estimates of the arbitrage value of energy storage using price-taker models. Applied Energy, 2022, 310, 118250.	5.1	5
5	Optimal energy storage portfolio for high and ultrahigh carbon-free and renewable power systems. Energy and Environmental Science, 2021, 14, 5132-5146.	15.6	46
6	The curtailment paradox in the transition to high solar power systems. Joule, 2021, 5, 1143-1167.	11.7	50
7	The challenges of achieving a 100% renewable electricity system in the United States. Joule, 2021, 5, 1331-1352.	11.7	99
8	Quantifying the challenge of reaching a 100% renewable energy power system for the United States. Joule, 2021, 5, 1732-1748.	11.7	82
9	Impact of operating reserve rules on electricity prices with high penetrations of renewable energy. Energy Policy, 2021, 156, 112443.	4.2	13
10	Using Concentrating-Solar-Power Plants as Economic Carbon-Free Capacity Resources. Energy Conversion and Management: X, 2021, 12, 100112.	0.9	0
11	Hybrid Resources: Challenges, Implications, Opportunities, and Innovation. IEEE Power and Energy Magazine, 2021, 19, 37-44.	1.6	7
12	Carbon-Free Energy: How Much, How Soon?. IEEE Power and Energy Magazine, 2021, 19, 67-76.	1.6	6
13	The potential for battery energy storage to provide peaking capacity in the United States. Renewable Energy, 2020, 151, 1269-1277.	4.3	66
14	Assessing the potential of battery storage as a peaking capacity resource in the United States. Applied Energy, 2020, 275, 115385.	5.1	29
15	The value of seasonal energy storage technologies for the integration of wind and solar power. Energy and Environmental Science, 2020, 13, 1909-1922.	15.6	126
16	The 2020 photovoltaic technologies roadmap. Journal Physics D: Applied Physics, 2020, 53, 493001.	1.3	274
17	Impacts of storage dispatch on revenue in electricity markets. Journal of Energy Storage, 2020, 31, 101573.	3.9	12
18	Leveraging concentrating solar power plant dispatchability: A review of the impacts of global market structures and policy. Energy Policy, 2020, 139, 111335.	4.2	17

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19	A model for evaluating the configuration and dispatch of PV plus battery power plants. Applied Energy, 2020, 262, 114465.	5.1	41
20	Timescales of energy storage needed for reducing renewable energy curtailment. Renewable Energy, 2019, 130, 388-399.	4.3	127
21	An Analysis of Thermal Plant Flexibility Using a National Generator Performance Database. Environmental Science & Technology, 2019, 53, 13486-13494.	4.6	6
22	Sunny with a Chance of Curtailment: Operating the US Grid with Very High Levels of Solar Photovoltaics. IScience, 2019, 21, 436-447.	1.9	36
23	Evaluating a concentrating solar power plant as an extended-duration peaking resource. Solar Energy, 2019, 191, 686-696.	2.9	7
24	Distribution system costs associated with the deployment of photovoltaic systems. Renewable and Sustainable Energy Reviews, 2018, 90, 420-433.	8.2	34
25	How low can you go? The importance of quantifying minimum generation levels for renewable integration. Energy Policy, 2018, 115, 249-257.	4.2	32
26	Solar on the rise: How cost declines and grid integration shape solarâ€™s growth potential in the United States. MRS Energy & Sustainability, 2018, 5, 1.	1.3	6
27	Potential air quality benefits from increased solar photovoltaic electricity generation in the Eastern United States. Atmospheric Environment, 2018, 175, 65-74.	1.9	27
28	A comparison of price-taker and production cost models for determining system value, revenue, and scheduling of concentrating solar power plants. Applied Energy, 2018, 231, 854-865.	5.1	38
29	Analyzing storage for wind integration in a transmission-constrained power system. Applied Energy, 2018, 228, 122-129.	5.1	33
30	Achieving a 100% Renewable Grid: Operating Electric Power Systems with Extremely High Levels of Variable Renewable Energy. IEEE Power and Energy Magazine, 2017, 15, 61-73.	1.6	846
31	Data Challenges in Estimating the Capacity Value of Solar Photovoltaics. IEEE Journal of Photovoltaics, 2017, 7, 1065-1073.	1.5	24
32	Maintaining Balance: The Increasing Role of Energy Storage for Renewable Integration. IEEE Power and Energy Magazine, 2017, 15, 31-39.	1.6	43
33	The policy and institutional challenges of grid integration of renewable energy in the western United States. Utilities Policy, 2015, 33, 34-41.	2.1	20
34	Alternatives No More: Wind and Solar Power Are Mainstays of a Clean, Reliable, Affordable Grid. IEEE Power and Energy Magazine, 2015, 13, 78-87.	1.6	50
35	Relative performance of tracking versus fixed tilt photovoltaic systems in the USA. Progress in Photovoltaics: Research and Applications, 2014, 22, 1302-1315.	4.4	30
36	The Value of CSP with Thermal Energy Storage in the Western United States. Energy Procedia, 2014, 49, 1622-1631.	1.8	77

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37	Quantifying the Value of Concentrating Solar Power in a Production Cost Model. , 2014, , .		1
38	A Dynamic Programming Approach to Estimate the Capacity Value of Energy Storage. IEEE Transactions on Power Systems, 2014, 29, 395-403.	4.6	117
39	Implications of high renewable electricity penetration in the U.S. for water use, greenhouse gas emissions, land-use, and materials supply. Applied Energy, 2014, 123, 368-377.	5.1	109
40	Enabling Greater Penetration of Solar Power via the Use of CSP with Thermal Energy Storage. , 2014, , 99-122.		19
41	Impact of photovoltaic orientation on its relative economic value in wholesale energy markets. Progress in Photovoltaics: Research and Applications, 2013, 21, 1531-1540.	4.4	34
42	Comparing Capacity Value Estimation Techniques for Photovoltaic Solar Power. IEEE Journal of Photovoltaics, 2013, 3, 407-415.	1.5	66
43	Demand Response for Ancillary Services. IEEE Transactions on Smart Grid, 2013, 4, 1988-1995.	6.2	264
44	The unit commitment model with concave emissions costs: a hybrid Bendersâ€™ Decomposition with nonconvex master problems. Annals of Operations Research, 2013, 210, 361-386.	2.6	11
45	Bright Future: Solar Power as a Major Contributor to the U.S. Grid. IEEE Power and Energy Magazine, 2013, 11, 22-32.	1.6	51
46	Benefits of Colocating Concentrating Solar Power and Wind. IEEE Transactions on Sustainable Energy, 2013, 4, 877-885.	5.9	79
47	Estimating the Capacity Value of Concentrating Solar Power Plants With Thermal Energy Storage: A Case Study of the Southwestern United States. IEEE Transactions on Power Systems, 2013, 28, 1205-1215.	4.6	89
48	Co-benefits of large scale plug-in hybrid electric vehicle and solar PV deployment. Journal of Power Sources, 2013, 236, 350-356.	4.0	129
49	Renewable Generation, Integration of. , 2013, , 69-97.		1
50	The capacity value of solar generation in the Western United States. , 2012, , .		5
51	Estimating the Capacity Value of Concentrating Solar Power Plants: A Case Study of the Southwestern United States. IEEE Transactions on Power Systems, 2012, 27, 1116-1124.	4.6	65
52	Exploring large-scale solar deployment in DOE's SunShot Vision Study. , 2012, , .		1
53	Decarbonizing the electric sector: Combining renewable and nuclear energy using thermal storage. Energy Policy, 2012, 44, 301-311.	4.2	95
54	How Thermal Energy Storage Enhances the Economic Viability of Concentrating Solar Power. Proceedings of the IEEE, 2012, 100, 335-347.	16.4	115

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55	Toward a Solar-Powered Grid. IEEE Power and Energy Magazine, 2011, 9, 24-32.	1.6	32
56	Technical and economic performance of residential solar water heating in the United States. Renewable and Sustainable Energy Reviews, 2011, 15, 3789-3800.	8.2	61
57	The value of compressed air energy storage in energy and reserve markets. Energy, 2011, 36, 4959-4973.	4.5	204
58	A comparative analysis of the value of pure and hybrid electricity storage. Energy Economics, 2011, 33, 56-66.	5.6	63
59	Grid flexibility and storage required to achieve very high penetration of variable renewable electricity. Energy Policy, 2011, 39, 1817-1830.	4.2	723
60	Enabling Technologies for High Penetration of Wind and Solar Energy. , 2011, , .		3
61	The Value of Concentrating Solar Power and Thermal Energy Storage. IEEE Transactions on Sustainable Energy, 2010, 1, 173-183.	5.9	233
62	Effects of Plug-In Hybrid Electric Vehicles on Ozone Concentrations in Colorado. Environmental Science & Technology, 2010, 44, 6256-6262.	4.6	36
63	Estimating the value of electricity storage in PJM: Arbitrage and some welfare effects. Energy Economics, 2009, 31, 269-277.	5.6	406
64	The value of compressed air energy storage with wind in transmission-constrained electric power systems. Energy Policy, 2009, 37, 3149-3158.	4.2	253
65	Wind power myths debunked. IEEE Power and Energy Magazine, 2009, 7, 89-99.	1.6	87
66	Emissions Impacts and Benefits of Plug-In Hybrid Electric Vehicles and Vehicle-to-Grid Services. Environmental Science & Technology, 2009, 43, 1199-1204.	4.6	217
67	Communication and control of electric drive vehicles supporting renewables. , 2009, , .		85
68	Quantifying Avoided Fuel Use and Emissions from Solar Photovoltaic Generation in the Western United States. Environmental Science & Technology, 2009, 43, 226-232.	4.6	29
69	Land-use requirements and the per-capita solar footprint for photovoltaic generation in the United States. Energy Policy, 2008, 36, 3531-3543.	4.2	140
70	Evaluating the limits of solar photovoltaics (PV) in traditional electric power systems. Energy Policy, 2007, 35, 2852-2861.	4.2	311
71	Evaluating the limits of solar photovoltaics (PV) in electric power systems utilizing energy storage and other enabling technologies. Energy Policy, 2007, 35, 4424-4433.	4.2	261
72	Improving the technical, environmental and social performance of wind energy systems using biomass-based energy storage. Renewable Energy, 2006, 31, 1355-1370.	4.3	80

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73	Emissions and Energy Efficiency Assessment of Baseload Wind Energy Systems. Environmental Science & Technology, 2005, 39, 1903-1911.	4.6	70
74	Improved Accounting of Emissions from Utility Energy Storage System Operation. Environmental Science & Technology, 2005, 39, 9016-9022.	4.6	38
75	Life cycle energy requirements and greenhouse gas emissions from large scale energy storage systems. Energy Conversion and Management, 2004, 45, 2153-2172.	4.4	275
76	Consequences of high-penetration renewables. , 0, , 594-607.		1