Curriculum Vitae
Nicholas D. Laws, Ph.D.

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Contents

Professional Experience

- Director of Modeling and Analytics, IdeaSmiths LLC, 2024–present
- Senior Power Systems Optimization Engineer, Camus Energy, 2022–present
- Research Engineer, National Renewable Energy Laboratory, 2017–2022
- Graduate Research Assistant, Webber Energy Group, UT Austin, 2018–2023
- Graduate Research Assistant, Thayer School of Engineering, Dartmouth College, 2014-2016
- Mountain, Climbing, and Ski Guide, Aspen Alpine Guides, 2013-2014
- Mountain Guide, International Mountain Guides, 2011-2014
- Commodity Buyer, Valley Lumber, 2007-2011
- Construction Manager, Eldorado Climbing Walls, 2006-2007

Education

- Ph.D. Mechanical Engineering, The University of Texas at Austin, 2023
- M.S. Engineering Sciences, Thayer School of Engineering Dartmouth College, 2016
- B.S. Aerospace Engineering, Boston University, 2005

Peer-Reviewed Journal Articles

8. **Laws, Nicholas D**, Chen, Dongmei, and Webber, Michael J. "Valuing distributed energy resources for non-wires alternatives". In: *Electric Power Systems Research* 234 (2024)

7. **Laws, Nicholas D** and Hanasusanto, Grani A. "Linearizing bilinear products of shadow prices and dispatch variables in bilevel problems for optimal power system planning and operations". In: *IEEE Transactions on Power Systems* 38.1 (2022)

6. Mishra, Sakshi, Pohl, Josiah, **Laws, Nicholas D**, Cutler, Dylan, Kwasnik, Ted, Becker, William, Zolan, Alex, Anderson, Kate, Olis, Dan, and Elgqvist, Emma. "Computational framework for behind-the-meter DER techno-economic modeling and optimization: REopt Lite". In: *Energy Systems* (2021). URL: https://arxiv.org/pdf/2008.05873

5. McLaren, Joyce, **Laws, Nicholas D**, Anderson, Kate, DiOrio, Nicholas, and Miller, Hannah. "Solar-plus-storage economics: What works where, and why?" In: *The Electricity Journal* 32.1 (2019). URL: https://www.sciencedirect.com/science/article/am/pii/S1040619018302744

4. **Laws, Nicholas D**, Anderson, Kate, DiOrio, Nicholas A, Li, Xiangkun, and McLaren, Joyce. "Impacts of valuing resilience on cost-optimal PV and storage systems for commercial buildings". In: *Renewable energy* 127 (2018). URL: https://www.sciencedirect.com/science/article/am/pii/S0960148118305305

3. Anderson, Kate, **Laws, Nicholas D**, Marr, Spencer, Lisell, Lars, Jimenez, Tony, Case, Tria, Li, Xiangkun, Lohmann, Dag, and Cutler, Dylan. "Quantifying and monetizing renewable energy resiliency". In: *Sustainability* 10.4 (2018). URL: https://www.mdpi.com/2071-1050/10/4/933/pdf

2. **Laws, Nicholas D**, Epps, Brenden P, Peterson, Steven O, Laser, Mark S, and Wanjiru, G Kamau. "On the utility death spiral and the impact of utility rate structures on the adoption of residential solar photovoltaics and energy storage". In: *Applied energy* 185 (2017). URL: https://www.sciencedirect.com/science/article/pii/S0306261916315732

1. **Laws, Nicholas D** and Epps, Brenden P. "Hydrokinetic energy conversion: Technology, research, and outlook". In: *Renewable and Sustainable Energy Reviews* 57 (2016). URL: https://www.sciencedirect.com/science/article/pii/S1364032115015725

Peer-Reviewed Conference Proceedings

3. Gasper, Paul, **Laws, Nicholas D**, Rathod, Bhavesh, Olis, Dan, Smith, Kandler, and Thakkar, Foram. "Optimization of Energy Storage System Economics and Controls by Incorporating Battery Degradation Costs in REopt". In: *243rd Electrochemical Society Meeting*. Boston, MA, 2023

2. Mirletz, Brian T and **Laws, Nicholas D**. "Impacts of Dispatch Strategies and Forecast Errors on the Economics of Behind-the-Meter PV-Battery Systems". In: *2023 IEEE 50th Photovoltaic Specialists Conference (PVSC)*. IEEE. 2023

1. **Laws, Nicholas D**, Epps, Brenden, Medina, Albert, and Ol, Michael V. "Singularity methods for modeling airfoil flows with dynamic stall and fast flap deflections". In: *55th AIAA Aerospace Sciences Meeting*. 2017. URL: https://arc.aiaa.org/doi/abs/10.2514/6.2017-0095

Non-Refereed Conference Papers and Presentations

1. **Laws, Nicholas D**. When Solar Plus Storage Make Sense. Technical report. Presented to National Association of Energy Service Companies, Milwaukee, WI. National Renewable Energy Lab.(NREL), Golden, CO (United States), June 2018. URL: https://www.osti.gov/servlets/purl/1458716

Select Technical Reports and White Papers

3. **Laws, Nicholas D**, Cutler, Dylan S, Dunham, Hallie, Johnson, Sam, Inman, Daniel, Granger, Nikita, Jones, Wayne, and Chalenski, David. Stochastic Price Generation for Evaluating Wholesale Electricity Market Bidding Strategies. Technical report. National Renewable Energy Laboratory (NREL), 2023. URL: https://www.nrel.gov/docs/fy23osti/82005.pdf

2. Murphy, Caitlin, Hotchkiss, Elizabeth L, Anderson, Katherine H, Barrows, Clayton P, Cohen, Stuart M, Dalvi, Sourabh, **Laws, Nicholas D**, Maguire, Jeffrey B, Stephen, Gordon W, and Wilson, Eric J. Adapting Existing Energy Planning, Simulation, and Operational Models for Resilience Analysis. Technical report. National Renewable Energy Lab.(NREL), Golden, CO (United States), 2020. URL: https://www.osti.gov/servlets/purl/1602705

1. McLaren, Joyce A, Mullendore, Seth, **Laws, Nicholas D**, and Anderson, Katherine H. Valuing the Resilience Provided by Solar and Battery Energy Storage Systems. Technical report. National Renewable Energy Lab.(NREL), Golden, CO (United States), 2018

Selected Projects