

John Bistline

CONTACT INFORMATION	John Erik Truxaw Bistline Electric Power Research Institute Energy and Environmental Analysis Group 3420 Hillview Avenue Palo Alto, CA 94304 <i>Phone:</i> (650) 353-8566 <i>Email:</i> jbistline@epri.com http://eea.epri.com/
RESEARCH INTERESTS	Energy and Environmental Economics, Climate Policy Analysis, Power Systems, Risk Analysis, Technological Change
EDUCATION	Stanford University , Stanford, CA PhD, Management Science and Engineering, 2010–2013 <i>Dissertation:</i> “Essays on Uncertainty Analysis in Energy Modeling: Capacity Planning, R&D Portfolio Management, and Fat-Tailed Uncertainty” <i>Committee:</i> John Weyant (primary adviser), Gerd Infanger, Jim Sweeney, Yinyu Ye, Chris Edwards (defense chair) Stanford University , Stanford, CA MS, Mechanical Engineering, 2008–2010 <i>Depth:</i> Energy Systems Carnegie Mellon University , Pittsburgh, PA BS, Mechanical Engineering and Engineering and Public Policy, 2004–2008
EXPERIENCE	Electric Power Research Institute , Palo Alto, CA <i>Principal Technical Leader, Energy and Environmental Analysis</i> 2018–Present <i>Senior Technical Leader, Energy and Environmental Analysis</i> 2017–2018 <i>Project Manager and Technical Lead, Energy and Environmental Analysis</i> 2013–2017 Stanford University , Stanford, CA <i>Research Fellow, Steyer-Taylor Center for Energy Policy and Finance</i> 2013–2016 <i>Research Assistant for Prof. John Weyant, Energy Modeling Forum</i> 2010–2013 <i>Research Assistant for Prof. Chris Edwards, Advanced Energy Systems Lab</i> 2008–2010 Electric Power Research Institute , Palo Alto, CA <i>Research Assistant, Energy and Environmental Analysis</i> 2010 Electric Power Research Institute , Washington, DC <i>Research Assistant, Energy Technology Assessment Center</i> 2007 Applied Research Laboratory , State College, PA <i>Research Assistant for Prof. Robert Kunz</i> 2006 Particle Flow and Tribology Laboratory , Pittsburgh, PA <i>Research Assistant for Prof. C. Fred Higgs, III</i> 2005–2007
HONORS AND AWARDS	Chauncey Award, Electric Power Research Institute 2018 Chauncey Award, Electric Power Research Institute 2016 Chauncey Award, Electric Power Research Institute 2014 Best Early Career Article, <i>Environmental Research Letters</i> 2014

School of Engineering Fellowship, Stanford	2010–2011
William K. Bowes, Jr. Fellow, Stanford	2008–2011
Bennett Award for Academic Achievement, Carnegie Mellon	2008
Tau Beta Pi Fellow	2008–2009
National Science Foundation Research Fellowship Honorable Mention	2009
CIT Dean’s List, Carnegie Mellon	2004–2008
Undergraduate Teaching Fellow, Carnegie Mellon	2008
Thomas H. Johnson Engineering and Public Policy Fellow, Carnegie Mellon	2007
Institutional Nominee for Morris K. Udall Scholarship	2007
Intel First Year Research Experience Grant	2005
John Nagy, Sr. Memorial Scholarship	2004
John S. Morrison Scholarship	2004

JOURNAL
PUBLICATIONS

- Bistline, J. E.** and D. Young (2019). Economic Drivers of Wind and Solar Penetration in the U.S. *Environmental Research Letters*, 14(12): 124001.
- Bistline, J. E.**, R. James, and A. Sowder (2019). Technology, Policy, and Market Drivers of (and Barriers to) Advanced Nuclear Reactor Deployment in the United States After 2030. *Nuclear Technology*, 205(8): 1075–1094.
- Bistline, J. E.**, N. Santen, and D. Young (2019). The Economic Geography of Variable Renewable Energy and Impacts of Trade Formulations for Renewable Mandates. *Renewable and Sustainable Energy Reviews*, 106: 79–96.
- Bistline, J. E.** (2019). Turn Down for What? The Economic Value of Operational Flexibility in Electricity Markets. *IEEE Transactions on Power Systems*, 34(1): 527–534.
- Mai, T., **J. E. Bistline**, Y. Sun, W. Cole, C. Marcy, C. Namovicz, and D. Young (2018). The Role of Input Assumptions and Model Structures in Projections of Variable Renewable Energy: A Multi-Model Perspective of the U.S. Electricity System. *Energy Economics*, 76: 313–324.
- Bistline, J. E.**, E. Hodson, C. G. Rossmann, J. Creason, B. Murray, and A. R. Barron (2018). Electric Sector Policy, Technological Change, and U.S. Emissions Reductions Goals: Results from the EMF 32 Model Intercomparison Project. *Energy Economics*, 73: 307–325.
- Creason, J. R., **J. E. Bistline**, E. L. Hodson, B. C. Murray, and C. G. Rossmann (2018). Effects of Technology Assumptions on US Power Sector Capacity, Generation, and Emissions Projections: Results from the EMF 32 Model Intercomparison Project. *Energy Economics*, 73: 290–306.
- Young, D. and **J. E. Bistline** (2018). The Costs and Value of Renewable Portfolio Standards in Meeting Decarbonization Goals. *Energy Economics*, 73: 337–351.
- Murray, B., **J. E. Bistline**, J. Creason, E. Wright, A. Kanudia, and F. de la Chesnaye (2018). The EMF 32 Study on Technology and Climate Policy Strategies for Greenhouse Gas Reductions in the U.S. Electric Power Sector: An Overview. *Energy Economics*, 73: 286–289.
- Blanford, G. J., J. H. Merrick, **J. E. T. Bistline**, and D. T. Young (2018). Simulating Annual Variation in Load, Wind, and Solar by Representative Hour Selection. *The Energy Journal*, 39(3): 189–212.
- Bistline, J. E.**, S. D. Comello, and A. Sahoo (2018). Managerial Flexibility in Levelized Cost Measures: A Framework for Incorporating Uncertainty in Energy Investment Decisions. *Energy*, 151: 211–225.

- Bistline, J. E.** and S. K. Rose (2018). Social Cost of Carbon Pricing of Power Sector CO₂: Accounting for Leakage and Other Social Implications from Subnational Policies. *Environmental Research Letters*, 13(1): 014027.
- Bistline, J. E.** and F. de la Chesnaye (2017). Banking on Banking: Does “When” Flexibility Mask the Costs of Stringent Climate Policy? *Climatic Change*, 144(4): 597–610.
- Bistline, J. E.** (2017). Economic and Technical Challenges of Flexible Operations under Large-Scale Variable Renewable Deployment. *Energy Economics*, 64: 363–372.
- Bistline, J. E.** (2016). Energy Technology R&D Portfolio Management: Modeling Uncertain Returns and Market Diffusion. *Applied Energy*, 183: 1181–1196.
- Bistline, J. E.** and G. J. Blanford (2016). More Than One Arrow in the Quiver: Why “100% Renewables” Misses the Mark. *Proceedings of the National Academy of Sciences*, 113(28): E3988.
- Bistline, J. E.** (2015). Electric Sector Capacity Planning under Uncertainty: Climate Policy and Natural Gas in the US. *Energy Economics*, 51: 236–251.
- Bistline, J. E.** (2015). Fat-Tailed Uncertainty, Learning, and Climate Policy. *Climate Change Economics*, 6(2): 1550009.
- Bistline, J. E.**, D. M. Blum, C. Rinaldi, G. Shields-Estrada, S. S. Hecker, and M. E. Paté-Cornell (2015). Assessing the Size of North Korea’s Uranium Enrichment Program. *Journal of Science and Global Security*, 23(2): 71–100.
- Bistline, J. E.** (2014). Natural Gas, Uncertainty, and Climate Policy in the US Electric Power Sector. *Energy Policy*, 74: 433–442.
- Bistline, J. E.** (2014). Energy Technology Expert Elicitations: An Application to Natural Gas Turbine Efficiencies. *Technological Forecasting and Social Change*, 86: 177–187.
- Shearer, C., **J. E. Bistline**, M. Inman, and S. J. Davis (2014). The Effect of Natural Gas Supply on US Renewable Energy and CO₂ Emissions. *Environmental Research Letters*, 9(9): 094008.
- Bistline, J. E.** and J. P. Weyant (2013). Electric Sector Investments under Technological and Policy-Related Uncertainties: A Stochastic Programming Approach. *Climatic Change*, 121(2): 143–160.
- Bistline, J. E.** and V. Rai (2009). The Role of Carbon Capture Technologies in Greenhouse Gas Emissions-Reduction Models: A Parametric Study for the U.S. Power Sector. *Energy Policy*, 38(2): 1177–1191.
- Hoskins, M. H., R. F. Kunz, **J. E. Bistline**, and C. Dong (2009). Coupled Flow-Structure-Biochemistry Simulations of Dynamic Systems of Blood Cells Using an Adaptive Surface Tracking Method. *Journal of Fluids and Structures*, 25(5): 936–953.
- OTHER PUBLICATIONS
- Santen, N. and **J. E. Bistline** (2019). System Flexibility Investments and Energy Prices in Regional High Renewable Grids: Preliminary Results. EPRI Report 3002016633.
- Bistline, J. E.** and R. Austin (2019). The Economics of Nuclear Plant Modernization in U.S. Markets. EPRI Report 3002014737.
- Bistline, J. E.** (2018). Economic Value of Increased Operational Flexibility for Fossil-Fired Generation Assets. EPRI Report 3002013735.
- Electric Power Research Institute (2018). U.S. National Electrification Assessment. EPRI Report 3002013582.

Bistline, J. E., R. James, and A. Sowder (2018). Exploring the Role of Advanced Nuclear in Future Energy Markets: Economic Drivers, Barriers, and Impacts in the U.S. EPRI Report 3002011803.

Cole, W., B. Frew, T. Mai, Y. Sun, **J. E. Bistline**, G. Blanford, D. Young, C. Marcy, C. Namovicz, R. Edelman, B. Meroney, R. Sims, J. Stenhouse, and P. Donohoo-Vallett (2017). Variable Renewable Energy in Long-Term Planning Models: A Multi-Model Perspective. NREL/TP-6A20-70528.

Young, D., A. Diamant, **J. E. Bistline**, Y. Wan, and N. Santen (2017). 2017 REGEN Scenarios Analysis: Understanding Key Factors that May Impact Future Electricity Generation. EPRI Report 3002011044.

Bistline, J. E., D. Shawhan, G. Blanford, F. de la Chesnaye, A. Krupnick, B. Mao, N. Santen, and R. Zimmerman (2017). Systems Analysis in Electric Power Sector Modeling: Evaluating Model Complexity for Long-Range Planning. EPRI Report 3002011365.

Santen, N., **J. E. Bistline**, G. Blanford, and F. de la Chesnaye (2017). Systems Analysis in Electric Power Sector Modeling: A Review of the Recent Literature and Capabilities of Selected Capacity Planning Tools. EPRI Report 3002011102.

Electric Power Research Institute (2017). Quick Insights: Energy Department Report on Electricity Markets and Reliability. EPRI Report 3002011711.

Bistline, J. E., V. Niemeyer, and D. Young (2017). Understanding Clean Power Plan Choices in Kansas: Options and Uncertainties. EPRI Report 3002009492.

Young, D., G. Blanford, **J. E. Bistline**, S. Rose, F. de la Chesnaye, R. Bedilion, T. Wilson, and S. Wan. US-REGEN Model Documentation. EPRI Report 3002010956.

Young, D., V. Niemeyer, and **J. E. Bistline** (2016). Understanding Clean Power Plan Choices in Michigan: Options and Uncertainties. EPRI Report 3002009036.

Bistline, J. E. (2016). Technical and Economic Challenges of Flexible Operations under Large-Scale Renewable Deployment: Case Studies for Texas and California. EPRI Report 3002008897.

Bistline, J. E. and F. de la Chesnaye (2016). Where Has “When” Flexibility Gone?: The Role of Temporal Flexibility in Achieving Greenhouse Gas Abatement Goals. EPRI Report 3002007497.

Rose, S. and **J. E. Bistline** (2016). Applying the Social Cost of Carbon: Technical Considerations. EPRI Report 3002004659.

Bistline, J. E. (2015). US-REGEN Unit Commitment Model Documentation. EPRI Report 3002004748.

James, R., S. Hesler, and **J. E. Bistline** (2015). Program on Technology Innovation: Fossil Fleet Transition with Fuel Changes and Large Scale Variable Renewable Integration. EPRI Report 3002006517.

Rose, S., D. Diaz, G. Blanford, **J. E. Bistline**, F. de la Chesnaye, and T. Wilson (2014). Understanding the Social Cost of Carbon: A Technical Assessment. EPRI Report 3002004657.

BOOK CHAPTERS Merrick, J., T. Mai, G. Blanford, and **J. E. Bistline** (2020). “Renewables and Storage in the Power Sector.” In *Energy Modeling for Policymaking*, Hill Huntington, John Weyant, and Sebastian Rausch (eds). Elsevier.

PAPERS IN
PREPARATION OR
UNDER REVIEW

Bistline, J. E., M. Budolfson, and B. Francis. “Deepening Transparency in Energy and Environmental Modeling: Improving Best Practices for Modelers and Non-Modelers Alike.”

Bistline, J. E. and G. Blanford. “Value of Technology in the Electric Power Sector: Full Portfolios and R&D Lower Costs of Meeting Decarbonization Goals.”

Bistline, J. E., J. Merrick, and V. Niemeyer. “Estimating Power Sector Leakage Risks and Provincial Impacts of Canadian Carbon Pricing.”

Bistline, J. E. and D. Young. “Emissions Impacts of Future Battery Storage Deployment on Regional Power Systems.”

Bistline, J. E. and J. Merrick. “Parameterizing Open-Source Energy Models: A Statistical Approach to Estimate Unknown Power Plant Attributes Using Available Data.”

Bistline, J. E., M. Brown, S. Siddiqui, and K. Vaillancourt. “Electric Sector Impacts of Renewable Policy Coordination: A Multi-Model Study of the North American Energy System.”

Avraam, C., S. Siddiqui, **J. E. Bistline**, M. Brown, and K. Vaillancourt. “North American Natural Gas Infrastructure Developments under Different Mechanisms of Renewable Policy Coordination.”

Brown, M., C. Avraam, **J. E. Bistline**, J. DeCarolis, H. Eshraghi, S. Giarola, M. Hansen, A. Hawkes, P. Johnston, S. Khanal, A. Molar-Cruz, and S. Siddiqui. “North American Energy System Responses to Natural Gas Price Shocks.”

Edmonds, J., C. Nichols, M. Adamantiades, **J. E. Bistline**, J. Huster, G. Iyer, N. Johnson, P. Patel, S. Showalter, N. Victor, M. Wise, and F. Wood. “Will Congressionally Mandated Incentives Lead to Deployment of Large-Scale CO₂ Capture, Facilities for Enhanced Oil Recovery CO₂ Markets, and Geologic CO₂ Storage?”

Huntington, H., A. Bhargava, D. Daniels, J. Weyant, C. Avraam, **J. E. Bistline**, S. Giarola, M. Hansen, P. Johnson, A. Molar-Cruz, M. Nadew, S. Siddiqui, K. Vaillancourt, and N. Victor. “Key Findings from the Core North American Scenarios in the EMF34 Intermodel Comparison.”

PROFESSIONAL
AFFILIATIONS

United States Association for Energy Economics, INFORMS

AD-HOC
REVIEWER

Applied Energy, Climate Change Economics, Climate Policy, Climatic Change, Columbia University Center on Global Energy Policy, Ecological Economics, Energy Economics, The Energy Journal, Energy Policy, Energy Research and Social Science, Environmental and Resource Economics, EPRI, LBNL, Nature Energy, NREL, Proceedings of the National Academy of Sciences

REFERENCES

Available upon request