

Ben Havumaki, Senior Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Senior Associate*, June 2021 – Present; *Associate*, July 2018 – June 2021.

- Provides research, analysis, and consulting services, frequently in the context of regulated proceedings, with expertise in the following topic areas:
 - Rate design and performance-based regulation: Evaluates utility proposals and formulates new recommendations based on best practices and informed by innovative emerging models. Evaluates rate designs for consistency with policy goals using quantitative modeling and jurisdictional data. Provides expert testimony and other formal input in the context of regulated proceedings.
 - Benefit-cost analysis: Evaluates utility BCAs with reference to best practices, including emerging standards for grid modernization and distributed energy resources. Engaged in the development of new BCA practices in the arenas of grid modernization and resilience.
 - Macroeconomic analysis: Uses the IMPLAN model in conjunction with primary research and analysis and core economic principles to evaluate the GDP, job, and income implications of major grid changes.
- Contributing author to reports covering a range of topics including plant decommissioning, transportation electrification, and distributed energy resources (DER) growth.

University of Massachusetts Boston, MA. *Graduate Teaching and Research Assistant*, 2017 – 2018

- Led ecosystem-valuation workshops for EPA-funded initiative to shape resilience policymaking in the Great Bay region of New Hampshire.
- Served as a teaching assistant in graduate econometrics course and undergraduate macroeconomics and urban economics courses.

Notre Dame Education Center and Jewish Vocational Service Boston, MA. *Math Instructor*, 2012 – 2017

- Taught foundational math to adult learners and standard high school math curriculum to students in non-traditional school program.

The City of New York New York, NY. *Senior Investigator*, 2007 – 2010

- Investigated complaints against officers of the New York City Police Department and issued disciplinary recommendations in formal reports to the agency board.

EDUCATION

University of Massachusetts, Boston, Boston, MA

Master of Arts in Applied Economics, 2018

Recipient of the Arthur MacEwan Award for Excellence in Political Economy

McGill University, Montreal, Quebec

Bachelor of Arts in History, 2007

PUBLICATIONS

Borden, E., B. Havumaki, A. Lawton, M. Whited. 2023. *Establishing Income Based Fixed Charges in California: A review of economic theory, policy tradeoffs, and practical considerations for fixed charge reform*. Synapse Energy Economics for The Utility Reform Network and Natural Resources Defense Council.

Knight, P., J. Frost, T. Fitch, E. Sinclair, J. Taberner, O. Griot, B. Havumaki, J. Smith, L. Metz, S. Chavin. 2023. *TVA's Clean Energy Future: Charting a course to decarbonization in the Tennessee Valley*. Synapse Energy Economics for GridLab and Center for Biological Diversity.

Bhandari, D., A. Napoleon, B. Havumaki. 2022. *Reply Comments on the Grid Modernization Proposals in Xcel's 2021 IDP: Analysis of the proposals for Distributed Intelligence and the Resilient Minneapolis Program and recommendations on certification*. Synapse Energy Economics for Minnesota Department of Commerce.

D. Bhandari, A. Napoleon, B. Havumaki. 2022. *Comments on the Grid Modernization Proposals in Xcel's 2021 IDP: Analysis of the proposals for Distributed Intelligence and the Resilient Minneapolis Program and Recommendations on Certification*. Synapse Energy Economics for Minnesota Department of Commerce.

Havumaki, B., C. Lane, D. Bhandari. 2022. *Comments on AGIS Related Scoping & Procedures: In Response to the Notice of Comment in Docket No. E-002/M-21-814*. Synapse Energy Economics for Minnesota Department of Commerce.

Havumaki, B., T. Woolf, C. Lane, E. Sinclair, C. Roberto, P. Alvarez. 2022. *Review and Assessment of Grid Modernization Plans: Guidance for Regulators, Utilities, and Other Stakeholders*. Synapse Energy Economics for Minnesota Department of Commerce.

Knight, P., B. Havumaki, A. Takasugi, J. Frost. 2022. *Transforming Transportation in Michigan: A Roadmap to the State's 2050 Climate Target*. Synapse Energy Economics for Sierra Club.

Takahashi, K., T. Woolf, B. Havumaki, D. White, D. Goldberg, S. Kwok, A. Takasugi. 2021. *Missed Opportunities: The Impacts of Recent Policies on Energy Efficiency Programs in Midwestern States*. Synapse Energy Economics for the Midwest Energy Efficiency Alliance.

Kallay, J., A. Napoleon, J. Hall, B. Havumaki, A. Hopkins, M. Whited, T. Woolf, J. Stevenson, R. Broderick, R. Jeffers, B. Garcia. 2021. *Regulatory Mechanisms to Enable Investments in Electric Utility Resilience*. Synapse Energy Economics for Sandia National Laboratories.

Kallay, J., S. Letendre, T. Woolf, B. Havumaki, S. Kwok, A. Hopkins, R. Broderick, R. Jeffers, K. Jones, M. DeMenno. 2021. *Application of a Standard Approach to Benefit-Cost Analysis for Electric Grid Resilience Investments*. Synapse Energy Economics for Sandia National Laboratories.

Kallay, J., A. Napoleon, B. Havumaki, J. Hall, C. Odom, A. Hopkins, M. Whited, T. Woolf, M. Chang, R. Broderick, R. Jeffers, B. Garcia. 2021. *Performance Metrics to Evaluate Utility Resilience Investments*. Synapse Energy Economics for Sandia National Laboratories.

Woolf, T., D Bhandari, C. Lane, J. Frost, B. Havumaki, S. Letendre, C. Odom. 2021. *Benefit-Cost Analysis of the Rhode Island Community Remote Net Metering Program*. Synapse Energy Economics for the Rhode Island Division of Public Utilities and Carriers.

Woolf, T., B. Havumaki, S. Letendre, C. Odom, J. Hall. 2021. *Macroeconomic Impacts of the Rhode Island Community Remote Net Metering Program*. Synapse Energy Economics for the Rhode Island Division of Public Utilities and Carriers.

Kallay, J., A. Hopkins, A. Napoleon, B. Havumaki, J. Hall, M. Whited, M. Chang., R. Broderick, R. Jeffers, K. Jones, M. DeMenno. 2021. *The Resilience Planning Landscape for Communities and Electric Utilities*. Synapse Energy Economics for Sandia National Laboratories.

Woolf, T., L. Schwartz, B. Havumaki, D. Bhandari, M. Whited. 2021. *Benefit-Cost Analysis for Utility-Facing Grid Modernization Investments: Trends, Challenges, and Considerations*. Prepared by Lawrence Berkeley National Laboratory and Synapse Energy Economics for the Grid Modernization Laboratory Consortium of the U.S. Department of Energy.

Letendre, S., E. Camp, J. Hall, B. Havumaki, A. Hopkins, C. Odom, S. Hackel, M. Koolbeck, M. Lord, L. Shaver, X. Zhou. 2020. *Energy Storage in Iowa: Market Analysis and Potential Economic Impact*. Prepared by Synapse Energy Economics and Slipstream for Iowa Economic Development Authority.

Camp, E., B. Havumaki, T. Vitolo, M. Whited. 2020. *Future of Solar PV in the District of Columbia: Feasibility, Projections, and Rate Impacts of the District's Expanded RPS*. Synapse Energy Economics for the District of Columbia Office of the People's Counsel.

Whited, M., J. Frost, B. Havumaki. 2020. *Best Practices for Commercial and Industrial EV Rates*. A guide prepared by Synapse Energy Economics for Natural Resources Defense Council.

Knight, P., E. Camp, D. Bhandari, J. Hall, M. Whited, B. Havumaki, A. Allison, N. Peluso, T. Woolf. 2019. *Making Electric Vehicles Work for Utility Customers: A Policy Handbook for Consumer Advocates*. Synapse Energy Economics for the Energy Foundation.

Camp, E., A. Hopkins, D. Bhandari, N. Garner, A. Allison, N. Peluso, B. Havumaki, D. Glick. 2019. *The Future of Energy Storage in Colorado: Opportunities, Barriers, Analysis, and Policy Recommendations*. Synapse Energy Office for the Colorado Energy Office.

Napoleon, A., B. Havumaki, D. Bhandari, T. Woolf. 2019. *Review of New Brunswick Power's Application for Approval of an Advanced Metering Infrastructure Capital Project: In the Matter of the New Brunswick Power Corporation and Section 107 of the Electricity Act; Matter No. 452*. Synapse Energy Economics for the New Brunswick Energy and Utilities Board Staff.

Whited, M., B. Havumaki. 2019. *GD2019 04 M: DC DOEE Comments Responding to Notice of Inquiry*. Synapse Energy Economics for the District of Columbia Department of Energy and Environment.

Timmons, D., A.Z. Dhunny, K. Elahee, B. Havumaki, M. Howells, A. Khoodaruth, A.K. Lema-Driscoll, M.R. Lollchund, Y.K. Ramgolam, S.D.D.V. Rughooputh, D. Surroop. 2019. *Cost Minimization for Fully Renewable Electricity Systems: A Mauritius Case Study*. Energy Policy. 133, 110895.

Napoleon, A., T. Woolf, K. Takahashi, J. Kallay, B. Havumaki. 2019. *Comments in the New York Public Service Commission Case 18-M-0084: In the Matter of a Comprehensive Energy Efficiency Initiative*. Comments related to NY Utilities report regarding energy efficiency budgets and targets, collaboration, heat pump technology, and low- and moderate-income customers and requests for approval. Synapse Energy Economics on behalf of Natural Resources Defense Council.

Havumaki, B., E. Camp, B. Fagan, D. Bhandari. 2019. *Planning for the Future at the CTGS Site: Report on the Decommissioning Proposal of Maritime Electric*. Synapse Energy Economics for Carr, Stevenson, and MacKay.

Havumaki, B., J. Kallay, K. Takahashi, T. Woolf. 2019. *All-Electric Solid Oxide Fuel Cells as an Energy Efficiency Measure*. Synapse Energy Economics for Bloom Energy.

Takahashi, K., B. Havumaki, J. Kallay, T. Woolf. 2019. *Bloom Fuel Cells: A Cost-Effectiveness Brief*. Synapse Energy Economics for Bloom Energy.

Havumaki, B., T. Vitolo. 2019. *Comments to the Mississippi Public Service Commission: In response to the report of Acadian Consulting LLC*. Synapse Energy Economics for Gulf States Renewable Energy Industries Association, Sierra Club, and 25 x '25.

Whited, M., J. Kallay, D. Bhandari, B. Havumaki. 2018. *Driving Transportation Electrification Forward in Pennsylvania: Considerations for Effective Transportation Electrification Ratemaking*. Synapse Energy Economics for Natural Resources Defense Council.

Havumaki, B. 2018. *Hydropower in the Decarbonized Mauritian Grid: A Prospective Study*. Master's Thesis.

Havumaki, B., G. Mavrommati, C. Makriyannis. 2018. *World Bank Water Management, Sanitation, and Conservation Projects in Developing Countries: A Guide to Cost-Benefit Analysis*. Report for the World Bank.

TESTIMONY

Nova Scotia Utility and Review Board (NSUARB M11199): Expert Evidence of Ben Havumaki on behalf of Counsel to Nova Scotia Utility and Review Board. August 28, 2023.

New Brunswick Energy and Utilities Board (Matter 529): Expert Evidence of Synapse Energy Economics, Inc. On behalf of the New Brunswick Energy and Utilities Board. April 25, 2023.

Minnesota Public Utilities Commission (Docket No. E-002/GR-21-630): Direct and Surrebuttal Testimony of Ben Havumaki regarding Xcel Energy's application to increase rates. On behalf of the Division of Energy Resources of the Minnesota Department of Commerce. December 6, 2022, and October 3, 2022.

Public Utilities Commission of New Hampshire (Docket No. DE 20-161): Direct Testimony of Tim Woolf and Ben Havumaki regarding Eversource's 2020 least-cost integrated resource plan. On behalf of the Office of the Consumer Advocate. August 19, 2022.

Public Service Commission of West Virginia (Case No. 21-0857-E-CN): Direct Testimony of Ben Havumaki regarding the petition of Monongahela Power Company and the Potomac Edison Company for the issuance of a certificate of public convenience and necessity for environmental compliance and modernization, upgrade, and improvement program and related surcharge for coal-fired boilers at electric power plants. On behalf of Appalachian Mountain Associates. July 20, 2022.

Illinois Commerce Commission (Docket No. 22-0067): Direct and Rebuttal Testimony of Melissa Whited and Ben Havumaki regarding the performance incentive mechanisms and tracking metrics proposed by Commonwealth Edison Company and Ameren Illinois Company. On behalf of the State of Illinois. April 6, 2022.

Public Utilities Commission of New Hampshire (Docket DG 21-104): Direct Testimony of Ben Havumaki and Courtney Lane Regarding Northern Utilities' Proposed Rate Increase for the Residential Class and Multi-Year Rate Plan. On behalf of New Hampshire Office of the Consumer Advocate. April 1, 2022.

Illinois Commerce Commission (Docket No. 22-0063): Direct Testimony of Melissa Whited and Ben Havumaki regarding performance incentive mechanisms and tracking metrics proposed by Ameren Illinois Company. On behalf of the State of Illinois. March 30, 2022 and May 25, 2022.

Public Utilities Commission of New Hampshire (Docket DG 21-104): Direct Testimony of Courtney Lane and Ben Havumaki regarding Northern Utilities Inc.'s proposed multi-year rate plan, which includes a proposed residential customer charge, the company's reliance on the minimum-system method for classifying distribution mains costs and its implication for rate design and class cost allocation. On behalf of the Office of the Consumer Advocate. April 1, 2022.

Public Utilities Commission of New Hampshire (Docket No. DE 21-030): Direct testimony of Melissa Whited and Ben Havumaki regarding Until Energy Systems' multi-year rate plan, grid modernization proposal, overall rate increases for the residential class, allocation of costs among rate classes, increase to the residential customer charge, and revenue decoupling mechanism. November 23, 2021.

Rhode Island Division of Public Utilities & Carriers (Docket No. 5189): Direct Testimony of Tim Woolf and Ben Havumaki. November 17, 2021.

Hawaii Public Utilities Commission (Docket No. 2018-0088): Panel testimony by Ben Havumaki regarding performance incentive mechanisms. On behalf of the Division of Consumer Advocacy, Department of Commerce and Consumer Affairs. September 21, 2020.

Georgia Public Service Commission (Docket No. 42516): Direct Testimony of Melissa Whited and Ben Havumaki. On behalf of Sierra Club. October 17, 2019.

PRESENTATIONS

Woolf, T. B Havumaki. 2022. "Economic Assessment of Grid Modernization Plans." Presentation at the NASUCA 2022 Mid-Year Meeting.

Resume updated June 2023