**Asa S. Hopkins**, **Ph.D.,** Senior Vice President, Consulting

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## PROFESSIONAL EXPERIENCE

**Synapse Energy Economics Inc**., Cambridge, MA. *Senior Vice President*, April 2024 – Present; *Vice President*, April 2019 – April 2024; *Principal Associate*, January 2017 – March 2019.

Conducts research and writes expert testimony and reports related to state energy policy and planning, energy efficiency, strategic electrification, deep decarbonization, and the present and future of electric and gas utility regulatory and business models.

**Vermont Public Service Department,** Montpelier, VT. *Director of Energy Policy and Planning,* October 2011 – December 2016

State energy planning and utility regulation

• Directed the year-long development of the 2016 Vermont Comprehensive Energy Plan, including stakeholder meetings, public forums, and coordination of contributions from other departments and the Governor's office. Primary author of the executive summary and five chapters.
• Led the Department's approach to establishing budgets and performance targets for energy efficiency utilities. Oversaw staff conducting program evaluation and savings verification.
• Submitted testimony and conducted analysis in support of public advocacy and negotiation in prominent litigated regulatory proceedings.

Policy development, analysis, and advocacy

• Developed the structure of Vermont's 2015 Renewable Energy Standard, including its novel "energy transformation" requirement. Worked with stakeholders to develop support for the policy and with the legislature to shepherd it to passage. This policy will result in more reduction of Vermont's GHG emissions than any others passed in the last 15 years.
• Led execution of Vermont's Total Energy Study, which examined technology and policy pathways for Vermont to meet GHG emission and renewable energy goals.
• Led cost-benefit analysis of Vermont's existing net metering structure and led the development of departmental proposals for a new structure.
• Prepared and delivered public, stakeholder, and interagency presentations, including to agency and business leaders, legislative committees, and the governor.
• Oversaw programs providing financing, technical, and process assistance to clean energy projects.

During tenure, Vermont rose in the rankings on national clean energy state scorecards: ACEEE State Energy Efficiency Scorecard from 5th to 3rd and U.S. Clean Tech Leadership Index from 10th to 3rd.

**U.S. Department of Energy**, Washington, DC. *Special Advisor to the Under Secretary for Science / AAAS Science and Technology Policy Fellow,* September 2010 – August 2011

Dr. Hopkins served as the assistant project director for the Department of Energy's first Quadrennial Technology Review. In this role, he coordinated a team that solicited input from Department of Energy and National Laboratory staff and scientists, ran a series of public workshops, facilitated coordination with the White House, developed a set of technology assessments, and ultimately drafted the Report on the First QTR, published Sept. 27, 2011.

**Lawrence Berkeley National Laboratory**, Berkeley, CA. *Environmental Energy Policy Postdoctoral Fellow*, January 2009 – August 2010

Conducted technical and economic analysis to support the Department of Energy in setting the energy efficiency standards that appliances must meet in order to be sold in the United States.

**California Institute of Technology**, Pasadena, CA. *Graduate Research Fellow,* 2002 – 2008

**Los Alamos National Laboratory**, Los Alamos, NM. *Post-Baccalaureate Researcher, Theoretical Division,* June 2001 – June 2002

## EDUCATION

**California Institute of Technology**, Pasadena, CA
Doctor of Philosophy in Physics, 2008
Master of Science in Physics, 2007

**Haverford College**, Haverford, PA
Bachelor of Science *summa cum laude*, in Physics with minors in Computer Science and Growth and Structure of Cities, 2001

## SELECTED PROJECTS

***The Future of Gas Utilities*** – Dr. Hopkins leads much of Synapse's work in the area of the future of gas utilities. He and his team are assisting a number of clients to understand the future of gas utilities in the context of deep building decarbonization objectives, accelerating gas utility capital investments, and evolving competition between electricity and gas. This work includes assisting the Maryland Office of People's Counsel in critiquing utilities' leak prone pipe replacement program design and resulting investments, as well as the impact of the state's decarbonization objectives on utility sales and finances; the District of Columbia Department of Energy and Environment in assessing Washington Gas Light's Climate Business Plan, leak prone pipe replacement, and rate case filings; Conservation Law Foundation in Massachusetts Department of Public Utilities Docket 20-80 (an investigation into "the role of gas local distribution companies as the Commonwealth achieves its target 2050 climate goals"); the Industrial Gas Users Association in evaluation of energy-transition-related business risk to Quebecois and Ontario gas

utilities; Natural Resources Defense Council in New York and Nevada's regulatory proceedings regarding the future of gas; the Colorado Energy Office regarding approaches to decision-making in the face of uncertainty, in the context of Colorado's regulatory proceedings regarding gas utility Clean Heat plans and building decarbonization; and the County of San Diego (with the University of California San Diego) in developing the buildings and utilities portion of its Regional Decarbonization Framework.

***Puerto Rico Energy Bureau*** – Synapse has provided extensive support to Puerto Rico's electricity regulator since 2015. Dr. Hopkins coordinated the engagement from 2018 through 2024, and retains a leadership role. Dr. Hopkins has led or substantially contributed to the development of Puerto Rico's first energy efficiency and demand response regulations; emergency microgrid regulations; and the review of the island's second Integrated Resource Plan and subsequent processes to optimize resilience using both transmission and distributed generation resources.

***Massachusetts Comprehensive Energy Plan*** – On behalf of the Massachusetts Department of Energy Resources (the state energy office), Synapse and Sustainable Energy Advantage assisted DOER and its sister agencies in the development of Massachusetts's first Comprehensive Energy Plan. Dr. Hopkins assisted DOER leadership in defining the scope and approach for the CEP, to distinguish it from other state planning processes. He worked with Pat Knight to develop an approach to modeling energy transformations toward low-carbon alternatives in electricity, buildings, and transportation that are consistent with state policy and approaches while being grounded in stock turnover rates and feasible policies and programs.

***Northeastern Regional Assessment of Strategic Electrification*** – On behalf of the Northeast Energy Efficiency Partnerships, Synapse and Meister Consultants Group identified the opportunity, costs, and benefits available if strategic electrification is adopted as a key strategy for decarbonization in New York and New England. Dr. Hopkins, Kenji Takahashi, and Pat Knight are primary authors of the resulting report, published in July 2017, which characterizes the current markets for efficiency electrification technologies (such as heat pumps and electric vehicles), identifies policies to overcome market barriers, assesses the state of electrification technologies, and models the extent of electrification both possible given market dynamics and required to meet regional greenhouse gas emission goals.

***2016 Vermont Comprehensive Energy Plan*** – Directed the year-long development of the 2016 plan, including setting its strategic approach to current Vermont energy planning challenges and grounding it in quantitative analysis. Developed the public engagement process, then hosted expert stakeholder meetings and public forums. Adapted the results of the 2014 Total Energy Study to produce scenarios that illustrate the proposed pathways identified in the plan. Coordinated contributions from staff and leaders in other departments, and from the Governor's office. Wrote the executive summary and 5 of the 14 chapters.

***Total Energy Study*** – Scoped and led a legislatively-mandated report on policy and technology pathways to meet Vermont's renewable energy and greenhouse gas emission goals. Designed and facilitated a focus-group-based stakeholder engagement process to identify technology and policy visions for

analysis. Retained outside modeling consultant, then worked closely with them to build credible business-as-usual and policy case models of Vermont's energy economy to the year 2050 using the TIMES/FACETS integrated assessment model. Translated those model results to make REMI PI+ calculations of impact on Vermont GDP and jobs. Synthesized qualitative and quantitative results into intermediate and final reports identifying key outcomes for policy design.

***Demand Resources Plan Proceedings*** – In each of three, three-year cycles, led the development of the Department of Public Service's positions regarding appropriate budgets, rate and bill impacts, and performance targets for Vermont's energy efficiency utilities. Analyzed current efficiency utility performance to calibrate expected future performance. Negotiated performance metrics that reflect policy priorities. Developed new regulatory and budget treatment of research and development for behavioral energy efficiency programs.

***Quadrennial Technology Review*** – As Assistant Project Director, managed the project activities of the eight-person core team for the U.S. Department of Energy's first Quadrennial Technology Review. This review of DOE's energy technology activities established a robust framework and codified principles used to build DOE's energy technology portfolio (including identifying the appropriate and highest-leverage activities for DOE relative to the private sector and other government actors). Extensive collaboration and discussions within DOE, as well the public through a series of workshops with industry, government, national laboratory, and academic participation, culminated in the publication of the first DOE-QTR report in September 2011. Coordinated successful stakeholder workshops; facilitated focus groups. Drafted discussion papers that served as the basis for extensive intra- and inter-agency and White House coordination and negotiation. Primary author of the final report's section on building and industrial energy efficiency. Project was completed on schedule and on budget, and met its critical milestones.

## REPORTS

Takahashi, K., T. Gyalmo, A. Hopkins. 2026. *Refrigerant Emissions Impacts of Residential Building Electrification in the Northeast and Mid-Atlantic: Quantifying Leakage, Emissions Impacts, and the Role of Refrigerant Transitions*. Synapse Energy Economics for Northeast States for Coordinated Air Use Management (NESCAUM).

Hopkins, A., A. Napoleon, S. deLeon, K. Takahashi, S. Schadler, E. Carlson. 2026. *Gas Distribution System Regulatory Handbook*. Synapse Energy Economics for the Future of Heat Initiative.

Takahashi, K., E. Carlson, A. Glaser Schoff, A. Fuzaylov, S. Shenstone-Harris, A. Hopkins, P. Knight. 2026. *Regional Electric Peak Load Forecasts for Maine: Implications of Electrification and ISO-NE CELT Forecasts*. Synapse Energy Economics for the Maine Office of the Public Advocate.

Carlson, E., K. Schultz, A. S. Hopkins. 2025. *Alternative Approaches to Increasing Gas System Safety in the District of Columbia.* Synapse Energy Economics for the District of Columbia Department of Energy and Environment and Office of the Attorney General.

Takahashi, K., A. Hopkins, P. Eash-Gates, E. Carlson, K. Schultz, E. Ashley. 2025. *Strategic Roadmap for Building Decarbonization - Policy, Regulatory, Workforce, and Equity Strategies for a Cleaner, Greener New Jersey.* Synapse Energy Economics and New Jersey agencies for the Governor's Office of Climate Action and the Green Economy.

Takahashi, K., C. Lane, M. Whited, S. Schadler, T. Gyalmo, A. Zeng, A. S. Hopkins. 2024. *Charging Minnesota's Electric Vehicles; Strategies that Work for the Electric Grid and Consumers.* Synapse Energy Economics for Minnesota Department of Commerce, Division of Energy Resources.

Takahashi, K., A. S. Hopkins, E. Carlson, S. Schadler, S. Chavin. 2024. *Memo: Assessment of Electric Grid Headroom for Accommodating Building Electrification (Revised July 2024)*. Synapse Energy Economics to New Yorkers for Clean Power.

Hopkins, A. S., A. Napoleon, S. Schadler, T. Gyalmo. 2024. *The High Cost of New Jersey Gas Utilities' Leak Prone Pipe Replacement Programs 2024.* Synapse Energy Economics for Natural Resources Defense Council.

Hopkins, A. S. and A. Zeng. 2024. *A Timely and Managed Gas Utility Transition Lowers Cost and Risk: Analysis of Options for Washington*. Synapse Energy Economics for Climate Solutions.

DeLeon, S., K. Takahashi, E. Carlson, A. S. Hopkins, S. Kwok, J. Litynski, C. Mattioda, L. Metz. 2024. *Minnesota Building Decarbonization Analysis: Equitable and cost-effective pathways toward net-zero emissions for homes and businesses.* Synapse Energy Economics for Clean Heat Minnesota.

Sustainable Energy Advantage and Synapse Energy Economics. 2023. Memo: Data for Use in Economic Analysis of a Clean Heat Standard. For Massachusetts Department of Environmental Protection.

Sustainable Energy Advantage and Synapse Energy Economics. 2023. Memo: Survey of Credit-Based Policies. For Massachusetts Department of Environmental Protection.

Sustainable Energy Advantage and Synapse Energy Economics. 2023. Memo: Options for Role of Electric Distribution Companies (EDCs), Obligated Fuels, and Obligated Entities. For Massachusetts Department of Environmental Protection.

Synapse Energy Economics, Nelson Nygaard, Integral Group, and Siemens PTI. 2023. The Strategic Electrification Roadmap for Buildings and Transportation in the District of Columbia: Resilient, Innovative, and Affordable Electrification. For the District of Columbia Department of Energy and Environment.

Hopkins, A. S., A. Napoleon, K. Schultz. 2023. *The High Cost of New York Gas Utilities' Leak- Prone Pipe Replacement Programs.* Synapse Energy Economics for Natural Resources Defense Council.

Carlson, E., P. Eash-Gates, B. Fagan, A. Hopkins. 2023. *Review of Northwest Natural Gas 2022 Integrated Resource Plan—Final Report: Assessing Compliance with the Oregon IRP Guidelines and the Greenhouse Gas Reduction Requirements from the Climate Protection Program.* Synapse Energy Economics for Staff of Oregon Public Utilities Commission.

Douglas, A., J. Kallay, S. Singh Walker, A. Hopkins, A. Napoleon, & K. Takahashi. 2022. Future Proofing the Texas Grid with Distributed Energy Resources. Synapse Energy Economics for Texas Advanced Energy Business Alliance.

Hopkins, A. S., A. Napoleon, J. Litynski, K. Takahashi, J. Frost, S. Kwok. 2022. *Climate Policy for Maryland's Gas Utilities: Financial Implications*. Synapse Energy Economics for Maryland Office of the People's Counsel.

Kwok, S., K. Takahashi, J. Litynski, A. S. Hopkins. 2022. Memo: Massachusetts DPU Docket-2080: Proposed "Common Regulatory Framework." Synapse Energy Economics for Conservation Law Foundation.

Hopkins, A. S. S. Kwok, J. Litynski, A. Napoleon, K. Takahashi. 2022. Memo: Evaluation of Draft Consultant Reports in Massachusetts DPU Docket 20-80. Synapse Energy Economics for Conservation Law Foundation.

Hopkins, A. S., A. Napoleon, S. Kwok. 2022. *Factsheet: Hydrogen & Low-Carbon Gases in New York's Electricity Future*. Synapse Energy Economics for Sierra Club.

Hopkins A. S., P. Eash-Gates, J. Frost, S. Kwok, J. Litynski, K. Takahashi. 2022. "Decarbonization of Buildings." In *San Diego Regional Decarbonization Framework*, edited by SDG Policy Initiative, School of Global Policy and Strategy, University of California San Diego. San Diego.

Frost, J. S. Kwok, K. Takahashi, A.S. Hopkins, A. Napoleon. 2021. *New York Heat Pump Trajectory Analy*sis. Synapse Energy Economics for NRDC.

Hopkins, A. S., A. Napoleon, K. Takahashi. 2021. *A Framework for Long-Term Gas Utility Planning in Colorado.* Synapse Energy Economics for the Colorado Energy Office.

Woolf, T., A. Napoleon, A. Hopkins, K. Takahashi. 2021. *Long-Term Planning to Support the Transition of New York's Gas Utility Industry*. Synapse Energy Economics for Natural Resources Defense Council.

Frost, J., J. Litynski, S. Letendre, A. S. Hopkins. 2021. *Economic Impacts of Climate Change on Cape Cod*. Synapse Energy Economics for Eastern Research Group and the Cape Cod Commission.

Hopkins, A.S., P. Knight, J. Frost. 2021. *Rhode Island Carbon Pricing Study.* Synapse Energy Economics and the Cadmus Group for the Rhode Island Office of Energy Resources.

Kallay, J., A.S. Hopkins, C. Odom, J. Ramey, J. Stevenson. R. Broderick, R. Jeffers, B. Garcia. 2021. *The Quest for Public Purpose Microgrids for Resilience: Considerations for Regulatory Approval.* Synapse Energy Economics for Sandia National Labs.

Takahashi, K., E. Sinclair, A. Napoleon, A. S. Hopkins, D. Goldberg. 2021. *Evaluation of EnergyWise Low-Income Energy Efficiency Program in Mississippi – Program Performance, Design, and Implications for Low-Income Efficiency Programs*. Synapse Energy Economics for Sierra Club and Gulf Coast Community Foundation.

Kallay, J., A. Napoleon, J. Hall, B. Havumaki, A. S. 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., A. Napoleon, B. Havumaki, J. Hall, C. Odom, A. S. 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.

Kallay, J., S. Letendre, T. Woolf, B. Havumaki, S. Kwok, A. S. 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.

Hopkins, A. S., S. Kwok, A. Napoleon, C. Roberto, K. Takahashi. 2021. *Scoping a Future of Gas Study.* Synapse Energy Economics for Conservation Law Foundation.

Kallay, J., A. S. 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.

Shipley, J., A. S Hopkins, K. Takahashi, D. Farnsworth, 2021. *Renovating Regulation to Electrify Buildings: A Guide for the Handy Regulator*. Regulatory Assistance Project.

Hopkins, A. S., A. Napoleon, T. Woolf, K. Takahashi. 2021. *Long-Term Planning to Support the Transition of New York's Gas Utility Industry*. Synapse Energy Economics for Natural Resources Defense Council.

Letendre, S., E. Camp, J. Hall, B. Havumaki, A. S. 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.

Eash-Gates, P., K. Takahashi, D. Goldberg, A. S. Hopkins, S. Kwok. 2021. *Boston Building Emissions Performance Standard: Technical Methods Overview.* Synapse Energy Economics for the City of Boston.

Camp, E., C. Odom, A. S. Hopkins. 2020. *Cost-Effectiveness of Proposed New Mexico Environment Department Oil and Gas Emissions Reduction Rules: Impacts and Co-Benefits of Reduced Volatile Organic Compound Emissions from the Oil and Gas Industry.* Synapse Energy Economics for Environmental Defense Fund.

Camacho, J., K. Takahashi, A. S. Hopkins, D. White. 2020. *Assessment of Proposed Energize Eastside Project*. Synapse Energy Economics and MaxETA Energy for the City of Newcastle, WA.

Takahashi, K., J. Frost, D. Goldberg, A. S. Hopkins, K. Nishio, K. Nakano. 2020. *Survey of U.S. State and Local Building Decarbonization Policies and Programs*. Presented at the 2020 ACEEE Summer Study of Energy Efficiency in Buildings.

Hopkins, A. S., A. Napoleon, K. Takahashi. 2020. *Gas Regulation for a Decarbonized New York: Recommendations for Updating New York Gas Utility Regulation.* Synapse Energy Economics for Natural Resources Defense Council.

Takahashi, K., A. S. Hopkins, J. Rosenkrantz, D. White, S. Kwok, N. Garner. 2020. *Assessment of National Grid's Long-Term Capacity Report*. Synapse Energy Economics for the Eastern Environmental Law Center.

Camp, E., N. Garner, A. S. Hopkins. 2019. *Cost-Effectiveness of Comprehensive Oil and Gas Emissions Reduction Rules in New Mexico: Impacts of Reduced Methane and Volatile Organic Compound Emissions from the Oil and Gas Industry.* Synapse Energy Economics for the Environmental Defense Fund.

Camp, E., A. S. 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.

Kallay, J., A. S. Hopkins, J. Frost, A. Napoleon, K. Takahashi, J. Slason, G. Freeman, D. Grover, B. Swanson. 2019. *Net Zero Energy Roadmap for the City of Burlington, Vermont*. Synapse Energy Economics and Resource Systems Group for Burlington Electric Department.

Camp, E., B. Fagan, J. Frost, D. Glick, A. S. Hopkins, A. Napoleon, N. Peluso, K. Takahashi, D. White, R. Wilson, T. Woolf. 2018. *Phase 1 Findings on Muskrat Falls Project Rate Mitigation.* Synapse Energy Economics for Board of Commissioners of Public Utilities, Province of Newfoundland and Labrador.

Hopkins, A. S., P. Knight, N. Peluso. 2018. *Massachusetts Comprehensive Energy Plan: Commonwealth and Regional Demand Analysis.* Synapse Energy Economics, Sustainable Energy Advantage, and MA DOER for the Massachusetts Department of Energy Resources.

Knight, P., D. Goldberg, E. Malone, A. S. Hopkins, D. Hurley. 2018. *Getting SMART: Making sense of the Solar Massachusetts Renewable Target (SMART) program*. Synapse Energy Economics for Cape Light Compact.

Hopkins, A. S., K. Takahashi, D. Glick, M. Whited. 2018. *Decarbonization of Heating Energy Use in California Buildings: Technology, Markets, Impacts, and Policy Solutions*. Synapse Energy Economics for the Natural Resources Defense Council.

Woolf, T., A. S. Hopkins, M. Whited, K. Takahashi, A. Napoleon. 2018. *Review of New Brunswick Power's 2018/2019 Rate Case Application.* In the Matter of the New Brunswick Power Corporation and Section 103(1) of the Electricity Act Matter No. 375. Prepared by Synapse Energy Economics for the New Brunswick Energy and Utilities Board Staff.

Hopkins, A. S., K. Takahashi. 2017. *Alternatives to Building a New Mt. Vernon Substation in Washington, DC*. Synapse Energy Economics for the District of Columbia Department of Energy and Environment.

Hopkins, A. S., S. Fields, T. Vitolo. 2017. *Policies to Cost-Effectively Retain Existing Renewables in New York*. Synapse Energy Economics for the Alliance for Clean Energy New York.

Vitolo, T., A. S. Hopkins. 2017. *The Mounting Losses at CWLP's Dallman Station: A Study of the Relative Costs of Operating Each of the Four Dallman Units*. Synapse Energy Economics for the Sierra Club.

Hopkins, A. S., A. Horowitz, P. Knight, K. Takahashi, T. Comings, P. Kreycik, N. Veilleux, J. Koo. 2017. *Northeast Regional Assessment of Strategic Electrification*. Synapse Energy Economics and Meister Consultants Group for the Northeast Energy Efficiency Partnerships.

Vermont Public Service Department. 2016. *Vermont Comprehensive Energy Plan*.

Vermont Public Service Department. 2016. *Act 199 Study on Manufacturing Competitiveness and Energy*.

Vermont Public Service Department. 2014. *Total Energy Study: Final Report on a Total Energy Approach to Meeting the State's Greenhouse Gas and Renewable Energy Goals*.

Vermont Public Service Department. 2014. *Evaluation of Net Metering in Vermont Conducted Pursuant to Act 99 of 2014*.

Vermont Public Service Department. 2013. *Total Energy Study: Report to the Vermont General Assembly on Progress Toward a Total Energy Approach to Meeting the State's Greenhouse Gas and Renewable Energy Goals.*

Vermont Public Service Department. 2013. *Evaluation of Net Metering in Vermont Conducted Pursuant to Act 125 of 2012*.

U.S. Department of Energy. 2011. *Report on the First Quadrennial Technology Review*. DOE/S-0001.

## ARTICLES

Hopkins, A. S., K. Takahashi, S. Nadel. 2020. "Keep warm and carry on: Electrification and efficiency meet the 'polar vortex'." Proceedings of the 2020 ACEEE Summer Study of Energy Efficiency in Buildings.

Hopkins, A. S., K. Takahashi, L. David. 2018. "Challenges and Opportunities for Deep Decarbonization through Strategic Electrification under the Utility Regulatory Structures of the Northeast". Proceedings of the 2018 ACEEE Summer Study on Energy Efficiency in Buildings, August 2018.

Hopkins, A. S. Review of *Burn Out*, by Dieter Helm, *Science* 356, Issue 6339 (May 2017): 709, https://doi.org/10.1126/science.aam8696

Dunsky, P., A. S. Hopkins, K. Vaillancourt, M. Fabbri. 2016. "Achieving an Ultra-Low Carbon Future: Technology and Policy Pathways to Meet Vermont's GHG Goals," *ACEEE Summer Study on Energy Efficiency in Buildings.*

Greenblatt, J., A. S. Hopkins, V. Letchert, M. Blasnik. 2012. "Energy Use of U.S. Residential Refrigerators and Freezers: Function Derivation Based on Household and Climate Characteristics," *Energy Efficiency.* 10.1007/s12053-012-9158-6.

Hopkins, A. S., L. Gu, A. Lekov, J. Lutz, G. Rosenquist. 2011. "Simulating a Nationally Representative Housing Sample Using EnergyPlus," Lawrence Berkeley National Laboratory Report, LBNL-4420E.

Lutz, J.D., A. S. Hopkins, V. Letschert, V.H. Franco, A. Sturges. 2011. "Using National Survey Data to Estimate Lifetimes of Residential Appliances," *HVAC&R Research*.

Alvarez, R.M., A. S. Hopkins, B. Sinclair. 2010. "Mobilizing Pasadena Democrats: Measuring the Effects of Partisan Campaign Contacts," *The Journal of Politics* 72, 31.

Nielsen, A.E.B., A. S. Hopkins, H. Mabuchi. 2009. "Quantum Filter Reduction for Measurement-Feedback Control Via Unsupervised Manifold Learning," *New Journal of Physics* 11, 105043.

Hopkins, A. S., B. Lev, H. Mabuchi. 2004. "Proposed Magnetoelectrostatic Ring Trap for Neutral Atoms," *Physical Review A* 70, 053616.

Hopkins, A. S., K. Jacobs, S. Habib, K. Schwab. 2003. "Feedback Cooling of a Nanomechanical Resonator," *Physical Review B* 68, 235328.

## TESTIMONY

**Public Utilities Commission of the State of Colorado (Proceeding No. 25AL-0538G)**: Answer testimony on cost allocation for gas system expansion costs to new customers, including proposal of new customer capacity expansion charge (the value of which was adopted in settlement among the parties). On behalf of Sierra Club, June 2026.

**Maryland Public Service Commission (Case No. 9489)**: Direct and Surrebuttal Testimony of Asa Hopkins regarding the Application of Washington Gas Light company for Authority to Increase Existing Rates and Charges and to Revise Its Terms and Conditions for Gas Service. On behalf of the Maryland Office of People's Counsel, March and May 2026.

**Connecticut Public Utilities Regulatory Authority (Docket No. 24-12-01)**: Joint direct and surrebuttal testimony (with Dr. Sol deLeon) regarding the application of Yankee Gas Services Company D/B/A/ Eversource Energy to amend its rate schedules, with focus on gas capital planning in the context of decarbonization. On behalf of the Connecticut Office of Consumer Counsel, March and April, 2025.

**Washington DC Public Service Commission (FC 1180):** Provided direct testimony regarding Washington Gas's application for a rate increase. On behalf of the District of Columbia Government, January 2025.

**Washington DC Public Service Commission (FC 1179):** Provided direct and rejoinder testimony regarding Washington Gas's application for accelerated cost recovery of pipeline replacement costs. On behalf of the District of Columbia Government, December 2024 and October 2025.

**Michigan Public Service Commission (Case No. U-21291):** Provided direct testimony regarding the application of DTE Gas Company for authority to increase its rates, amend its rate schedules, and rules governing the distribution and supply of natural gas, and for miscellaneous accounting authority. On

behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club, May, 2024.

**Connecticut Public Utilities Regulatory Authority (Docket No. 23-11-02)**: Direct and surrebuttal testimony regarding the application of Connecticut Natural Gas Corporation and the Southern Connecticut Gas Company to amend their rate schedules, with focus on gas capital planning in the context of decarbonization. On behalf of the Connecticut Office of Consumer Counsel, February and March 2024.

**Public Utilities Commission of the State of Colorado (Proceeding No. 23A-0392EG)**: Answer and cross-answer regarding the application of Public Service Company of Colorado for approval of its 2024-2028 Clean Heat Plan, with focus on rate and bill impacts. On behalf of Sierra Club and Natural Resources Defense Council, January and February 2024.

**Maryland Public Service Commission (Case No. 9692)**: Direct and Surrebuttal Testimony of Asa Hopkins regarding the application of Baltimore Gas and Electric Company for an Electric and Gas Multi-Year Plan. On behalf of the Maryland Office of People's Counsel, August 2023.

**Ontario Energy Board (EB-2022-0200):** Testified as an expert on the business risk facing Enbridge Gas, Inc. related to the energy transition and other risks, as part of a rate case proceeding to set the utility's capital structure. On behalf of the Industrial Gas Users Association, 2023.

**Washington DC Public Service Commission (FC 1169):** Provided direct and rebuttal expert testimony regarding Washington Gas's application for an increase in rates, from the standpoint of the District of Columbia's climate and clean energy policies. On behalf of the District of Columbia Government, November 2022 and January 2023.

**New York Public Utilities Commission (Case No. 22-E-0064 and 22-G-0065):** Direct and Rebuttal Testimony of Alice Napoleon and Asa Hopkins regarding Con Edison's proposed gas-side investments as greenhouse gas mitigation strategies and gas extension allowance rule changes and the need for long-term planning for the gas system and adequacy of the company's non-pipe alternatives framework. On behalf of Natural Resources Defense Council, May 2022.

**Régie de l'énergie du Québec (R-4156-2021):** Testified as an expert on the business risk facing Quebec's natural gas utilities related to the energy transition, as part of a proceeding to set the utilities' cost of capital and capital structure. On behalf of the Industrial Gas Users Association, 2022.

**Vermont Public Utility Commission (Case No. 21-1107-PET and 21-1109-PET):** Addressed the impact of GlobalFoundries proposed "self-managed utility" on the general good of the state and Vermont's energy policy, with particular focus on the impact on environmental soundness and greenhouse gas emissions mitigation. On behalf of Conservation Law Foundation, June 2021.

**Public Service Commission of Wisconsin (Docket No. 5-CG-106):** Addressed the need for a pair of liquified natural gas facilities in light of the fossil fuel use reductions required to meet state and federal

goals for mitigating climate change and the potential for cost-effective demand-side alternatives. On behalf of the Sierra Club, June 2021.

**Vermont Senate Finance Committee**: Provided expert testimony in the form of a presentation entitled "Updating Vermont's Renewable Energy Standard" to the Vermont Senate Finance Committee in January of 2020. Dr. Hopkins presented on the history of the standard, what has changed since 2015, and future potential.

**Vermont Public Utility Commission (Case No. 17-1247-NMP):** Addressed the consistency of a proposed solar generation facility with the Vermont Comprehensive Energy Plan. On behalf of Derby GLC Solar LLC, January 2018.

**Washington DC Public Service Commission (FC 1142):** Provided expert testimony regarding the merits of the proposed merger of Washington Gas and AltaGas, Ltd. with respect to the impact on environmental quality, with particular emphasis on the impact of utility management and its approach to climate change on the ability of the District to achieve its climate change mitigation goals. On behalf of the District of Columbia Government.

**Régie de l'énergie du Québec (R-3986-2016):** Provided an expert report and testimony regarding best practices in utility demand response programs, in the context of Hydro Québec Distribution's ten-year Supply Plan. On behalf of the Regroupment national des conseils régionaux de l'environment du Québec (RNCREQ).

**Vermont Public Service Board (Dockets No. 8586 and 8685):** Addressed the need for a proposed solar PV generator and its associated contract under PURPA rates, its economic impact on the state, and its consistency with the Vermont Electric Plan. On behalf of the Vermont Department of Public Service, July 2016.

**Vermont Public Service Board (Docket No. 8684):** Proposed avoided energy and capacity cost rates for use in Rule 4.100, Vermont's implementation of PURPA. On behalf of the Vermont Department of Public Service, October 2015 and May 2016.

**Vermont Public Service Board (Docket No. 8600):** Addressed the need for a proposed solar PV generator, its economic impact on the state, and its consistency with the Vermont Electric Plan. On behalf of the Vermont Department of Public Service, March 2016.

**Vermont Public Service Board (Docket No. 8525):** Introduced a memorandum of understanding between the DPS and Green Mountain Power regarding a proposed rate design, with particular focus on new critical peak price rates to be available and marketed. On behalf of the Vermont Department of Public Service, November 2015.

**Vermont Public Service Board (Docket No. 7970):** Addressed whether increases in the expected cost of a gas pipeline expansion project were sufficient to warrant reopening the underlying proceeding, particularly with respect to the need for the project, the economic impact on the state, and consistency

with the general good of the state and the Vermont Comprehensive Energy Plan. On behalf of the Vermont Department of Public Service, May 2015.

**Vermont Public Service Board (Docket No. 8311):** Addressed how statutory criteria for the use of electric energy efficiency funds for electrification measures (such as heat pumps) might be met. On behalf of the Vermont Department of Public Service, January 2015.

**Vermont Public Service Board (Docket No. 7862):** Presented the Department's positions regarding whether Entergy Vermont Yankee should be granted a continued certificate of public good, with particular focus on the need for the plant, the economic benefit of continued operation, consistency with the Vermont Electric Plan, and whether continued operation by Entergy was in the general good of the state. On behalf of the Vermont Department of Public Service, October 2012 and April 2013.

**Vermont Public Service Board (Docket No. 7833):** Addressed the need for a proposed biomass electric generator and its consistency with the Vermont Electric Plan. On behalf of the Vermont Department of Public Service, October and November 2012; February and September 2013.

**Vermont Public Service Board (Docket No. 7770):** Addressed a number of topics related to the merger of Green Mountain Power and Central Vermont Public Service, most particularly the disposition of a windfall repayment due to ratepayers. On behalf of the Vermont Department of Public Service, January and March 2012.

**Vermont Public Service Board (Docket No. 7815):** Addressed consistency of a proposed long-term PPA with the Vermont Electric Plan and the utility's integrated resource plan. On behalf of the Vermont Department of Public Service, January 2012.

## SELECTED PRESENTATIONS

Hopkins, A. S. "Optimizing Demand-Side Resources to Advance State Policy Priorities" presented at the National Association of State Energy Officials Winter Policy Outlook, February 2026.

Hopkins, A. S. Panelist on panel entitled "Natural Gas: Risk, Uncertainty, and the Road Ahead" at the CAMPUT Conference, Halifax, NS, May 2025.

Hopkins, A. S. "Coming Challenges to the Gas Distribution Utility Status Quo" presented at the Future of Heat Initiative, November 2024.

Hopkins, A. S. "Rising Gas Rates: The Need for Consumer-Focused Leadership in Light of a Looming Death Spiral" presented at the National Association of State Utility Consumer Advocates, November 2024.

Hopkins, A. S. "Analysis and Activism: The Gas Distribution Utility Status Quo is Unsustainable" presented at the Caltech Y Social Activism Speaker Series, November 2024.

Hopkins, A. S., R. Haefer, J. Slason, J. Tamerius. "Task 2: Long-Distance Travel Charging Needs" presenting to Massachusetts EV Infrastructure Coordinating Council, June 2024.

Hopkins, A. S., R. Haefer, J. Tamerius. “Update on EVI Demand Modeling” presenting to Massachusetts EV Infrastructure Coordinating Council, June 2023.

Hopkins, A. S., S. Kwok, A. Napoleon, K. Schultz, K. Takahashi. “Massachusetts Clean Heat Standard: Policy and Regulatory Analysis” presented with Conservation Law Foundation, February 2023.

Hopkins, A. S. “IIJA, IRA, and the Growing Federal Role in Transmission—and Why States Should Care,” presented at the National Association of State Energy Officials Annual Meeting, October 2022.

Hopkins, A. S., J. Litynski, A. Takasugi. “Policy approaches to increasing electricity affordability in California,” presented to various California stakeholders on behalf of Natural Resources Defense Council, February 2022.

Shipley, J., Hopkins, A. S., Takahashi, K., & Farnsworth, D. “Renovating regulation to electrify buildings: A guide for the handy regulator,” presented with Regulatory Assistance Project, January 2021.

Hopkins, A. S. 2019. “Efficiency, Electrification, and Renewables in New England and Puerto Rico” at 2019 ACEEE Energy Efficiency as a Resource Conference, October 2019.

Hopkins, A. S. 2019. “Strategic electrification and winter cold snaps: A resource and a challenge” at 2019 ACEEE Energy Efficiency as a Resource Conference, October 2019.

Panelist on “Deep Dive Session on State and Local Electrification Roadmaps” at Electric Power Research Institute (EPRI)/Northeast Energy Efficiency Partnerships (NEEP) Electrification Summit, August 2019.

Hopkins. A. S., K. Takahashi, D. Lis. 2018. “Decarbonization through Strategic Electrification Meets Utilities and Regulation in the Northeast” at the 2018 ACEEE Summer Study on Energy Efficiency in Buildings, August 2018.

Hopkins, A. S. 2019. “Strategic Electrification: Impacts and approaches to meeting decarbonization goals in the northeastern states (and elsewhere)” at Lawrence Berkeley National Laboratory, Energy Technologies Area, August 2018.

Hopkins, A. S. 2017. “Utility Performance Regulation” at the Western States Regional Meeting of the National Association of State Energy Officials, April 2017.

Panelist on “A Regulatory Perspective of Grid Transformation” at the IEEE Innovative Smart Grid Technologies Conference, September 2016.

Panelist on the “Comprehensive Energy Plan Update” at the Renewable Energy Vermont Conference, October 2015.

Hopkins, A. S. 2015. “Vermont’s Total Energy Study.” Presentation at the National Association of State Energy Officials Energy Policy Outlook Conference, February 2015.

Panelist on “The Role of Energy Efficiency in Mitigating Winter Peak Issues” at the Association of Energy Services Professionals (Northeast Chapter) & Northeast Energy Efficiency Council, November 2014.

Hopkins, A. S. 2014. “Total Energy Study.” Presentation at the Renewable Energy Vermont Conference, October 2014.

Panelist on “State Energy & Economic Policy Impacts on Industry Transformation” at the Power Industry Transformation Summit, April 2014.

Hopkins, A. S. 2008. “Mobilizing Pasadena Democrats: Measuring the Effects of Partisan Campaign Contacts.” Presentation at the American Political Science Association Annual Meeting, August 2008.

**HONORS, AWARDS, AND FELLOWSHIPS**

Certified Public Manager, 2014

AAAS Science and Technology Policy Fellowship, 2010 – 2011

Dean’s Award for Community Service, 2009

Delegate to the 2004 Democratic National Convention

NSF Graduate Research Fellow, 2002 – 2005

Los Alamos National Laboratory Student Distinguished Performance Award, 2002

Two-time first-team Academic All American, 2000 and 2001

Barry M. Goldwater Scholar, 1999 – 2001

**OTHER ACTIVITIES**

NASEO - Electricity Committee: Affiliate Co-Chair, 2020 – 2025

Newton, MA Citizens Commission on Energy: Member 2017-2024, Co-Chair 2023 – 2024

Guest on Synapse Energy Economics, Inc.’s *Energy Nerd Show,* Aug 6, 2020

Board Member, National Association of State Energy Officials, 2015-2016

Industrial Advisory Board for ARPA-E-funded project “Packetized Energy Management,” 2016

Burlington, VT Public Works Commission: Member 2012 – 2014, Chair 2015

*Resume updated June 2026.*