

# Elson Advocacy

## BY RESS AND EMAIL

June 11, 2024

**Ms. Nancy Marconi**  
Registrar  
Ontario Energy Board  
2300 Yonge Street, 27th Floor  
Toronto, Ontario M4P 1E4

Dear Ms. Marconi:

**Re: Enbridge Gas Inc. 2024 to 2028 Rates Application  
EB-2024-0111**

I am writing on behalf of the Green Energy Coalition and Environmental Defence to submit a request to file evidence regarding the applicant's energy transition evidence and proposals as pertinent to the phase II issues. As detailed below, the evidence would be prepared by Chris Neme and Dr. David Hill of the Energy Futures Group (EFG) and would focus on the energy transition technology fund, low-carbon gas procurement proposal, energy comparison information, and the proposed next steps for system pruning and integrated resource planning.

### **Experience of Energy Futures Group**

Mr. Neme is a leading expert on the options for and implications of decarbonization for gas customers and best practices to address those customer risks and opportunities. Mr. Neme and his firm have prepared reports, comments to regulators and expert testimony specifically on this topic in jurisdictions across North America.<sup>1</sup> Mr. Neme and his firm have also critically reviewed numerous gas utility decarbonization studies across a wide range of jurisdictions.

Over the past three decades, Mr. Neme has worked for energy regulators, utilities, government agencies and other organizations in more than 30 states, 7 Canadian provinces and several European countries. He has defended expert witness testimony in approximately 70 cases before regulatory commissions in 13 different jurisdictions. He has also testified before several state legislatures.

Mr. Neme also has decades of experience specific to Ontario and its gas system. Mr. Neme served on the Enbridge and Union natural gas demand side management audit/evaluations committees since their inception approximately two decades ago and currently sits on the gas DSM Evaluation Committee, the gas Integrated Resource Planning (IRP) Technical Working Group (IRP TWG), and the Demand Side Management Stakeholder Advisory Group (SAG). He

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<sup>1</sup> Including in Massachusetts, Vermont, Delaware, Michigan, Illinois, Washington, Oregon, and British Columbia.

has also previously served as an external reviewer of efficiency potential and carbon pricing studies. He has earned broad respect and trust from the Ontario regulatory community and has been elected to these committee roles by other intervenors and/or appointed by the OEB. Mr. Neme has provided expert testimony in approximately 25 OEB cases. Mr. Neme's CV is attached.

Mr. Neme would be supported by Dr. David Hill, who has a Ph. D. in Energy Management and Policy Planning and over 30 years of experience in the energy and environmental sectors. Dr. Hill would assist in preparing the EFG evidence, especially with respect to the Enbridge proposal to procure low-carbon gases as this is an area where Dr. Hill has considerable knowledge and experience to contribute. Dr. Hill's CV is attached.

### **Evidence Description**

At a high level, EFG's evidence would critique Enbridge's evidence and proposals relating to phase II energy transition issues and provide recommendations as applicable. We anticipate that EFG's evidence and potential recommendations would largely focus on the following four areas:

- The appropriateness of the ETTF and, if the ETTF is approved, recommendations regarding the spending criteria (i.e. safe bet identification), processes to ensure robust and balanced oversight and decision-making, and other design elements;
- The appropriateness of Enbridge's RNG proposals and, if they are approved, recommendations regarding program criteria and design elements to maximize consumer benefits;
- Comments on Enbridge's energy comparison information evidence, including its rationale for excluding heat pumps from its energy comparison informational materials; and
- Comments on Enbridge's proposed next steps regarding system pruning and integrated resource planning.

EFG's evidence would touch on the following issues set out in the issues list:

15) Are the specific proposed parameters for an Energy Transition Technology Fund and associated rate rider appropriate?

16) Is the proposal to establish a new Energy Transition Technology Fund Variance Account appropriate?

17) Are the specific proposals to amend the Voluntary RNG Program and to procure low-carbon energy as part of the gas supply commodity portfolio, appropriate?

18) Are the energy transition safe bet proposals with capital spending in the IRM term that were not addressed in Phase 1, such as the Energy Transition Technology Fund and the Low-Carbon Renewable Natural Gas Program, appropriate?

24) Has Enbridge Gas appropriately reviewed the energy comparison information in its informational and marketing materials, and taken appropriate actions based on its review?

25) Has Enbridge Gas appropriately responded to relevant OEB directions and commitments from previous proceedings, including issues related to the IRP Framework?

The energy transition raises new and important issues for gas regulation. We believe the OEB will benefit from Mr. Neme's deep knowledge in this area, especially in light of his decades of experience with Ontario's gas landscape.

### **Budget**

We anticipate the EFG report costing \$45,000 to \$60,000 to produce. Although estimate that the remaining steps in the hearing may require an additional 40% in consultant costs based on past experience, we cannot provide a firm estimate of those costs as they are based on factors that are entirely outside of our control, including the number of interrogatories, whether presentations will be required, and whether Mr. Neme would be called as a witness. We anticipate incremental counsel time associated with this evidence to be less than \$2,500.

### **Conclusion**

In light of the above, we respectfully request that this evidence be approved for submission in this proceeding.

Yours truly,



Kent Elson

cc: Parties to the above proceeding

## Professional Summary

Chris specializes in analysis of markets for energy efficiency, demand response, renewable energy and strategic electrification measures, as well as the design and evaluation of programs and policies to promote them. During his 25+ years in the industry, he has worked for energy regulators, utilities, government agencies and advocacy organizations in 30+ states, 7 Canadian provinces and several European countries. He has filed expert witness testimony in 60+ cases before regulatory commissions in 13 different jurisdictions; he has also testified before several state legislatures. Chris has authored numerous reports and papers on clean energy policies and programs, including the National Standard Practice Manual for Benefit Cost Analysis of Distributed Energy Resources (2020), the predecessor NSPM for energy efficiency (2017), and several reports on electric non-wires and gas non-pipe alternatives.

## Experience

2010-present: Principal, Energy Futures Group, Hinesburg, VT

1999-2010: Director of Planning & Evaluation, Vermont Energy Investment Corp., Burlington, VT

1993-1999: Senior Analyst, Vermont Energy Investment Corp., Burlington, VT

1992-1993: Energy Consultant, Lawrence Berkeley National Laboratory, Gaborone, Botswana

1986-1991: Senior Policy Analyst, Center for Clean Air Policy, Washington, DC

## Education

M.P.P., University of Michigan, 1986

B.A., Political Science, University of Michigan, 1985

## Selected Projects

- **Natural Resources Defense Council (Illinois, Michigan and Ohio).** Critically review efficiency, demand response, electrification, distribution system investment and integrated resource plans filed by IL, MI and OH utilities. Draft/defend regulatory testimony on critiques. Represent NRDC in regular stakeholder-utility engagement processes. Represent NRDC in collaborative development of non-wires solution pilots. Support development of Illinois clean energy legislation. (2010 to present)
- **E4TheFuture.** Co-authored National Standard Practice Manual Benefit Cost-Analysis of Distributed Energy Resources (2020) and NSPM for efficiency (2017). Present the NSPM to audiences across the U.S. and Canada; helping several to assess how to use it to refine current practices. (2016-present)
- **Vermont Agency of Natural Resources.** Supported EFG/Cadmus team in analysis of pathways for achieving the state's Global Warming Solutions Action emission reduction requirements, including marginal abatement cost curve development (2022). Supporting new assessment of emissions and cost tradeoffs between policy options for decarbonizing buildings and industry sectors (2023).

### Energy Futures Group, Inc

PO Box 587, Hinesburg, VT 05461 – USA | ☎ 802-482-2625 | @cneme@energyfuturesgroup.com

- **Connecticut Energy Efficiency Board.** Part of team providing on-going review and input on utility efficiency program planning and related policy issues. Lead role in providing input on New England Avoided Energy Supply Cost study and cost-effectiveness screening policy issues. (2019-present)
- **Ontario Energy Board.** Appointed to serve on provincial gas DSM Evaluation Advisory Committee, providing input on multi-year evaluation plans, scopes of work for evaluation studies and independent evaluator assessments of utilities' annual gas savings claims. Also serve on gas IRP committee, providing input on non-pipe alternatives, including cost-effectiveness analyses and selection of pilot projects. Previously also appointed to advisory committees on gas and electric efficiency potential studies and advisory committee on carbon price forecast studies. (2015-present)
- **Green Energy Coalition (Ontario).** Represent coalition of environmental groups in regulatory proceedings, utility negotiations and stakeholder meetings on DSM policies, utility proposed DSM Plans, integrated resource planning and rules governing non-pipe alternatives. (1993 to present)
- **Energy Action Network (Vermont).** Co-authored a white paper on the concept of a "Clean Heat Standard" – a kind of renewable portfolio standard that would impose increasing obligations on Vermont Gas and wholesale suppliers of fuel oil and propane to reduce greenhouse gas emissions from burning of fossil fuels in homes and businesses, consistent with the state's Global Warming Solutions Act requirements (e.g., 40% reduction by 2030). Co-leading related voluntary working group of interested parties providing input on the design of the policy. Testified before Vermont House Energy and Technology Committee on Clean Heat Standard legislation. (2020-present)
- **Sierra Club (Massachusetts).** Supported Sierra Club's participation in an year-long process in which the Massachusetts' gas utilities engaged with stakeholders to discuss and consider the future of the gas industry in the context of decarbonization policy goals. Reviewed draft inputs to technical study of options for decarbonizing the gas industry presented to the group and assisted in drafting regulatory comments on final study results as well as gas utility policy proposals. (2021-2022).
- **Environmental Law and Policy Center.** Filed expert witness testimony supporting AEP Ohio's initial proposal to run a portfolio of efficiency programs and in opposition to a proposed rate case settlement agreement to eliminate such programs. (2021)
- **Sierra Club (Maryland).** Provided strategic support on testimony on cost-effectiveness and other rules governing expansion of gas infrastructure to connect additional customers. (2021)
- **New Jersey Board of Public Utilities.** Served on management team responsible for statewide delivery of New Jersey Clean Energy Programs. Led strategic planning; support regulatory filings, cost-effectiveness analysis & evaluation work. (2015 to 2020). Served on management team for start-up of residential and renewables programs for predecessor project. (2006-2010)
- **Regulatory Assistance Project - U.S.** Provided guidance on efficiency policy and programs. Lead author on strategic reports on program options for decarbonizing Vermont buildings, achieving 30% electricity savings in 10 years, using efficiency to defer T&D system investments, & bidding efficiency into capacity markets. (2010 to 2020)
- **Energy Efficiency Alberta.** Assisted EEA in providing input to Alberta Utilities Commission on the role efficiency resources can play in reducing electric system costs. (2019 to 2020)

- **Consumers Association of Canada (Manitoba) and Winnipeg Harvest.** Critically reviewed and filed regulatory testimony on Efficiency Manitoba's first three-year plan (2020-2023), with particular emphasis on the extent to which the plan supported advanced heat pump technology as both an electric efficiency measure and a key to future building electrification. (2019-2020).
- **Citizens Action Coalition of Indiana.** Critically reviewed how energy efficiency resources were modeled in utility IRPs, as well as the design of energy efficiency program portfolios. (2018 to 2020)
- **Efficiency Vermont.** Provided technical support in review of avoided cost assumptions, as well as related policies on cost-effectiveness analyses of efficiency resources (2019).
- **Earth Justice and Southern Alliance for Clean Energy.** Helped critically review Florida utilities' efficiency potential studies and proposed 2020-2024 energy efficiency savings targets. (2019)
- **New Hampshire Office of the Consumer Advocate.** Drafted expert witness testimony on the merits of utilities adding a pilot non-wires solution project to their efficiency program plans. (2018)
- **Regulatory Assistance Project - Europe.** Provide on-going support on efficiency policies and programs in the United Kingdom, Germany, and other countries. Reviewed draft European Union policies on Energy Savings Obligations, EM&V protocols, and related issues. Drafted policy brief on efficiency feed-in-tariffs and roadmap for residential retrofits. (2009 to 2018)
- **Green Mountain Power (Vermont).** Supported development and implementation of GMP's first compliance plan for Vermont RPS Tier 3 requirement to reduce customers' direct consumption of fossil fuels, with significant emphasis on strategic electrification strategies. Also developed 10-year forecast of sales that could result from three different levels of policy/program promotion of residential electric space heating, electric water heating and electric vehicles. (2016 to 2018)
- **Alberta Energy Efficiency Alliance.** Drafted white paper how treatment of "efficiency as a resource" could be institutionalized in Alberta. The paper followed several presentations to government agencies and others on behalf of the Pembina Institute. (2017 to 2018)
- **Southern Environmental Law Center.** Assessed reasonableness of Duke Energy's historic efficiency program savings claims, as well as the design of their efficiency program portfolios for 2019. Filed expert witness testimony on findings in North Carolina dockets (2018).
- **Toronto Atmospheric Fund.** Helped draft an assessment of efficiency potential from retrofitting of cold climate heat pumps into electrically heated multi-family buildings (2017).
- **Northeast Energy Efficiency Partnerships.** Helped manage Regional EM&V forum project estimating savings for emerging technologies, including field study of cold climate heat pumps. Led assessment of best practices on use of efficiency to defer T&D investment. (2009 to 2015)
- **Ontario Power Authority.** Managed jurisdictional scans on leveraging building efficiency labeling/disclosure requirements and non-energy benefits in cost-effectiveness screening. Supported staff workshop on the role efficiency can play in deferring T&D investments. Presented on efficiency trends for Advisory Council on Energy Efficiency. (2012-2015)
- **Vermont Public Interest Research Group.** Conducted comparative analysis of the economic and environmental impacts of fuel-switching from oil/propane heating to either natural gas or efficient, cold climate electric heat pumps. Filed regulatory testimony on findings. (2014-2015)

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- **New Hampshire Electric Co-op.** Led assessment of the co-op's environmental and social responsibility programs' promotion of whole building efficiency retrofits, cold climate heat pumps and renewable energy systems. Presented recommendations to the co-op Board. (2014)
- **National Association of Regulatory Utility Commissioners (NARUC).** Assessed alternatives to 1<sup>st</sup> year savings goals to eliminate disincentives to invest in longer-lived savings. (2013)
- **California Investor-Owned Utility.** Senior advisor on EFG project to analyze 10 leading U.S. utility portfolios to determine if there are differences in the cost of saved energy related to utility spending in specific non-incentive categories, including administration, marketing, and EM&V. (2013)
- **DC Department of the Environment (Washington DC).** Part of VEIC team administering the DC Sustainable Energy Utility (SEU). Helped characterize the DC efficiency market and supporting the design of efficiency programs that the SEU will be implementing. (2011 to 2012)
- **Ohio Sierra Club.** Filed and defended expert witness testimony on the implications of not fully bidding all efficiency resources into the PJM capacity market. (2012)
- **Regulatory Assistance Project – Global.** Assisted RAP in framing several global research reports. Co-authored the first report – an extensive “best practices guide” on government policies for achieving energy efficiency objectives, drawing on experience with a variety of policy mechanism employed around the world. (2011)
- **Tennessee Valley Authority.** Assisted CSG team providing input to TVA on the redesign of its residential efficiency program portfolio to meet aggressive new five-year savings goals. (2010)
- **New York State Energy Research and Development Authority (NYSERDA).** Led residential & renewables portions of several statewide efficiency potential studies. (2001 to 2010)
- **Ohio Public Utilities Commission.** Senior Advisor to a project to develop a web-based Technical Reference Manual (TRM). The TRM includes deemed savings assumptions, deemed calculated savings algorithms and custom savings protocols. It was designed to serve as the basis for all electric and gas efficiency program savings claims in the state. (2009 to 2010)
- **Vermont Electric Power Company.** Led residential portion of efficiency potential study to assess alternatives to new transmission line. Testified before Public Service Board. (2001-2003)
- **Efficiency Vermont.** Served on Sr. Management team. Supported initial project start-up. Oversaw residential planning, input to regulators on evaluation, input to regional EM&V forum, development of M&V plan and other aspects of bidding efficiency into New England's Forward Capacity Market (FCM), and development and updating of nation's first TRM. (2000 to 2010)
- **Long Island Power Authority Clean Energy Plan.** Led team that designed the four major residential programs (three efficiency, one PV) incorporated into the plan in 1999. Oversaw extensive technical support to the implementation of those programs. This involved assistance with the development of goals and budgets, development of savings algorithms, cost-effectiveness screening, and on-going program design refinements. (1998 to 2009)

## Selected Publications and Reports

- *Cost Savings and CO<sub>2</sub> Emission Reductions of Residential Electrification in Peoples Gas Territory*, prepared for the Natural Resources Defense Council, November 2022 (with David Hill & Liz Bourguet)
- *Tip of the Spear: How Efficiency Programs Supporting Cold Climate Heat Pumps in Low Income Multi-Family Buildings Could Help Lay the Foundation for Building Decarbonization in Michigan and Illinois*, 2022 ACEEE Summer Study on Energy Efficiency in Buildings (with Laura Goldberg, Valeria Rincon and Samantha Williams)
- *The Clean Heat Standard*, Vermont Energy Action Network (EAN) White Paper, December 2021 (with Richard Cowart)
- *National Standard Practice Manual for Benefit Cost Analysis of Distributed Energy Resources*, August 2020, (with Tim Woolf and others)
- *Reducing CO<sub>2</sub> Emissions from Vermont Buildings: Potential and Cost-Effectiveness of Select Program Options*, Regulatory Assistance Project, February 13, 2019 (with Richard Faesy)
- *Pumping Energy Savings: Recommendations for Accelerating Heat Pump Adoption in Ontario's Electrically Heated Multi-Residential Buildings*, Toronto Atmospheric Fund, July 2018 (with Devon Calder, Brian Purcell and Judy Simon)
- *National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources*, Edition 1, Spring 2017 (with Tim Woolf, Marty Kushler, Steven Schiller and Tom Eckman)
- *The Next Quantum Leap in Efficiency: 30% Electricity Savings in 10 Years*, Proceedings of the 2016 ACEEE Summer Study on Energy Efficiency in Buildings, Volume 9, pp. 1-14 (with Jim Grevatt, Rich Sedano and Dave Farnsworth)
- *The Next Quantum Leap in Efficiency: 30% Electricity Savings in Ten Years*, published by the Regulatory Assistance Project, February 2016 (with Jim Grevatt)
- *Energy Efficiency as a T&D Resource: Lessons from Recent U.S. Efforts to Use Geographically Targeted Efficiency Programs to Defer T&D Investments*, published by Northeast Energy Efficiency Partnerships, January 9, 2015 (with Jim Grevatt)
- *Unleashing Energy Efficiency: The Best Way to Comply with EPA's Clean Power Plan*, Public Utilities Fortnightly, October 2014, pp. 30-38 (with Tim Woolf, Erin Malone and Robin LeBaron)
- *The Resource Value Framework: Reforming Energy Efficiency Cost-Effectiveness Screening*, published by the National Efficiency Screening Project, August 2014 (with Tim Woolf et al.)
- *U.S. Experience with Participation of Energy Efficiency in Electric Capacity Markets*, Regulatory Assistance Project, August 2014 (with Richard Cowart)
- *The Positive Effects of Energy Efficiency on the German Electricity Sector*, IEPEC 2014 Conference, September 2014 (with Friedrich Seefeldt et al.)



- *Final Report: Alternative Michigan Energy Savings Goals to Promote Longer Term Savings and Address Small Utility Challenges*, prepared for the Michigan Public Service Commission, September 13, 2013 (with Optimal Energy)
- *Energy Efficiency Feed-in-Tariffs: Key Policy and Design Considerations*, Proceedings of ECEEE 2013 Summer Study, pp 305-315 (with Richard Cowart)
- *Can Competition Accelerate Energy Savings? Options and Challenges for Efficiency Feed-in-Tariffs*, published in *Energy & Environment*, Volume 24, No. 1-2, February 2013 (with Richard Cowart)
- *An Energy Efficiency Feed-in-Tariff: Key Policy and Design Considerations*, published by the Regulatory Assistance Project, March/April 2012 (with Richard Cowart)
- *U.S. Experience with Efficiency as a Transmission and Distribution System Resource*, published by the Regulatory Assistance Project, February 2012 (with Rich Sedano)
- *Achieving Energy Efficiency: A Global Best Practices Guide on Government Policies*, published by the Regulatory Assistance Project, February 2012 (with Nancy Wasserman)
- *Residential Efficiency Retrofits: A Roadmap for the Future*, published by the Regulatory Assistance Project, May 2011 (with Meg Gottstein and Blair Hamilton)
- *Is it Time to Ditch the TRC?* Proceedings of ACEEE 2010 Summer Study on Energy Efficiency in Buildings, Volume 5 (with Marty Kushler)
- *Energy Efficiency as a Resource in the ISO New England Forward Capacity Market*, in *Energy Efficiency*, published on line 06 June 2010 (with Cheryl Jenkins and Shawn Enterline)
- *A Comparison of Energy Efficiency Programmes for Existing Homes in Eleven Countries*, prepared for the British Department of Energy and Climate Change, 19 February, 2010 (with Blair Hamilton et al.)
- *Energy Efficiency as a Resource in the ISO New England Forward Capacity Market*, Proceedings of the 2009 European Council on an Energy Efficient Economy Summer Study, pp. 175-183 (with Cheryl Jenkins and Shawn Enterline)
- *Playing with the Big Boys: Energy Efficiency as a Resource in the ISO New England Forward Capacity Market*, Proceedings of ACEEE 2008 Summer Study Conference on Energy Efficiency in Buildings, Volume 5 (with Cheryl Jenkins and Blair Hamilton)
- *Recommendations for Community-Based Energy Program Strategies, Final Report*, developed for the Energy Trust of Oregon, June 1, 2005 (with Dave Hewitt et al.)
- *Shareholder Incentives for Gas DSM: Experience with One Canadian Utility*, Proceedings of ACEEE 2004 Summer Study on Energy Efficiency in Buildings, Volume 5 (with Kai Millyard)
- *Cost Effective Contributions to New York's Greenhouse Gas Emission Reduction Targets from Energy Efficiency and Renewable Energy Resources*, ACEEE 2004 Summer Study Proceedings, Volume 8 (with David Hill et al.)
- *Opportunities for Accelerated Electric Energy Efficiency Potential in Quebec: 2005-2012*, prepared for Regroupement national des conseils regionaux de l'environnement du Quebec, Regroupement des organismes environnementaux energie and Regroupement pour la

responsabilite sociale des entreprises, May 16, 2004 (with Eric Belliveau, John Plunkett and Phil Dunskey)

- *Review of Connecticut's Conservation and Load Management Administrator Performance, Plans and Incentives*, for Connecticut Office of Consumer Counsel, October 31, 2003 (with John Plunkett, Phil Mosenthal, Stuart Slote, Francis Wyatt, Bill Kallock and Paul Horowitz)
- *Energy Efficiency and Renewable Energy Resource Development Potential in New York State*, for New York Energy Research and Development Authority, August 2003 (with John Plunkett, Phil Mosenthal, Steve Nadel, Neal Elliott, David Hill and Christine Donovan)
- *Assessment of Economically Deliverable Transmission Capacity from Targeted Energy Efficiency Investments in the Inner and Metro-Area and Northwest and Northwest/Central Load Zones*, for Vermont Electric Power Company, Final Report: April 2003 (with John Plunkett et al.)
- *Residential HVAC Quality Installation: New Partnership Opportunities and Approaches*, Proceedings of ACEEE 2002 Summer Study Conference on Energy Efficiency in Buildings, Volume 6 (with Rebecca Foster, Mia South, George Edgar and Put Murphy)
- *A Modified Delphi Approach to Predict Market Transformation Program Effects*, Proceedings of ACEEE 2000 Summer Study Conference on Energy Efficiency in Buildings, Volume 6 (with Phil Mosenthal et al.)
- *Using Targeted Energy Efficiency Programs to Reduce Peak Electrical Demand and Address Electric System Reliability Problems*, published by the American Council for an Energy Efficient Economy, November 2000 (with Steve Nadel and Fred Gordon)
- *Energy Savings Potential from Addressing Residential Air Conditioner and Heat Pump Installation Problems*, American Council for an Energy Efficient Economy, February 1999 (with John Proctor and Steve Nadel)
- *Promoting High Efficiency Residential HVAC Equipment: Lessons Learned from Leading Utility Programs*, Proceedings of ACEEE 1998 Summer Study Conference on Energy Efficiency in Buildings, Volume 2 (with Jane Peters and Denise Rouleau)
- *PowerSaver Home Program Impact Evaluation*, report to Potomac Edison, February 1998 (with Andy Shapiro, Ken Tohinaka and Karl Goetze)
- *A Tale of Two States: Detailed Characterization of Residential New Construction Practices in Vermont and Iowa*, Proceedings of ACEEE 1996 Summer Study Conference on Energy Efficiency in Buildings, Volume 2 (with Blair Hamilton, Paul Erickson, Peter Lind and Todd Presson)
- *New Smart Protocols to Avoid Lost Opportunities and Maximize Impact of Residential Retrofit Programs*, in Proceedings of ACEEE 1994 Summer Study on Energy Efficiency in Buildings (with Blair Hamilton and Ken Tohinaka)
- *Economic Analysis of Woodchip Systems and Finding Capital to Pay for a Woodchip Heating System*, Chapters 6 and 8 in Woodchip Heating Systems: A Guide for Institutional and Commercial Biomass Installations, published by the Council of Northeastern Governors, July 1994

- *PSE&G Lost Opportunities Study: Current Residential Programs and Relationship to Lost Opportunities*, prepared for the PSE&G DSM Collaborative, June 1994 (with Blair Hamilton, Paul Berkowitz and Wayne DeForest)
- *PSE&G Lost Opportunities Study: Preliminary Residential Market Analysis*, prepared for the PSE&G DSM Collaborative, May 1994 (with Blair Hamilton, Paul Berkowitz and Wayne DeForest)
- *Long-Range Evaluation Plan for the Vermont Weatherization Assistance Program*, prepared for the Vermont Office of Economic Opportunity, February 1994 (with Blair Hamilton and Ken Tohinaka)
- *Impact Evaluation of the 1992-1993 Vermont Weatherization Assistance Program*, prepared for the Vermont Office of Economic Opportunity, December 1993 (with Blair Hamilton and Ken Tohinaka)
- *Electric Utilities and Long-Range Transport of Mercury and Other Toxic Air Pollutants*, published by the Center for Clean Air Policy, 1991
- *Coal and Emerging Energy and Environmental Policy*, in Natural Resources and Environment, 1991 (with Don Crane)
- *Acid Rain: The Problem*, in EPA Journal, January/February 1991 (with Ned Helme)
- *An Efficient Approach to Reducing Acid Rain: The Environmental Benefits of Energy Conservation*, published by the Center for Clean Air Policy, 1989
- *The Untold Story: The Silver Lining for West Virginia in Acid Rain Control*, published by the Center for Clean Air Policy, 1988
- *Midwest Coal by Wire: Addressing Regional Energy and Acid Rain Problems*, published by the Center for Clean Air Policy, 1987
- *Acid Rain: Road to a Middle Ground Solution*, published by the Center for Clean Air Policy, 1987 (with Ned Helme)

## Professional Summary

David is known nationally for his advancement of sustainable energy program design and evaluation, and renewable energy policy. David has been the principal investigator and led analysis teams for multi-year stakeholder informed studies on solar market and decarbonization pathways and scenarios. David provides expert testimony and regulatory support; participates in national, and state boards; leads policy committees and conferences; provides comprehensive studies of the economic, technical, and achievable potentials for sustainable energy programming; and supports program budget planning and implementation. He has led or significantly contributed to the design and development of efficiency and renewable energy programs with annual budgets of \$100+ million for initiatives in New Jersey, Washington DC, New York, Vermont, Arizona, and Maryland.

## Experience

### Energy Futures Group

- Managing Consultant 2020 – present

### Vermont Energy Investment Corporation (VEIC)

- Director, Distributed Energy Resources, Policy Fellow 2014 – 2020
- Managing Consultant and Deputy Director Planning and Evaluation 2008 – 2014
- Senior Consultant and Consultant 1998 – 2008

### Tellus Institute and the Boston Center of the Stockholm Environment Institute

- Research Associate 1993 - 1998

## Education

**Ph.D., University of Pennsylvania,** Energy Management and Policy Planning, 1993.

- Fulbright Scholar: Dissertation research on energy decision-making in rural Nepal, 1991 – 1993.

**Master's, University of Pennsylvania,** Appropriate Technology and International Development, 1989.

**B.A., Middlebury College,** Geography and Political Science, 1981.

## Selected Projects (from more than 100)

**Vermont Agency of Natural Resources.** Senior advisor to team analyzing policy and regulatory options for emissions reductions from Vermont's residential, commercial, and industrial building sectors, including analysis of benefits and costs of Clean Heat Standard. In partnership with Stockholm Environment Institute and Cadmus Group, incorporating LEAP scenario modeling and complementary models to assess program and administrative costs, customer economics, and rate impacts for electricity, gas and delivered fuels. 2023.

**General Services Administration.** Team leader for EFG on team primed by Cadmus Group assisting the GSA analyze and facilitate strategies for all Federal Government Agencies to procure carbon free

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electricity by 2030. EFG task area involves mapping results from NREL's Cambium model to Federal agencies and facilities, and assessment of trends on Carbon Free Electricity procurement options by state and electric balancing authority region. 2023-present.

**Delaware Department of Natural Resources.** Lead analysis for a team of EFG and NV5/Optimal Energy, providing baseline scenario modeling for an update to Delaware's Comprehensive Energy Plan using the Low Emissions Analysis Platform LEAP model. 2022.

**Conservation Law Foundation.** Appearance before the Rhode Island Energy Facilities Siting Board in support of Expert Witness testimony of EFG colleague Gabrielle Stebbins, relating to request for declaratory order for expansion of a propane facility in Providence RI. 2021-2022.

**Vermont Agency of Natural Resources.** Co-leader of team of EFG and Cadmus Group, serving as technical consultants to the Vermont Climate Council. Used Low Emissions Analysis Platform (LEAP) model to inform Pathways Analysis report on scenarios for meeting Global Warming Solutions Act requirements. 2021-2022.

**Environmental Defense Fund and Citizens Utility Board.** Expert testimony on two proposed pilot projects in Nicor Gas general rate case. Illinois Commerce Commission, Docket 21-0098. 2021.

**Citizens Utility Board and NRDC.** Expert testimony submitted to Illinois Commerce Commission on renewable natural gas pilot proposed by Nicor gas. Docket 20-0722, 2021.

**Clean Energy New Hampshire.** Expert testimony in support of joint utilities Triennial Energy Efficiency Plan. New Hampshire Public Utilities Commission, Docket DE 2—092, 2020.

**Southern Alliance for Clean Energy.** Expert testimony on energy efficiency in Dominion Energy South Carolina's 2020 Integrated Resource Plan. Public Service Commission adopted recommendations for revisions and strengthening of DSM resource in the plan. 2020.

**Massachusetts Executive Office of Energy and Environmental Affairs.** Under subcontract with Cadmus, Inc. Led scenario modeling team investigating the building sector decarbonization strategies for Massachusetts Decarbonization Roadmap. 2019-2020.

**U.S. Department of Energy.** Principal Investigator for a three-year SunShot Initiative Solar Market Pathways study, investigating the technical, regulatory, and business model implications of getting 20 percent of Vermont's total electric supply from solar by 2025. 2014-2017.

**Sun Shares.** Created and launched, and responsible for management and business development of, a community solar business subsidiary to provide "Easy and Affordable Solar for Employers and their Employees," 2015 – 2019.

**Maryland Office of Peoples Counsel.** Expert witness and senior advisor for review and design of EmPOWER Maryland portfolio. Includes strategies for coordination with grid modernization and cost recovery, amortization and utility incentives. 2011- 2020.

**Washington, D.C., Department of Energy and Environment.** Led design and launch of the DC Sustainable Energy Utility's Solar for All Initiative. Supports both single family and community solar installations directly benefitting income qualified households. 2017-2019.

**Pennsylvania Department of Environmental Protection.** Led scenario analysis and modeling for Pennsylvania's Solar Future. Stakeholder presentations at six workshops on total energy sector modeling for meeting 10% of Pennsylvania's electric needs from solar by 2030. 2016-2019.

## EFG Experience with Energy Transition Issues

### Decarbonization Pathways Studies

- EFG has led or played major roles in the conduct of several decarbonization studies
  - **Massachusetts 2050 Decarbonization Roadmap.** EFG was part of the Cadmus team that analyzed economy-wide decarbonization pathways for the state's Executive Office of Energy and Environmental Affairs.
  - **Vermont Pathways Analysis Report.** EFG was part of Cadmus team that analyzed economy-wide decarbonization pathways for the Vermont Agency of Natural Resources and the Vermont Climate Council. EFG led the buildings/thermal sector work.
  - **Vermont Thermal Sector Decarbonization Analysis.** EFG is currently under contract to the Vermont Agency of Natural Resources to assess the emission reduction, cost, and other trade-offs between different policy approaches to decarbonizing buildings and industry in the state.
  - **Delaware Comprehensive Energy Plan.** EFG is currently leading analysis of decarbonization pathways for the Delaware Department of Natural Resources and Environmental Control.
- EFG has helped clients critically review decarbonization studies performed by other parties, particularly those sponsored by gas utilities.
  - **Massachusetts Gas Utilities Study:** EFG helped Sierra Club participate in a year-long utility-stakeholder collaborative process for assessing and modeling options for decarbonization. This included drafting numerous comments on the utilities' consultants' proposed analysis scenarios, draft modeling assumptions, and draft reports. EFG has also supported drafting of comments to regulators critiquing the gas utilities' study and policy/planning proposals in subsequent regulatory proceeding.
  - **Assessment of Common Biases in Gas Utility Decarbonization Studies.** EFG helped the Natural Resources Defense Council review and critique numerous gas industry-funded decarbonization studies across a range of different U.S. states.

### Renewable Gas Potential

- EFG recently was part of a consultant team that critiqued a Michigan RNG potential study on behalf of the Natural Resources Defense Council.

### Building Decarbonization Policy and Economics

- **Vermont Clean Heat Standard.** EFG Principal Chris Neme was one of two authors of the Vermont Energy Action Network's 2021 white paper on the concept of a Clean Heat Standard, which was born out of a nearly year-long multi-stakeholder working group that Chris also co-led (and included the CEO of Vermont Gas). The concept was subsequently turned in to legislation, passed out of both the Vermont House and Vermont Senate, and came within on vote of overriding the Governor's veto. The legislation was recently reintroduced in the current legislative session, with several modifications on which Mr. Neme provided input, as Vermont Senate Bill 5.
- **Other Vermont climate policy whitepapers.** EFG co-led the development of a "Weatherization at Scale" proposal which followed a year of work by a multi-stakeholder working group which EFG Principal Richard Faesy co-led with the CEO of Vermont Gas. We also drafted a whitepaper



for the Vermont Energy Action Network on the concept of a heating and water heating equipment “fee-bate” (sliding scale sales tax based on carbon emissions intensity).

- **Michigan Healthy Climate Plan.** EFG Principal Chris Neme represented the Natural Resources Defense Council (NRDC) in a couple of working groups organized by the state’s Department of Environment, Great Lakes and Energy to develop a state climate plan.
- **Illinois Climate Legislation.** EFG has supported NRDC in developing legislative policy proposals for advancing decarbonization in the state.
- **Customer Economics of Electrification in Chicago.** EFG published a report in November 2022 analyzing the economics and greenhouse gas emission impacts of residential electrification in the city of Chicago. The analysis was based on current and forecast future retail energy prices for gas and electricity; capital costs of heat pumps, heat pump water heaters and other electric and gas appliances; current average gas consumption by end use; performance of high efficiency gas and electric equipment; and various other factors.

### Regulatory Testimony

- **White Paper on shorter-term Depreciation of new gas infrastructure investments (Rhode Island).** EFG drafted a white paper which the Conservation Law Foundation filed with the Rhode Island Public Utilities Commission on the merits of shorter-term (e.g. 20 years) amortization of new gas utility investments to reduce risk of stranded assets in the context of evolving climate policies.
- **Nicor Gas RNG Pilots (Illinois).** EFG filed testimony on behalf of the Environmental Defense Fund in opposition to proposed RNG pilot projects.
- **Northwest gas pipeline (FERC).** EFG drafted a report filed with the U.S. Federal Energy Regulatory Commission, on behalf of the Washington state Attorney General, on the lack of demonstrated need for and adverse environmental consequences of a proposed expansion of an interstate gas pipeline by Gas Transition Northwest (GTN).
- **Northwest Natural Gas hydrogen blending pilot (Oregon).** EFG was recently hired to draft testimony for Sierra Club and other parties to critique a proposed hydrogen blending pilot. Testimony to be filed in December 2022.
- **Illinois and Michigan electrification programs.** EFG has supported – in testimony and then from a technical and programmatic perspective – the development of residential electrification programs. The initial programs were launched through energy efficiency program portfolios. More recently, EFG has filed testimony in electric utility rate cases in Michigan to propose electrification pilots funded through electric rates. The testimony analyzed the customer economics and electric rate impacts of such programs.
- **Fortis BC RNG purchases to offset emissions from new construction of gas heated homes.** EFG was hired by the BC Sustainable Energy Association to critique a recent Fortis proposal to meet provincial requirements for net zero emission new construction by contracting for the amount of RNG any new gas homes would consume and socializing the cost of such purchases across all gas customers. As part of its critique, EFG analyzed the relative customer economics of gas consumption under the proposal to the alternative of efficient all-electric new homes.