

July 9, 2013

The Public Utilities Board  
Attention: Mr. Hollis Singh  
Executive Director and Board Secretary  
400-330 Portage Ave.  
Winnipeg, MB R3C 0C4

Distributed by email

Dear Mr. Singh:

**Re: Supplemental response to Board Order 67/13**

This is a follow-up response from Green Action Centre and our collaborator Pattern Energy to procedural Order 67/13. In our June 28, 2013 response we indicated that we were unable to complete the work plan and draft budget in the allotted time and promised this supplement today.

Our first observation is that we share the deep concern of CAC MB, expressed in a letter earlier today, about the protracted delay in the completion of Manitoba Hydro's DSM potential study. We support their motion to direct Manitoba Hydro to file the study no later than August 16, when other materials are to be filed.

In our June 28th response, we identified seven areas of concern and our intentions with respect to each. These are repeated in italics below. Having reviewed the submissions of MIPUG and CAC and communicated further with Pattern Energy, Power Advisory LLC and Resource Insight Inc., we comment on each.

*A. Green Action Centre proposes to pursue DSM alternatives by again, with CAC, co-sponsoring evidence from Philippe Dunsky, who is well-known to the PUB and previous PUB participants. Mr. Dunsky's work plan and draft budget will be filed with the CAC submission.*

CAC has now submitted a work plan and budget for Mr. Dunsky, whose work is co-sponsored by Green Action Centre. The draft budget total is \$190,000..

*B. The main alternative generation resource is wind. Indeed both Manitoba Hydro and the PUB in Order 67/13 contemplate the production and testing of a number of different scenarios involving wind. Green Action Centre and Pattern Energy hope to identify a wind expert able to guide interrogations and produce evidence on the technical and economic aspects of wind generation and its integration into the grid. Such an expert has yet to be identified.*

Pattern Energy has contacted Power Advisory LLC regarding the possibility of them producing an economic analysis of the wind alternatives. Power Advisory indicates that they were also approached by the PUB to serve as the PUB's wind experts. We have two observations.

1. We can avoid duplication in the area of Power Advisory's expertise if we are able to have close access to them prior to and during their analytical work to identify and discuss issues and areas of concern and perhaps preliminary results to coordinate with the other components of our intervention.
2. We note that Power Advisory's particular strengths appear to lie in economic analysis and structuring of markets. There may remain a gap in the engineering and system-related aspects of wind integration to the grid. It will be important to review the scope of work and expertise of Power Advisory to see if complementary expertise in grid integration for wind is needed.

Note that both of the above will be needed (a) to review Manitoba wind alternatives to, or in combination with, Manitoba Hydro's preferred development plan and (b) to review and evaluate the contract with Minnesota Power and its parent Allete, which includes a provision to "store" wind power generated by Allete's North Dakota wind farm.<sup>1</sup>

*C. Solar-thermal, solar electric, biomass and geothermal are alternative renewable fuels and technologies, whereas natural gas is the most common alternative to electricity in gas-serviced areas. Fuel switching from or to any of these to or from grid electricity will affect Manitoba's domestic load (as well as costs to customers, the gas utility, the electric utility; cash flows into and out of Manitoba; and net global GHGs). Paul Chernick's discussion of Manitoba Hydro's fuel-switching report<sup>2</sup> initiated this topic in the last GRA. It is directly relevant to load forecasting (1.d.), reshaping demand (2.) and socio-economic and environmental impacts (2.i and j.). We intend for Paul Chernick to extend his evidence in the context of assessing alternatives for the NFAT. We will need to connect with Mr. Dunsky to understand which, if any, of these technologies will be included in his evidence, which in turn may depend upon which are considered within Manitoba Hydro's DSM potential study.*

We understand that Mr. Dunsky's DSM review will include customer sited alternatives like geothermal and solar. We have asked Mr. Chernick and Resource Insight, Inc. (RII) to focus on fuel-switching to and from gas heat alternatives and the impacts on costs, load and environmental performance. The RII work plan and budget are attached, as are the qualifications of Mr. Chernick, Ms. Geller and Mr. Griffiths. RII estimates that this portion of their work plan will cost \$65,225.

*D. The PUB approved issue (c) marginal cost comparisons of the PDP and alternatives. In our application, we noted a variety of frames or approaches for determining marginal costs of hydropower, including (a) the long term value of incremental exports, (b) the long-term cost of incremental supply from construction of new hydro generation and associated transmission, (c) medium term cost of incremental supply as reflected in operating and carrying costs/kWh for the first 10-20 years of new supply. We would like clarity on the alternatives and their appropriate application in drawing comparisons between different resource alternatives. We intend for Mr. Chernick to tackle this issue.*

Upon review of the MIPUG and CAC submissions, we have decided to focus on marginal costs only in relation to the fuel switching analysis, which is included in RII's work plan above. Otherwise we look to MIPUG and CAC experts to produce the relevant evidence, which we will test in IRs and cross-examination.

*E. We want to consider the role of alternatives to the PDP in risk mitigation and risk management. We will need to determine if this topic is adequately covered in the other filed proposals.*

We will rely on other interveners and Manitoba Hydro to provide the primary evidence in risk analysis, to be tested in IRs and cross-examination.

*F. Finally we, like other interveners, will be required to understand and assess all relevant issues to make our recommendations at the conclusion of the process, not just those on which we produce evidence. We intend to allocate time to Mr. Paul Chernick to help identify issues, answer questions, provide guidance for written and oral questions and interpret results.*

RII has submitted a work plan and budget for these activities totalling \$33,010 (attached). Mr. Chernick has expertise in most of the areas to be canvassed in the NFAT and will be helping us to review, understand and evaluate other submissions. We wish to reserve the right for him to include comments on other submissions in his oral testimony.

<sup>1</sup> [http://www.mnpower.com/Content/Documents/Company/PressReleases/2012/20120126\\_NewsRelease.pdf](http://www.mnpower.com/Content/Documents/Company/PressReleases/2012/20120126_NewsRelease.pdf)

<sup>2</sup> *Economic, Load, and Environmental Impacts of Fuel Switching in Manitoba* at [https://www.hydro.mb.ca/regulatory\\_affairs/electric/gra\\_2012\\_2013/Appendix\\_26.pdf](https://www.hydro.mb.ca/regulatory_affairs/electric/gra_2012_2013/Appendix_26.pdf)

G. Our budget will also include time for the services of our lawyer Mr. Bill Gange. This will have to be proportionate to the nine weeks of the hearing, in addition to preparation, the paper exchange of questions and answers and evidence beforehand and final summation at the end.


The nearest comparator for the NFAT in terms of complexity and anticipated number of hearing days is Manitoba Hydro's 2010/11 and 2011/12 GRA, which did an extensive review of risk issues associated with Hydros development plans. For that hearing, the cost award for Mr. Gange's time was \$114,458.34. I will thus estimate \$115K as a placeholder figure for Mr. Gange.

### **Work Plan and Budget Summary**

|   |            |
|---|------------|
| A. Philippe Dunsky - DSM alternatives (with CAC)  | \$190,000. |
| B. Power Advisory (PUB witness) +<br>Possible additional witness on system integration              | unknown    |
| C. Paul Chernick (RII) - Fuel switching between electricity and natural gas<br>and implications     | \$65,225.  |
| D. Approaches to marginal costs - MIPUG and CAC witnesses, except for C.                            |            |
| E. Risk and risk mitigation - will rely on other witnesses but review with<br>Mr. Chernick          |            |
| F. Paul Chernick (RII) - expert support for reviewing, interpreting and<br>evaluating all evidence. | \$33,010.  |
| G. Bill Gange - legal support   | \$115,000. |

We trust that this information will be helpful to the PUB in determining how the many issues pertinent to the NFAT can be covered cost-effectively. Again I apologize for the delay in assembling this information.

Sincerely,



Peter Miller  
Vice President of Green Action Centre  
and Policy Committee Chair

### **Attachments:**

Resource Insight Inc. (RII) work plan and budget

Qualifications of Paul Chernick, Susan Geller and Benjamin Griffiths

**Resource Insight Inc. work plan and budget in support of Green Action Centre's intervention in Manitoba Hydro's NFAT**

| Task  | Hours        |              |              | Total      |               |
|---|--------------|--------------|--------------|------------|---------------|
|   | PLC<br>\$185 | SCG<br>\$185 | BWG<br>\$150 | Hours      | \$            |
| <u>General support on all issues</u>  |              |              |              |            |               |
| Participate in Hydro Technical Conferences  | 12           | 12           | 12           | 36         | 6,240         |
| Review Hydro filing and related documents   | 8            | 16           | 8            | 32         | 5,640         |
| Discovery on Hydro, including reviewing responses to other parties' questions and dealing with discovery disputes | 16           | 32           | 16           | 64         | 11,280        |
| Advice and assistance to GAC on issues, cross and briefing  | 30           | 20           | 4            | 54         | 9,850         |
| Support subtotal  |              |              |              |            | 33,010        |
| <u>Evidence on gas-electric fuel-switching with implications and recommendations for the NFAT</u>                 |              |              |              |            |               |
| Detailed review of Hydro's economic and environmental analyses of fuel-switching                                  | 10           | 15           | 5            | 30         | 5,375         |
| Detailed review of Hydro's forecast of significant growth in electric heating use                                 | 5            | 15           | 5            | 25         | 4,450         |
| Independent analysis of cost-effectiveness of fuel-switching  |              |              |              |            |               |
| Estimate marginal costs   | 20           | 20           | 10           | 50         | 8,900         |
| Estimate short- and long-term marginal GHG emissions avoided by exports   | 20           | 10           | 20           | 50         | 8,550         |
| Quantification of environmental costs   | 8            |              | 8            | 16         | 2,680         |
| Additional customer types, technologies and situations  | 10           | 20           | 20           | 50         | 8,550         |
| Policy options for improving fuel choices   |              |              |              |            |               |
| Electric and gas rate designs, incentives, and fees   | 20           | 20           | 10           | 50         | 8,900         |
| Effect on Hydro's retail load forecast  | 5            | 10           | 10           | 25         | 4,275         |
| Respond to discovery  | 10           | 15           | 10           | 35         | 6,125         |
| Prepare for and attend hearing  | 32           |              |              | 32         | 5,920         |
| Travel Expenses, PLC trip to Winnipeg: air, hotel, taxis, meals   |              |              |              |            | 1,500         |
| Testimony subtotal  |              |              |              |            | 65,225        |
| <b>Total</b>  |              |              |              | <b>549</b> | <b>98,235</b> |

# PAUL L. CHERNICK

Resource Insight, Inc.  
5 Water Street  
Arlington, Massachusetts 02476

## SUMMARY OF PROFESSIONAL EXPERIENCE

- 1986–Present* **President, Resource Insight, Inc.** Consults and testifies in utility and insurance economics. Reviews utility supply-planning processes and outcomes: assesses prudence of prior power planning investment decisions, identifies excess generating capacity, analyzes effects of power-pool-pricing rules on equity and utility incentives. Reviews electric-utility rate design. Estimates magnitude and cost of future load growth. Designs and evaluates conservation programs for electric, natural-gas, and water utilities, including hook-up charges and conservation cost recovery mechanisms. Determines avoided costs due to cogenerators. Evaluates cogeneration rate risk. Negotiates cogeneration contracts. Reviews management and pricing of district heating systems. Determines fair profit margins for automobile and workers' compensation insurance lines, incorporating reward for risk, return on investments, and tax effects. Determines profitability of transportation services. Advises regulatory commissions in least-cost planning, rate design, and cost allocation.
- 1981–86* **Research Associate, Analysis and Inference, Inc.** (Consultant, 1980–81). Researched, advised, and testified in various aspects of utility and insurance regulation. Designed self-insurance pool for nuclear decommissioning; estimated probability and cost of insurable events, and rate levels; assessed alternative rate designs. Projected nuclear power plant construction, operation, and decommissioning costs. Assessed reasonableness of earlier estimates of nuclear power plant construction schedules and costs. Reviewed prudence of utility construction decisions. Consulted on utility rate-design issues, including small-power-producer rates; retail natural-gas rates; public-agency electric rates, and comprehensive electric-rate design for a regional power agency. Developed electricity cost allocations between customer classes. Reviewed district-heating-system efficiency. Proposed power-plant performance standards. Analyzed auto-insurance profit requirements. Designed utility-financed, decentralized conservation program. Analyzed cost-effectiveness of transmission lines.
- 1977–81* **Utility Rate Analyst, Massachusetts Attorney General.** Analyzed utility filings and prepared alternative proposals. Participated in rate negotiations, discovery, cross-examination, and briefing. Provided extensive expert testimony before various regulatory agencies. Topics included demand forecasting, rate design, marginal costs, time-of-use rates, reliability issues, power-pool operations, nuclear-power cost projections, power-plant cost-benefit analysis, energy conservation, and alternative-energy development.

## **EDUCATION**

SM, Technology and Policy Program, Massachusetts Institute of Technology, February 1978.

SB, Civil Engineering Department, Massachusetts Institute of Technology, June 1974.

## **HONORS**

Chi Epsilon (Civil Engineering)

Tau Beta Pi (Engineering)

Sigma Xi (Research)

Institute Award, Institute of Public Utilities, 1981.

## **PUBLICATIONS**

“Environmental Regulation in the Changing Electric-Utility Industry” (with Rachel Brailove), *International Association for Energy Economics Seventeenth Annual North American Conference* (96–105). Cleveland, Ohio: USAEE. 1996.

“The Price is Right: Restructuring Gain from Market Valuation of Utility Generating Assets” (with Jonathan Wallach), *International Association for Energy Economics Seventeenth Annual North American Conference* (345–352). Cleveland, Ohio: USAEE. 1996.

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“Monetizing Externalities in Utility Regulations: The Role of Control Costs” (with Emily Caverhill), in *Proceedings from the NARUC National Conference on Environmental Externalities*, October 1990.

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“Analysis of Residential Fuel Switching as an Electric Conservation Option” (with Eric Espenhorst and Ian Goodman), in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

“A Utility Planner’s Checklist for Least-Cost Efficiency Investment” (with John Plunkett) in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

*Environmental Costs of Electricity* (with Richard Ottinger et al.). Oceana; Dobbs Ferry, New York: September 1990.

“Demand-Side Bidding: A Viable Least-Cost Resource Strategy” (with John Plunkett and Jonathan Wallach), in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

“Incorporating Environmental Externalities in Evaluation of District Heating Options” (with Emily Caverhill), *Proceedings from the International District Heating and Cooling Association 81st Annual Conference*, June 1990.

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## REPORTS

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## **PRESENTATIONS**

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“Cost Recovery and Utility Incentives.” Day-long presentation as part of the Demand-Side-Management Training Institute’s workshop, “DSM for Public Interest Groups,” October 1993.

“Cost Allocation for Utility Ratemaking.” With Susan Geller. Day-long workshop for the staff of the Connecticut Department of Public Utility Control, October 1993.

“Comparing and Integrating DSM with Supply.” Day-long presentation as part of the Demand-Side-Management Training Institute’s workshop, “DSM for Public Interest Groups,” October 1993.

“DSM Cost Recovery and Rate Impacts.” Presentation as part of “Effective DSM Collaborative Processes,” a week-long training session for Ohio DSM advocates sponsored by the Ohio Office of Energy Efficiency, August 1993.

“Cost-Effectiveness Analysis.” Presentation as part of “Effective DSM Collaborative Processes,” a week-long training session for Ohio DSM advocates sponsored by the Ohio Office of Energy Efficiency, August 1993.

“Environmental Externalities: Current Approaches and Potential Implications for District Heating and Cooling” (with R. Brailove), International District Heating and Cooling Association 84th Annual Conference; June 1993.

“Using the Costs of Required Controls to Incorporate the Costs of Environmental Externalities in Non-Environmental Decision-Making.” Presentation at the American Planning Association 1992 National Planning Conference; presentation cosponsored by the Edison Electric Institute. May 1992.

“Cost Recovery and Decoupling” and “The Clean Air Act and Externalities in Utility Resource Planning” panels (session leader), DSM Advocacy Workshop; April 15 1992.

“Overview of Integrated Resources Planning Procedures in South Carolina and Critique of South Carolina Demand Side Management Programs,” Energy Planning Workshops; Columbia, S.C.; October 21 1991;

“Least Cost Planning and Gas Utilities.” Conservation Law Foundation Utility Energy Efficiency Advocacy Workshop; Boston, February 28 1991.

“Least-Cost Planning in a Multi-Fuel Context,” NARUC Forum on Gas Integrated Resource Planning; Washington, D.C., February 24 1991.

“Accounting for Externalities: Why, Which and How?” Understanding Massachusetts’ New Integrated Resource Management Rules; Needham, Massachusetts, November 9 1990.

“Increasing Market Share Through Energy Efficiency.” New England Gas Association Gas Utility Managers’ Conference; Woodstock, Vermont, September 10 1990.

“Quantifying and Valuing Environmental Externalities.” Presentation at the Lawrence Berkeley Laboratory Training Program for Regulatory Staff, sponsored by the U.S. Department of Energy’s Least-Cost Utility Planning Program; Berkeley, California, February 2 1990;

“Conservation in the Future of Natural Gas Local Distribution Companies,” District of Columbia Natural Gas Seminar; Washington, D.C., May 23 1989.

“Conservation and Load Management for Natural Gas Utilities,” Massachusetts Natural Gas Council; Newton, Massachusetts, April 3 1989.

New England Conference of Public Utilities Commissioners, Environmental Externalities Workshop; Portsmouth, New Hampshire, January 22–23 1989.

“Assessment and Valuation of External Environmental Damages,” New England Utility Rate Forum; Plymouth, Massachusetts, October 11 1985; “Lessons from Massachusetts on Long Term Rates for QFs”.

“Reviewing Utility Supply Plans,” Massachusetts Energy Facilities Siting Council; Boston, Massachusetts, May 30 1985.

“Power Plant Performance,” National Association of State Utility Consumer Advocates; Williamstown, Massachusetts, August 13 1984.

“Utility Rate Shock,” National Conference of State Legislatures; Boston, Massachusetts, August 6 1984.

“Review and Modification of Regulatory and Rate Making Policy,” National Governors’ Association Working Group on Nuclear Power Cost Overruns; Washington, D.C., June 20 1984.

“Review and Modification of Regulatory and Rate Making Policy,” Annual Meeting of the American Association for the Advancement of Science, Session on Monitoring for Risk Management; Detroit, Michigan, May 27 1983.

### **ADVISORY ASSIGNMENTS TO REGULATORY COMMISSIONS**

District of Columbia Public Service Commission, Docket No. 834, Phase II; Least-cost planning procedures and goals; August 1987 to March 1988.

Connecticut Department of Public Utility Control, Docket No. 87-07-01, Phase 2; Rate design and cost allocations; March 1988 to June 1989.

### **EXPERT TESTIMONY**

1. **MEFSC 78-12/MDPU 19494**, Phase I; Boston Edison 1978 forecast; Massachusetts Attorney General; June 12 1978.

Appliance penetration projections, price elasticity, econometric commercial forecast, peak demand forecast. Joint testimony with Susan C. Geller.

2. **MEFSC 78-17**; Northeast Utilities 1978 forecast; Massachusetts Attorney General; September 29 1978.

Specification of economic/demographic and industrial models, appliance efficiency, commercial model structure and estimation.

3. **MEFSC 78-33**; Eastern Utilities Associates 1978 forecast; Massachusetts Attorney General; November 27 1978.

Household size, appliance efficiency, appliance penetration, price elasticity, commercial forecast, industrial trending, peak demand forecast.

4. **MDPU 19494**; Phase II; Boston Edison Company Construction Program; Massachusetts Attorney General; April 1 1979.

Review of numerous aspects of the 1978 demand forecasts of nine New England electric utilities, constituting 92% of projected regional demand growth, and of the NEPOOL demand forecast. Joint testimony with S.C. Geller.

5. **MDPU 19494**; Phase II; Boston Edison Company Construction Program; Massachusetts Attorney General; April 1 1979.

Reliability, capacity planning, capability responsibility allocation, customer generation, co-generation rates, reserve margins, operating reserve allocation. Joint testimony with S. Finger.

6. **ASLB, NRC 50-471**; Pilgrim Unit 2, Boston Edison Company; Commonwealth of Massachusetts; June 29 1979.

Review of the Oak Ridge National Laboratory and NEPOOL demand forecast models; cost-effectiveness of oil displacement; nuclear economics. Joint testimony with S.C. Geller.

7. **MDPU 19845**; Boston Edison Time-of-Use Rate Case; Massachusetts Attorney General; December 4 1979.

Critique of utility marginal cost study and proposed rates; principles of marginal cost principles, cost derivation, and rate design; options for reconciling costs and revenues. Joint testimony with S.C. Geller. Testimony eventually withdrawn due to delay in case.

8. **MDPU 20055**; Petition of Eastern Utilities Associates, New Bedford G. & E., and Fitchburg G. & E. to purchase additional shares of Seabrook Nuclear Plant; Massachusetts Attorney General; January 23 1980.

Review of demand forecasts of three utilities purchasing Seabrook shares; Seabrook power costs, including construction cost, completion date, capacity factor, O&M expenses, interim replacements, reserves and uncertainties; alternative energy sources, including conservation, cogeneration, rate reform, solar, wood and coal conversion.

9. **MDPU 20248**; Petition of MMWEC to Purchase Additional Share of Seabrook Nuclear Plant; Massachusetts Attorney General; June 2 1980.

Nuclear power costs; update and extension of MDPU 20055 testimony.

10. **MDPU 200**; Massachusetts Electric Company Rate Case; Massachusetts Attorney General; June 16 1980.

Rate design; declining blocks, promotional rates, alternative energy, demand charges, demand ratchets; conservation: master metering, storage heating, efficiency standards, restricting resistance heating.

- 11. MEFSC 79-33;** Eastern Utilities Associates 1979 Forecast; Massachusetts Attorney General; July 16 1980.

Customer projections, consistency issues, appliance efficiency, new appliance types, commercial specifications, industrial data manipulation and trending, sales and resale.

- 12. MDPU 243;** Eastern Edison Company Rate Case; Massachusetts Attorney General; August 19 1980.

Rate design: declining blocks, promotional rates, alternative energy, master metering.

- 13. Texas PUC 3298;** Gulf States Utilities Rate Case; East Texas Legal Services; August 25 1980.

Inter-class revenue allocations, including production plant in-service, O&M, CWIP, nuclear fuel in progress, amortization of canceled plant residential rate design; interruptible rates; off-peak rates. Joint testimony with M. B. Meyer.

- 14. MEFSC 79-1;** Massachusetts Municipal Wholesale Electric Company Forecast; Massachusetts Attorney General; November 5 1980.

Cost comparison methodology; nuclear cost estimates; cost of conservation, co-generation, and solar.

- 15. MDPU 472;** Recovery of Residential Conservation Service Expenses; Massachusetts Attorney General; December 12 1980.

Conservation as an energy source; advantages of per-kWh allocation over per-customer-month allocation.

- 16. MDPU 535;** Regulations to Carry Out Section 210 of PURPA; Massachusetts Attorney General; January 26 1981 and February 13 1981.

Filing requirements, certification, qualifying facility (QF) status, extent of coverage, review of contracts; energy rates; capacity rates; extra benefits of QFs in specific areas; wheeling; standardization of fees and charges.

- 17. MEFSC 80-17;** Northeast Utilities 1980 Forecast; Massachusetts Attorney General; March 12 1981 (not presented).

Specification process, employment, electric heating promotion and penetration, commercial sales model, industrial model specification, documentation of price forecasts and wholesale forecast.

- 18. MDPU 558;** Western Massachusetts Electric Company Rate Case; Massachusetts Attorney General; May 1981.



Rate design including declining blocks, marginal cost conservation impacts, and promotional rates. Conservation, including terms and conditions limiting renewable, cogeneration, small power production; scope of current conservation program; efficient insulation levels; additional conservation opportunities.

- 19. MDPU 1048; Boston Edison Plant Performance Standards; Massachusetts Attorney General; May 7 1982.**

Critique of company approach, data, and statistical analysis; description of comparative and absolute approaches to standard-setting; proposals for standards and reporting requirements.

- 20. DCPSC FC785; Potomac Electric Power Rate Case; DC People's Counsel; July 29 1982.**

Inter-class revenue allocations, including generation, transmission, and distribution plant classification; fuel and O&M classification; distribution and service allocators. Marginal cost estimation, including losses.

- 21. NHPUC DE1-312; Public Service of New Hampshire-Supply and Demand; Conservation Law Foundation, et al.; October 8 1982.**

Conservation program design, ratemaking, and effectiveness. Cost of power from Seabrook nuclear plant, including construction cost and duration, capacity factor, O&M, replacements, insurance, and decommissioning.

- 22. Massachusetts Division of Insurance; Hearing to Fix and Establish 1983 Automobile Insurance Rates; Massachusetts Attorney General; October 1982.**

Profit margin calculations, including methodology, interest rates, surplus flow, tax flows, tax rates, and risk premium.

- 23. Illinois Commerce Commission 82-0026; Commonwealth Edison Rate Case; Illinois Attorney General; October 15 1982.**

Review of Cost-Benefit Analysis for nuclear plant. Nuclear cost parameters (construction cost, O&M, capital additions, useful life, capacity factor), risks, discount rates, evaluation techniques.

- 24. New Mexico PSC 1794; Public Service of New Mexico Application for Certification; New Mexico Attorney General; May 10 1983.**

Review of Cost-Benefit Analysis for transmission line. Review of electricity price forecast, nuclear capacity factors, load forecast. Critique of company ratemaking proposals; development of alternative ratemaking proposal.

- 25. Connecticut Public Utility Control Authority 830301; United Illuminating Rate Case; Connecticut Consumers Counsel; June 17 1983.**

Cost of Seabrook nuclear power plants, including construction cost and duration, capacity factor, O&M, capital additions, insurance and decommissioning.

- 26. MDPU 1509; Boston Edison Plant Performance Standards; Massachusetts Attorney General; July 15 1983.**

Critique of company approach and statistical analysis; regression model of nuclear capacity factor; proposals for standards and for standard-setting methodologies.

- 27. Massachusetts Division of Insurance; Hearing to Fix and Establish 1984 Automobile Insurance Rates; Massachusetts Attorney General; October 1983.**

Profit margin calculations, including methodology, interest rates.

- 28. Connecticut Public Utility Control Authority 83-07-15; Connecticut Light and Power Rate Case; Alloy Foundry; October 3 1983.**

Industrial rate design. Marginal and embedded costs; classification of generation, transmission, and distribution expenses; demand versus energy charges.

- 29. MEFSC 83-24; New England Electric System Forecast of Electric Resources and Requirements; Massachusetts Attorney General; November 14 1983, Rebuttal, February 2 1984.**

Need for transmission line. Status of supply plan, especially Seabrook 2. Review of interconnection requirements. Analysis of cost-effectiveness for power transfer, line losses, generation assumptions.

- 30. Michigan PSC U-7775; Detroit Edison Fuel Cost Recovery Plan; Public Interest Research Group in Michigan; February 21 1984.**

Review of proposed performance target for new nuclear power plant. Formulation of alternative proposals.

- 31. MDPU 84-25; Western Massachusetts Electric Company Rate Case; Massachusetts Attorney General; April 6 1984.**

Need for Millstone 3. Cost of completing and operating unit, cost-effectiveness compared to alternatives, and its effect on rates. Equity and incentive problems created by CWIP. Design of Millstone 3 phase-in proposals to protect ratepayers: limitation of base-rate treatment to fuel savings benefit of unit.

- 32. MDPU 84-49 and 84-50; Fitchburg Gas & Electric Financing Case; Massachusetts Attorney General; April 13 1984.**

Cost of completing and operating Seabrook nuclear units. Probability of completing Seabrook 2. Recommendations regarding FG&E and MDPU actions with respect to Seabrook.

- 33. Michigan PSC U-7785; Consumers Power Fuel Cost Recovery Plan; Public Interest Research Group in Michigan; April 16 1984.**

Review of proposed performance targets for two existing and two new nuclear power plants. Formulation of alternative policy.

- 34. FERC ER81-749-000 and ER82-325-000; Montaup Electric Rate Cases; Massachusetts Attorney General; April 27 1984.**

Prudence of Montaup and Boston Edison in decisions regarding Pilgrim 2 construction: Montaup's decision to participate, the Utilities' failure to review their earlier analyses and assumptions, Montaup's failure to question Edison's decisions, and the utilities' delay in canceling the unit.

- 35. Maine PUC 84-113; Seabrook 1 Investigation; Maine Public Advocate; September 13 1984.**

Cost of completing and operating Seabrook Unit 1. Probability of completing Seabrook 1. Comparison of Seabrook to alternatives. Rate effects. Recommendations regarding utility and PUC actions with respect to Seabrook.

- 36. MDPU 84-145; Fitchburg Gas and Electric Rate Case; Massachusetts Attorney General; November 6 1984.**

Prudence of Fitchburg and Public Service of New Hampshire in decision regarding Seabrook 2 construction: FGE's decision to participate, the utilities' failure to review their earlier analyses and assumptions, FGE's failure to question PSNH's decisions, and utilities' delay in halting construction and canceling the unit. Review of literature, cost and schedule estimate histories, cost-benefit analyses, and financial feasibility.

- 37. Pennsylvania PUC R-842651; Pennsylvania Power and Light Rate Case; Pennsylvania Consumer Advocate; November 1984.**

Need for Susquehanna 2. Cost of operating unit, power output, cost-effectiveness compared to alternatives, and its effect on rates. Design of phase-in and excess capacity proposals to protect ratepayers: limitation of base-rate treatment to fuel savings benefit of unit.

- 38. NHPUC 84-200; Seabrook Unit 1 Investigation; New Hampshire Public Advocate; November 15 1984.**

Cost of completing and operating Seabrook Unit 1. Probability of completing Seabrook 1. Comparison of Seabrook to alternatives. Rate and financial effects.

- 39. Massachusetts Division of Insurance; Hearing to Fix and Establish 1985 Automobile Insurance Rates; Massachusetts Attorney General; November 1984.**

Profit margin calculations, including methodology and implementation.

- 40. MDPU 84-152; Seabrook Unit 1 Investigation; Massachusetts Attorney General; December 12 1984.**

Cost of completing and operating Seabrook. Probability of completing Seabrook 1. Seabrook capacity factors.

- 41. Maine PUC 84-120; Central Maine Power Rate Case; Maine PUC Staff; December 11 1984.**

Prudence of Central Maine Power and Boston Edison in decisions regarding Pilgrim 2 construction: CMP's decision to participate, the utilities' failure to review their earlier analyses and assumptions, CMP's failure to question Edison's decisions, and the utilities' delay in canceling the unit. Prudence of CMP in the planning and investment in Sears Island nuclear and coal plants. Review of literature, cost and schedule estimate histories, cost-benefit analyses, and financial feasibility.

- 42. Maine PUC 84-113; Seabrook 2 Investigation; Maine PUC Staff; December 14 1984.**

Prudence of Maine utilities and Public Service of New Hampshire in decisions regarding Seabrook 2 construction: decisions to participate and to increase ownership share, the utilities' failure to review their earlier analyses and assumptions, failure to question PSNH's decisions, and the utilities' delay in halting construction and canceling the unit. Review of literature, cost and schedule estimate histories, cost-benefit analyses, and financial feasibility.

- 43. MDPU 1627; Massachusetts Municipal Wholesale Electric Company Financing Case; Massachusetts Executive Office of Energy Resources; January 14 1985.**

Cost of completing and operating Seabrook nuclear unit 1. Cost of conservation and other alternatives to completing Seabrook. Comparison of Seabrook to alternatives.

- 44. Vermont PSB 4936; Millstone 3; Costs and In-Service Date; Vermont Department of Public Service; January 21 1985.**

Construction schedule and cost of completing Millstone Unit 3.

- 45. MDPU 84-276; Rules Governing Rates for Utility Purchases of Power from Qualifying Facilities; Massachusetts Attorney General; March 25 1985, and October 18 1985.**

Institutional and technological advantages of Qualifying Facilities. Potential for QF development. Goals of QF rate design. Parity with other power sources. Security requirements. Projecting avoided costs. Capacity credits. Pricing options. Line loss corrections.

- 46. MDPU 85-121; Investigation of the Reading Municipal Light Department; Wilmington (MA) Chamber of Commerce; November 12 1985.**

Calculation on return on investment for municipal utility. Treatment of depreciation and debt for ratemaking. Geographical discrimination in street-lighting rates. Relative size of voluntary payments to Reading and other towns. Surplus and disinvestment. Revenue allocation.

- 47. Massachusetts Division of Insurance; Hearing to Fix and Establish 1986 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; November 1985.**

Profit margin calculations, including methodology, implementation, modeling of investment balances, income, and return to shareholders.

- 48. New Mexico PSC 1833, Phase II; El Paso Electric Rate Case; New Mexico Attorney General; December 23 1985.**

Nuclear decommissioning fund design. Internal and external funds; risk and return; fund accumulation, recommendations. Interim performance standard for Palo Verde nuclear plant.

- 49. Pennsylvania PUC R-850152; Philadelphia Electric Rate Case; Utility Users Committee and University of Pennsylvania; January 14 1986.**

Limerick 1 rate effects. Capacity benefits, fuel savings, operating costs, capacity factors, and net benefits to ratepayers. Design of phase-in proposals.

- 50. MDPU 85-270; Western Massachusetts Electric Rate Case; Massachusetts Attorney General; March 19 1986.**

Prudence of Northeast Utilities in generation planning related to Millstone 3 construction: decisions to start and continue construction, failure to reduce ownership share, failure to pursue alternatives. Review of industry literature, cost and schedule histories, and retrospective cost-benefit analyses.

- 51. Pennsylvania PUC R-850290; Philadelphia Electric Auxiliary Service Rates; Albert Einstein Medical Center, University of Pennsylvania and AMTRAK; March 24 1986.**

Review of utility proposals for supplementary and backup rates for small power producers and cogenerators. Load diversity, cost of peaking capacity, value of generation, price signals, and incentives. Formulation of alternative supplementary rate.

- 52. New Mexico PSC 2004; Public Service of New Mexico, Palo Verde Issues; New Mexico Attorney General; May 7 1986.**

Recommendations for Power Plant Performance Standards for Palo Verde nuclear units 1, 2, and 3.

- 53. Illinois Commerce Commission 86-0325; Iowa-Illinois Gas and Electric Co. Rate Investigation; Illinois Office of Public Counsel; August 13 1986.**

Determination of excess capacity based on reliability and economic concerns. Identification of specific units associated with excess capacity. Required reserve margins.

- 54. New Mexico PSC 2009; El Paso Electric Rate Moderation Program; New Mexico Attorney General; August 18 1986. (Not presented).**

Prudence of EPE in generation planning related to Palo Verde nuclear construction, including failure to reduce ownership share and failure to pursue alternatives. Review of industry literature, cost and schedule histories, and retrospective cost-benefit analyses.

Recommendation for rate-base treatment; proposal of power plant performance standards.

- 55. City of Boston, Public Improvements Commission;** Transfer of Boston Edison District Heating Steam System to Boston Thermal Corporation; Boston Housing Authority; December 18 1986.

History and economics of steam system; possible motives of Boston Edison in seeking sale; problems facing Boston Thermal; information and assurances required prior to Commission approval of transfer.

- 56. Massachusetts Division of Insurance;** Hearing to Fix and Establish 1987 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; December 1986 and January 1987.

Profit margin calculations, including methodology, implementation, derivation of cash flows, installment income, income tax status, and return to shareholders.

- 57. MDPU 87-19;** Petition for Adjudication of Development Facilitation Program; Hull (MA) Municipal Light Plant; January 21 1987.

Estimation of potential load growth; cost of generation, transmission, and distribution additions. Determination of hook-up charges. Development of residential load estimation procedure reflecting appliance ownership, dwelling size.

- 58. New Mexico PSC 2004;** Public Service of New Mexico Nuclear Decommissioning Fund; New Mexico Attorney General; February 19 1987.

Decommissioning cost and likely operating life of nuclear plants. Review of utility funding proposal. Development of alternative proposal. Ratemaking treatment.

- 59. MDPU 86-280;** Western Massachusetts Electric Rate Case; Massachusetts Energy Office; March 9 1987.

Marginal cost rate design issues. Superiority of long-run marginal cost over short-run marginal cost as basis for rate design. Relationship of consumer reaction, utility planning process, and regulatory structure to rate design approach. Implementation of short-run and long-run rate designs. Demand versus energy charges, economic development rates, spot pricing.

- 60. Massachusetts Division of Insurance 87-9;** 1987 Workers' Compensation Rate Filing; State Rating Bureau; May 1987.

Profit margin calculations, including methodology, implementation, surplus requirements, investment income, and effects of 1986 Tax Reform Act.

- 61. Texas PUC 6184;** Economic Viability of South Texas Nuclear Plant #2; Committee for Consumer Rate Relief; August 17 1987.

STNP operating parameter projections; capacity factor, O&M, capital additions, decommissioning, useful life. STNP 2 cost and schedule projections. Potential for conservation.

- 62. Minnesota PUC ER-015/GR-87-223;** Minnesota Power Rate Case; Minnesota Department of Public Service; August 17 1987.

Excess capacity on MP system; historical, current, and projected. Review of MP planning prudence prior to and during excess; efforts to sell capacity. Cost of excess capacity. Recommendations for ratemaking treatment.

- 63. Massachusetts Division of Insurance 87-27;** 1988 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; September 2 1987. Rebuttal October 8 1987.

Underwriting profit margins. Effect of 1986 Tax Reform Act. Biases in calculation of average margins.

- 64. MDPU 88-19;** Power Sales Contract from Riverside Steam and Electric to Western Massachusetts Electric; Riverside Steam and Electric; November 4 1987.

Comparison of risk from QF contract and utility avoided cost sources. Risk of oil dependence. Discounting cash flows to reflect risk.

- 65. Massachusetts Division of Insurance 87-53;** 1987 Workers' Compensation Rate Refiling; State Rating Bureau; December 14 1987.

Profit margin calculations, including updating of data, compliance with Commissioner's order, treatment of surplus and risk, interest rate calculation, and investment tax rate calculation.

- 66. Massachusetts Division of Insurance;** 1987 and 1988 Automobile Insurance Remand Rates; Massachusetts Attorney General and State Rating Bureau; February 5 1988.

Underwriting profit margins. Provisions for income taxes on finance charges. Relationships between allowed and achieved margins, between statewide and nationwide data, and between profit allowances and cost projections.

- 67. MDPU 86-36;** Investigation into the Pricing and Ratemaking Treatment to be Afforded New Electric Generating Facilities which are not Qualifying Facilities; Conservation Law Foundation; May 2 1988.

Cost recovery for utility conservation programs. Compensating for lost revenues. Utility incentive structures.

- 68. MDPU 88-123;** Petition of Riverside Steam & Electric Company; Riverside Steam and Electric Company; May 18 1988, and November 8 1988.

Estimation of avoided costs of Western Massachusetts Electric Company. Nuclear capacity factor projections and effects on avoided costs. Avoided cost of energy interchange and power plant life extensions. Differences between median and expected oil prices. Salvage value of cogeneration facility. Off-system energy purchase projections. Reconciliation of avoided cost projection.

- 69. MDPU 88-67; Boston Gas Company; Boston Housing Authority; June 17 1988.**

Estimation of annual avoidable costs, 1988 to 2005, and levelized avoided costs. Determination of cost recovery and carrying costs for conservation investments. Standards for assessing conservation cost-effectiveness. Evaluation of cost-effectiveness of utility funding of proposed natural gas conservation measures.

- 70. Rhode Island PUC Docket 1900; Providence Water Supply Board Tariff Filing; Conservation Law Foundation, Audubon Society of Rhode Island, and League of Women Voters of Rhode Island; June 24 1988.**

Estimation of avoidable water supply costs. Determination of costs of water conservation. Conservation cost-benefit analysis.

- 71. Massachusetts Division of Insurance 88-22; 1989 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; Profit Issues, August 12 1988, supplemented August 19 1988; Losses and Expenses, September 16 1988.**

Underwriting profit margins. Effects of 1986 Tax Reform Act. Taxation of common stocks. Lag in tax payments. Modeling risk and return over time. Treatment of finance charges. Comparison of projected and achieved investment returns.

- 72. Vermont PSB 5270, Module 6; Investigation into Least-Cost Investments, Energy Efficiency, Conservation, and the Management of Demand for Energy; Conservation Law Foundation, Vermont Natural Resources Council, and Vermont Public Interest Research Group; September 26 1988.**

Cost recovery for utility conservation programs. Compensation of utilities for revenue losses and timing differences. Incentive for utility participation.

- 73. Vermont House of Representatives, Natural Resources Committee; House Act 130; "Economic Analysis of Vermont Yankee Retirement"; Vermont Public Interest Research Group; February 21 1989.**

Projection of capacity factors, operating and maintenance expense, capital additions, overhead, replacement power costs, and net costs of Vermont Yankee.

- 74. MDPU 88-67, Phase II; Boston Gas Company Conservation Program and Rate Design; Boston Gas Company; March 6 1989.**

Estimation of avoided gas cost; treatment of non-price factors; estimation of externalities; identification of cost-effective conservation.



- 75. Vermont PSB 5270;** Status Conference on Conservation and Load Management Policy Settlement; Central Vermont Public Service, Conservation Law Foundation, Vermont Natural Resources Council, Vermont Public Interest Research Group, and Vermont Department of Public Service; May 1 1989.

Cost-benefit test for utility conservation programs. Role of externalities. Cost recovery concepts and mechanisms. Resource allocations, cost allocations, and equity considerations. Guidelines for conservation preapproval mechanisms. Incentive mechanisms and recovery of lost revenues.

- 76. Boston Housing Authority Court 05099;** Gallivan Boulevard Task Force vs. Boston Housing Authority, et al.; Boston Housing Authority; June 16 1989.

Effect of master-metering on consumption of natural gas and electricity. Legislative and regulatory mandates regarding conservation.

- 77. MDPU 89-100;** Boston Edison Rate Case; Massachusetts Energy Office; June 30 1989.

Prudence of BECo's decision to spend \$400 million from 1986–88 on returning the Pilgrim nuclear power plant to service. Projections of nuclear capacity factors, O&M, capital additions, and overhead. Review of decommissioning cost, tax effect of abandonment, replacement power cost, and plant useful life estimates. Requirements for prudence and used-and-useful analyses.

- 78. MDPU 88-123;** Petition of Riverside Steam and Electric Company; Riverside Steam and Electric; July 24 1989. Rebuttal, October 3 1989.

Reasonableness of Northeast Utilities' 1987 avoided cost estimates. Projections of nuclear capacity factors, economy purchases, and power plant operating life. Treatment of avoidable energy and capacity costs and of off-system sales. Expected versus reference fuel prices.

- 79. MDPU 89-72;** Statewide Towing Association, Police-Ordered Towing Rates; Massachusetts Automobile Rating Bureau; September 13 1989.

Review of study supporting proposed increase in towing rates. Critique of study sample and methodology. Comparison to competitive rates. Supply of towing services. Effects of joint products and joint sales on profitability of police-ordered towing. Joint testimony with I. Goodman.

- 80. Vermont PSB 5330;** Application of Vermont Utilities for Approval of a Firm Power and Energy Contract with Hydro-Quebec; Conservation Law Foundation, Vermont Natural Resources Council, Vermont Public Interest Research Group; December 19 1989. Surrebuttal February 6 1990.

Analysis of a proposed 450-MW, 20 year purchase of Hydro-Quebec power by twenty-four Vermont utilities. Comparison to efficiency investment in Vermont, including potential for efficiency savings. Analysis of Vermont electric energy supply. Identification of possible improvements to proposed contract.

Critique of conservation potential analysis. Planning risk of large supply additions. Valuation of environmental externalities.

- 81. MDPU 89-239; Inclusion of Externalities in Energy Supply Planning, Acquisition and Dispatch for Massachusetts Utilities; December 1989; April 1990; May 1990.**

Critique of Division of Energy Resources report on externalities. Methodology for evaluating external costs. Proposed values for environmental and economic externalities of fuel supply and use.

- 82. California PUC; Incorporation of Environmental Externalities in Utility Planning and Pricing; Coalition of Energy Efficient and Renewable Technologies; February 21 1990.**

Approaches for valuing externalities for inclusion in setting power purchase rates. Effect of uncertainty on assessing externality values.

- 83. Illinois Commerce Commission Docket 90-0038; Proceeding to Adopt a Least Cost Electric Energy Plan for Commonwealth Edison Company; City of Chicago; May 25 1990. Joint rebuttal testimony with David Birr, August 14 1990.**

Problems in Commonwealth Edison's approach to demand-side management. Potential for cost-effective conservation. Valuing externalities in least-cost planning.

- 84. Maryland PSC 8278; Adequacy of Baltimore Gas & Electric's Integrated Resource Plan; Maryland Office of People's Counsel; September 18 1990.**

Rationale for demand-side management, and BG&E's problems in approach to DSM planning. Potential for cost-effective conservation. Valuation of environmental externalities. Recommendations for short-term DSM program priorities.

- 85. Indiana Utility Regulatory Commission; Integrated Resource Planning Docket; Indiana Office of Utility Consumer Counselor; November 1 1990.**

Integrated resource planning process and methodology, including externalities and screening tools. Incentives, screening, and evaluation of demand-side management. Potential of resource bidding in Indiana.

- 86. MDPU 89-141, 90-73, 90-141, 90-194, and 90-270; Preliminary Review of Utility Treatment of Environmental Externalities in October QF Filings; Boston Gas Company; November 5 1990.**

Generic and specific problems in Massachusetts utilities' RFPs with regard to externality valuation requirements. Recommendations for corrections.

- 87. MEFSC 90-12/90-12A; Adequacy of Boston Edison Proposal to Build Combined-Cycle Plant; Conservation Law Foundation; December 14 1990.**

Problems in Boston Edison's treatment of demand-side management, supply option analysis, and resource planning. Recommendations of mitigation options.

- 88. Maine PUC 90-286; Adequacy of Conservation Program of Bangor Hydro Electric; Penobscot River Coalition; February 19 1991.**

Role of utility-sponsored DSM in least-cost planning. Bangor Hydro's potential for cost-effective conservation. Problems with Bangor Hydro's assumptions about customer investment in energy efficiency measures.

- 89. Virginia State Corporation Commission PUE900070; Order Establishing Commission Investigation; Southern Environmental Law Center; March 6 1991.**

Role of utilities in promoting energy efficiency. Least-cost planning objectives of and resource acquisition guidelines for DSM. Ratemaking considerations for DSM investments.

- 90. MDPU 90-261-A; Economics and Role of Fuel-Switching in the DSM Program of the Massachusetts Electric Company; Boston Gas Company; April 17 1991.**

Role of fuel-switching in utility DSM programs and specifically in Massachusetts Electric's. Establishing comparable avoided costs and comparison of electric and gas system costs. Updated externality values.

- 91. Private arbitration; Massachusetts Refusetech Contractual Request for Adjustment to Service Fee; Massachusetts Refusetech; May 13 1991.**

NEPCo rates for power purchases from the NESWC plant. Fuel price and avoided cost projections vs. realities.

- 92. Vermont PSB 5491; Cost-Effectiveness of Central Vermont's Commitment to Hydro Quebec Purchases; Conservation Law Foundation; July 19 1991.**

Changes in load forecasts and resale markets since approval of HQ purchases. Effect of HQ purchase on DSM.

- 93. South Carolina PSC 91-216-E; Cost Recovery of Duke Power's DSM Expenditures; South Carolina Department of Consumer Affairs; September 13 1991. Surrebuttal October 2 1991.**

Problems with conservation plans of Duke Power, including load building, cream skimming, and inappropriate rate designs.

- 94. Maryland PSC 8241, Phase II; Review of Baltimore Gas & Electric's Avoided Costs; Maryland Office of People's Counsel; September 19 1991.**

Development of direct avoided costs for DSM. Problems with BG&E's avoided costs and DSM screening. Incorporation of environmental externalities.

- 95. Bucksport Planning Board;** AES/Harriman Cove Shoreland Zoning Application; Conservation Law Foundation and Natural Resources Council of Maine; October 1 1991.

New England's power surplus. Costs of bringing AES/Harriman Cove on line to back out existing generation. Alternatives to AES.

- 96. MDPU 91-131;** Update of Externalities Values Adopted in Docket 89-239; Boston Gas Company; October 4 1991. Rebuttal, December 13 1991.

Updates on pollutant externality values. Addition of values for chlorofluorocarbons, air toxics, thermal pollution, and oil import premium. Review of state regulatory actions regarding externalities.

- 97. Florida PSC 910759;** Petition of Florida Power Corporation for Determination of Need for Proposed Electrical Power Plant and Related Facilities; Floridians for Responsible Utility Growth; October 21 1991.

Florida Power's obligation to pursue integrated resource planning and failure to establish need for proposed facility. Methods to increase scope and scale of demand-side investment.

- 98. Florida PSC 910833-EI;** Petition of Tampa Electric Company for a Determination of Need for Proposed Electrical Power Plant and Related Facilities; Floridians for Responsible Utility Growth; October 31 1991.

Tampa Electric's obligation to pursue integrated resource planning and failure to establish need for proposed facility. Methods to increase scope and scale of demand-side investment.

- 99. Pennsylvania PUC I-900005, R-901880;** Investigation into Demand Side Management by Electric Utilities; Pennsylvania Energy Office; January 10 1992.

Appropriate cost recovery mechanism for Pennsylvania utilities. Purpose and scope of direct cost recovery, lost revenue recovery, and incentives.

- 100. South Carolina PSC 91-606-E;** Petition of South Carolina Electric and Gas for a Certificate of Public Convenience and Necessity for a Coal-Fired Plant; South Carolina Department of Consumer Affairs; January 20 1992.

Justification of plant certification under integrated resource planning. Failures in SCE&G's DSM planning and company potential for demand-side savings.

- 101. MDPU 92-92;** Adequacy of Boston Edison's Street-Lighting Options; Town of Lexington; June 22 1992.

Efficiency and quality of street-lighting options. Boston Edison's treatment of high-quality street lighting. Corrected rate proposal for the Daylux lamp. Ownership of public street lighting.

- 102. South Carolina PSC 92-208-E;** Integrated Resource Plan of Duke Power Company; South Carolina Department of Consumer Affairs; August 4 1992.

Problems with Duke Power's DSM screening process, estimation of avoided cost, DSM program design, and integration of demand-side and supply-side planning.

- 103. North Carolina Utilities Commission E-100, Sub 64;** Integrated Resource Planning Docket; Southern Environmental Law Center; September 29 1992.

General principles of integrated resource planning, DSM screening, and program design. Review of the IRPs of Duke Power Company, Carolina Power & Light Company, and North Carolina Power.

- 104. Ontario Environmental Assessment Board** Ontario Hydro Demand/Supply Plan Hearings; *Environmental Externalities Valuation and Ontario Hydro's Resource Planning* (3 vols.); October 1992.

Valuation of environmental externalities from fossil fuel combustion and the nuclear fuel cycle. Application to Ontario Hydro's supply and demand planning.

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- 113. Michigan PSC U-10102;** Detroit Edison Rate Case; Michigan United Conservation Clubs; February 17 1993.

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- 114. Ohio PUC 91-635-EL-FOR, 92-312-EL-FOR, 92-1172-EL-ECP;** Cincinnati Gas and Electric demand-management programs; City of Cincinnati. April 1993.

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- 121. MDPU 94-49,** Boston Edison integrated resource-management plan; Massachusetts Attorney General. August 1994.

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- 122. Michigan PSC U-10554,** Consumers Power Company DSM Program and Incentive; Michigan Conservation Clubs. November 1994.

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- 123. Michigan PSC U-10702,** Detroit Edison Company Cost Recovery, on behalf of the Residential Ratepayers Consortium. December 1994.

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- 135. North Carolina Utilities Commission E-2, Sub 669. December 1995.**
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- Long-term forecast of Cincinnati Gas and Electric Company, especially its DSM portfolio. Opportunities for further cost-effective DSM savings. Tests of cost effectiveness. Role of DSM in light of industry restructuring; alternatives to traditional utility DSM.
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- Design of load-management rates of Central Vermont Public Service Company.
- 139. Maryland PSC 8720, Washington Gas Light DSM; Maryland Office of People's Counsel. May 1996.**
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- 140. MDPU DPU 96-100; Massachusetts Utilities' Stranded Costs; Massachusetts Attorney General. Oral testimony in support of "estimation of Market Value, Stranded Investment, and Restructuring Gains for Major Massachusetts Utilities," July 1996.**
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- 141. MDPU DPU 96-70; Massachusetts Attorney General. July 1996.**
- Market-based allocation of gas-supply costs of Essex County Gas Company.
- 142. MDPU DPU 96-60; Massachusetts Attorney General. Direct testimony, July 1996; surrebuttal, August 1996.**
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- 145. Ontario Energy Board EBRO 495**, LRAM and shared-savings incentive for DSM performance of Consumers Gas; Green Energy Coalition. March 1997.

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- 146. New York PSC Case 96-E-0897**, Consolidated Edison restructuring plan; City of New York. April 1997.

Electric-utility competition and restructuring; critique of proposed settlement of Consolidated Edison Company; stranded costs; market power; rates; market access.

- 147. Vermont PSB 5980**, proposed statewide energy plan; Vermont Department of Public Service. Direct, August 1997; rebuttal, December 1997.

Justification for and estimation of statewide avoided costs; guidelines for distributed IRP.

- 148. MDPU 96-23**, Boston Edison restructuring settlement; Utility Workers Union of America. September 1997.

Performance incentives proposed for the Boston Edison company.

- 149. Vermont PSB 5983**, Green Mountain Power rate increase; Vermont Department of Public Service. Direct, October 1997; rebuttal, December 1997.

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- 150. MDPU 97-63**, Boston Edison proposed reorganization; Utility Workers Union of America. October 1997.

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- 151. MDTE 97-111**, Commonwealth Energy proposed restructuring; Cape Cod Light Compact. Joint testimony with Jonathan Wallach, January 1998.

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- 152. NH PUC** Docket DR 97-241, Connecticut Valley Electric fuel and purchased-power adjustments; City of Claremont, N.H. February 1998.

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- 154. Vermont PSB** 6018, Central Vermont Public Service Co. rate increase; Vermont Department of Public Service. February 1998.

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- 155. Maine PUC** 97-580, Central Maine Power restructuring and rates; Maine Office of Public Advocate. May 1998; Surrebuttal, August 1998.

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- 156. MDTE** 98-89, purchase of Boston Edison municipal streetlighting, Towns of Lexington and Acton. Affidavit, August 1998.

Valuation of municipal streetlighting; depreciation; applicability of unbundled rate.

- 157. Vermont PSB** 6107, Green Mountain Power rate increase, Vermont Department of Public Service. Direct, September 1998; Surrebuttal drafted but not filed, November 2000.

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- 158. MDTE** 97-120, Western Massachusetts Electric Company proposed restructuring; Massachusetts Attorney General. Joint testimony with Jonathan Wallach, October 1998. Joint surrebuttal with Jonathan Wallach, January 1999.

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- 159. Maryland PSC** 8794 and 8804; BG&E restructuring and rates; Maryland Office of People's Counsel. Direct, December 1998; rebuttal, March 1999.

Implementation of restructuring. Valuation of generation assets from comparable-sales and cash-flow analyses. Determination of stranded cost or gain.

- 160. Maryland PSC 8795;** Delmarva Power & Light restructuring and rates; Maryland Office of People's Counsel. December 1998.

Implementation of restructuring. Valuation of generation assets and purchases from comparable-sales and cash-flow analyses. Determination of stranded cost or gain.

- 161. Maryland PSC 8797;** Potomac Edison Company restructuring and rates; Maryland Office of People's Counsel. Direct, January 1999; rebuttal, March 1999.

Implementation of restructuring. Valuation of generation assets and purchases from comparable-sales and cash-flow analyses. Determination of stranded cost or gain.

- 162. Connecticut DPUC 99-02-05;** Connecticut Light and Power Company stranded costs; Connecticut Office of Consumer Counsel. April 1999.

Projections of market price. Valuation of purchase agreements and nuclear and non-nuclear assets from comparable-sales and cash-flow analyses.

- 163. Connecticut DPUC 99-03-04;** United Illuminating Company stranded costs; Connecticut Office of Consumer Counsel. April 1999.

Projections of market price. Valuation of purchase agreements and nuclear assets from comparable-sales and cash-flow analyses.

- 164. Washington UTC UE-981627;** PacifiCorp–Scottish Power Merger, Office of the Attorney General. June 1999.

Review of proposed performance standards and valuation of performance. Review of proposed low-income assistance.

- 165. Utah PSC 98-2035-04;** PacifiCorp–Scottish Power Merger, Utah Committee of Consumer Services. June 1999.

Review of proposed performance standards and valuation of performance.

- 166. Connecticut DPUC 99-03-35;** United Illuminating Company proposed standard offer; Connecticut Office of Consumer Counsel. July 1999.

Design of standard offer by rate class. Design of price adjustments to preserve rate decrease. Market valuations of nuclear plants. Short-term stranded cost

- 167. Connecticut DPUC 99-03-36;** Connecticut Light and Power Company proposed standard offer; Connecticut Office of Consumer Counsel. Direct, July 1999; Supplemental, July 1999.

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- 168. W. Virginia PSC 98-0452-E-GI;** electric-industry restructuring, West Virginia Consumer Advocate. July 1999.

Market value of generating assets of, and restructuring gain for, Potomac Edison, Monongahela Power, and Appalachian Power. Comparable-sales and cash-flow analyses.

- 169. Ontario Energy Board RP-1999-0034;** Ontario Performance-Based Rates; Green Energy Coalition. September 1999.

Rate design. Recovery of demand-side-management costs under PBR. Incremental costs.

- 170. Connecticut DPUC 99-08-01;** standards for utility restructuring; Connecticut Office of Consumer Counsel. Direct, November 1999; Supplemental January 2000.

Appropriate role of regulation. T&D reliability and service quality. Performance standards and customer guarantees. Assessing generation adequacy in a competitive market.

- 171. Connecticut Superior Court CV 99-049-7239;** Connecticut Light and Power Company stranded costs; Connecticut Office of Consumer Counsel. Affidavit, December 1999.

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- 172. Connecticut Superior Court CV 99-049-7597;** United Illuminating Company stranded costs; Connecticut Office of Consumer Counsel. December 1999.

Errors of the CDPUC, in its discounted-cash-flow computations, in selecting performance assumptions for Seabrook, and in setting minimum bid price.

- 173. Ontario Energy Board RP-1999-0044;** Ontario Hydro transmission-cost allocation and rate design; Green Energy Coalition. January 2000.

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- 174. Utah PSC 99-2035-03;** PacifiCorp Sale of Centralia plant, mine, and related facilities; Utah Committee of Consumer Services. January 2000.

Prudence of sale and management of auction. Benefits to ratepayers. Allocation and rate treatment of gain.

- 175. Connecticut DPUC 99-09-12;** Nuclear Divestiture by Connecticut Light & Power and United Illuminating; Connecticut Office of Consumer Counsel. January 2000.

Market for nuclear assets. Optimal structure of auctions. Value of minority rights. Timing of divestiture.

- 176. Ontario Energy Board** RP-1999-0017; Union Gas PBR proposal; Green Energy Coalition. March 2000.
- Lost-revenue-adjustment and shared-savings incentive mechanisms for Union Gas DSM programs. Standards for review of targets and achievements, computation of lost revenues. Need for DSM expenditure true-up mechanism.
- 177. NY PSC** 99-S-1621; Consolidated Edison steam rates; City of New York. April 2000.
- Allocation of costs of former cogeneration plants, and of net proceeds of asset sale. Economic justification for steam-supply plans. Depreciation rates. Weather normalization and other rate adjustments.
- 178. Maine PUC** 99-666; Central Maine Power alternative rate plan; Maine Public Advocate. Direct, May 2000; Surrebuttal, August 2000.
- Likely merger savings. Savings and rate reductions from recent mergers. Implications for rates.
- 179. MEFSB** 97-4; MMWEC gas-pipeline proposal; Town of Wilbraham, Mass. June 2000.
- Economic justification for natural-gas pipeline. Role and jurisdiction of EFSB.
- 180. Connecticut DPUC** 99-09-03; Connecticut Natural Gas Corporation Merger and Rate Plan; Connecticut office of Consumer Counsel. September 2000.
- Performance-based ratemaking in light of mergers. Allocation of savings from merger. Earnings-sharing mechanism.
- 181. Connecticut DPUC** 99-09-12RE01; Proposed Millstone Sale; Connecticut Office of Consumer Counsel. November 2000.
- Requirements for review of auction of generation assets. Allocation of proceeds between units.
- 182. MDTE** 01-25; Purchase of Streetlights from Commonwealth Electric; Cape Light Compact. January 2001
- Municipal purchase of streetlights; Calculation of purchase price under state law; Determination of accumulated depreciation by asset.
- 183. Connecticut DPUC** 00-12-01 and 99-09-12RE03; Connecticut Light & Power rate design and standard offer; Connecticut Office of Consumer Counsel. March 2001.
- Rate design and standard offer under restructuring law; Future rate impacts; Transition to restructured regime; Comparison of Connecticut and California restructuring challenges.
- 184. Vermont PSB** 6460 & 6120; Central Vermont Public Service rates; Vermont Department of Public Service. Direct, March 2001; Surrebuttal, April 2001.

Review of decision in early 1990s to commit to long-term uneconomic purchase from Hydro Québec. Calculation of present damages from imprudence.

- 185. New Jersey BPU EM00020106;** Atlantic City Electric Company sale of fossil plants; New Jersey Ratepayer Advocate. Affidavit, May 2001.

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- 186. New Jersey BPU GM00080564;** Public Service Electric and Gas transfer of gas supply contracts; New Jersey Ratepayer Advocate. Direct, May 2001.

Transfer of gas transportation contracts to unregulated affiliate. Potential for market power in wholesale gas supply and electric generation. Importance of reliable gas supply. Valuation of contracts. Effect of proposed requirements contract on rates. Regulation and design of standard-offer service.

- 187. Connecticut DPUC 99-04-18 Phase 3, 99-09-03 Phase 2;** Southern Connecticut Natural Gas and Connecticut Natural Gas rates and charges; Connecticut Office of Consumer Counsel. Direct, June 2001; Supplemental, July 2001.

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- 188. New Jersey BPU EX01050303;** New Jersey electric companies' procurement of basic supply; New Jersey Ratepayer Advocate. August 2001.

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- 190. MDTE 01-56,** Berkshire Gas Company; Massachusetts Attorney General. October 2001.

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- 191. New Jersey BPU EM00020106;** Atlantic City Electric proposed sale of fossil plants; New Jersey Ratepayer Advocate. December 2001.

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- 192. Vermont PSB 6545;** Vermont Yankee proposed sale; Vermont Department of Public Service. Direct, January 2002.

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- 193. Connecticut Siting Council 217;** Connecticut Light & Power proposed transmission line from Plumtree to Norwalk; Connecticut Office of Consumer Counsel. March 2002.
- Nature of transmission problems. Potential for conservation and distributed resources to defer, reduce or avoid transmission investment. CL&P transmission planning process. Joint testimony with John Plunkett.
- 194. Vermont PSB 6596;** Citizens Utilities Rates; Vermont Department of Public Service. Direct, March 2002; Rebuttal, May 2002.
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- 195. Connecticut DPUC 01-10-10;** United Illuminating rate plan; Connecticut Office of Consumer Counsel. April 2002
- Allocation of excess earnings between shareholders and ratepayers. Asymmetry in treatment of over- and under-earning. Accelerated amortization of stranded costs. Effects of power-supply developments on ratepayer risks. Effect of proposed rate plan on utility risks and required return.
- 196. Connecticut DPUC 01-12-13RE01;** Seabrook proposed sale; Connecticut Office of Consumer Counsel. July 2002
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- 197. Ontario EB RP-2002-0120;** Review of transmission-system code; Green Energy Coalition. October 2002.
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- 198. New Jersey BPU ER02080507;** Jersey Central Power & Light rates; N.J. Division of the Ratepayer Advocate. Phase I December 2002; Phase II (oral) July 2003.
- Prudence of procurement of electrical supply. Documentation of procurement decisions. Comparison of costs for subsidiaries with fixed versus flow-through cost recovery.
- 199. Connecticut DPUC 03-07-02;** CL&P rates; AARP. October 2003
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- 200. Connecticut DPUC 03-07-01;** CL&P transitional standard offer; AARP. November 2003.



Application of rate cap. Legislative intent.

- 201. Vermont PSB 6596;** Vermont Electric Power Company and Green Mountain Power Northwest Reliability transmission plan; Conservation Law Foundation. December 2003.

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- 202. Ohio PUC Case 03-2144-EL-ATA;** Ohio Edison , Cleveland Electric, and Toledo Edison Cos. rates and transition charges; Green Mountain Energy Co. Direct February 2004.

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- 207. NY PSC 04-W-1221;** rates, rules, charges, and regulations of United Water New Rochelle; Town of Eastchester and City of New Rochelle. Direct, February 2005.

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- 208. NY PSC 05-M-0090;** system-benefits charge; City of New York. Comments, March 2005.

Assessment and scope of, and potential for, New York system-benefits charges.

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- 214. Ontario Energy Board** Case EB-2005-0520; Union Gas rates; School Energy Coalition. Evidence, April 2006.
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- 215. Ontario Energy Board** Case EB-2006-0021; natural gas demand-side-management generic issues proceeding; School Energy Coalition. Evidence, June 2006.
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- 224. NY PSC** Case 06-G-1332, Consolidated Edison Rates and Regulations; City of New York. Direct, March 2007.

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- 225. Alberta EUB 1500878**; ATCO Electric rates; Association of Municipal Districts & Counties and Alberta Federation of Rural Electrical Associations. Direct, May 2007

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- 228. Manitoba PUB 136-07**, Manitoba Hydro rates; Resource Conservation Manitoba and Time to Respect Earth's Ecosystem. Direct, February 2008.

Revenue allocation, rate design, and demand-side management. Estimation of marginal costs and export revenues.

- 229. Mass. EFSB 07-7**, DPU 07-58 & -59, proposed Brockton Power Company plant; Alliance Against Power Plant Location. Direct, March 2008

Regional supply and demand conditions. Effects of plant construction and operation on regional power supply and emissions.

- 230. CDPUC 08-01-01**, peaking generation projects; Connecticut Office of Consumer Counsel. Direct (with Jonathan Wallach), April 2008.

Assessment of proposed peaking projects. Valuation of peaking capacity. Modeling of energy margin, forward reserves, other project benefits.

- 231. Ontario EB-2007-0905**, Ontario Power Generation payments; Green Energy Coalition. Direct, April 2008.

Cost of capital for Hydro and nuclear investments. Financial risks of nuclear power.

- 232. Utah PSC 07-035-93**, Rocky Mountain Power Rates; Utah Committee of Consumer Services. Direct, July 2008

Cost allocation and rate design. Cost of service. Correct classification of generation, transmission, and purchases.

- 233. Ontario EB-2007-0707**, Ontario Power Authority integrated system plan; Green Energy Coalition, Penimba Institute, and Ontario Sustainable Energy Association. Evidence (with Jonathan Wallach and Richard Mazzini), August 2008.

Critique of integrated system plan. Resource cost and characteristics; finance cost. Development of least-cost green-energy portfolio.

- 234. NY PSC Case 08-E-0596**, Consolidated Edison electric rates; City of New York. Direct, September 2008.

Estimated bills, automated meter reading, and advanced metering. Aggregation of building data. Targeted DSM program design. Using distributed generation to defer T&D investments.

- 235. CDPUC 08-07-01**, integrated resource plan; Connecticut Office of Consumer Counsel. Direct, September 2008.

Integrated resource planning scope and purpose. Review of modeling and assumptions. Review of energy efficiency, peakers, demand response, nuclear, and renewables. Structuring of procurement contracts.

- 236. Manitoba PUB 2008 MH EIIR**, Manitoba Hydro intensive industrial rates; Resource Conservation Manitoba and Time to Respect Earth's Ecosystem. Direct, November 2008.

Marginal costs. Rate design. Time-of-use rates.

- 237. Maryland PSC 9036**; Columbia Gas rates; Maryland Office of People's Counsel. Direct, January 2009.

Cost allocation and rate design. Critique of cost-of-service studies.

- 238. Vermont PSB 7440**; extension of authority to operate Vermont Yankee; Conservation Law Foundation and Vermont Public Interest Research Group. Direct, February 2009; Surrebutal, May 2009.

Adequacy of decommissioning funding. Potential benefits to Vermont of revenue-sharing provision. Risks to Vermont of underfunding decommissioning fund.

- 239. Nova Scotia Review Board P-884(2)**, Nova Scotia Power DSM and cost recovery, Nova Scotia Consumer Advocate. May 2009.

Recovery of demand-side-management costs and lost revenue.

- 240. Nova Scotia Review Board P-172**, proposed biomass project, Nova Scotia Consumer Advocate. June 2009.

Procedural, planning, and risk issues with proposed power-purchase contract. Biomass price index. Nova Scotia Power's management of other renewable contracts.

- 241. Connecticut Siting Council 370A**, Connecticut Light & Power transmission projects; Connecticut Office of Consumer Counsel. Direct, July 2009.
- Need for transmission projects. Modeling of transmission system. Realistic modeling of operator responses to contingencies
- 242. Mass. DPU 09-39**, NGrid rates, Mass. Department of Energy Resources. August 2009.
- Revenue-decoupling mechanism. Automatic rate adjustments.
- 243. Utah PSC Docket No. 09-035-23**, Rocky Mountain Power rates; Utah Office of Consumer Services. Direct, October 2009. Rebuttal, November 2009.
- Cost-of-service study. Cost allocators for generation, transmission, and substation.
- 244. Utah PSC Docket No. 09-035-15**, Rocky Mountain Power energy-cost-adjustment mechanism; Utah Office of Consumer Services. Direct, November 2009; Surrebuttal, January 2010.
- Automatic cost-adjustment mechanisms. Net power costs and related risks. Effects of energy-cost-adjustment mechanisms on utility performance.
- 245. Penn. PUC Docket No. R-2009-2139884**, Philadelphia Gas Works energy efficiency and cost recovery; Philadelphia Gas Works. Direct, December 2009.
- Avoided gas costs. Recovery of efficiency-program costs and lost revenues. Rate impacts of DSM.
- 246. Ark. PSC Docket No. 09-084-U**, Entergy Arkansas rates; National Audubon Society and Audubon Arkansas. Direct, February 2010; Surrebuttal, April 2010.
- Recovery of revenues lost to efficiency programs. Determination of lost revenues. Incentive and recovery mechanisms.
- 247. Ark. PSC Docket No. 10-010-U**, Energy efficiency; National Audubon Society and Audubon Arkansas. Direct, March 2010; Reply, April 2010.
- Regulatory framework for utility energy-efficiency programs. Fuel-switching programs. Program administration, oversight, and coordination. Rationale for commercial and industrial efficiency programs. Benefit of energy efficiency.
- 248. Ark. PSC Docket No. 08-137-U**, Generic rate-making; National Audubon Society and Audubon Arkansas. Direct, March 2010; Supplemental, October 2010; Reply, October 2010.
- Calculation of avoided costs. Recovery of utility energy-efficiency-program costs and lost revenues. Shareholder incentives for efficiency-program performance.
- 249. Plymouth, Mass., Superior Court Civil Action No. PLCV2006-00651-B** (Hingham Municipal Lighting Plant v. Gas Recovery Systems LLC et al.) breach of agreement; defendants. Affidavit, May 2010.

Contract interpretation. Meaning of capacity measures. Standard practices in capacity agreements. Power-pool rules and practices. Power planning and procurement.

- 250. Plymouth, Mass., Superior Court** Civil Action No. PLCV2006-00651-B (Hingham Municipal Lighting Plant v. Gas Recovery Systems LLC et al.) breach of agreement; defendants. Affidavit, May 2010.

Contract interpretation. Meaning of capacity measures. Standard practices in capacity agreements. Power-pool rules and practices. Power planning and procurement.

- 251. N.S. UARB** P128.10, Port Hawkesbury Biomass Project; Nova Scotia Consumer Advocate. Direct, June 2010.

Least-cost planning and renewable-energy requirements. Feasibility versus alternatives. Unknown or poorly estimated costs.

- 252. Mass. DPU** 10-54, NGrid purchase of long-term power from Cape Wind; Natural Resources Defense Council et al. Direct, July 2010.

Effects of renewable-energy projects on gas and electric market prices. Impacts on system reliability and peak loads. Importance of PPAs to renewable development. Effectiveness of proposed contracts as price edges.

- 253. Maryland PSC** 9230, Baltimore Gas & Electric rates; Maryland Office of People's Counsel. Direct, Direct, July 2010; Rebuttal, Surrebuttal, August 2010.

Allocation of gas- and electric-distribution costs. Critique of minimum-system analyses and direct assignment of shared plant. Allocation of environmental compliance costs. Allocation of revenue increases among rate classes.

- 254. Ontario EB-2010-0008**, Ontario Power Generation facilities charges; Green Energy Coalition. Evidence, August 2010.

Critique of including a return on CWIP in current rates. Setting cost of capital by business segment.

- 255. N.S. UARB** NG-HG-R-10, Heritage Gas rates; N.S. Consumer Advocate. Direct, October 2010.

Cost allocation. Cost of capital. Effect on rates of growth in sales.

- 256. Manitoba PUB** Case No. 17/10, Manitoba Hydro rates; Resource Conservation Manitoba and Time to Respect Earth's Ecosystem. Direct, December 2010

Revenue-allocation and rate design. DSM program.

- 257. N.S. UARB** NSPI-P-891, Nova Scotia Power depreciation rates; N.S. Consumer Advocate. Direct, February 2011.

Depreciation and rates.

- 258. New Orleans City Council** No. UD-08-02, Entergy IRP rules; Alliance for Affordable Energy. Direct, December 2010
- Integrated resource planning: Purpose, screening, cost recovery, and generation planning.
- 259. N.S. UARB** Docket BRD-E-R-10, Renewable Energy Community Based Feed-in Tariffs; N.S. Consumer Advocate. Direct, March 2011.
- Cost of projects. Rate effects of feed-in tariffs. Consideration of community in computing costs.
- 260. Mass. EFSB** 10-2/ D.P.U. 10-131, 10-132, NStar transmission; Town of Sandwich, Mass. Direct, May 2011; Surrebuttal, June 2011.
- Need for new transmission; errors in load forecasting; probability of power outages.
- 261. Utah PSC** Docket No. 10-035-124; Rocky Mountain Power rate case; Utah Office of Consumer Services. June 2011
- Load data, allocation of generation plants, scrubbers, power purchases, and service drops. Marginal cost study: inclusion of all load-related transmission projects, critique of minimum- and zero-intercept methods for distribution. Residential rate design.
- 262. N.S. UARB** Docket NSPI P-892; Nova Scotia Power general rate application; N.S. Consumer Advocate. August 2011.
- Cost allocation: allocation of costs of wind power and substations. Rate design: marginal-cost-based rates, demand charges, time-of-use rates.
- 263. N.S. UARB** Docket NSPI P-202; Load-retention tariff; N.S. Consumer Advocate. August 2011.
- Marginal cost of serving very large industrial electric loads; risk, incentives and rate design.
- 264. Okla. Corporation Commission** Cause No. PUD 201100077; Current and pending federal regulations and legislation affecting Oklahoma utilities; Sierra Club. comments July, October 2011; presentation July 2011.
- Challenges facing Oklahoma coal plants; efficiency, renewable and conventional resources available to replace existing coal plants; integrated environmental compliance planning.
- 265. Nevada PUC** Docket No. 11-08019; Integrated analysis of resource acquisition; Sierra Club. Comments September 2011; Hearing October 2011
- Scoping of integrated review of cost-effectiveness of continued operation of Reid Gardner 1–3 coal units.



- 266. Okla. Corporation Commission** Cause No. PUD 201100087; Oklahoma Gas and Electric Company electric rates; Sierra Club. November 2011.
- Resource monitoring and acquisition. Benefits to ratepayers of energy conservation and renewables. Supply planning
- 267. Ky. PSC** Case No. 2011-00375; Kentucky utilities' purchase and construction of power plants; Sierra Club and National Resources Defense Council. December 2011.
- Assessment of resources, especially renewables. Treatment of risk. Treatment of future environmental costs.
- 268. N.S. UARB** Docket NSUARB-E-ENSC-R-12; DSM plan of Efficiency Nova Scotia; N.S. Consumer Advocate. May 2012.
- Avoided costs. Allocation of costs. Reporting of bill effects.
- 269. N.S. UARB** Docket NSUARB-NSPI-P-203; Utility-sponsored energy-efficiency programs; N.S. Consumer Advocate. June 2012.
- Effect on ratepayers of proposed load-retention tariff. Incremental capital costs, renewable-energy costs, and costs of operating biomass cogeneration plant.
- 270. Utah PSC** Docket No. 11-035-200; Rocky Mountain Power Rates; Utah OCC. June 2012.
- Cost allocation. Estimation of marginal customer costs.
- 271. Ark. PSC** Docket No. 12-008-U; Environmental controls at Southwestern Electric Power Company's Flint Creek plant; Sierra Club. Direct, June 2012, Rebuttal, August 2012.
- Costs and benefits of environmental retrofit to permit continued operation of coal plant, versus other options including purchased gas generation, efficiency, and wind. Fuel-price projections. Need for transmission upgrades.
- 272. U.S. EPA** Docket EPA-R09-OAR-2012-0021, Air Quality Implementation Plan; Sierra Club, September 2012.
- Costs, financing, and rate effects of Apache coal-plant scrubbers. Relative incomes in service territories of Arizona Coop and other utilities.
- 273. Arkansas PSC** Docket No. 07-016-U, Entergy Arkansas' integrated resource plan; Audubon Arkansas. Comments, September 2012.
- Estimation of future gas prices. Estimation of energy-efficiency potential. Screening of resource decisions. Wind costs.
- 274. Vt. PSB** Docket No. 7862, Entergy Nuclear Vermont and Entergy Nuclear Operations petition to operate Vermont Yankee; Conservation Law Foundation, October 2012.

Effect of continued operation on market prices. Value of revenue-sharing agreement.  
Risks of underfunding decommissioning fund.

- 275. Manitoba PUB** 2012–13 GRA, Manitoba Hydro rates; Green Action Centre.  
November 2012

Estimation of marginal costs. Fuel switching.

- 276. Kansas CC** Docket No. 12-GIMX-337-GIV, Utility energy-efficiency programs; The  
Climate and Energy Project, December 2012.

Cost-benefit tests for energy-efficiency programs. Collaborative program design.

- 277. N.S. UARB** Matter No. M05339; Capital Plan of Nova Scotia Power; N.S. Consumer  
Advocate. January 2013.

Economic and financial modeling of investment. Treatment of AFUDC.

Qualifications of  
**SUSAN C. GELLER**

Resource Insight, Inc.  
5 Water Street  
Arlington, Massachusetts 02176

**SUMMARY OF PROFESSIONAL EXPERIENCE**

*1992–Present* **Senior Research Associate, Resource Insight.** Reviews cost-allocation, rate-design, and marginal-cost methodologies. Determines avoided costs for screening of conservation and distributed-generation investments. Assesses prudence of generation-plant investment, power purchases, and power-procurement decision processes. Reviews performance-based ratemaking proposals. Evaluates utilities' least-cost resource planning and long-range demand forecasts.

*1978–91* **Utility Rate Analyst, Utilities Division, Massachusetts Department of the Attorney General.** Presented expert testimony before the Massachusetts Department of Public Utilities, the Massachusetts Energy Facilities Siting Council, and the Atomic Safety and Licensing Board, on economic issues in electric and gas utility regulation. Included testimony on reliability and reviewability of load forecasting methodologies, proposals for embedded cost allocation methodologies, measurement of marginal cost of gas and electric supply, evaluation and design of utility retail rate structure, financial incentives for utility funding of conservation programs, evaluation of need for and economics of new electric generation plant, and design of gas transportation tariffs.

Formulated strategy and litigation issues in cases concerning economic and econometric questions, including efficiency and equity of gas and electric rate design proposals; financial incentives and program development for utility-funded conservation and load management; validity of long range demand forecasts; implementation of least cost supply planning and methods of cost recovery; economics of new plant construction; design of resource bidding systems. Formulated and advocated policy positions for the Utilities Division in the areas of least cost supply planning, resource bidding and deregulation, rate treatment of costs of future supply and demand resources, and rate design.

Prepared discovery and briefs. Developed lines of cross-examination and provided technical assistance to attorneys in their preparation of cross-examination. Participated in negotiations with utilities. Acted as information resource for the Utilities Division on utility planning, operations and regulatory history.

**PROFESSIONAL AFFILIATIONS**

Member, International Association for Energy Economics

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## **EDUCATION**

MA, Public Policy Program, Harvard University Kennedy School of Government, June, 1978.

BA, Economics, magna cum laude, Harvard University, June, 1974.

## **REPORTS**

“Avoided Energy Supply Costs for Demand-Side Management in Massachusetts” (with Rachel Brailove, Paul Chernick, Bruce Biewald, and David White). 1999. Northborough, Mass.: Avoided-Energy-Supply-Component Study Group, c/o New England Power Supply Company.

“Performance-based Regulation in a Restructured Utility Industry” (with Bruce Biewald, Tim Woolf, Peter Bradford, Paul Chernick, and Jerrold Oppenheim). 1997. Washington: NARUC.

“Restructuring the Electric Utilities of Maryland: Protecting and Advancing Consumer Interests” (with Paul Chernick, Jonathan Wallach, John Plunkett, Roger Colton, Peter Bradford, Bruce Biewald, and David Wise). 1997. Baltimore, Maryland: Maryland Office of People’s Counsel.

“Estimation of Market Value, Stranded Investment, and Restructuring Gains for Major Massachusetts Utilities” (with Paul Chernick, Jonathan Wallach, Rachel Brailove, and Adam Auster). 1996. On behalf of the Massachusetts Attorney General (Boston).

“Review of the Elizabethtown Gas Company’s 1992 DSM Plan and the Demand-Side Management Rules” (with Jonathan Wallach, Paul Chernick, John Plunkett, James Peters, Blair Hamilton, and A. Shapiro). 1992. Report to the New Jersey Department of Public Advocate.

“Review of Jersey Central Power & Light’s 1992 DSM Plan and the Demand-Side Management Rules” (with Jonathan Wallach, et al.); Report to the New Jersey Department of Public Advocate, June 1992.

## **PRESENTATIONS**

“Cost Allocation for Utility Ratemaking.” With Paul Chernick. Day-long workshop for the staff of the Connecticut Department of Public Utility Control, October, 1993.

## **EXPERT TESTIMONY**

1. **EFSC 78-12/DPU 19494**, Phase I; Boston Edison Company’s 1978 Demand and Energy Forecast; June 12, 1978.

Review of and adjustments to Boston Edison’s end-use and econometric forecast, including effect on projections of electric price increases. Joint testimony with P. Chernick.

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2. **EFSC 78-4**; 1978 Long Range Forecast of New England Gas and Electric Association (“NEGEA”); November 10, 1978.

Reviewability and reliability of judgmental forecasts; shortcomings of simple time-trending, and important factors to consider in forecasting electric sales.

3. **EFSC 78-1**; 1978 Long Range Forecast of Massachusetts Municipal Wholesale Electric Company (“MMWEC”); September 1, 1978.

Evaluation of judgmental forecasting, simple time-trending, and modeling of “conservation.”

4. **MDPU 19494**, Phase II; Boston Edison’s Construction Program and Capacity Needs; April 1, 1979.

Evaluation of the 1978 forecasts of ten New England utilities which constituted 92% of projected NEPOOL demand. Joint testimony with P. Chernick.

5. **ASLB, NRC 50-471**; Boston Edison Company, Pilgrim Nuclear Generating Station, Unit No. 2; June 29, 1979.

Evaluation of two New England regional demand forecasts, an Oak Ridge National Laboratory econometric forecast and the NEPOOL end-use and econometric forecast, and cost-effectiveness of investment in a nuclear generating unit. Joint testimony with P. Chernick.

6. **MDPU 19845**; Boston Edison Company’s Time-Of-Use Rates; December 4, 1979.

Formulation of marginal cost pricing principles; analysis of BECo rate design proposals and marginal cost study; development of alternative costing methodology and rate design proposals. Joint testimony with P. Chernick.

7. **MDPU 20055**; Petition of Eastern Utilities Associates, New England Gas and Electric, and Fitchburg Gas and Electric to Purchase Additional Shares of Seabrook Nuclear Plant; January 23, 1980.

Evaluation of New Bedford Gas and Electric forecast as a basis for the Company’s “need for power” argument.

8. **MDPU 20248**; Petition of MMWEC to Purchase Additional Shares of Seabrook Nuclear Plant; June 2, 1980.

Evaluation of reviewability and reliability of 29 demand forecasts (for the 29 members of MMWEC), the basis for the Company’s “need for power” argument. Focused on the use of subjective data, interviews as a basis for forecasting, simple time-trending, and specific modeling assumptions.

9. **EFSC 79-4**; 1979 NEGEA Long Range Forecast; July 16, 1980.

Evaluation of judgmental forecasting approach; recommended standards for use of subjective data; evaluated specific data input and modeling assumptions.

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- 10. EFSC 80-4; 1979 Long Range Forecast and Supply Plan of New England Electric System; November 5, 1980.**

Review of end-use and econometric forecast. Presented general principles of econometric forecasting and documentation. More specific issues include space heating penetration projections, conservation, and commercial model specification.

- 11. MDPU 81-12; 1981 Long Range Forecast of Boston Edison Company; May 15, 1981.**

Review of end-use and econometric forecast. General principles of econometric forecasting and documentation, including model specification, use of statistical tests, subjective adjustments to econometric results, and role of judgment. Specific issues include demographic projection, appliance penetration and usage projections, and impact of appliance efficiency improvements and price increases.

- 12. MDPU 702; Nantucket Electric Company Request for General Rate Increase; October 2, 1981.**

Proposal of change in method of adjusting existing rate structures to collect allowed rate increase.

- 13. MDPU 800; Massachusetts Electric Company Request for General Rate Relief; October 9, 1981.**

Efficiency and equity of declining block rate structures, customer charges, demand charges and ratchets. Development of alternative rate design proposals.

- 14. MDPU 906; Boston Edison Company Request for General Rate Relief; December 31, 1981.**

Statement of general principles of cost allocation and rate design; efficiency and equity of Company's proposed declining block rate structures and demand charges; estimation of marginal cost; development of alternative rate design proposals.

- 15. MDPU 1015; Cambridge Electric Light Company Request for General Rate Relief; May 18, 1982.**

Economic efficiency of Company's proposed declining block rate structures and demand charges; development of alternative rate design proposals.

- 16. MDPU 955; Massachusetts Electric Light Company Proposals for Load Management and Conservation Rates; June 7, 1982.**

Evaluation of cost-effectiveness of storage heating as a load management measure; comparison of bill reductions versus system cost savings under the Company's rate design proposals. Evaluation of Company's marginal cost estimates; specific issues include average versus marginal loss factors, externalities, marginal distribution capacity costs of off-peak loads.

- 17. MDPU 1133; Massachusetts Electric Light Company Request for General Rate Increase; August 6, 1982.**

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Economic efficiency of Company's proposed declining block rate structures and demand charges; development of alternative rate design proposals.

- 18. MDPU 1350;** Boston Edison Company Request for General Rate Increase; February 1, 1983.

Evaluation of Company's marginal cost estimates; development of rate design proposals based on revised estimate of marginal cost.

- 19. MDPU 1530;** Nantucket Electric Company Request for General Rate Increase; July 22, 1983.

Development of marginal cost estimate and rate design proposals for Nantucket system. Evaluation of Company's plans to install a new diesel unit; specific issues include reliability value of smaller generation units and of demand-side management alternatives to new generation, in particular resetting of water heater time clock controls. Contribution of winter, spring and fall loads as well as summer loads to need for capacity and implications for rate design. Evaluation of effectiveness of Company's rate design proposals in controlling summer peak load growth.

- 20. MDPU 84-25;** Western Massachusetts Electric Company Request For General Rate Increase; April 11, 1984.

Development of long run marginal cost estimate. Evaluation of Company's short run marginal energy cost estimates. Marginal cost issues also addressed are Company's exclusion of marginal transmission and distribution capacity costs and marginal loss factors. Economic efficiency of demand charges and ratchets.

No-loser's test as a standard for evaluating conservation programs. Critique of Company's cost-benefit analysis of conservation. Recommendations for program design and cost allocation.

- 21. MDPU 84-145;** Fitchburg Gas and Electric Light Company Request for General Rate Increase; September 28, 1984

Evaluation of embedded cost of service study. Specific issues include reliability of borrowed load data; validity of class maximum demand as allocator for demand-related distribution plant, of allocation of revenue losses associated with water heater rentals to residential classes, and of allocation of low-income subsidy entirely to residential classes.

- 22. MDPU 84-145;** Fitchburg Gas and Electric Light Company Request for General Rate Increase; October 1984

Evaluation of marginal cost study.

- 23. MDPU 84-55/EFSC 83-28;** Nantucket Electric Company Long Range Forecast and Supply Plan; March 15, 1985

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Evaluation of forecast methodology (including plausibility of regression models, failure to distinguish seasonal from annual customers, failure to reflect future C&LM, and error on definition of customer number variables) and plausibility of forecast results.

- 24. MDPU 84-276;** Rules Governing Rates and Conditions for Utility Purchases of Power from Qualifying Facilities; April 1, 1985.

Long run versus short run marginal cost as the basis for payments to small power producers; distortions in proposed production target formula.

- 25. MDPU 84-276;** Rules Governing Rates and Conditions for Utility Purchases of Power from Qualifying Facilities; October 18, 1985.

Evaluation of ratepayer risk associated with long term fixed price contracts; long run versus short run marginal cost as the basis for the long term contract price.

- 26. MDPU 85-271;** Boston Edison Company Request For General Rate Increase; March 7, 1986

Examination of long run versus short run costs as basis for setting retail energy rates; evaluation of demand charges as an effective and appropriate rate design mechanism.

- 27. MDPU 85-270;** Western Massachusetts Electric Company Request For General Rate Increase; March 26, 1986.

Examination of long run versus short run costs as basis for setting retail energy rates; evaluation of demand charges as an effective and appropriate rate design mechanism.

- 28. MDPU 86-27;** Colonial Gas Company Partial Requirements and Cogeneration Rate Proposals; April 18, 1986.

Economic efficiency and equity of using marginal cost rather than embedded cost to set class revenue requirement solely for these special rates; cost justification of proposed end-use rate classification; evaluation of Company's marginal cost estimates (including issues involving interruptible sales, cost of liquefaction of LNG, use of simulation model which assumes perfect foresight, effect of design year reliability standard on normal year costs, and marginal distribution cost estimates).

- 29. MDPU 85-178;** Investigation by the Department Regarding Charges and Service for Transportation of Natural Gas for Industrial End-Users; May 12, 1986.

Proposed method of calculating transportation rates that credits transporting customers with no more than savings to retail distribution company.

- 30. MDPU 86-82;** Berkshire Gas Company Request For General Rate Increase; July 28, 1986.



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Evaluation of marginal cost methodology. Addressed effect on marginal energy cost of load uncertainty, hedging, and hedging; increases in storage volumes as a component of capacity cost; and inclusion of reserve margin in calculation of capacity cost. Identified calculational error in Company translation of marginal capacity cost estimate into rate design. Recommended alternative to use of average daily weather to develop “normal” year. Addressed economic efficiency and equity of lower rates for specific end-uses, namely off-peak transportation, dual fuel and cogeneration customers. Potential conflicts of interest in Company’s proposal to broker gas.

- 31. MDPU 86-280; Western Massachusetts Electric Company Request For General Rate Increase; March 11, 1987.**

Long run versus short run costs as basis for setting retail energy rates.

- 32. MDPU 87-122; Commonwealth Gas Company Request For General Rate Increase; October 6, 1987.**

Evaluation of marginal cost methodology. Addressed and quantified effect on marginal energy cost of load uncertainty, hedging of supplemental gas supplies, and storage. Addressed and quantified effect of interruptible sales on marginal cost. Identified calculational error in Company translation of marginal capacity cost estimate into charges in rate design. Evaluation of Company’s interruptible sales policy, in general, and of pricing of sales to COM/Energy electric generation facilities, in particular.

- 33. MDPU 87-169; Investigation of the Adequacy of Plans to Ensure Reliable Service in the Summer of 1987 and Thereafter; December 4, 1987.**

Long run versus short run costs as basis for setting retail rates. Price setting as a regulatory tool for controlling demand.

- 34. MDPU 87-221; Cambridge Electric Light Company Request for General Rate Increase; February 16, 1988.**

Evaluation of Company’s supply plan and need for new capacity, including use of average rather than seasonal capacity ratings and treatment of availability uncertainties. Validity of the discounted peaker method. Market-clearing price as the basis for short run marginal cost pricing. Other marginal cost issues include effect of summer derating on cost of peaker, appropriateness of discounting transmission costs based on in-service date rather than year of deficiency, payments for transmission by others as a component of marginal cost, and error in translation of marginal cost estimate into rate design.

- 35. MDPU 88-135/151; Commonwealth Electric Company Request For General Rate Increase; October 21, 1988.**

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Evaluation of Company's supply plan and need for new capacity, including reliability of load forecast and treatment of uncertainty in plant availability, life extensions, and demand-side versus supply-side resources. Validity of the discounted peaker method. Discussion of a number of marginal costing issues including the accurate use of price indices, lumpiness in marginal transmission capacity cost estimates, effect of uncertainty in plant availability, utility conservation, outage power from the power pool, and unit start-up costs on estimate of marginal energy cost.

- 36. MDPU 89-21;** Massachusetts Electric Company Request For General Rate Increase; July 21, 1989.

Cost-effectiveness of demand-metering; demand charge incentive structure; validity of time-of-use literature as basis for estimate of non-TOU demand charge effects; evaluation of Company use of statistical results and cost-effectiveness methodology.

- 37. MDPU 89-195;** Massachusetts Electric Company; December 22, 1989.

Evaluation of Company's proposed cost recovery and incentives for conservation and load management programs.

- 38. EFSC 90/12/90-12A;** Boston Edison Company Request For Approval Of Long-Range Forecast Of Electric Needs And Requirements and Request For Approval Of Proposal To Construct A 306 MW Natural Gas/Distillate Oil-Fired Combined Cycle Generation Station At Its Edgar Station Site; March 4, 1991.

Evaluation of the need for and the economics of the Company's proposed new generation facility.

## Exhibit BWG-1

Qualifications of  
**BENJAMIN GRIFFITHS**

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5 Water Street  
Arlington, Massachusetts 02476

### **SUMMARY OF PROFESSIONAL EXPERIENCE**

- 2012– Present*     **Research Assistant, Resource Insight, Inc.** Supports investigations into utility economics on behalf of various attorneys general, consumer advocates, and other parties. Matters studied include cost allocation, rate setting, operation and retrofit of energy facilities, feed-in tariffs, and costs avoided by energy efficiency and conservation. Analyzes quantitative data and synthesizes qualitative research on utility load, capacity markets, energy and fuel futures, marginal costs, and weather.
- 2010– 2012*     **Logistics Manager, WindPole Ventures.** Founding member of the operations group at a provider of wind information to the power sector.

### **EDUCATION**

BA, Classical Civilization and History (double major) with honors, Boston University, 2010.

### **REPORTS**

“Affordability of Pollution Control on the Apache Coal Units: Review of Arizona Electric Power Cooperative’s Comments on Behalf of the Sierra Club” (with Paul Chernick). 2012. Filed as part of comments in Docket EPA-R09-OAR-2012-0021 by National Parks Conservation Association, Sierra Club, et al.