

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Joint Application Of Louisville Gas And Electric Company )  
and Kentucky Utilities Company for Certificates of Public )  
Convenience and Necessity for the Construction of a Combined )  
Cycle Combustion Turbine at the Cane Run Generating ) CASE NO. 2011-00375  
Station and the Purchase of Existing Simple Cycle Combustion )  
Turbine Facilities from Bluegrass Generation Company, LLC )  
in LaGrange, Kentucky )

RECEIVED

Direct Testimony of  
Dylan Sullivan

DEC 20 2011  
PUBLIC SERVICE  
COMMISSION

On Behalf of  
Sierra Club and Natural Resources Defense Council

December 20, 2011

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## **Part I: Introduction**

**Q: What is your name, address, and position?**

A: My name is Dylan Sullivan. My business address is 2 North Riverside Plaza, Suite 2250, Chicago, Illinois 60606. I am employed by the Natural Resources Defense Council (“NRDC”) as a Staff Scientist.

**Q: Describe your educational background and professional experience.**

A: I earned a Bachelor of Arts degree, magna cum laude, in Environmental Geology from the University of Missouri-Columbia in 2004. I was awarded a Master of Science in Civil and Environmental Engineering from Stanford University in June 2008. My Masters degree was energy focused: I graduated from the Civil and Environmental Engineering Department’s Atmosphere/Energy program and took classes on economic analysis of natural resources and climate policy, air quality analysis, and energy efficiency and renewable energy technologies and practices. I joined NRDC in June 2008, where I monitor the performance of Midwestern utilities’ energy efficiency portfolios, recommend new programs or modifications to existing programs to capture cost-effective energy efficiency, and conduct research and advocacy on changes to the utility business model that ensure utilities and customers can benefit from energy efficiency. At NRDC, I have worked on many matters related to these dockets, including:

- Preparing testimony responding to electric utility energy efficiency programs and portfolios of programs, electric utility resource plans, and electric utility proposals for energy efficiency cost recovery mechanisms, including lost revenue adjustment mechanisms, performance incentives, and program cost recovery,

- Participating in groups advising Commonwealth Edison, Ameren Illinois Utilities, American Electric Power-Ohio, Duke Energy-Ohio, and FirstEnergy's Ohio operating companies on implementing energy efficiency programs;
- Researching and writing about utility regulations related to energy efficiency, particularly decoupling, a policy that removes a utility's disincentive to help improve the efficiency with which customers in its service territory use energy.

In October 2011, I co-wrote an article about decoupling that was published in the Electricity Journal.

**Q: Have you previously testified before state regulatory commissions?**

A: Yes. I most recently testified before the Public Utilities Commission of Ohio in American Electric Power-Ohio's distribution rate case, Case No. 11-351-EL-AIR, et al. I also recently testified in Duke Energy-Ohio's forecast report and resource planning case, No. 10-503-EL-FOR. I previously testified before the Public Utilities Commission of Ohio in Case No. 08-935-EL-SSO, Case No. 09-1947-EL-EEC, et al., and Case No. 10-388-EL-SSO. I have testified before the Indiana Utility Regulatory Commission on decoupling<sup>1</sup> and before the Kansas Corporation Commission on energy efficiency program cost recovery, incentives, and decoupling.<sup>2</sup>

**Q: What is the purpose of your testimony?**

A: The purpose of my testimony is to show how a robust portfolio of cost effective energy efficiency programs would reduce the capacity and energy needs of Louisville Gas & Electric Company and Kentucky Utilities Company ("Companies"), capacity and energy

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<sup>1</sup> Petition of Southern Indiana Gas & Electric Co., Indiana Utility Regulatory Commission, Cause No. 43839.

<sup>2</sup> In re Application of Kansas City Power and Light Co., Kansas Corporation Commission, Docket No. 10-KCPE-795-TAR

that, if saved, could alter the Companies' decision to build or purchase gas-fired generation.

**Q: Can you summarize your recommendation to the Commission?**

A: Yes. I estimate that a robust portfolio of energy efficiency programs (not including a more robust portfolio of demand response programs) would reduce the Companies' claimed capacity shortfall by 145 MW in 2016 and 194 MW in 2017. The Company is not fully exploiting the opportunity for cost effective energy efficiency in its service territory. The Commission should take into account the ability of energy efficiency to cost effectively offset capacity and energy needs as it examines the need for the construction or purchase of gas-fired generation.

**Part II: A Robust Portfolio of Energy Efficiency Programs Would Substantially Reduce the Companies' Claimed Capacity Shortfall**

**Q: Do the Companies include the impact of their energy efficiency programs in the Joint Load Forecast used to determine future resource needs?**

A: Yes. The Companies project a load reduction of approximately 500 MW from the impact of their energy efficiency and peak demand reduction programs in 2017,<sup>3</sup> and an additional 126 MW of peak load reduction from interruptible tariffs.<sup>4</sup> The Capacity impact of these energy efficiency and peak demand reduction programs, and interruptible tariffs are used by the Companies to reduce forecasted peak load: the resulting "total demand" is compared to existing resources, purchases, and reserve requirements to

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<sup>3</sup> Testimony of David S. Sinclair at 8

<sup>4</sup> KU and LG&E, 2011 Integrated Resource Plan at Table 8 (4)(a)-1

determine the Companies' capacity shortfall, if any.<sup>5</sup> The Companies' portfolio of energy efficiency programs thus has a direct and measurable impact on their capacity needs.

**Q: In your opinion, do the Companies' energy efficiency programs come close to fully exploiting the opportunity for cost effective energy efficiency in its service territories?**

A: No. First, it would be preferable to conduct this analysis with access to an open, transparent analysis of the energy efficiency opportunity in the Companies' service territory (an "energy efficiency potential study," which I will discuss later). In the absence of that, it is informative to look at the Companies' planned energy efficiency savings as a percentage of its forecasted load. By that measure, the Companies are likely not close to accessing the opportunity for cost effective energy efficiency. Planned program savings never exceed .55% of load through 2017.

<b>Year</b>	<b>Energy Efficiency/Peak Demand Reduction program savings (% of load)<sup>6</sup></b>
2012	.49%
2013	.42%
2014	.55%
2015	.26%
2016	.25%
2017	.25%

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<sup>5</sup> Testimony of David S. Sinclair at 15.

<sup>6</sup> From Combined Company Sales (Sinclair at 4) and the annual savings from IRP Table 8.(3)(e)(3)

**Q: In the absence of a potential study, why are you comfortable opining that the Companies' programs are not likely fully accessing the potential for cost effective energy efficiency?**

A: I'm comfortable because I can compare these projected savings to the savings that other states and utilities in the region are on track to achieve. For example, as I described at the 2011 American Council for an Energy Efficient Economy National Conference on Energy Efficiency as a Resource,<sup>7</sup> Duke Energy Ohio well exceeded its 2009<sup>8</sup> and 2010<sup>9</sup> energy savings benchmarks: .3% and .5% of load as prescribed by law.<sup>10</sup> American Electric Power-Ohio did the same. Importantly for the Companies' purposes, Duke's performance was achieved without substantial participation from industrial customers, and Duke Energy-Ohio's very conservative potential study (which examined only 32 non-residential and 42 residential measures, versus others that examine up to 1400 measures) determined 1% annual savings were cost effective and achievable.<sup>11</sup> Duke Energy-Ohio has also been running programs since the mid-1990s, showing that substantial energy efficiency opportunities exist even in portfolios that operate over a sustained period. Recent energy efficiency performance in the Pacific Northwest, which, like Kentucky, has low energy costs, also illustrates this. There, despite robust energy efficiency investment since 1980, utilities taking energy from the Bonneville Power

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<sup>7</sup> [http://aceee.org/files/pdf/conferences/eer/2011/BS5B\\_Sullivan.Williams.pdf](http://aceee.org/files/pdf/conferences/eer/2011/BS5B_Sullivan.Williams.pdf)

<sup>8</sup> First Annual Energy Efficiency Status Report of Duke Energy Ohio, Inc., Public Utilities Commission of Ohio Case No. 10-317-EL-EEC, March 15, 2010.

<sup>9</sup> Annual Energy Efficiency Status Report of Duke Energy Ohio, Inc., Public Utilities Commission of Ohio, Case No. 11-1311-EL-EEC, March 15, 2011.

<sup>10</sup> Ohio Revised Code Section 4928.66.

<sup>11</sup> Forefront Economics Inc. and H Gil Peach and Associates, LLC, Ohio Market Potential for Demand Side Management Programs Final Report, Page 4, Public Utilities Commission of Ohio, Case No. 09-1999-EL-POR.

Administration saved 27% more energy than targeted in 2010;<sup>12</sup> utilities have exceeded targets each year since 2005. Total utility energy efficiency investments increased by 25% from 2009 to 2010, while costs only increased by 7%.<sup>13</sup>

Closer to Kentucky, American Electric Power-Ohio recently filed a portfolio of energy efficiency programs that, if implemented as planned, will see the Company save 1.15% of load in 2012, 1.23% of load in 2013, and 1.24% of load in 2014, while saving customers \$280.7 million in utility costs over the life of the installed measures, over and above the costs of delivering the programs.<sup>14</sup> NRDC signed a settlement endorsing the plan, and I worked closely with the Company to suggest new programs and changes to existing programs to capture more savings.

Additionally, the high cost effectiveness test results of the Companies' current portfolio of DSM programs (producing \$3.39 in utility cost savings for every \$1 of utility investment<sup>15</sup>) indicate that there is likely cost effective energy efficiency being left on the table. A portfolio that as a whole exceeds a Total Resource Cost test ("TRC") of 1 will reduce the service territory's energy bill: the current portfolio TRC of 3.01 shows the Company could likely expand the universe of measures covered by its programs, or

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<sup>12</sup>Charles, G., and Eckman, T., Regional Conservation Progress Report – Results from 2010, Northwest Power and Conservation Council, October 11, 2011, Slide 3, [http://www.nwcouncil.org/energy/rtf/consreport/2010/2011\\_10presentation.pdf](http://www.nwcouncil.org/energy/rtf/consreport/2010/2011_10presentation.pdf).

<sup>13</sup> Id. at Slide 9-10.

<sup>14</sup> American Electric Power-Ohio, Volume I: 2012 to 2014 EE/PDR Action Plan, November 29, 2011, Page 10, Public Utilities Commission of Ohio Case No. 11-5568-EL-POR, et al

<sup>15</sup> ICF International, Louisville Gas and Electric Company / Kentucky Utilities Company – DSM Program Review (Mar. 18, 2011) at p. 20 (hereinafter "ICF Report"). The ICF Report was filed with the Commission as Exhibit 10 to the Companies' Demand Side Management and Energy Efficiency Program Plan filing in PSC Case No. 2011-00134



market programs more heavily, saving more energy while still staying within the bounds of cost effectiveness.

**Q: How much additional demand could a robust but achievable energy efficiency portfolio offset for the Companies?**

A: I estimate a robust but achievable portfolio of energy efficiency programs could offset 125 MW of demand in 2016 and 167 MW in 2017, in addition to the Companies' planned DSM and interruptible programs. The calculation is shown in the attached Exhibit DES-2. To determine this, I modeled the capacity impact of a portfolio that targets annual savings of .5% of load in 2012, .75% of load in 2013, and 1% of load in 2014 and thereafter, and subtracted from this the Companies' existing efforts, assuming the additional savings are spread over 75% of the hours in a year, which is conservative.<sup>16</sup> Using the Companies' 16% reserve requirement, the incremental capacity savings from a robust portfolio of energy efficiency programs would reduce the Companies' capacity shortfall by 145 MW in 2016 and 194 MW in 2017. Importantly, my analysis looks only at the capacity benefit of energy efficiency programs, not at additional demand response opportunities, such as those enabled by smart meters.

**Q: How should the Commission respond to the likelihood that the Companies are asking to build and buy generation without having fully exploited more cost-effective alternatives?**

A: In my opinion, the Commission should deny the Companies' application for a Certificate of Public Convenience and Necessity and require the Companies to analyze their

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<sup>16</sup> The Companies' existing portfolio of energy efficiency programs is more peak-correlated, savings are on average spread over half of the hours in a year. This is of course not the ideal way to analyze the peak load contribution of energy efficiency programs: to do that I would analyze the load shape of energy savings from incremental measures. My method in this proceeding uses an appropriately conservative assumption to substitute for this detailed analysis.

capacity needs if they implemented energy efficiency programs that targeted 1% annual savings. As I mentioned earlier, other utilities are finding 1% savings to be achievable and cost-effective. In the medium-term, the Companies should work with stakeholders and issue an RFP for a third party consultant to investigate the potential of energy efficiency in the Companies' service territory, accepting input on scope and assumptions from stakeholders. The National Action Plan for Energy Efficiency Guide for Conducting Energy Efficiency Potential Studies – a resource published in 2007 under the auspices of a Leadership Group made up of more than 50 leading electric and gas utilities, state utility commissioners, state air and energy agencies, energy service providers, energy consumers, and energy efficiency and consumer advocates, facilitated by the U.S. Department of Energy and U.S. Environmental Protection Agency – provides an excellent overview of energy efficiency potential studies.<sup>17</sup>

**Q: Do you have suggestions for areas where the Companies could look for energy savings opportunities?**

A: Yes, but I again must state the importance of commissioning an open, transparent energy efficiency potential study, as recommended to the Companies by ICF International.<sup>18</sup> In the residential sector, I continue to see opportunities for programs that aim to get an optimally efficient bulb in each socket. Some bulb types are not covered by the EISA standards (such as some outdoor reflector bulbs), and new technologies have been or will soon be introduced to improve energy efficiency in these and other sockets, most notably LEDs, 2X efficient incandescents, and improved CFLs. Plug loads are the fastest growing

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<sup>17</sup> National Action Plan for Energy Efficiency (2007). *Guide for Conducting Energy Efficiency Potential Studies*. Prepared by Philip Mosenthal and Jeffrey Loiter, Optimal Energy, Inc., [http://www.epa.gov/cleanenergy/documents/suca/potential\\_guide.pdf](http://www.epa.gov/cleanenergy/documents/suca/potential_guide.pdf)

<sup>18</sup> ICF Report at 3.

residential end use, utilities throughout the country are proposing or running programs to improve the energy efficiency of consumer electronics. In the commercial sector, programs to encourage the retrocommissioning of buildings and to reduce the energy use of computer servers are both promising. This is of course not an exhaustive list, but it is representative of some of the programs NRDC is working on with utilities in the region.

### **Part III: Conclusion**

**Q: Can you summarize your recommendation to the Commission?**

A: Yes. The analysis of the need for new generation contained in the Companies' application is incomplete because of the Companies' incomplete efforts to capture the opportunity for cost effective energy efficiency in its service territory. A robust energy efficiency portfolio could reduce the Companies' claimed capacity shortfall and reduce customers' energy bills.

**Q: Does this conclude your testimony?**

A: Yes.

A	B	C	D	E	F	G	H	I	J
Year	Combined Company Sales (GWh)	Combined Company Peak Demand (MW)	"Robust" Annual EE Goal (% of annual sales)	"Robust" Annual Savings (GWh)	"Robust" Cumulative Savings (GWh)	Planned Annual Savings (GWh)	Incremental Annual Savings from "Robust" (GWh)	Cumulative Incremental Savings (GWh)	Average Coincident Incremental Demand Savings (MW)
	1	2		(B*D)		3	(E-G)		(I/6570h)*1000
2012	34,511	7,210	0.5000%	173	173	168	5	5	1
2013	35,076	7,356	0.7500%	263	436	148	115	119	18
2014	35,530	7,477	1.0000%	355	791	196	159	279	42
2015	36,097	7,603	1.0000%	361	1,152	93	268	547	83
2016	36,615	7,654	1.0000%	366	1,518	93	273	820	125
2017	37,074	7,760	1.0000%	371	1,889	93	278	1,097	167

1, 2 Sinclair at 4

3 From IRP Table 8.(3)(e)(3)

need 237 MW in 2016, Voyles 10  
 Bluegrass provides 495 of summer peaking capacity, 3 units

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Turbine Facilities from Bluegrass Generation Company, LLC )  
in LaGrange, Kentucky )


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AFFIDAVIT OF DYLAN SULLIVAN FOR DIRECT TESTIMONY  
(PUBLIC VERSION)

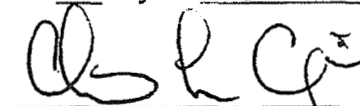
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State of )  
Illinois )  
 )

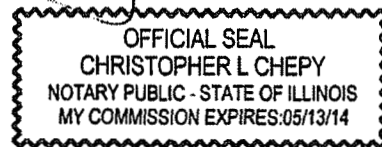
Dylan Sullivan, being first duly sworn, states the following: The prepared Direct Testimony (Public Version) and associated exhibits filed on Tuesday, December 20, 2011 constitute the direct testimony of Affiant in the above-styled case. Affiant states that he would give the answers set forth in the Direct Testimony, Public Version, if asked the questions propounded therein. Affiant further states that, to the best of his knowledge, his statements made are true and correct.

  
Dylan Sullivan

SUBSCRIBED AND SWORN to before me this 16<sup>th</sup> day of December 2011.

  
Notary Public

My Commission Expires:  
05/13/2014



STATE OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

**Joint Application of Louisville Gas & Electric )  
and Kentucky Utilities Company for a )  
Certificate of Public Convenience and )  
Necessity and Site Compatibility Certificate )  
for the Construction of a Combined Cycle )  
Plant at the Cane Run Station and the )  
Purchase of Existing Simple Cycle )  
Combustion Turbine Facilities from )  
Bluegrass Generation Company )**

**Case No. 2011-00375**

**DIRECT TESTIMONY OF  
PAUL CHERNICK**

**ON BEHALF OF  
SIERRA CLUB AND  
NATURAL RESOURCES DEFENSE COUNCIL**

**Public Version—Confidential Information Redacted**

Resource Insight, Inc.

**DECEMBER 20, 2011**

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**TABLE OF EXHIBITS**

Exhibit PLC-1

*Professional Qualifications of Paul Chernick*

1 **I. Identification and Qualifications**

2 **Q: Mr. Chernick, please state your name, occupation, and business address.**

3 A: I am Paul L. Chernick. I am the president of Resource Insight, Inc., 5 Water  
4 Street, Arlington, Massachusetts.

5 **Q: Summarize your professional education and experience.**

6 A: I received an SB degree from the Massachusetts Institute of Technology in June  
7 1974 from the Civil Engineering Department, and an SM degree from the Mass-  
8 achusetts Institute of Technology in February 1978 in technology and policy. I  
9 have been elected to membership in the civil engineering honorary society Chi  
10 Epsilon, and the engineering honor society Tau Beta Pi, and to associate  
11 membership in the research honorary society Sigma Xi.

12 I was a utility analyst for the Massachusetts Attorney General for more  
13 than three years, and was involved in numerous aspects of utility rate design,  
14 costing, load forecasting, and the evaluation of power-supply options. Since  
15 1981, I have been a consultant in utility regulation and planning, first as a  
16 research associate at Analysis and Inference, after 1986 as president of PLC,  
17 Inc., and in my current position at Resource Insight. In these capacities, I have  
18 advised a variety of clients on utility matters.

19 My work has considered, among other things, integrated resource planning,  
20 the cost-effectiveness of prospective new generation plants and transmission  
21 lines, retrospective review of generation-planning decisions, ratemaking for  
22 plant under construction, ratemaking for excess and/or uneconomical plant enter-  
23 ing service, conservation-program design, cost recovery for utility efficiency  
24 programs, the valuation of environmental externalities from energy production  
25 and use, allocation of costs of service between rate classes and jurisdictions,



1 design of retail and wholesale rates, and performance-based ratemaking (PBR)  
2 and cost recovery in restructured gas and electric industries. My professional  
3 qualifications are further summarized in Exhibit PLC-1.

4 **Q: Have you testified previously in utility proceedings?**

5 A: Yes. I have testified more than 250 times on utility issues, before regulators in  
6 more than thirty U.S. jurisdictions and five Canadian provinces. My previous  
7 testimony is listed in my resume.

8 **II. Introduction**

9 **Q: For whom are you testifying?**

10 A: My testimony is sponsored by Sierra Club and Natural Resources Defense  
11 Council.

12 **Q: What is the purpose of your direct testimony?**

13 A: My clients asked that I review the adequacy of the recent request for proposals  
14 process of Louisville Gas & Electric and Kentucky Utilities Company (collec-  
15 tively, the Companies), specifically with regard to the treatment of renewable  
16 resources in the screening of offers.

17 **Q: Over what period of time have you reviewed the Companies' filings in this  
18 proceeding?**

19 A: My clients retained me immediately upon being granted intervention on Decem-  
20 ber 14, 2011, six days before the due date for this testimony. I promptly  
21 reviewed the redacted application and the responses to both sets of Staff  
22 discovery. Unfortunately, the redactions eliminated almost all the information of  
23 interest for my review. The confidential version of the application was provided

1 to me on December 16 2011. The Companies responded to my clients' discovery  
2 on December 19, the day before my testimony was due.

3 As a result of the short period available for me to review the record,  
4 including the responses to my clients' discovery, I may need to supplement my  
5 direct testimony. If so, I will provide that supplement well in advance of the  
6 Companies' rebuttal testimony, so as not to delay the case schedule.

7 **Q: What specific issues does your testimony address?**

8 A: Based upon my brief review of the Companies' 2011 Resource Assessment  
9 (Exhibit DSS-1), along with the Companies' 2011 Integrated Resource Plan, I  
10 have concerns about the following two broad areas: the treatment of future  
11 environmental costs in the screening of resources and the treatment of various  
12 cost risks. The next two sections describe those concerns.

13 **Q: What recommendations do you have for the Commission in this  
14 proceeding?**

15 A: Unless the Staff or some other party identifies a problem in the pricing of the  
16 Bluegrass purchase, I believe the low price of that purchase and the possibility  
17 that the plant would not be available for purchase in the future argue for  
18 approval of the Bluegrass transaction. On the other hand, I recommend that the  
19 Commission defer any approval of the Cane Run combined-cycle plant, pending  
20 further analysis of the points I have raised, along with those raised in the  
21 testimony of Sierra Club and Natural Resources Defense Council witness Dylan  
22 Sullivan. The Commission does not currently have enough information to  
23 determine whether construction of the new Cane Run plant is beneficial in  
24 addition to the implementation of all cost-effective energy efficiency and a  
25 substantial purchase of renewable energy.

1           Procedurally, the Commission would need to decide whether to approve  
2           the Bluegrass transaction and leave this docket open for additional fact finding  
3           on Cane Run and alternatives, or to close this docket and invite the Companies  
4           to file a more complete analysis of Cane Run, renewables, and efficiency.

### 5   **III. Future Environmental Costs**

#### 6   **A. Conventional Pollutants**

7   **Q: How should the Companies reflect future environmental costs and require-**  
8   **ments in resource planning?**

9   A: Those considerations affect the cost-effectiveness of resources through two basic  
10   effects, each of which can manifest in a number of ways. First, environmental  
11   requirements may trigger retirements and retrofits prior to the selection of new  
12   resources, in ways that increase the cost-effectiveness of additional resources.  
13   Such changes to the Companies' existing resources may include the following:

- 14   • plant retirements, which advance the need for new capacity and increase  
15    marginal dispatch costs in the hours in which the retired plants would  
16    otherwise have run;
- 17   • retrofits that reduce plant capacity (e.g., increased internal plant loads to  
18    operate scrubbers), which have effects much like retirements, although on  
19    a smaller scale;
- 20   • retrofits that increase plant heat rate, by using electricity and/or steam;
- 21   • retrofits that increase variable operating costs (e.g., scrubber limestone,  
22    SCR ammonia and catalyst replacement, using up space in existing  
23    landfills, activated carbon) for plants that continue to operate, increasing  
24    marginal costs;

- 1 • requirements for emission allowances, which increase the effective cost of
- 2 each MWh generated, much like variable O&M;
- 3 • annual operating limitations to keep emissions, cooling-water usage, or
- 4 other environmental effects within permitted levels.

5 Second, the selection of new resources may allow the avoidance of some  
6 environmental retrofits, either by allowing retirement of the existing plants or by  
7 allowing continued operation within permitted levels without further retrofits.

8 **Q: What environmental regulations and requirements are currently pending?**

9 A: The major pending regulations of concern for the Companies' plants include the  
10 following:

- 11 • The Cross-State Air Pollution Rule (CSAPR), which sets annual emission  
12 limits for each thermal unit for annual SO<sub>2</sub> emissions, annual NO<sub>x</sub> emis-  
13 sions, and seasonal NO<sub>x</sub> emissions, to reduce fine-particulate and ozone  
14 pollution. Emission allocations can be traded between plants within Ken-  
15 tucky and can be traded across state lines to a limited extent. Current prices  
16 for those emissions allowances in 2012 are \$250/ton for SO<sub>2</sub>, \$550/ton for  
17 annual NO<sub>x</sub>, and \$625/ton for seasonal NO<sub>x</sub>. Interstate trading becomes  
18 more restricted starting in 2014. For Kentucky and 15 other states, the SO<sub>2</sub>  
19 emission limits also become more stringent in 2014. The limits on NO<sub>x</sub>  
20 emissions are designed to improve air quality in the areas that violate an  
21 older 0.080-ppm national-ambient-air-quality standard for ozone. A tighter  
22 0.075-ppm standard was adopted in 2008 (72 Fed. Reg. 16, 436 (March 27  
23 2008)), but the additional areas not in compliance with that standard have  
24 not been formally listed. The EPA has scheduled another revision of this  
25 ozone standard for 2013, and the agency's scientific advisors have already  
26 recommended a standard between 0.060 and 0.070 ppm. The stricter ozone

1 standards (and potentially stricter particulate standards) would result in  
2 tighter emission limits under future rounds of the CSAPR.

- 3 • The requirement for Maximum Achievable Control Technology to control  
4 hazardous air pollutants from power plants. The final rules are to be re-  
5 leased roughly contemporaneously with the filing of my testimony and are  
6 expected to require activated carbon injection and baghouses to capture  
7 mercury and other metal emissions, as well as some control of acid gases.
- 8 • The requirement for improved screens to limit impingement of aquatic  
9 organisms and the analysis of entrainment of smaller organisms in power-  
10 plant cooling system, a rule that only appears to affect Mill Creek 1 among  
11 the Companies' units.
- 12 • Pending requirements for improved handling of coal-plant wastes to mini-  
13 mize run-off (such as by replacing waste ponds with lined and monitored  
14 landfills) and the contamination of surface and ground waters.

15 **Q: How does the Resource Assessment incorporate future environmental costs?**

16 A: The Resource Assessment does not provide a clear summary of the effects of the  
17 Companies' plans for environmental compliance on dispatch of its existing  
18 system, and hence the energy costs avoided by new resources. The Resource  
19 Assessment, the Application, and the testimony of Company Witness David  
20 Sinclair indicate that the analysis reflects the retirement of six old coal units  
21 (Cane Run 4–6, Green River 3 and 4, and Tyrone 3), totaling 797 MW, by the  
22 end of 2015.

23 The Companies' tabulations of the future capacity of existing resources  
24 include annual variations in capacity (both up and down), with a net reduction of  
25 32 MW from 2012 to 2018 (e.g., Resource Assessment Table 7). I have not

1 found any breakdown of these changes by unit. It is not clear whether this  
2 reduction reflects all the effects of pending environmental retrofits.

3 The Resource Assessment does not provide any information regarding the  
4 Companies' modeling of the variable costs of the environmental controls, or  
5 their effects on heat rate, on the avoided production costs used in evaluating  
6 potential resources. I would expect to see prices for allowances under CSAPR  
7 listed among the "Key Assumptions" in Section 7 or Appendix B to the Resource  
8 Assessment, but allowance prices are not mentioned anywhere.

9 Finally, it does not appear that the Resource Assessment accounted for the  
10 possibility that additional supply resources would allow the Companies to retire  
11 such units as Mill Creek 1 and Brown 1 and 2, avoiding the environmental  
12 upgrades that are otherwise likely to be needed for those units.<sup>1</sup>

13 ***B. Treatment of Greenhouse Gas Regulation***

14 **Q: How does the Resource Assessment deal with the possibility that the**  
15 **Companies will be subject to future regulations to control greenhouse-gas**  
16 **regulations?**

17 A: The Resource Assessment does not contain any reference to greenhouse-gas  
18 regulations, emission limits, caps, fees, or any other constraints over the next 30  
19 years.

20 **Q: Is that a reasonable assumption at this time?**

21 A: No. The EPA has accepted the responsibility to regulate greenhouse-gas emis-  
22 sions from large sources (which would include most of the Companies' fossil  
23 power plants). The details of EPA's regulatory scheme are still under develop-

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<sup>1</sup>Reducing the Companies' energy requirements through enhanced energy-efficiency programs would also facilitate retirement of those units and avoidance of environmental retrofits.

1 ment, and whatever EPA develops under its current authority and court mandates  
2 is likely to be superseded by future legislative action.

3 **Q. What is the current status of EPA’s obligation to address carbon emissions?**

4 A. The EPA is in the process of promulgating greenhouse gas New Source Perform-  
5 ance Standards under the federal Clean Air Act. The standards are likely to re-  
6 quire new sources to take particular steps to limit their CO<sub>2</sub> emissions. The  
7 standard will also likely apply to existing sources that are modified in ways that  
8 increase greenhouse-gas emissions over a certain threshold.

9 In conjunction with this requirement, the EPA is slated to issue binding  
10 emission guidelines that will regulate greenhouse-gas emissions from electric  
11 generating units regardless of whether the source undergoes a major modifica-  
12 tion.<sup>2</sup> Either regulatory approach is likely to establish some cost for emitting  
13 CO<sub>2</sub> or to achieve required reductions in such emissions. Therefore assuming a  
14 cost of zero for future greenhouse gas regulation is unreasonable.

15 **Q: Given the uncertainties, is it possible that the appropriate estimate of the  
16 Companies’ costs of complying with greenhouse-emissions rules is zero?**

17 A: No. It is possible that future charges for carbon emissions would be zero,  
18 although I believe that is unlikely. But it is certainly possible that the costs will  
19 be positive, and they may be very large. The probability-weighted average of  
20 those potential future costs should be included in the reference case, and the  
21 wide range of possible costs should be reflected in the risk analysis.

22 **Q: Do other major utilities around the country include the cost and risk of  
23 carbon regulation in resource planning?**

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<sup>2</sup>See the EPA’s 2011 “Settlement Agreements to Address Greenhouse Gas Emissions from Electric Generating Units and Refineries: Fact Sheet” (online at [www.epa.gov/airquality/pdfs/settlementfactsheet.pdf](http://www.epa.gov/airquality/pdfs/settlementfactsheet.pdf), accessed 12/20/2011).

- 1 A: Many major utilities expect that carbon caps or taxes are likely in the future and  
2 thus include one or more CO<sub>2</sub> prices in resource evaluation. Some examples  
3 within the last year, mostly from integrated resource plans (IRPs), are as follows:
- 4 • Duke Energy Carolinas September 2011 South Carolina IRP (at 100–101)  
5 assumed a CO<sub>2</sub> price starting at \$12/ton in 2016 and increasing to \$42/ton  
6 by 2031, with higher CO<sub>2</sub> price assumptions in sensitivity analyses.
  - 7 • Georgia Power’s August 2011 IRP (at 159–160) modeled four different CO<sub>2</sub>  
8 price levels ranging from \$0 to \$30/ton starting in 2015 to “span the  
9 plausible short term and long term range of CO<sub>2</sub> requirements.”<sup>3</sup>
  - 10 • Delmarva, in its December 2010 Delaware IRP assumed a federal CO<sub>2</sub> price  
11 of \$20 per ton in 2018, increasing to \$25 per ton by 2020.<sup>4</sup>
  - 12 • Ameren Missouri’s February 2011 IRP (AT 31) includes a CO<sub>2</sub> cap-and-  
13 trade case with a price of \$7.50/ton in 2015, increasing to \$47/ton in 2040.
  - 14 • The Tennessee Valley Authority’s March 2011 IRP evaluated resources with  
15 eight CO<sub>2</sub> price-scenarios ranging from a \$0/ton low case to a high case  
16 with prices rising from \$17 per ton in 2012 to \$94 per ton by 2030.<sup>5</sup>
  - 17 • PacifiCorp’s March 2011 Utah IRP (at 159–160) used four CO<sub>2</sub> price cases,  
18 ranging from no CO<sub>2</sub> price, to as much as \$25/ton in 2015, with various  
19 escalation rates. PacifiCorp utility also modeled two scenarios involving  
20 hard caps on overall CO<sub>2</sub> emissions.

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<sup>3</sup>Georgia Power’s Application for Decertification and Updated Integrated Resource Plan, Georgia PSC Docket No. 34218 (Aug. 4, 2011) at 37. Georgia Power is a subsidiary of the Southern Company.

<sup>4</sup>Delmarva Delaware IRP Filing Resource Modeling—Supporting Documentation (Dec. 1, 2010) at 16–17. Delmarva is a subsidiary of PEPCo Holdings.

<sup>5</sup>Tennessee Valley Authority Integrated Resource Plan: TVA’s Environmental and Energy Future (Mar. 2011), at 96.



- 1           • Duke Energy Ohio July 2011 IRP included a CO<sub>2</sub> price beginning in 2016.<sup>6</sup>  
2           • The Avoided Energy Supply Cost Report (July 2011), sponsored by the  
3           New England utilities (including NStar, National Grid, Northeast Utilities,  
4           Central Maine Power and United Illuminating), included a base CO<sub>2</sub> price  
5           of \$2/ton in 2012, rising to \$15/ton in 2018 and \$39/ton in 2026, as well as  
6           low and high cases with prices of \$2/ton and \$64/ton in 2026 (all in  
7           constant 2010 dollars).<sup>7</sup>

8           Many other IRPs issued in 2010 or earlier also include carbon prices.

#### 9   **IV. Treatment of Risk**

10   **Q: How does the Resource Assessment treat risk?**

11   A: I have not found any explicit treatment of risk in the Resource Assessment.

12   **Q: What risks that arise from the Companies' existing and proposed new  
13   resources would be mitigated by renewable resources?**

14   A: Renewable resources are not subject to fluctuations in fuel costs. Most of the  
15   Companies' existing resources are fueled by coal or natural gas, while gas would  
16   fuel both of the plants proposed in this proceeding. Natural gas is the fuel supply  
17   for more of the marginal energy supply than for the Companies' total energy  
18   supply. In addition, the cost of economy power purchases is likely to be  
19   determined primarily by the price of gas in high-load hours and by coal in the  
20   low-load hours. As has been demonstrated over the last decade, fuel prices can

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<sup>6</sup>Duke Energy Ohio, Inc., 2011 Electric Long Term Forecast Report and Resource Plan, Ohio PUC Case No. 11-1439-EL-FOR (July 15, 2011), at 186.

<sup>7</sup>Hornby, Rick, Paul Chernick, Carl Swanson, et al. 2009. "Avoided Energy Supply Costs in New England: 2009 Report." Northborough, Mass.: Avoided-Energy-Supply-Component Study Group, c/o National Grid.

1 change rapidly and unexpectedly. For example, Northern Appalachian high-  
2 sulfur spot coal prices rose from about \$45/ton in late 2006 to over \$120/ton in  
3 the summer of 2008, fell back into the \$45/ton range in early 2009, and is now  
4 up to about \$80/ton

5 High fuel prices, either prolonged or sporadic, create financial and eco-  
6 nomic stress of electricity consumers.

7 **Q: Other than fuel prices, are there other important sources of cost risk from**  
8 **the Companies' fossil generation portfolio?**

9 A: Yes. The Companies' thermal power plants and economy power purchases are  
10 also subject to environmental-compliance risks that do not affect the major  
11 renewable technologies, wind and solar. Those risks include, for example, un-  
12 certainty regarding the allowance prices for the CSAPR under the current rules,  
13 under the tighter CSAPR allowance allocations to be established in the future, and  
14 the very broad uncertainty regarding future carbon emissions regulations.

15 More generally, the Companies' energy supply portfolio is highly concen-  
16 trated in coal and, to a lesser extent, gas. A highly concentrated portfolio is sub-  
17 ject to greater risk than one with a more diverse mix.

18 **Q: Does the Companies' use of multiple fuel-price forecasts constitute a risk**  
19 **analysis?**

20 A: No. Each of the fuel-price forecasts used in the Resource Assessment represents  
21 the expectations of one analyst or another (the Companies, Wood/PIRA, or CERA)  
22 regarding the average or most-likely prices in the future. None of these analyses  
23 is described as representing a high-price case in response to supply restrictions  
24 or high demand (e.g., China's demand for coal, or increased demand for gas by  
25 electric generators).

1           In addition, the Companies applied the alternative fuel-price forecasts only  
2           in the Final Phase II analysis, after the ..... in  
3           Phase I and Initial Phase II. Hence, even the variation in base-case fuel forecasts  
4           did not affect the .....

5           **Q: Is there a difference in the risk characteristics of the two resources that the**  
6           **Companies have selected and of purchases of renewable resources?**

7           A: Yes. For purchases from renewable power plants, such as wind farms, utilities  
8           generally pay a contract price per MWh delivered. Anything that increases the  
9           cost of the power, or reduces the availability of energy output, is the problem of  
10          the resource owner. The risks of building, maintaining, and operating the plant is  
11          shifted to the seller. If the plant does not work, the Companies and their cus-  
12          tomers do not pay; if the plant is expensive to operate, the Companies and their  
13          customers pay only the contracted price.

14          In contrast, in purchasing the Bluegrass plant, the Companies are taking on  
15          the risks of being the plant operator. For the Cane Run combined-cycle plant,  
16          the Companies would incur all the risks of licensing, building, and operating the  
17          plant. Almost all of those risks are passed on to ratepayers, who generally wind  
18          up paying the full cost of utility-owned power plants whether the plants operate  
19          well or not.

20          **Q: Did the Companies take the different risks of plant ownership and power**  
21          **purchases in the Resource Assessment?**

22          A: No.

23          **Q: How should the Companies have incorporated risk in the analysis?**

24          A: The Resource Assessment could have dealt with risk in several ways. For  
25          example, the Companies could have estimated the effect of high fuel prices and  
26          allowance prices on the total cost-effectiveness of renewable options and on the

1 variability of rates from one year to the next. Alternatively, the Companies could  
 2 apply a fixed percentage discount to the price of any fixed-price resource whose  
 3 cost does not vary with fuel price or emission allowance prices.

#### 4 **V. Renewable-Energy Potential and Costs**

##### 5 **Q: Are large amounts of renewable energy available?**

6 A: Yes. As summarized in, nearly 5,000 MW of utility-scale wind capacity are on  
 7 line in the states surrounding Kentucky, of which 750 MW were added in 2011.  
 8 Another 1,100 MW are under construction, and 32,000 MW are in the  
 9 transmission queues in those states. See Table 1. Note that no wind capacity is  
 10 on line or under development in Kentucky.

11 **Table 1: Megawatts of Wind Generation Around Kentucky**

State	On Line	Recent Additions		Under Construction	In Queue
		2011	2010		
Ill.	2,436	389	498	611	16,284
Ind.	1,339	303	905	-	8,426
Ky.	-	-	-	-	-
Mo.	459	2	149	-	2,051
Ohio	67	57	3	352	3,683
Tenn.	29	-	-	-	-
Va.	-	-	-	38	820
W. Va.	431		101	147	1,045

12 *Source: American Wind Energy Association, State Fact Sheets*

13 Larger amounts of wind energy are on line and under development in other  
 14 states of the MISO and PJM regions.

15 Utilities serving areas contiguous with the Companies are also purchasing  
 16 wind energy from further afield. The Tennessee Valley Authority, for example,  
 17 has 1,565 MW of wind farms under contract, comprising

- 18 • 300 MW on line in Illinois, with another 350 MW under construction,

- 1       • 115 MW on line in Iowa, with another 184 MW under construction,  
2       • 366 MW under construction in Kansas,  
3       • 250 MW under construction in South Dakota.<sup>8</sup>

4           Additional transmission currently under development will allow even more  
5       of the low-cost wind energy from the Plains states (such as Kansas, Oklahoma,  
6       Nebraska and the Dakotas) to reach the Midwest, including Kentucky.

7       **Q: Are the costs of wind energy competitive with other sources?**

8       A: Yes. Utilities such as PacifiCorp and TVA have acquired large amounts of wind  
9       energy for economic reasons, independent of any state requirements for  
10      renewable energy.

11           The costs of renewables have fallen dramatically over time. For wind,  
12      increased production of turbines, increased turbine size, and taller towers have  
13      all reduced the cost of power per MWh produced. The following are examples  
14      of the costs of power from recent projects:

- 15      • In 2007 through 2010, Oklahoma Gas and Electric (OG&E) paid about  
16      \$25/MWh for energy from the 50 MW NextEra Sooner project.<sup>9</sup>  
17      • In 2010, OG&E paid about \$47/MWh for power from the 152 MW Keenan  
18      project.<sup>10</sup>  
19      • Minnesota Power has recently estimated that its latest wind project, the  
20      105 MW Bison 3, will cost \$28/MWh.<sup>11</sup>  
21      • Kansas City Power & Light has contracted with Duke for \$38/MWh from  
22      the 131 MW Cimarron II wind farm.<sup>12</sup>

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<sup>8</sup>[http://www.tva.gov/power/wind\\_purchases.htm](http://www.tva.gov/power/wind_purchases.htm), accessed 12/20/2011.

<sup>9</sup>OG&E FERC Form 1 reports, various years, at 326–327.

<sup>10</sup>OG&E FERC Form 1 reports, various years, at 326–327.

<sup>11</sup>“Wind project to Cut Overall Costs in Minnesota,” *Megawatt Daily*, October 21, 2011, at 10.

1           The costs of solar photovoltaic systems are also falling rapidly. While solar  
2 energy is still more expensive than wind, it is also more valuable, because the  
3 energy production is predominantly during the higher-priced on-peak hours.  
4 Since solar output is highly coincident with summer peak loads, solar installa-  
5 tions at or near customer premises can avoid transmission and distribution costs,  
6 as well as reducing peak and energy line losses.

7 **Q: Does this conclude your testimony?**

8 A: Yes, at this time. Given the circumstances I describe above in Section II, I may  
9 need to supplement this testimony.

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<sup>12</sup>“Wind Turbine Glut, Greater Efficiency Drive Down Prices,” Power Finance & Risk, 9/5/2011, at 1.

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Joint Application Of Louisville Gas And Electric Company )  
and Kentucky Utilities Company for Certificates of Public )  
Convenience and Necessity for the Construction of a Combined )  
Cycle Combustion Turbine at the Cane Run Generating ) CASE NO. 2011-00375  
Station and the Purchase of Existing Simple Cycle Combustion )  
Turbine Facilities from Bluegrass Generation Company, LLC )  
in LaGrange, Kentucky )

AFFIDA

(PUBLIC VERSION)

Commonwealth of )  
Massachusetts )  
)

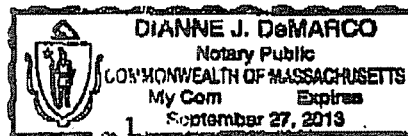
Paul Chernick, being first duly sworn, states the following: The prepared Direct Testimony (Public Version) and associated exhibits filed on Tuesday, December 20, 2011 constitute the direct testimony of Affiant in the above-styled case. Affiant states that he would give the answers set forth in the Direct Testimony, Public Version, if asked the questions propounded therein. Affiant further states that, to the best of his knowledge, his statements made are true and correct.

*Paul Chernick*  
Paul Chernick

SUBSCRIBED AND SWORN to before me this 20 day of Dec 2011.

*Dianne DeMarco*  
Notary Public

My Commission Expires:



**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)

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Institute Award, Institute of Public Utilities, 1981.

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*Environmental Externalities Valuation and Ontario Hydro’s Resource Planning* (with E. Caverhill and R. Brailove), 3 vols.; prepared for the Coalition of Environmental Groups for a Sustainable Energy Future, October 1992.

“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.

“The AGREAS Project Critique of Externality Valuation: A Brief Rebuttal,” March 1992.

“The Potential Economic Benefits of Regulatory NO<sub>x</sub> Valuation for Clean Air Act Ozone Compliance in Massachusetts,” March 1992.

“Initial Review of Ontario Hydro’s Demand-Supply Plan Update” (with David Argue et al.), February 1992.

“Report on the Adequacy of Ontario Hydro’s Estimates of Externality Costs Associated with Electricity Exports” (with Emily Caverhill), January 1991.

“Comments on the 1991–1992 Annual and Long Range Demand-Side-Management Plans of the Major Electric Utilities,” (with John Plunkett et al.), September 1990. Filed in NY PSC Case No. 28223 in re New York utilities’ DSM plans.

“Power by Efficiency: An Assessment of Improving Electrical Efficiency to Meet Jamaica’s Power Needs,” (with Conservation Law Foundation, et al.), June 1990.

“Analysis of Fuel Substitution as an Electric Conservation Option,” (with Ian Goodman and Eric Espenhorst), Boston Gas Company, December 22 1989.

“The Development of Consistent Estimates of Avoided Costs for Boston Gas Company, Boston Edison Company, and Massachusetts Electric Company” (with Eric Espenhorst), Boston Gas Company, December 22 1989.

“The Valuation of Externalities from Energy Production, Delivery, and Use: Fall 1989 Update” (with Emily Caverhill), Boston Gas Company, December 22 1989.

“Conservation Potential in the State of Minnesota,” (with Ian Goodman) Minnesota Department of Public Service, June 16 1988.

“Review of NEPOOL Performance Incentive Program,” Massachusetts Energy Facilities Siting Council, April 12 1988.

“Application of the DPU’s Used-and-Useful Standard to Pilgrim 1” (With C. Wills and M. Meyer), Massachusetts Executive Office of Energy Resources, October 1987.

“Constructing a Supply Curve for Conservation: An Initial Examination of Issues and Methods,” Massachusetts Energy Facilities Siting Council, June 1985.

“Final Report: Rate Design Analysis,” Pacific Northwest Electric Power and Conservation Planning Council, December 18 1981.

## **PRESENTATIONS**

“Adding Transmission into New York City: Needs, Benefits, and Obstacles.” Presentation to FERC and the New York ISO on behalf of the City of New York. October 2004.

“Plugging Into a Municipal Light Plant,” With Peter Enrich and Ken Barna. Panel presentation as part of the 2004 Annual Meeting of the Massachusetts Municipal Association. January 2004.

“Distributed Utility Planning.” With Steve Litkovitz. Presentation to the Vermont Distributed-Utility-Planning Collaborative, November 1999.

“The Economic and Environmental Benefits of Gas IRP: FERC 636 and Beyond.” Presentation as part of the Ohio Office of Energy Efficiency’s seminar, “Gas Utility Integrated Resource Planning,” April 1994.

“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.**

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

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

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

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- 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.

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

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- 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.

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- 96. MDPU 91-131; Update of Externalities Values Adopted in Docket 89-239; Boston Gas Company; October 4 1991. Rebuttal, December 13 1991.**
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- 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.**
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- 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.**
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- 107. Maryland PSC 8473;** Review of the Power Sales Agreement of Baltimore Gas and Electric with AES Northside; Maryland Office of People's Counsel; November 16 1992.

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- 109. South Carolina PSC 92-209-E;** In Re Carolina Power & Light Company; South Carolina Department of Consumer Affairs; November 24 1992.

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- 111. Maryland PSC 8487;** Baltimore Gas and Electric Company, Electric Rate Case; January 13 1993. Rebuttal Testimony: February 4 1993.
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- 112. Maryland PSC 8179;** for Approval of Amendment No. 2 to Potomac Edison Purchase Agreement with AES Warrior Run; Maryland Office of People's Counsel; January 29 1993.
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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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- Cost-effectiveness screening of demand-side management programs and measures; estimates by Commonwealth Edison of costs avoided by DSM and of future cost, capacity, and performance of supply resources.
- 117. FERC 2422 et al.,** Application of James River–New Hampshire Electric, Public Service of New Hampshire, for Licensing of Hydro Power; Conservation Law Foundation; 1993.
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- 121. MDPU 94-49**, Boston Edison integrated resource-management plan; Massachusetts Attorney General. August 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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- 136. Arizona Commerce Commission** U-1933-95-317, Tucson Electric Power rate increase; Residential Utility Consumer Office. January 1996.
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- 137. Ohio PUC** 95-203-EL-FOR; Campaign for an Energy-Efficient Ohio. February 1996
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- 139. Maryland PSC** 8720, Washington Gas Light DSM; Maryland Office of People's Counsel. May 1996.
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- Stranded costs. Calculation of loss or gain. Valuation of utility assets.
- 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.
- Market-based allocation of gas-supply costs of Fall River Gas Company.
- 143. Maryland PSC** 8725; Maryland Office of People's Counsel. July 1996.
- Proposed merger of Baltimore Gas & Electric Company, Potomac Electric Power Company, and Constellation Energy. Cost allocation of merger benefits and rate reductions.
- 144. New Hampshire PUC** DR 96-150, Public Service Company of New Hampshire stranded costs; New Hampshire Office of Consumer Advocate. December 1996.
- Market price of capacity and energy; value of generation plant; restructuring gain and stranded investment; legal status of PSNH acquisition premium; interim stranded-cost charges.
- 145. Ontario Energy Board** EBRO 495, LRAM and shared-savings incentive for DSM performance of Consumers Gas; Green Energy Coalition. March 1997.

LRAM and shared-savings incentive mechanisms in rates for the Consumers Gas Company Ltd.

- 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.

Increased costs and risks to ratepayers and shareholders from proposed reorganization; risks of diversification; diversion of capital from regulated to unregulated affiliates; reduction in Commission authority.

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

Critique of proposed restructuring plan filed to satisfy requirements of the electric-utility restructuring act of 1997. Failure of the plan to foster competition and promote the public interest.

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

Prudence of continued power purchase from affiliate; market cost of power; prudence disallowances and cost-of-service ratemaking.

- 153. Maryland PSC 8774**; APS-DQE merger; Maryland Office of People's Counsel. February 1998.

Power-supply arrangements between APS's operating subsidiaries; power-supply savings; market power.

- 154. Vermont PSB 6018**, Central Vermont Public Service Co. rate increase; Vermont Department of Public Service. February 1998.
- Prudence of decisions relating to a power purchase from Hydro-Quebec. Reasonableness of avoided-cost estimates. Quality of DU planning.
- 155. Maine PUC 97-580**, Central Maine Power restructuring and rates; Maine Office of Public Advocate. May 1998; Surrebuttal, August 1998.
- Determination of stranded costs; gains from sales of fossil, hydro, and biomass plant; treatment of deferred taxes; incentives for stranded-cost mitigation; rate design.
- 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.
- Prudence of decisions relating to a power purchase from Hydro-Quebec. Least-cost planning and prudence. Quality of DU planning.
- 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.
- Market value of the three Millstone nuclear units under varying assumptions of plant performance and market prices. Independent forecast of wholesale market prices. Value of Pilgrim and TMI-1 asset sales.
- 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.

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

- 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.
- Errors of the CDPUC in deriving discounted-cash-flow valuations for Millstone and Seabrook, and in setting minimum bid price.
- 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.
- Cost allocation and rate design. Net vs. gross load billing. Export and wheeling-through transactions. Environmental implications of utility proposals.
- 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.  
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- 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.  
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- 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.  
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- 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.**
- Identifying, quantifying, and allocating merger-related gas-supply savings between ratepayers and shareholders. Establishing baselines. Allocations between affiliates. Unaccounted-for gas.
- 188. New Jersey BPU EX01050303; New Jersey electric companies' procurement of basic supply; New Jersey Ratepayer Advocate. August 2001.**
- Review of proposed statewide auction for purchase of power requirements. Market power. Risks to ratepayers of proposed auction.
- 189. NY PSC 00-E-1208; Consolidated Edison rates; City of New York. October 2001.**
- Geographic allocation of stranded costs. Locational and postage-stamp rates. Causation of stranded costs. Relationship between market prices for power and stranded costs.
- 190. MDTE 01-56, Berkshire Gas Company; Massachusetts Attorney General. October 2001.**
- Allocation of gas costs by load shape and season. Competition and cost allocation.
- 191. New Jersey BPU EM00020106; Atlantic City Electric proposed sale of fossil plants; New Jersey Ratepayer Advocate. December 2001.**
- Current market value of generating plants vs. proposed purchase price.
- 192. Vermont PSB 6545; Vermont Yankee proposed sale; Vermont Department of Public Service. Direct, January 2002.**
- Comparison of sales price to other nuclear sales. Evaluation of auction design and implementation. Review of auction manager's valuation of bids.
- 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.**
- Review of 1991 decision to commit to long-term uneconomic purchase from Hydro Québec. Alternatives; role of transmission constraints. Calculation of present damages from imprudence.

- 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
- Comparison of sales price to other nuclear sales. Evaluation of auction design and implementation. Assessment of valuation of purchased-power contracts.
- 197. Ontario EB RP-2002-0120;** Review of transmission-system code; Green Energy Coalition. October 2002.
- Cost allocation. Transmission charges. Societal cost-effectiveness. Environmental externalities.
- 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
- Proposed distribution investments, including prudence of prior management of distribution system and utility's failure to make investments previously funded in rates. Cost controls. Application of rate cap. Legislative intent.
- 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.
- Inadequacies of proposed transmission plan. Failure of to perform least-cost planning. Distributed resources.
- 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.
- Pricing of standard-offer service in competitive markets. Critique of anticompetitive features of proposed standard-offer supply, including non-bypassable charges.

- 203. NY PSC Cases 03-G-1671 & 03-S-1672; Consolidated Edison Company Steam and Gas Rates; City of New York. Direct March 2004; Rebuttal April 2004; Settlement June 2004.**
- Prudence and cost allocation for the East River Repowering Project. Gas and steam energy conservation. Opportunities for cogeneration at existing steam plants.
- 204. NY PSC 04-E-0572; Consolidated Edison rates and performance; City of New York. Direct, September 2004; rebuttal, October 2004.**
- Consolidated Edison's role in promoting adequate supply and demand resources. Integrated resource and T&D planning. Performance-based ratemaking and streetlighting.
- 205. Ontario EB RP 2004-0188; cost recovery and DSM for Ontario electric-distribution utilities; Green Energy Coalition. Exhibit, December 2004.**
- Differences in ratemaking requirements for customer-side conservation and demand management versus utility-side efficiency improvements. Recovery of lost revenues or incentives. Reconciliation mechanism.
- 206. MDTE 04-65; Cambridge Electric Light Co. streetlighting; City of Cambridge. Direct, October 2004; Supplemental January 2005.**
- Calculation of purchase price of street lights by the City of Cambridge.
- 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.**
- Size and financing of proposed interconnection. Rate design. Water-mains replacement and related cost recovery. Lost and unaccounted-for water.
- 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.
- 209. Maryland PSC 9036; Baltimore Gas & Electric rates; Maryland Office of People's Counsel. Direct, August 2005.**
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- 210. British Columbia Utilities Commission Project No. 3698388, British Columbia Hydro resource-acquisition plan; British Columbia Sustainable Energy Association and Sierra Club of Canada BC Chapter. Direct, September 2005.**
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- 263. N.S. UARB** Docket NSPI P-202; Load Retention Tariff; NS 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 Impacting Oklahoma Utilities; Sierra Club; comments July, October 2011; presentation July 2011.
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