

Ex. N-26

NSUARB P-172

NOVA SCOTIA UTILITY AND REVIEW BOARD

In the Matter of: An Application by NSPI, NewPage Port Hawkesbury
Corp. and Strait Bio-Gen Ltd. For Review and Approval of
a Proposed 60 MW Biomass Project PPA
and
Approval of a Proposed 60 MW Biomass Project

DIRECT TESTIMONY OF

PAUL CHERNICK

ON BEHALF OF

THE CONSUMER ADVOCATE

REDACTED

Resource Insight, Inc.

JUNE 16, 2009

RECEIVED
JUN 16 2009

Nova Scotia
Utility and Review Board

TABLE OF CONTENTS

I.	Identification & Qualifications	1
II.	Introduction.....	3
III.	Process Issues	5
IV.	Least-Cost Planning Issues	7
	A. NSPI Incentives	9
	B. Biomass Usage and Supply	9
	C. Wind-plant Cost Trends	12
V.	Contract Pricing Issues	21
VI.	Recommendations.....	24

TABLE OF EXHIBITS

Exhibit____PLC-1	<i>Professional Qualifications of Paul Chernick</i>
------------------	---

1 **I. Identification & 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 St,
4 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
8 Massachusetts Institute of Technology in February 1978 in technology and
9 policy. I have been elected to membership in the civil engineering honorary
10 society Chi Epsilon, and the engineering honor society Tau Beta Pi, and to
11 associate membership in the research honorary society Sigma Xi.

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

19 My work has considered, among other things, the cost-effectiveness of pro-
20 spective new electric generation plants and transmission lines, retrospective
21 review of generation-planning decisions, ratemaking for plant under construc-
22 tion, ratemaking for excess and/or uneconomical plant entering service, conser-
23 vation program design, cost recovery for utility efficiency programs, the valua-
24 tion of environmental externalities from energy production and use, allocation of

1 costs of service between rate classes and jurisdictions, design of retail and
2 wholesale rates, and performance-based ratemaking and cost recovery in restruc-
3 tured gas and electric industries. My professional qualifications are further
4 summarized in Exhibit ____PLC-1.

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

6 A: Yes. I have testified more than two hundred times on utility issues before various
7 regulatory, legislative, and judicial bodies, including utility regulators in twenty-
8 four states and four Canadian provinces, and two US Federal agencies.

9 **Q: Have you previously testified before this Board?**

10 A: Yes. I testified in the Board's review of Nova Scotia's Demand Side Manage-
11 ment Plan for 2010 and Demand Side Management Cost Recovery Rider in May
12 2009.

13 **Q: Please summarize your experience regarding purchased-power contracts.**

14 A: I have reviewed a large number of proposed purchased-power contracts,
15 including those in the following dockets:

- 16 • New Mexico PSC 1794 (1983): bundle of transactions, including new
17 transmission, nuclear sale, and coal purchase
- 18 • MDPU 88-19 (1987), MDPU 88-123 (1988): Riverside coal plant
- 19 • NH PUC Docket DR 97-241: system power purchase from affiliate
- 20 • Vermont PSB 5330 (1990), Vermont PSB 5491 (1991) Vermont PSB 5983
21 (1997), Vermont PSB 6018 (1998), Vermont PSB 6107, Vermont PSB
22 6460 & 6120 (2001), Vermont PSB 6596 (2002): long-term purchase of
23 hydroelectric power
- 24 • Maryland PSC 8179 (1993): Warrior Run coal plant
- 25 • Connecticut DPUC 06-01-08 PH01 and PH02: standard-service and last-
26 resort supply (2006 to present)

- 1 • Connecticut DPUC Docket 07-04-24 (2007): review combustion turbine
- 2 and combined-cycle contracts proposed by independent consultant
- 3 • Connecticut DPUC Docket 08-07-07 (2008): review proposed combustion
- 4 turbine contracts, recommend contracts for regulator approval
- 5 • Connecticut DPUC Docket 06-01-08 PH03: long-term firm and unit-
- 6 contingent contracts (2008 to present)
- 7 In addition, I have been involved in generic rulemakings for power
- 8 contracting, including in the following dockets:
- 9 • MDPU 535 (1981); MDPU 84-276 (1985): purchased-power rates
- 10 • Connecticut DPUC 05-07-18 (2005): financial effects of power purchases
- 11 • New Jersey BPU EX01050303 (2001): statewide auction for power
- 12 requirements

13 **II. Introduction**

14 **Q: On whose behalf are you testifying?**

15 A: My testimony is sponsored by the Nova Scotia Consumer Advocate.

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

17 A: The Consumer Advocate has asked me to comment on the proposal of Nova
18 Scotia Power, Inc. (NSPI) to enter into a 25-year contract to purchase the output
19 of Strait Bio-Gen, a 60-MW biomass cogeneration system that NewPage Port
20 Hawkesbury (NPPH) has proposed to supply steam to its pulp and paper mill.

21 **Q: Please summarize your observations on the NSPI proposal.**

22 A: I have identified the following three interlocking categories of problems with
23 NSPI's proposal:

- 1 • *Problems in the process.* NSPI has come to the Board to seek a ratepayer
2 bailout from a problem—a potential shortfall in meeting the Province’s
3 renewable energy standards (RES) for 2010 due to delays in the schedules
4 of wind projects selected in the 2007 RFP—that NSPI got itself into. NSPI
5 has presented this proposal to the Board on a schedule that precludes
6 comprehensive review.
- 7 • *Problems in planning and cost minimization.* NSPI did not solicit [REDACTED]
8 [REDACTED] alternative bids, has not pursued ownership issues that
9 its own studies indicate would solve its RES problem without the Strait
10 Bio-Gen contract, and has not considered the effect of Strait Bio-Gen on
11 the co-firing of its own power plants.
- 12 • *Problems with the contract itself.* The contract provides for 65% of the
13 price to escalate with a market fuel-price index that has not yet been
14 designed, even though NPPH is expecting to provide half the fuel from its
15 own operations (rather than from the market). NPPH has also indicated
16 that it may become a dominant player in the Nova Scotia biomass market,
17 giving NPPH the opportunity to manipulate biomass prices. The contract
18 would also increase the price of the Strait Bio-Gen power if NPPH stops
19 using Strait Bio-Gen steam for 30 days for any reason. All these factors
20 make the contract difficult to evaluate and risky to the buyer.

21 Each of these factors complicates the others, as follows:

- 22 • The utility’s failure to inform the Board and ratepayers about the process
23 and results of the 2007 RFP and its subsequent concerns with project delay
24 exacerbates the problems of the tight schedule.
- 25 • The violation of least-cost planning principles and the problems with the
26 contract raise issues that cannot be resolved in the schedule for this
27 proceeding.

1 • The problems with the contract would complicate any attempt to determine
2 whether this contract is least cost.

3 **Q: What is your recommendation to the Board in this matter?**

4 A: I recommend that the Board deny NSPI's request for pre-approval of the Strait
5 Bio-Gen project, as well as NSPI's proposed change to its fuel manual and the
6 scope of the Fuel Adjustment Mechanism (FAM).

7 That denial would leave NSPI the option of entering into a contract with
8 Strait Bio-Gen under existing rules and filing at a later date for an adequate
9 review of its prudence in drafting and signing the eventual contract. At that time,
10 the Board can also address the recovery of the contract costs, including
11 amendments to the FAM.

12 **III. Process Issues**

13 **Q: What are the process issues you have with NSPI's request?**

14 A: I have the following problems with the handling of this matter. NSPI

- 15 • has requested and been granted a procedural schedule with insufficient
16 time for review of a contract of this complexity.
- 17 • chose not to keep the Board and ratepayer representatives informed about
18 NSPI's review of the bids or the winning contracts in the 2007 RFP, or
19 progress of the projects toward completion.¹
- 20 • did not involve the Board and ratepayer representatives in the review of
21 Strait Bio-Gen proposal until after the filing of the application in this
22 docket, in late April 2009.

¹NSPI apparently shared some information with someone at the NSDOE, in connection with NSDOE's role as administrator of the RES. (IR Liberty-33)

- 1 • chose to file very little information about either the supposed problems of
2 the wind projects from 2007 RFP or alternatives for RES compliance in its
3 direct testimony.

4 As a result of the last three points, the first real information regarding the
5 nature of NSPI's perceived problem and the possible solutions was provided to
6 other parties with the IR responses on June 9, 2009.² Those responses suggest
7 that NSPI had and continues to have alternatives to the Strait Bio-Gen contract.
8 Even with the IR responses, NSPI has not fully disclosed the following infor-
9 mation:

- 10 • the state of its negotiations with other suppliers and the status of other RES
11 compliance options, such as co-firing.
- 12 • the nature of the problems with the wind projects contracted in the 2007
13 RFP. While NSPI repeatedly claims that delays in the wind projects
14 resulted from global financial problems, it has provided no evidence to
15 support that assertion. Wind projects with utility contracts are being
16 financed throughout North America. The current record does not allow the
17 Board to determine whether NSPI chose developers who were not com-
18 petent to built wind plants, or projects that were not sufficiently advanced
19 in development to meet NSPI's schedule, or whether some feature of
20 NSPI's contract has hampered the developers' ability to secure financing.

21 **Q: Has the short schedule limited your ability to clarify NPPH's positions, as**
22 **well?**

23 **A:** Yes. The record remains garbled even in such basic considerations as NPPH's
24 plans for fueling the plant.

²Board Staff received some supplemental information on May 20.

1 **Q: Do you see any significance to your second point—NSPI’s exclusion of other**
2 **parties from review of the 2007 RFP—other than exacerbation of the**
3 **timing problems?**

4 A: Yes. In the 2007 RFP, NSPI chose to make its planning decisions on its own,
5 without consultation or oversight, exercising its independent business judgment.
6 Since the RFP, NSPI has kept its own counsel regarding the management of the
7 contracts, as well as decisions as to whether or not to invest in projects,

8 [REDACTED]
9 [REDACTED] and pursue biomass co-
10 firing in its own plants. Now that it perceives that those judgments may have
11 exposed shareholders to some risk, NSPI is asking the Board to force ratepayers
12 to rescue NSPI by guaranteeing recovery of the Strait Bio-Gen contract costs.

13 If NSPI is actually in trouble due to its earlier independent decisions, it
14 should bear the consequences.

15 As NSPI observes, the Strait Bio-Gen contract “is different from existing
16 PPA contracts, in terms of cost and how it came to the attention of NSPI, and
17 requires UARB approval and stakeholder review.” (Avon IR-2) I would add to
18 this list of reasons for special scrutiny the peculiar contract terms and NSPI’s
19 inconsistent behaviour with respect to various renewable projects. The schedule
20 in this proceeding does not allow for the required review.

21 **IV. Least-Cost Planning Issues**

22 **Q: How would approval of NSPI’s proposal be inconsistent with least-cost**
23 **planning principles?**

24 A: I have identified the following six inconsistencies. NSPI

- 1 • proposes to abandon the competitive RFP process, without adequate
2 showing that Strait Bio-Gen is clearly superior to the least-cost bid that
3 could be expected in an RFP. As NSPI states in explaining why it did not
4 issue a Standard Offer for renewable energy, “Competitive processes are
5 the preferred method of procurement for energy in Nova Scotia” (IR Avon-
6 2).
- 7 • accepted the Strait Bio-Gen proposal outside an RFP, [REDACTED]
8 [REDACTED]
9 [REDACTED] (IR Liberty-
10 31).
- 11 • failed to evaluate the effect of Strait Bio-Gen on biomass supply and price
12 for co-firing of its existing coal boilers, even though co-firing is a
13 preferred renewable resource for several reasons. I discuss this issue below
14 in Section V.
- 15 • believes that it could increase the supply of wind power by investing in
16 some of the wind projects that are currently behind schedule, but did not
17 follow up on that option. Indeed, NSPI has taken over the Nuttby project to
18 ensure its completion. IR Liberty-33, Attachment 4, [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED] And “NSPI is currently considering providing
23 financial support to certain projects,” (IR CA-4) which could lead to NSPI
24 meeting the RES obligation without Strait Bio-Gen. NSPI has not
25 explained why it has not yet pursued investments in additional projects.

- 1 • dismisses new wind generation as an alternative to Strait Bio-Gen, without
2 considering the trends in wind-plant costs. I discuss this point in the next
3 subsection.
- 4 • ignores—in its analysis at pages 3–5 of its Direct Evidence—system-
5 interconnection costs for Strait Bio-Gen, but includes whatever level of
6 those costs (including the risk of high allocations of costs) are embedded
7 in the wind bids.

8 **A. *NSPI Incentives***

9 **Q: Can the Board rely on NSPI to act in the interest of ratepayers in this**
10 **matter?**

11 A: No. While NSPI appears to have viable alternatives for meeting its RES
12 obligations, management appears to believe that shareholders are at risk for
13 some level of penalty if those obligations are not met. The primary purpose of
14 NSPI's filing in this case is to ensure that the costs and risks of the Strait Bio-
15 Gen proposal would be borne entirely by ratepayers. In short, NSPI is proposing
16 to replace a small risk to shareholders with a large risk to ratepayers.

17 In general, the responsibility of NSPI management is to protect and
18 promote the interests of shareholders. It is the Board's responsibility to prevent
19 NSPI's pursuit of shareholder benefits from harming ratepayers.

20 Under these circumstances, and particularly in light of obvious problems
21 with process and contract terms, NSPI's opinions about the value of the Strait
22 Bio-Gen contract are inherently suspect.

23 **B. *Biomass Usage and Supply***

24 **Q: Is the proposed Strait Bio-Gen project a much-more-efficient use of the**
25 **wood fuel than co-firing in NSPI boilers?**

1 A: Surprisingly, no. I say “surprisingly” because cogeneration systems are usually
2 more efficient than a combination of stand-alone steam-electric plants and
3 process boilers. Also, NewPage (Direct, p. 10) asserts that the Strait Bio-Gen
4 “pricing is benefiting from...operation as a cogeneration facility with the Mill as
5 the steam host.”

6 As I read NPPH’s responses to IR NPPH CA-4 and CA-5, NPPH is
7 projecting that 40% of the boiler output would go to NPPH process loads while
8 the remaining 60% of the output would be used to generate electricity. Two
9 thirds of the energy used in electric generation would be exhausted to the
10 condenser, so the electric generation would be about 33% efficient. That is about
11 the efficiency of a normal steam-electric power plant without cogeneration, from
12 fuel to busbar output. But the Strait Bio-Gen efficiency is computed from the
13 boiler output to the busbar (or NPPH process), without any deduction for energy
14 going up the stack. Including stack losses, which would tend to be rather for
15 green wood fuel, the overall efficiencies for Strait Bio-Gen would be much
16 lower than the steam-use percentages I compute.³

17 Since coal plants are usually more than 33% efficient even including their
18 stack losses, NPPH’s figures for Strait Bio-Gen efficiencies imply that the same
19 amount of wood co-fired in a utility boiler would produce more electricity, at a
20 lower cost. It is also difficult to see how ratepayers would benefit from Strait
21 Bio-Gen’s operation as a cogeneration facility at such low efficiency.⁴

³Green wood contains water and combustion of wood releases additional water; the heat necessary to boil off that water goes up the stack with the water vapor. An NSPI coal plant co-firing wood would have similar stack losses for the wood portion of its fuel.

⁴It is not clear whether the heat rates provided in IR NPPH Multeese-3 are consistent with the responses I cite above, since NPPH does not specify whether the heat rates are based on higher heat

1 **Q: Does NSPI have an adequate assessment of the biomass supply in Nova**
2 **Scotia?**

3 A: No. NSPI appears to be just beginning work on this issue.

4 [REDACTED] (IR Liberty-
8 33)

9 Nova Scotia Power does not appear to know yet whether the biomass that
10 would be used at Strait Bio-Gen would reduce the biomass available for co-
11 firing in its existing boilers on a ton-for-ton, Btu-for-Btu basis.

12 Nova Scotia Power (IR Liberty-33 Attachment 2) says that co-firing is very
13 valuable to its customers, listing the following benefits:

- 14 • [REDACTED]
- 16 • [REDACTED]
- 19 • [REDACTED]
- 21 • [REDACTED]
- 22 • [REDACTED]

23 It would be unfortunate were the hastily-entered Strait Bio-Gen contract to
24 interfere with biomass co-firing at existing NSPI stations.

value (including the energy used to vaporize water) or lower heat value (excluding that energy).
This is another mystery that I have not been able to resolve within the schedule of this case.

1 **C. *Wind-plant Cost Trends***

2 **Q: What is NSPI's basis for assuming that new wind projects would not be**
3 **competitive with Strait Bio-Gen?**

4 A: NSPI's rationale for its estimate of new wind costs is follows:

5 It is logical to conclude that wind projects with the best economics will be
6 developed first and that later projects will have higher costs associated with
7 less favourable conditions of the projects. Therefore, we expect that any
8 future responses to RFPs will include pricing closer to [the average price of
9 projects rejected in the 2007 RFP] than to [the average price of projects
10 accepted in the 2007 RFP]. (NSPI Direct, May 4, 2009, p. 4)

11 Based on this argument, NSPI assumes that any future wind project will be
12 priced slightly above the price of the average rejected project from 2007. NSPI
13 reduces the target price by 5%, but increases it almost 7% for three years'
14 inflation (NSPI Direct Evidence, May 4, 2009, p. 4).

15 **Q: Is NSPI's conclusion really "logical"?**

16 A: No. NSPI ignores the trends in costs and in development of the wind-power
17 market since 2007.⁵

18 **Q: How have wind-plant costs changes since 2007?**

19 A: Costs have fallen significantly. In 2007, wind-plant costs were very high, due to
20 the weakness of the dollar, rising materials costs, a concerted movement
21 towards increased manufacturer profitability, and a shortage of components
22 and turbines continued to put upward pressure on wind turbine costs
23 ("Annual Report on U.S. Wind Power Installation, Cost, and Performance
24 Trends: 2007," U.S. DOE, May 2008, p. 16)

25 Other than exchange rates, all these factors have reversed since 2007. With
26 the global slowdown, materials costs have fallen, components and turbines are

⁵The utility does not address the two projects it rejected with prices lower than its assumed future price. Indeed, one of those projects bid less than [REDACTED]; NSPI does not explain why it was not selected.

1 in surplus supply, and the combination of reduced demand and addition of new
2 production capacity has reduced manufacturers' market power.

3 **Q: Have turbine manufacturers indicated that production capacity is**
4 **increasing and costs are falling?**

5 A: Yes. Gamesa Corporación Tecnológica ("2008 Results," power-point presenta-
6 tion (Madrid, 26 February 2009) indicated that its US annual production
7 capacity had increased by 900 MW from 2005 to 2008 (p. 6), and that it plans
8 another 30% increase in US production capacity by 2011 (p. 28).⁶

9 Clipper Windpower PLC says in its 2008 Annual Report:

10 After the strong U.S. Market growth in 2007 and 2008 of 114% and 49%,
11 respectively, the global financial turmoil has affected the Group's
12 customers and the entire wind industry. The constrained credit markets and
13 reduced availability of financing for wind projects have markedly slowed
14 activity in U.S. wind deployment.⁷ Customers have responded by reducing
15 capital expenditures and delaying the timing of turbine deliveries, which
16 have resulted in significantly fewer installations planned for 2009 and
17 2010....The Group has taken swift measures to improve results and
18 conserve cash through reductions in operating expenses and product
19 costs.... (p. 4)

20 Due to customer deferrals of some projects in 2009, and the ensuing lower
21 number of turbines ordered and shipped, Clipper reduced its workforce by
22 90 employees in early 2009, representing 11% of the total employee base
23 and 30% of production-related areas. (p. 4)

24 In 2009, Clipper expects continued dislocation of the debt markets resulting
25 in a continued unfavorable impact on our current customers and the wind
26 market. Given these extraordinary challenges, management is focused on
27 three priorities:

⁶I computed this increase from Gamesa's statements that it had increased capacity by 1,800 MW/year, 78% (or 1,400 MW/year) in the US and China. Since 2008 Gamesa production capacity in China was about 500 MW/year, that leaves about 900 MW/year in the US.

⁷As I note in Section III, this effect is generally limited to merchant plants, without contracts.

- 1 • Increase cash flow to offset the impact of deferred and reduced orders;
- 2 • Reduce operating and component costs to improve margins; and
- 3 • Prove turbine design and operation.
- 4 - Successfully complete remediation activities
- 5 - Improve turbine availability to exceed industry averages
- 6 - Continue to qualify the Liberty turbine for third party financing
- 7 (p. 5)

8 Margins are also expected to benefit from lower component and
9 manufacturing costs. (p. 5)

10 Vestas' Interim Financial Report for Q1 2009 says:

11 Component prices peaked in 2008 and are not expected to rise in 2009
12 because of the weaker economic growth. Longer term, lower raw materials
13 prices could lead to lower prices of wind turbines. Large-scale investments
14 throughout the supply chain have eliminated any immediate risk of
15 bottlenecks and, by extension, Vestas' need for buffer stocks, which will
16 henceforth be reduced. (p. 3)

17 The number of providers and sub-suppliers is growing, leading to
18 intensified competition throughout the value chain. (p. 3)

19 Vestas is investing heavily in new capacity in the USA and China, as the
20 long-term goal is to supply "North America from the USA." (p. 7)

21 Since the autumn of 2008, Vestas has experienced very limited order intake
22 in the USA. (p. 10)

23 **Q: Have these production-level developments been reflected in developer**
24 **estimates of wind-plant costs?**

25 A: For example, Wisconsin Electric Power found that turbine prices had fallen 21%
26 between its October 24, 2008 application for construction approval and its May
27 2009 update to reflect reduced "wind turbine prices," as follows:

28 Market conditions for the procurement of wind turbine equipment have
29 changed considerably since Wisconsin Electric initially submitted its
30 application. (Motion For Leave To File Supplemental Direct Testimony
31 And For Extension Of Deadlines PSC Wisconsin Docket No. 6630-CE-
32 302, p. 2, May 2009)

1 Shortly after we filed our application for a CPCN on October 24, 2008, it
2 became apparent that the wind turbine market was softening considerably
3 and that prices were decreasing accordingly. Since that time, Wisconsin
4 Electric has been working with the vendors to solidify the best opportunity
5 for the project and its customers and has received updated proposals for the
6 Gamesa G90, GE 1.5xle, Vestas V90-1.8 and Siemens SWT-2.3-93. All of
7 the vendors lowered their prices and improved other characteristics of their
8 offerings. (Supplemental Direct Testimony of Richard E. O'Connor, PSC
9 Wisconsin Docket No. 6630-CE-302, p. 217, May 2009)

10 The capital cost estimate for the largest wind turbine under consideration,
11 exclusive of AFUDC, has been reduced from \$525.6 million to \$413.5
12 million. (Supplemental Direct Testimony of Stephen R. Jones, PSC
13 Wisconsin Docket No. 6630-CE-302, p. 215, May 2009)

14 **Q: Does NSPI recognize these changed conditions in the wind-plant market?**

15 A: No. When asked about how prices for wind projects will be reduced (all else
16 equal) compared to its December 2007 procurement due to improved technology
17 in wind-turbine design, larger turbines and higher towers, improved manufac-
18 turing technology, increased competition among manufacturers, reduced demand
19 due to the recession, identification and development of more advantageous sites,
20 NSPI responded,

21 To evaluate the Biomass Project, NSPI compared it to the next best alterna-
22 tives that were considered to be available in the near term to assist NSPI in
23 meeting the 2010 RES targets. In considering wind projects, NSPI assumed
24 that any project that could compete in the near term would have to secure
25 financing in the near term, as lead time to develop a project is estimated to
26 be 24 months from executing a PPA. Therefore, in the time horizon
27 contemplated by the evaluation the above factors are not expected to reduce
28 future prices. (IR CA-5)

29 The utility also cited its answer to IR CA-5 in response to NSDOE's
30 question "is it NSPI's evidence that wind projects that may be developed in the
31 future will have economics that are worse than those that are currently under
32 development?" (IR NSDOE-10).

33 **Q: Does NSPI's explanation make any sense in response to either IR?**

1 A: No. A project “securing financing in the near term” in 2009 would be getting
2 2009 bids for turbines and towers, which would be lower than 2007 bids.
3 Developers who have made progress with project development since 2007
4 would also be able to provide more realistic prices with smaller risk adders. I do
5 not understand how NSPI believes that 2009 wind-power offers would be based
6 on 2007 equipment prices and information.

7 **Q: What is NSPI’s explanation for the delay in the in-service dates for some**
8 **wind projects from the 2007 RFP?**

9 A: NSPI attributes the problems to global financial problems.

10 [The 2007 RFP] projects have been profoundly affected by the turmoil in
11 international financial markets. Many of the projects are now experiencing
12 difficulty with project financing and schedules and their ability to meet
13 their project timelines is uncertain. (May 4 Evidence, p. 2)

14 NSPI understands that many of the 2007 RFP projects are experiencing
15 difficulty as a result of the turmoil in international financial markets.
16 (NSDOE IR-9(a))

17 [REDACTED] (Liberty IR-33 Attachment 4, p. 2)

20 NSPI understands generally that certain of the projects are experiencing
21 financial difficulties due to the turmoil in international financial markets.
22 The specific reasons why individual developers are having difficulties is a
23 matter for discussion with the individual developers. (CA IR-4(b))

24 **Q: Does NSPI offer any evidence that wind projects are experiencing difficulty**
25 **with project financing due to the capital markets?**

26 A: No. NSPI says that no project developers indicated that lenders have any doubt
27 that NSPI will honour its contracts. (IR CA-4(a)) Holding a valid contract with a
28 credit-worthy utility should be sufficient to allow financing of otherwise viable
29 projects.

1 As noted in IR CA-4(b), NSPI's evidence pointing to "turmoil in inter-
2 national financial markets" as the reason for project difficulties is limited to its
3 "general understanding." NSPI refers any question about "specific reasons why
4 individual developers are having difficulties" to "the individual developers,"
5 indicating that NSPI has no basis for its strong factual assertions in its direct
6 evidence and IR responses regarding the cause of wind-project delays.

7 Nova Scotia Power has no "information on whether wind plants under
8 contract to utilities and agencies in other provinces and states are experiencing
9 difficulty in financing" (IR CA-3).

10 The only evidence NSPI has provided, in response to requests for direct
11 support for its assertion that projects are now experiencing difficulty with
12 project financing and schedules, are the "quarterly reports filed by all wind
13 projects" (IR Multeese-1). While NSPI asserts (in the same place) that "the
14 quarterly reports for January 2009 reflect that the majority of projects had begun
15 to experience difficulties with project financing," my reading is that project
16 financing is not the critical issue for most of the delayed projects. Where project
17 financing is an issue, that seems to be the result of other problems, generally
18 originating in the developers' preparation or the behaviour of NSPI.

19 **Q: Do the Quarterly Development Reports in IR Multeese-1 support the**
20 **conclusion that "turmoil in international financial markets" is responsible**
21 **for delay of the projects?**

22 A: No. To the contrary:

- 23 • [REDACTED] are on schedule and
24 appear to have no financial problems, indicating that "turmoil in
25 international financial markets" is not a generic barrier to project
26 completion.

[REDACTED]

[REDACTED]

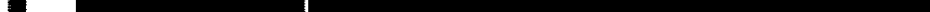
[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

15 Since financing generally occurs after all major issues have been resolved,
16 these projects have delayed their financing. But financing does not appear to be
17 the critical issue. Wind developers with utility contracts elsewhere in North



March 2009 report states,

” NSPI asserts it “

(IR CA-4) but does not identify which PPA holders were so favored, whether the favored projects had already been delayed by NSPI's slow processing of the SIS before they received this benefit, and why other projects (such as [REDACTED] had not been so favored. NSPI avoided the SIS problem with Strait Bio-Gen by agreeing to cap system interconnection costs and increase the purchase price to cover whatever costs were allocated to Strait Bio-Gen (Exhibit N-2, p. 2).

America have been financing projects, as have some NSPI projects. Of all the NSPI projects, only [REDACTED] [REDACTED]

[illegible][illegible]

Q: Can you provide an example of a project whose schedule appears to have been delayed primarily by NSPI's failure to complete transmission studies?

A: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[illegible]

§ 87(2)(b) [REDACTED]

§ 87(2)(b) [REDACTED]

§ 87(2)(b) [REDACTED]

[illegible]

16 A: Yes. A quick review of *Power Finance and Risk's* transaction database indicates
17 that at least two dozen projects in North America, totaling about 4,312 MW,
18 have obtained financing in this period, totaling about \$5 billion.¹⁰ This list
19 includes three Canadian projects, in Ontario, Quebec, and the Dalhousie project
20 in Nova Scotia.

¹⁰The database does not include all projects, nor the amount for every project it lists. In some cases, we have only the amount of one portion of the project financing (e.g., just the debt or just the equity).

1 **V: Contract Pricing Issues**

2 **Q: What are the problems in evaluating the pricing of the Strait Bio-Gen**
3 **contract?**

4 A: Under the proposed contract, some 39% of the contract price would escalate at a
5 currently undefined Nova Scotia Biomass Index for the entire 25 year contract
6 term.¹¹

7 **Q: What are the problems with the biomass-market-price escalator?**

8 A: The biomass-market-price escalator

- 9 • is not currently defined, and it is not clear who would define it;
10 • is a market-price index, rather than a cost escalator;
11 • starts from a 2010 base, before Strait Bio-Gen would come on line, and
12 would those reflect the tightening of the market due to Strait Bio-Gen's
13 demand.

14 **Q: Have you ever seen a contract that depended on a price index that did not**
15 **yet exist?**

16 A: No.

17 **Q: Is it possible to evaluate a contract with a major undefined escalator?**

18 A: Not with any assurance.

19 **Q: What is the problem with the use of a market-price index?**

20 A: As I understand it, this escalator would be a market-price index, rather than a
21 biomass-harvesting-cost index (comprising labor, equipment, trucking and
22 possibly stumpage costs), and could escalate rapidly in times of tight supply.

¹¹Another 31% of the contract price would escalate at 85% of the Nova Scotia CPI, but that index should be relatively stable and beyond significant manipulation by the parties to this transaction.

1 With increased use of biomass for boiler fuel, and possibly also as feedstock for
2 liquid fuels, the market price for the marginal biomass supply may be much
3 higher than the prices under long-term contracts or the costs of NPPH's own
4 production of biomass for Strait Bio-Gen.

5 As NPPH explains, "market factors will influence the price of hogfuel,
6 biomass stumpage and based on supply and demand.... The total demand level
7 for biomass will also determine costs of procurement as more and more costly
8 sources of material must be accessed—e.g., hogfuel vs. low quality hardwood,
9 stemwood vs. logging slash, etc." (IR NPPH-Multeese 2 (h) and (i)).

10 **Q: How would the starting date for the escalator affect the price of the**
11 **contract?**

12 A: The biomass portion of the contract would start in 2010 at [REDACTED]. That
13 would be the last full year before Strait Bio-Gen comes on line. The demand
14 from Strait Bio-Gen may well cause biomass prices to rise in 2011 and 2012.
15 Hence, ratepayers would bear the full risk of the effect of Strait Bio-Gen
16 demand on market prices, and NPPH would receive the benefit of that effect for
17 the portion of the fuel it supplies.

18 **Q: Does NPPH plan to supply a significant portion of Strait Bio-Gen's biomass**
19 **from its own operations?**

20 A: Yes. NewPage projected that it will supply 53% of the biomass energy input
21 from existing and new operations (IR NPPH-Multeese-1). NewPage would have
22 another 15% of the Strait Bio-Gen tonnage available as forest residues, but does
23 not propose to use those in its preliminary fuel supply plant.¹²

¹²Given the schedule in this proceeding, I have not been able to reconcile or confirm NPPH's estimates of its biomass supply, or the conversion from tonnage to Btu input.

1 In its direct testimony, NewPage was considerably more bullish,
2 suggesting that it could provide all the incremental requirements of Strait Bio-
3 Gen and become a net supplier of biomass. "By adding the utilization of logging
4 residues to our fuel supply mix...NewPage may have the capacity to supply
5 others in the local biomass market" (NPPH Direct, p. 5). Newpage is equivocal
6 on this point in response to IR NPPH CA-14.

7 As noted by NPPH, in NSPI's Supplemental Evidence filed May 20, 2009,
8 p. 1:

9 The fuel supply plan for the project contemplates that it will fully utilize all
10 of NPPH's woodroom bark, all sawmill hogfuel available to (now being
11 used by) NPPH in eastern Nova Scotia, all of the available sustainable
12 supply of low grade hardwood currently available from the NPPH Licensed
13 Crown lands, plus a large portion of the surplus sustainable supply of low
14 grade hardwood from private lands in eastern Nova Scotia, including Cape
15 Breton.

16 Significant additional or alternate supplies of biomass, not currently
17 included in the fuel supply plan, could be made available through the collection
18 and use of logging slash from both softwood and hardwood sawlog and
19 pulpwood harvesting operations.

20 **Q: What could be the effect of this proposed market-based biomass index?**

21 A: At best, the use of the market-price index would allow NPPH to charge NSPI
22 the highest cost of biomass produced in the Nova Scotia market for fuel it
23 produces at its average cost. Market prices may be very volatile, as we have
24 seen with fossil fuels and other commodities.

25 At worst, NewPage may be a dominant player in the Nova Scotia biomass
26 market and may be able to manipulate the prices that it charges NSPI for fuel.

27 **Q: How does NSPI deal with the uncertainties and risks in this important**
28 **portion of the contract price?**

1 A: The utility simply assumes that the biomass index will rise with consumer price
2 inflation, and thus refers to “65% of the cost escalating at 2.13%” (NSPI Direct,
3 p. 4), counting the [REDACTED] % of the cost that would escalate at market biomass prices
4 and the [REDACTED] % that would escalate at [REDACTED] % of CPI.¹³

5 **VI. Recommendations**

6 **Q: What is your recommendation to the Board in this matter?**

7 A: I recommend that the Board deny NSPI’s request for pre-approval of the Strait
8 Bio-gen project, as well as NSPI’s proposed change to it fuel manual and the
9 scope of the Fuel Adjustment Mechanism (FAM).

10 That denial would leave NSPI the option of entering into a contract with
11 Strait Bio-Gen under existing rules and filing at a later date for a deliberate
12 review of its prudence in drafting and signing the eventual contract. At that time,
13 the Board can also address the recovery of the contract costs, including
14 amendments to the FAM.

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

16 A: Yes.

¹³The computation is [REDACTED] = 65%.

PAUL L. CHERNICK

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

SUMMARY OF PROFESSIONAL EXPERIENCE

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

EDUCATION

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

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

HONORS

Chi Epsilon (Civil Engineering)

Tau Beta Pi (Engineering)

Sigma Xi (Research)

Institute Award, Institute of Public Utilities, 1981.

PUBLICATIONS

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

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

“The Future of Utility Resource Planning: Delivering Energy Efficiency through Distributed Utilities” (with Jonathan Wallach), *International Association for Energy Economics Seventeenth Annual North American Conference* (460–469). Cleveland, Ohio: USAEE. 1996.

“The Future of Utility Resource Planning: Delivering Energy Efficiency through Distribution Utilities” (with Jonathan Wallach), *1996 Summer Study on Energy Efficiency in Buildings*, Washington: American Council for an Energy-Efficient Economy 7(7.47–7.55). 1996.

“The Allocation of DSM Costs to Rate Classes,” *Proceedings of the Fifth National Conference on Integrated Resource Planning*. Washington: National Association of Regulatory Utility Commissioners. May 1994.

“Environmental Externalities: Highways and Byways” (with Bruce Biewald and William Steinhurst), *Proceedings of the Fifth National Conference on Integrated Resource Planning*. Washington: National Association of Regulatory Utility Commissioners. May 1994.

“The Transfer Loss is All Transfer, No Loss” (with Jonathan Wallach), *The Electricity Journal* 6:6 (July 1993).

“Benefit-Cost Ratios Ignore Interclass Equity” (with others), *DSM Quarterly*, Spring 1992.

“ESCOs or Utility Programs: Which Are More Likely to Succeed?” (with Sabrina Birner), *The Electricity Journal* 5:2, March 1992.

“Determining the Marginal Value of Greenhouse Gas Emissions” (with Jill Schoenberg), *Energy Developments in the 1990s: Challenges Facing Global/Pacific Markets, Vol. II*, July 1991.

“Monetizing Environmental Externalities for Inclusion in Demand-Side Management Programs” (with E. Caverhill), *Proceedings from the Demand-Side Management and the Global Environment Conference*, April 1991.

“Accounting for Externalities” (with Emily Caverhill). *Public Utilities Fortnightly* 127(5), March 1 1991.

“Methods of Valuing Environmental Externalities” (with Emily Caverhill), *The Electricity Journal* 4(2), March 1991.

“The Valuation of Environmental Externalities in Energy Conservation Planning” (with Emily Caverhill), *Energy Efficiency and the Environment: Forging the Link*. American Council for an Energy-Efficient Economy; Washington: 1991.

“The Valuation of Environmental Externalities in Utility Regulation” (with Emily Caverhill), *External Environmental Costs of Electric Power: Analysis and Internalization*. Springer-Verlag; Berlin: 1991.

“Analysis of Residential Fuel Switching as an Electric Conservation Option” (with Eric Espenhorst and Ian Goodman), *Gas Energy Review*, December 1990.

“Externalities and Your Electric Bill,” *The Electricity Journal*, October 1990, p. 64.

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

“Monetizing Environmental Externalities in Utility Planning” (with Emily Caverhill), in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

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

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

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

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

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

“A Utility Planner’s Checklist for Least-Cost Efficiency Investment,” (with John Plunkett), *Proceedings from the Canadian Electrical Association Demand-Side Management Conference*, June 1990.

“Incorporating Environmental Externalities in Utility Planning” (with Emily Caverhill), *Canadian Electrical Association Demand Side Management Conference*, May 1990.

“Is Least-Cost Planning for Gas Utilities the Same as Least-Cost Planning for Electric Utilities?” in *Proceedings of the NARUC Second Annual Conference on Least-Cost Planning*, September 10–13 1989.

“Conservation and Cost-Benefit Issues Involved in Least-Cost Planning for Gas Utilities,” in *Least Cost Planning and Gas Utilities: Balancing Theories with Realities*, Seminar proceedings from the District of Columbia Natural Gas Seminar, May 23 1989.

“The Role of Revenue Losses in Evaluating Demand-Side Resources: An Economic Re-Appraisal” (with John Plunkett), *Summer Study on Energy Efficiency in Buildings*, 1988, American Council for an Energy Efficient Economy, 1988.

“Quantifying the Economic Benefits of Risk Reduction: Solar Energy Supply Versus Fossil Fuels,” in *Proceedings of the 1988 Annual Meeting of the American Solar Energy Society*, American Solar Energy Society, Inc., 1988, pp. 553–557.

“Capital Minimization: Salvation or Suicide?,” in I. C. Bupp, ed., *The New Electric Power Business*, Cambridge Energy Research Associates, 1987, pp. 63–72.

“The Relevance of Regulatory Review of Utility Planning Prudence in Major Power Supply Decisions,” in *Current Issues Challenging the Regulatory Process*, Center for Public Utilities, Albuquerque, New Mexico, April 1987, pp. 36–42.

“Power Plant Phase-In Methodologies: Alternatives to Rate Shock,” in *Proceedings of the Fifth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, Ohio, September 1986, pp. 547–562.

“Assessing Conservation Program Cost-Effectiveness: Participants, Non-participants, and the Utility System” (with A. Bachman), *Proceedings of the Fifth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, Ohio, September 1986, pp. 2093–2110.

“Forensic Economics and Statistics: An Introduction to the Current State of the Art” (with Eden, P., Fairley, W., Aller, C., Vencill, C., and Meyer, M.), *The Practical Lawyer*, June 1 1985, pp. 25–36.

“Power Plant Performance Standards: Some Introductory Principles,” *Public Utilities Fortnightly*, April 18 1985, pp. 29–33.

“Opening the Utility Market to Conservation: A Competitive Approach,” *Energy Industries in Transition, 1985–2000*, Proceedings of the Sixth Annual North American Meeting of the International Association of Energy Economists, San Francisco, California, November 1984, pp. 1133–1145.

“Insurance Market Assessment of Technological Risks” (with Meyer, M., and Fairley, W) *Risk Analysis in the Private Sector*, pp. 401–416, Plenum Press, New York 1985.

“Revenue Stability Target Ratemaking,” *Public Utilities Fortnightly*, February 17 1983, pp. 35–39.

“Capacity/Energy Classifications and Allocations for Generation and Transmission Plant” (with M. Meyer), *Award Papers in Public Utility Economics and Regulation*, Institute for Public Utilities, Michigan State University 1982.

Design, Costs and Acceptability of an Electric Utility Self-Insurance Pool for Assuring the Adequacy of Funds for Nuclear Power Plant Decommissioning Expense, (with Fairley, W., Meyer, M., and Scharff, L.) (NUREG/CR-2370), U.S. Nuclear Regulatory Commission, December 1981.

Optimal Pricing for Peak Loads and Joint Production: Theory and Applications to Diverse Conditions (Report 77-1), Technology and Policy Program, Massachusetts Institute of Technology, September 1977.

REPORTS

“Green Resource Portfolios: Development, Integration, and Evaluation” (with Jonathan Wallach and Richard Mazzini). 2008. Report to the Green Energy Coalition presented as evidence in Ontario EB 2007-0707.

“Risk Analysis of Procurement Strategies for Residential Standard Offer Service” (with Jonathan Wallach, David White, and Rick Hornby) report to Maryland Office of People’s Counsel. 2008. Baltimore: Maryland Office of People’s Counsel.

“Avoided Energy Supply Costs in New England: 2007 Final Report” (with Rick Hornby, Carl Swanson, Michael Drunsic, David White, Bruce Biewald, and Jenifer Callay). 2007. Northborough, Mass.: Avoided-Energy-Supply-Component Study Group, c/o National Grid Company.

“Integrated Portfolio Management in a Restructured Supply Market” (with Jonathan Wallach, William Steinhurst, Tim Woolf, Anna Sommers, and Kenji Takahashi). 2006. Columbus, Ohio: Office of the Ohio Consumers’ Counsel.

“Natural Gas Efficiency Resource Development Potential in New York” (with Phillip Mosenthal, R. Neal Elliott, Dan York, Chris Neme, and Kevin Petak). 2006. Albany, N.Y.; New York State Energy Research and Development Authority.

“Natural Gas Efficiency Resource Development Potential in Con Edison Service Territory” (with Phillip Mosenthal, Jonathan Kleinman, R. Neal Elliott, Dan York, Chris Neme, and

Kevin Petak. 2006. Albany, N.Y.; New York State Energy Research and Development Authority.

“Evaluation and Cost Effectiveness” (principal author), Ch. 14 of “California Evaluation Framework” Prepared for California utilities as required by the California Public Utilities Commission. 2004.

“Energy Plan for the City of New York” (with Jonathan Wallach, Susan Geller, Brian Tracey, Adam Auster, and Peter Lanzaotta). 2003. New York: New York City Economic Development Corporation.

“Updated Avoided Energy Supply Costs for Demand-Side Screening in New England” (with Susan Geller, Bruce Biewald, and David White). 2001. Northborough, Mass.: Avoided-Energy-Supply-Component Study Group, c/o New England Power Supply Company.

“Review and Critique of the Western Division Load-Pocket Study of Orange and Rockland Utilities, Inc.” (with John Plunkett, Philip Mosenthal, Robert Wichert, and Robert Rose). 1999. White Plains, N.Y.: Pace University School of Law Center for Environmental Studies.

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

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

“Distributed Integrated-Resource-Planning Guidelines.” 1997. Appendix 4 of “The Power to Save: A Plan to Transform Vermont’s Energy-Efficiency Markets,” submitted to the Vermont PSB in Docket No. 5854. Montpelier: Vermont DPS.

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

“Comments of the New Hampshire Office of Consumer Advocate on Restructuring New Hampshire’s Electric-Utility Industry” (with Bruce Biewald and Jonathan Wallach). 1996. Concord, N.H.: NH OCA.

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

From Here to Efficiency: Securing Demand-Management Resources (with Emily Caverhill, James Peters, John Plunkett, and Jonathan Wallach). 1993. 5 vols. Harrisburg, Penn: Pennsylvania Energy Office.

“Analysis Findings, Conclusions, and Recommendations,” vol. 1 of “Correcting the Imbalance of Power: Report on Integrated Resource Planning for Ontario Hydro” (with Plunkett, John, and Jonathan Wallach), December 1992.

“Estimation of the Costs Avoided by Potential Demand-Management Activities of Ontario Hydro,” December 1992.

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

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 AGREIA Project Critique of Externality Valuation: A Brief Rebuttal,” March 1992.

“The Potential Economic Benefits of Regulatory NO_x 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 I” (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 of spend \$400 million from 1986-88 on returning the Pilgrim nuclear power plant to service. Projections of nuclear capacity factors, O&M, capital additions, and overhead. Review of decommissioning cost, tax effect of abandonment, replacement power cost, and plant useful life estimates. Requirements for prudence and used-and-useful analyses.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

-
- 104. Ontario Environmental Assessment Board** Ontario Hydro Demand/Supply Plan Hearings; *Environmental Externalities Valuation and Ontario Hydro's Resource Planning* (3 vols.); October 1992.
- Valuation of environmental externalities from fossil fuel combustion and the nuclear fuel cycle. Application to Ontario Hydro's supply and demand planning.
- 105. Texas PUC 110000**; Application of Houston Lighting and Power Company for a Certificate of Convenience and Necessity for the DuPont Project; Destec Energy, Inc.; September 28 1992.
- Valuation of environmental externalities from fossil fuel combustion and the application to the evaluation of proposed cogeneration facility.
- 106. Maine Board of Environmental Protection**; In the Matter of the Basin Mills Hydroelectric Project Application; Conservation Intervenors; November 16 1992.
- Economic and environmental effects of generation by proposed hydro-electric project.
- 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.
- Non-price scoring and unquantified benefits; DSM potential as alternative; environmental costs; cost and benefit estimates.
- 108. North Carolina Utilities Commission E-100, Sub 64**; Analysis and Investigation of Least Cost Integrated Resource Planning in North Carolina; Southern Environmental Law Center; November 18 1992.
- Demand-side management cost recovery and incentive mechanisms.
- 109. South Carolina PSC 92-209-E**; In Re Carolina Power & Light Company; South Carolina Department of Consumer Affairs; November 24 1992.
- DSM planning: objectives, process, cost-effectiveness test, comprehensiveness, lost opportunities. Deficiencies in CP&L's portfolio. Need for economic evaluation of load building.
- 110. Florida Department of Environmental Regulation** hearings on the Power Plant Siting Act; Legal Environmental Assistance Foundation, December 1992.
- Externality valuation and application in power-plant siting. DSM potential, cost-benefit test, and program designs.
- 111. Maryland PSC 8487**; Baltimore Gas and Electric Company, Electric Rate Case; January 13 1993. Rebuttal Testimony: February 4 1993.
- Class allocation of production plant and O&M; transmission, distribution, and general plant; administrative and general expenses. Marginal cost and rate design.

-
- 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.
- Economic analysis of proposed coal-fired cogeneration facility.
- 113. Michigan PSC U-10102;** Detroit Edison Rate Case; Michigan United Conservation Clubs; February 17 1993.
- Least-cost planning; energy efficiency planning, potential, screening, avoided costs, cost recovery, and shareholder incentives.
- 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.
- DSM planning, program designs, potential savings, and avoided costs.
- 115. Michigan PSC U-10335;** Consumers Power Rate Case; Michigan United Conservation Clubs; October 1993.
- Least-cost planning; energy efficiency planning, potential, screening, avoided costs, cost recovery, and shareholder incentives.
- 116. Illinois Commerce Commission 92-0268,** Electric-Energy Plan for Commonwealth Edison; City of Chicago. Direct testimony, February 1 1994; rebuttal, September 1994.
- 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.
- Cost-effective energy conservation available to the Public Service of New Hampshire; power-supply options; affidavit.
- 118. Vermont PSB 5270-CV-1,-3, and 5686;** Central Vermont Public Service Fuel-Switching and DSM Program Design, on behalf of the Vermont Department of Public Service. Direct, April 1994; rebuttal, June 1994.
- Avoided costs and screening of controlled water-heating measures; risk, rate impacts, participant costs, externalities, space- and water-heating load, benefit-cost tests.
- 119. Florida PSC 930548-EG-930551-EG,** Conservation goals for Florida electric utilities; Legal Environmental Assistance Foundation, Inc. April 1994.
- Integrated resource planning, avoided costs, rate impacts, analysis of conservation goals of Florida electric utilities.

-
120. **Vermont PSB 5724**, Central Vermont Public Service Corporation rate request; Vermont Department of Public Service. Joint surrebuttal testimony with John Plunkett. August 1994.
- Costs avoided by DSM programs; Costs and benefits of deferring DSM programs.
121. **MDPU 94-49**, Boston Edison integrated resource-management plan; Massachusetts Attorney General. August 1994.
- Least-cost planning, modeling, and treatment of risk.
122. **Michigan PSC U-10554**, Consumers Power Company DSM Program and Incentive; Michigan Conservation Clubs. November 1994.
- Critique of proposed reductions in DSM programs; discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.
123. **Michigan PSC U-10702**, Detroit Edison Company Cost Recovery, on behalf of the Residential Ratepayers Consortium. December 1994.
- Impact of proposed changes to DSM plan on energy costs and power-supply-cost-recovery charges. Critique of proposed DSM changes; discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.
124. **New Jersey Board of Regulatory Commissioners EM92030359**, Environmental costs of proposed cogeneration; Freehold Cogeneration Associates. November 1994.
- Comparison of potential externalities from the Freehold cogeneration project with that from three coal technologies; support for the study "The Externalities of Four Power Plants."
125. **Michigan PSC U-10671**, Detroit Edison Company DSM Programs; Michigan United Conservation Clubs. January 1995.
- Critique of proposal to scale back DSM efforts in light of potential for competition. Loss of savings, increase of customer costs, and decrease of competitiveness. Discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.
126. **Michigan PSC U-10710**, Power-supply-cost-recovery plan of Consumers Power Company; Residential Ratepayers Consortium. January 1995.
- Impact of proposed changes to DSM plan on energy costs and power-supply-cost-recovery charges. Critique of proposed DSM changes; discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.
127. **FERC 2458 and 2572**, Bowater–Great Northern Paper hydropower licensing; Conservation Law Foundation. February 1995.

Comments on draft environmental impact statement relating to new licenses for two hydropower projects in Maine. Applicant has not adequately considered how energy conservation can replace energy lost due to habitat-protection or -enhancement measures.

- 128. North Carolina Utilities Commission E-100, Sub 74, Duke Power and Carolina Power & Light avoided costs; Hydro-Electric-Power Producer's Group. February 1995.**

Critique and proposed revision of avoided costs offered to small hydro-power producers by Duke Power and Carolina Power and Light.

- 129. New Orleans City Council UD-92-2A and -2B, Least-cost IRP for New Orleans Public Service and Louisiana Power & Light; Alliance for Affordable Energy. Direct, February 1995; rebuttal, April 1995.**

Critique of proposal to scale back DSM efforts in light of potential competition.

- 130. DCPSC Formal 917, II, Prudence of DSM expenditures of Potomac Electric Power Company; Potomac Electric Power Company. Rebuttal testimony, February 1995.**

Prudence of utility DSM investment; prudence standards for DSM programs of the Potomac Electric Power Company.

- 131. Ontario Energy Board EBRO 490, DSM cost recovery and lost-revenue-adjustment mechanism for Consumers Gas Company; Green Energy Coalition. April 1995.**

DSM cost recovery. Lost-revenue-adjustment mechanism for Consumers Gas Company.

- 132. New Orleans City Council CD-85-1, New Orleans Public Service rate increase; Alliance for Affordable Energy. Rebuttal, May 1995.**

Allocation of costs and benefits to rate classes.

- 133. MDPU Docket DPU-95-40, Mass. Electric cost-allocation; Massachusetts Attorney General. June 1995.**

Allocation of costs to rate classes. Critique of cost-of-service study. Implications for industry restructuring.

- 134. Maryland PSC 8697, Baltimore Gas & Electric gas rate increase; Maryland Office of People's Counsel. July 1995**

Rate design, cost-of-service study, and revenue allocation.

- 135. North Carolina Utilities Commission E-2, Sub 669. December 1995.**

Need for new capacity. Energy-conservation potential and model programs.

- 136. Arizona Commerce Commission U-1933-95-317, Tucson Electric Power rate increase; Residential Utility Consumer Office. January 1996.**

- Review of proposed rate settlement. Used-and-usefulness of plant. Rate design. DSM potential.
- 137. Ohio PUC 95-203-EL-FOR;** Campaign for an Energy-Efficient Ohio. February 1996
- Long-term forecast of Cincinnati Gas and Electric Company, especially its DSM portfolio. Opportunities for further cost-effective DSM savings. Tests of cost effectiveness. Role of DSM in light of industry restructuring; alternatives to traditional utility DSM.
- 138. Vermont PSB 5835;** Vermont Department of Public Service. February 1996.
- Design of load-management rates of Central Vermont Public Service Company.
- 139. Maryland PSC 8720,** Washington Gas Light DSM; Maryland Office of People's Counsel. May 1996.
- Avoided costs of Washington Gas Light Company; integrated least-cost planning.
- 140. MDPU DPU 96-100;** Massachusetts Utilities' Stranded Costs; Massachusetts
- A.** Attorney General. Oral testimony in support of "estimation of Market Value, Stranded Investment, and Restructuring Gains for Major Massachusetts Utilities," July 1996.
- 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.**
- In three separate pieces of prefiled testimony, addressed the Green Mountain Power Corporation's (1) distributed-utility-planning efforts, (2) avoided costs, and (3) prudence of decisions relating to a power purchase from Hydro-Quebec.
- 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.

Performance-based ratemaking in light of mergers. Allocation of savings from merger. Earnings-sharing mechanism.

- 181. Connecticut DPUC 99-09-12RE01;** Proposed Millstone Sale; Connecticut Office of Consumer Counsel. November 2000.

Requirements for review of auction of generation assets. Allocation of proceeds between units.

- 182. MDTE 01-25;** Purchase of Streetlights from Commonwealth Electric; Cape Light Compact. January 2001

Municipal purchase of streetlights; Calculation of purchase price under state law; Determination of accumulated depreciation by asset.

- 183. Connecticut DPUC 00-12-01 and 99-09-12RE03;** Connecticut Light & Power rate design and standard offer; Connecticut Office of Consumer Counsel. March 2001.

Rate design and standard offer under restructuring law; Future rate impacts; Transition to restructured regime; Comparison of Connecticut and California restructuring challenges.

- 184. Vermont PSB 6460 & 6120;** Central Vermont Public Service rates; Vermont Department of Public Service. Direct, March 2001; Surrebuttal, April 2001.

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

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

Comparison of power-supply contracts. Comparison of plant costs to replacement power cost. Allocation of sales proceeds between subsidiaries.

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

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

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

- 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.
- Allocation of costs. Design of rates. Interruptible and firm rates.
- 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.
- Renewable energy and DSM. Economic tests of cost-effectiveness. Costs avoided by DSM.
- 211. Connecticut DPUC 05-07-18; financial effect of long-term power contracts; Connecticut Office of Consumer Counsel.** Direct September 2005.

Assessment of effect of DSM, distributed generation, and capacity purchases on financial condition of utilities.

- 212. Connecticut DPUC** 03-07-01RE03 & 03-07-15RE02; incentives for power procurement; Connecticut Office of Consumer Counsel. Direct, September 2005. Additional Testimony, April 2006.

Utility obligations for generation procurement. Application of standards for utility incentives. Identification and quantification of effects of timing, load characteristics, and product definition.

- 213. Connecticut DPUC** Docket 05-10-03; Connecticut L&P; time-of-use, interruptible and seasonal rates; Connecticut Office of Consumer Counsel. Direct and Supplemental Testimony February 2006.

Seasonal and time-of-use differentiation of generation, congestion, transmission and distribution costs; fixed and variable peak-period timing; identification of pricing seasons and seasonal peak periods; cost-effectiveness of time-of-use rates.

- 214. Ontario Energy Board** Case EB-2005-0520; Union Gas rates; School Energy Coalition. Evidence, April 2006.

Rate design related to splitting commercial rate class into two classes: new break point, cost allocation, customer charges, commodity rate blocks.

- 215. Ontario Energy Board** Case EB-2006-0021; natural gas demand-side-management generic issues proceeding; School Energy Coalition. Evidence, June 2006.

Multi-year planning and budgeting; lost-revenue adjustment mechanism; determining savings for incentives; oversight; program screening.

- 216. Indiana Utility Regulatory Commission** Cause Nos. 42943 and 43046; Vectren Energy DSM proceedings; Citizens Action Coalition. Direct, June 2006.

Rate decoupling and energy-efficiency goals.

- 217. Pennsylvania PUC** Docket No. 00061346; Duquesne Lighting; Real-time pricing; PennFuture. Direct, July 2006; surrebuttal August 2006.

Real-time and time-dependent pricing; benefits of time-dependent pricing; appropriate metering technology; real-time rate design and customer information

- 218. Pennsylvania PUC** Docket No. R-00061366, et al.; rate-transition-plan proceedings of Metropolitan Edison and Pennsylvania Electric; Real-time pricing; PennFuture. Direct, July 2006; surrebuttal August 2006.

Real-time and time-dependent pricing; appropriate metering technology; real-time rate design and customer information.

-
- 219. Connecticut DPUC 06-01-08;** Connecticut L&P procurement of power for standard service and last-resort service; Connecticut Office of Consumer Counsel. Reports and technical hearings September and October 2006.
- Conduct of auction; review of bids; comparison to market prices; selection of winning bidders.
- 220. Connecticut DPUC 06-01-08;** United Illuminating procurement of power for standard service and last-resort service; Connecticut Office of Consumer Counsel. Reports and technical hearings August and November 2006; March, September, October, and November 2007; February, April, and May 2008.
- Conduct of auction; review of bids; comparison to market prices; selection of winning bidders.
- 221. NY PSC Case No. 06-M-1017;** policies, practices, and procedures for utility commodity supply service; City of New York. Comments, November and December 2006.
- Multi-year contracts, long-term planning, new resources, procurement by utilities and other entities, cost recovery.
- 222. Connecticut DPUC 06-01-08;** procurement of power for standard service and last-resort service, lessons learned; Connecticut Office Of Consumer Counsel. Comments and Technical Conferences December 2006 and January 2007.
- Sharing of data and sources; benchmark prices; need for predictability, transparency and adequate review; utility-owned resources; long-term firm contracts.
- 223. PUCO Case No. 05-1444-GA-UNC;** recovery of conservation costs, decoupling, and rate-adjustment mechanisms for Vectren Energy Delivery of Ohio; Ohio Consumers' Counsel. Direct, February 2007.
- Assessing cost-effectiveness of natural-gas energy-efficiency programs. Calculation of avoided costs. Impact on rates. System benefits of DSM.
- 224. NY PSC Case 06-G-1332,** Consolidated Edison Rates and Regulations; City of New York. Direct, March 2007.
- Gas energy efficiency: benefits to customers, scope of cost-effective programs, revenue decoupling, shareholder incentives.
- 225. Alberta EUB 1500878;** ATCO Electric rates; Association of Municipal Districts & Counties and Alberta Federation of Rural Electrical Associations. Direct, May 2007
- Direct assignment of distribution costs to streetlighting. Cost causation and cost allocation. Minimum-system and zero-intercept classification.
- 226. Connecticut DPUC Docket 07-04-24,** Review of capacity contracts under Energy Independence Act; Connecticut Office of Consumer Counsel, Joint Direct Testimony June 2007.

-
- Assessment of proposed capacity contracts for new combined-cycle, peakers and DSM. Evaluation of contracts for differences, modeling of energy, capacity and forward-reserve markets. Corrections of errors in computation of costs, valuation of energy-price effects of peakers, market-driven expansion plans and retirements, market response to contracted resource additions, DSM proposal evaluation.
227. **NY PSC Case 07-E-0524**, Consolidated Edison electric rates; City of New York. Direct, September 2007.
- Energy-efficiency planning. Recovery of DSM costs. Decoupling of rates from sales. Company incentives for DSM. Advanced metering. Resource planning.
228. **Manitoba PUB 136-07**, Manitoba Hydro rates; Resource Conservation Manitoba and Time to Respect Earth's Ecosystem. Direct, February 2008.
- Revenue allocation, rate design, and demand-side management. Estimation of marginal costs and export revenues.
229. **Mass. EFSB 07-7**, DPU 07-58 & -59, proposed Brockton Power Company plant; Alliance Against Power Plant Location. Direct, March 2008
- Regional supply and demand conditions. Effects of plant construction and operation on regional power supply and emissions.
230. **CDPUC 08-01-01**, peaking generation projects; Connecticut Office of Consumer Counsel. Direct (with Jonathan Wallach), April 2008.
- Assessment of proposed peaking projects. Valuation of peaking capacity. Modeling of energy margin, forward reserves, other project benefits.
231. **Ontario EB-2007-0905**, Ontario Power Generation payments; Green Energy Coalition. Direct, April 2008.
- Cost of capital for Hydro and nuclear investments. Financial risks of nuclear power.
232. **Utah PSC 07-035-93**, Rocky Mountain Power Rates; Utah Committee of Consumer Services. Direct, July 2008
- Cost allocation and rate design. Cost of service. Correct classification of generation, transmission, and purchases.
233. **Ontario EB-2007-0707**, Ontario Power Authority integrated system plan; Green Energy Coalition, Penimba Institute, and Ontario Sustainable Energy Association. Evidence (with Jonathan Wallach and Richard Mazzini), August 2008.
- Critique of integrated system plan. Resource cost and characteristics; finance cost. Development of least-cost green-energy portfolio.
234. **NY PSC Case 08-E-0596**, Consolidated Edison electric rates; City of New York. Direct, September 2008.

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

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

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

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

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

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

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