

**STATE OF ILLINOIS**  
**ILLINOIS COMMERCE COMMISSION**

COMMONWEALTH EDISON COMPANY :  
 :  
Proposed general increase in electric rates : No. 07-0566  
 :  
 :  
 :

**AFFIDAVIT OF SUSAN F. TIERNEY**

STATE OF ILLINOIS        )  
                                  )        SS.  
COUNTY OF COOK        )

I, Susan F. Tierney, being first duly sworn, declare under oath as follows:

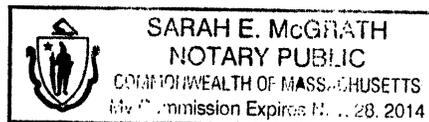
1. I am a Managing Principal of Analysis Group, Inc.
2. I provided Rebuttal Testimony, identified as ComEd Exs. 18.0 and 18.01, on behalf of Commonwealth Edison Company in this proceeding. Those pieces of testimony, which are attached to this affidavit, were prepared by me or under my direction and control.
3. I swear and affirm that the testimony provided is true and correct, to the best of my knowledge and ability, and that there are no corrections or revisions to be made to my testimony. If I were asked the same questions today, my answers would be the same. It is my desire that my testimony be considered as evidence by the Administrative Law Judges and by the Illinois Commerce Commission in this Docket.

FURTHER AFFIANT SAYETH NOT.

  
\_\_\_\_\_  
Susan F. Tierney

SUBSCRIBED AND SWORN to before me  
this 2 day of May, 2008.

  
\_\_\_\_\_  
Notary Public



**STATE OF ILLINOIS**  
**ILLINOIS COMMERCE COMMISSION**

COMMONWEALTH EDISON COMPANY  
Proposed general increases in electric rates

No. 07-0566

Rebuttal Testimony of

**HON. SUSAN F. TIERNEY, PH.D.**  
**MANAGING PRINCIPAL**  
**ANALYSIS GROUP, INC.**

On Behalf of  
COMMONWEALTH EDISON COMPANY

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10 I. INTRODUCTION AND PURPOSE OF TESTIMONY

11 *A. Identification of the Witness*

12 **Q. Dr. Tierney, please state your name and business address.**

13 A. My name is Susan F. Tierney, and my business address is 111 Huntington  
14 Avenue, Boston, Massachusetts, 02199.

15 **Q. What is your current position?**

16 A. I am a Managing Principal with Analysis Group.

17 *B. Purpose and Organization of Testimony*

18 **Q. What is the purpose of your testimony?**

19 A. I have been asked by Commonwealth Edison Company (“ComEd”) to respond to  
20 the testimony of Mr. Thomas Griffin (on behalf of the Staff of the Illinois  
21 Commerce Commission (“ICC Staff”)), who has recommended revisions to  
22 ComEd’s proposed *pro forma* adjustments to plant in service. Secondly, I  
23 respond to the testimony of the following witnesses who have commented on  
24 ComEd’s proposed rider for System Modernization Projects (“SMP”): Mr.  
25 Michael Brosch and Dr. L. Lynne Kiesling (on behalf of the Illinois Attorney  
26 General (“AG”) and the Citizens Utility Board (“CUB”)); Mr. Ralph Smith (on  
27 behalf of AARP); Dr. Dennis Goins (on behalf of Nucor Steel Kankakee  
28 (“Nucor”)); Mr. Robert Stephens (on behalf of the Illinois Industrial Energy  
29 Consumers (“IIEC”)); Mr. Kevin Higgins (on behalf of the Kroger Companies  
30 (“Kroger”)); and Mr. Ronald Linkenback (on behalf of the ICC Staff). My  
31 testimony rebuts Mr. Griffin’s recommendation to disallow certain *pro forma*

32 adjustments to plant in service, and these other witnesses' assertions that the  
33 proposed SMP Rider should be rejected.

34 **Q. How is your testimony organized?**

35 A. After this introductory section in which I summarize my conclusions and my own  
36 background, I discuss the following topics: In Section II, I address the  
37 ratemaking policy issues that are raised by Mr. Griffin's position on the *pro forma*  
38 additions; and in Section III, I discuss the company's proposed SMP Rider and  
39 rebut certain arguments of intervenors and Staff relating to it, in particular the  
40 testimony of Dr. Kiesling.

41 ***C. Summary of Testimony and Conclusions***

42 **Q. Please summarize the conclusions of your testimony.**

43 A. The Commission's rule on *pro forma* plant additions is an important one,  
44 especially in the circumstances in which ComEd currently finds itself. The clear  
45 purpose of the rule is to better match cost recovery through rates with a utility's  
46 investment. This rule advances two principal goals of ratemaking: (1) to assure  
47 that prices charged to customers reflect the actual costs of serving them; and (2) to  
48 enable the utility to attract capital at a reasonable cost to make useful investments  
49 to benefit customers. Such a rule is particularly important in times of inflation  
50 and/or when costs relevant to utility investment are rising. Focusing on these two  
51 core principles, as the Commission's *pro forma* rule does, will lead to rates that  
52 send proper price signals to consumers about the cost to provide them with utility  
53 service, so they can determine the amount they are willing to consume and pay  
54 for. Given the reliance on a 2006 historical test year and with new rates going

55 into effect almost two years after the end of the test year (*i.e.*, on October 1, 2008)  
56 and in place for at least a significant period of time thereafter, the Commission  
57 should focus its limited attention and resources on assuring that the rates  
58 ultimately established in this case reasonably reflect the utility's cost to provide  
59 service after October 2008. This recommendation would thus lead to rejection of  
60 Staff Witness Mr. Griffin's recommendations to remove *pro forma* adjustments  
61 for investment occurring after December 31, 2007.

62 Furthermore, I encourage the Commission to decline to adopt Dr.  
63 Kiesling's recommendation to reject Rider SMP, particularly in light of her own  
64 testimony supporting the advantages of investments in smart grid technologies.  
65 The SMP Rider seems to be precisely the type of mechanism that could enable her  
66 other infrastructure-investment recommendations to be accomplished. I  
67 encourage the Commission to adopt Rider SMP. While I am generally quite  
68 supportive of smart-grid technologies, I have not reviewed either Dr. Kiesling's or  
69 ComEd's specific investment proposals in sufficient detail to offer an opinion on  
70 whether they are appropriate for Commission approval at this time. I also respond  
71 briefly to certain Staff and Intervenor arguments that Rider SMP should be  
72 rejected because it might remove incentives for efficient utility operation.

73 ***D. Professional Experience***

74 **Q. Please describe your educational background.**

75 A. I have Masters and Ph.D. degrees in regional planning from Cornell University.  
76 My complete curriculum vita is attached to this report as Exhibit 18.1.

77 **Q. Please summarize your experience relating to utility regulatory and**

78 **ratemaking policy.**

79 A. Since the early 1980s, I have been a state utility regulator, federal energy policy  
80 maker, state environmental policy maker, academic, and consultant. I have  
81 worked for 25-plus years in electric industry economics, regulation, and policy in  
82 a variety of capacities, including as a Commissioner of the Massachusetts  
83 Department of Public Utilities (“Massachusetts DPU”).

84 **Q. Please describe your current employment.**

85 A. At Analysis Group, I consult on economic and regulatory policy issues affecting  
86 the electric and gas industries. My clients have included energy consumers, state  
87 and federal agencies, generating companies, private and public electric and gas  
88 utilities, regional transmission organizations, Indian tribes, and non-profit  
89 organizations. I have testified before numerous state and federal regulatory  
90 commissions, courts, and legislatures. I have served as an arbitrator, a member of  
91 blue ribbon commissions on energy and environmental policy issues, and as a  
92 director of many private and non-profit organizations in the energy and  
93 environmental sectors. I have written extensively on energy regulatory issues,  
94 and made countless presentations at industry workshops, conferences, and  
95 meetings. These experiences have enabled me to look at electric industry  
96 economic and regulatory policy issues from many vantage points. I joined  
97 Analysis Group in 2003, having previously been a consultant at Lexecon, Inc.

98 **Q. Please describe your other prior positions.**

99 A. Prior to becoming a consultant 13 years ago, I held senior positions in  
100 government for 13 years. I served as Assistant Secretary for Policy at the U.S.

101 Department of Energy under President Bill Clinton. Before that, I was the  
102 Massachusetts Secretary of Environmental Affairs (appointed by Governor  
103 William Weld); Commissioner of the Massachusetts DPU (appointed by  
104 Governor Michael Dukakis); and Director of the Massachusetts Energy Facilities  
105 Siting Council. Prior to my work in state and federal government, I was an  
106 Assistant Professor at the University of California (Irvine).

107 **Q. Do you have other relevant professional experience?**

108 A. Yes. I recently co-chaired the Energy/Environment Working Group for the  
109 transition of Governor Deval Patrick, and assisted in transition issues relating to  
110 utility regulation for the new Patrick Administration. I currently sit on several  
111 corporate and non-profit boards and commissions, including the National  
112 Commission on Energy Policy, and the National Academy of Sciences'  
113 Committee on Terrorism and the Electric Power Delivery System. I am chairman  
114 of the board of the Energy Foundation and of the board of Clean Air – Cool  
115 Planet (and Climate Policy Center); a director of Renegy Holdings, Inc. (a  
116 biomass-to-electricity company); a director of the Northeast States Clean Air  
117 Foundation; and a member of the Advisory Council of the National Renewable  
118 Energy Laboratory (“NREL”), the Massachusetts Renewable Energy Trust  
119 Advisory Council, the Environmental Advisory Council of the New York  
120 Independent System Operator (“NYISO”), and the China Sustainable Energy  
121 Program’s Policy Advisory Council. I previously chaired the board of the  
122 Electricity Innovations Institute, and was a director of Catalytica Energy Systems  
123 Inc., a director of the Electric Power Research Institute (“EPRI”), a member of the

124 Advisory Council of the New England Independent System Operator (“ISO-NE”),  
125 a member of the WIRES Blue Ribbon Panel on Cost-Allocation for Transmission,  
126 and a director of ACORE (American Council on Renewable Energy). For years, I  
127 have participated in the Harvard Electricity Policy Group and the Aspen  
128 Institute’s Energy Forum.

129 **II. APPROPRIATE RATEMAKING TREATMENT OF COMED’S PROPOSED**  
130 ***PRO FORMA* CAPITAL ADDITIONS**

131 **Q. What do Illinois’ regulatory policies allow with respect to *pro forma***  
132 **adjustments for capital additions in ratemaking?**

133 A. The ICC rules allow utilities to rely on either an historic test year or a future test  
134 year.<sup>1</sup> When a utility elects to use an historical test year, the Commission’s rules  
135 allow for *pro forma* adjustments to reflect changes in conditions from the end of  
136 the test year.<sup>2</sup> The clear intent of this rule is to better assure that a utility’s rates  
137 more closely align the utility’s revenues with costs that prevail while the rates are  
138 in effect. As I mentioned earlier, this alignment is one of the core purposes of

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<sup>1</sup> Ill. Code Section 287.20 Test Year Options: “A utility, at its option, may propose either one of the following periods as its proposed test year: (a) Historical. Any consecutive 12 month period, beginning no more than 24 months prior to the date of the utility’s filing, for which actual data are available at the time of filing new tariffs; or (b) Future. Any consecutive 12 month period of forecasted data beginning no earlier than the date new tariffs are filed and ending no later than 24 months after the date new tariffs are filed.”

<sup>2</sup> “Section 287.40 Pro Forma Adjustments to Historical Test Year Data.” “Section 287.40. Pro Forma Adjustments to Historical Test Year Data: A utility may propose pro forma adjustments (estimated or calculated adjustments made in the same context and format in which the affected information was provided) to the selected historical test year for all known and measurable changes in the operating results of the test year. These adjustments shall reflect changes affecting the ratepayers in plant investment, operating revenues, expenses, and cost of capital where such changes occurred during the selected historical test year or are reasonably certain to occur subsequent to the historical test year within 12 months after the filing date of the tariffs and where the amounts of the changes are determinable. Attrition or inflation factors shall not be substituted for a specific study of individual capital, revenue, and expense components. Any proposed known and measurable adjustment to the test year shall be individually identified and supported in the direct testimony of the utility. Each adjustment shall be submitted according to the standard information requirement schedules prescribed in 83 Ill. Adm. Code 285.”

139 ratemaking.<sup>3</sup>

140 **Q. In your opinion does the Commission’s rule on *pro forma* additions serve an**  
141 **important purpose?**

142 A. Very much so. This rule (Section 287.40) allows for consideration of changes  
143 occurring after an historical test-year period in a way designed to increase the  
144 probability that the revenue requirement reflects the utility’s expected costs. By  
145 so doing the rule serves to reduce appropriately potential effects that could distort  
146 customers’ rates, undermine capital attraction and create disincentives for  
147 undertaking needed investment to serve ratepayers’ needs. To accomplish those  
148 important objectives, the rule permits consideration of reasonably certain changes  
149 in costs that will affect the service provided to ratepayers. I distinguish this  
150 standard from others that might suggest that “reasonably certain” equates, in  
151 effect, with “absolutely certain,” or “actually occurred” in the past.

152 **Q. Do these same considerations – of needing to assure that (a) prices charged to**  
153 **consumers reflect investment costs made on their behalf, and (b) the utility**  
154 **can attract capital at reasonable costs and make useful investments for the**  
155 **benefit of consumers – apply here in this ComEd rate case?**

156 A. Yes. The practical realities facing ComEd at this time and place (explained in  
157 detail in the testimonies of various ComEd witnesses, such as Mr. J. Barry  
158 Mitchell, Ms. Susan D. Abbott, Mr. Robert W. Gee, Mr. George Williams, Mr.

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<sup>3</sup> As articulated in the literature, the essential purposes of ratemaking are to set rates at levels to produce revenues that allow the utility to attract capital needed to discharge its obligations, to signal to consumers what it costs to provide them with utility service so they can determine the amount they are willing to consume and pay for, to provide incentives for efficient provision of utility service, and to provide the means for consumers to transfer cash to those who provide them with service. James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, “Principles of Public Utility Rates,” Public Utilities Reports, Inc., Second Edition, 1988.

159 Michael McMahan, Mr. Robert McDonald, Ms. Kathryn Houtsma and Ms. Stacie  
160 Frank), are precisely the realities which the rule was no doubt intended to address  
161 and mitigate. These realities include (a) ComEd's need to attract capital to  
162 support investment in distribution infrastructure (as described by Mr. Mitchell and  
163 Mr. McDonald), (b) the less-than-attractive credit ratings already faced by ComEd  
164 (described by Ms. Abbott and Mr. McDonald), and (c) the rapidly rising costs of  
165 materials used in utility plant (as described by Mr. Williams and Mr. Gee). In the  
166 absence of a rule requiring that *pro forma* additions be shown only with  
167 "reasonable certainty," the outcome would tend to produce inaccurate rates that  
168 simply do not reflect the actual costs of service during the period rates are in  
169 effect. This would tend to send economically incorrect pricing signals to  
170 consumers, worsen the financial position of the utility thus raising its cost of  
171 capital, and undermine the opportunities for ComEd to invest in the infrastructure  
172 needed to serve customers' needs.

173 **Q Are there other reasons why the Commission's rule on *pro forma* additions**  
174 **serves a particularly useful function at this time?**

175 A. Yes. As described by the direct testimonies of Mr. Williams and Mr. McMahan,  
176 and as I amplify below, we are currently in a period of high costs faced by  
177 distribution companies in constructing and maintaining infrastructure on their  
178 system. Given these rising costs, there will be significant enough problems of  
179 aligning revenues with actual costs even if every dollar of ComEd's proposed *pro*  
180 *forma* adjustments were allowed as reasonably certain by the Commission.

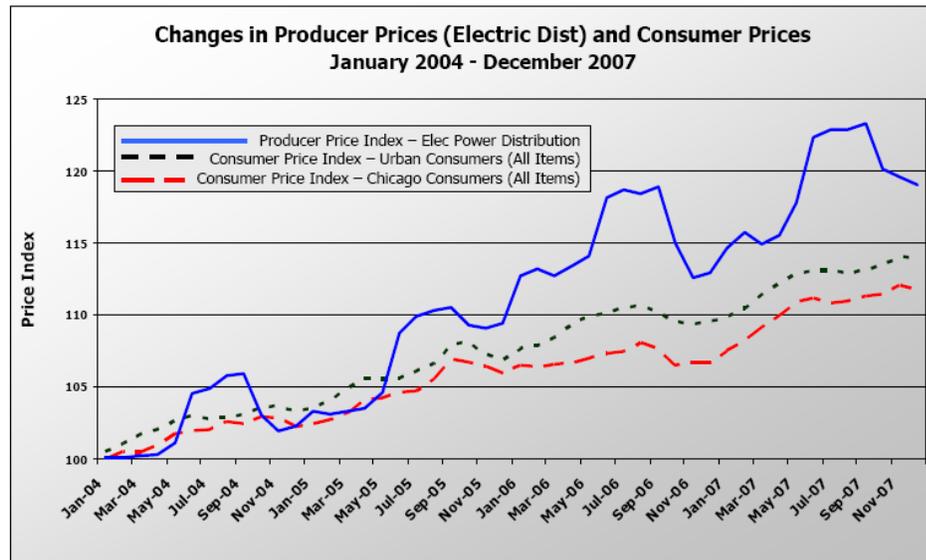
181 **Q. What additional information do you have about the rising costs of materials**

182 **faced by electric distribution utilities, beyond the information already**  
183 **presented by ComEd’s witnesses?**

184 A. First, national statistics on producer prices (for electric distribution companies)  
185 show costs rising faster than general consumer prices and, more specifically, than  
186 consumer prices in the Chicago area. These trends are shown on Figure 1 below.

187

Figure 1



188  
189

Source: U.S. Bureau of Labor Statistics

190 Since ComEd’s witnesses filed their testimony in October, 2007, a number of  
191 references have cited increases in input prices affecting the utility industry.<sup>4</sup> A  
192 new study published in *Public Utilities Fortnightly* in December 2007,<sup>5</sup> provides  
193 evidence on the rising construction-related costs faced by utilities in the U.S.:

<sup>4</sup> See, for example, Robert Guy Matthews, “Costs likely to spur steel-price rise,” *Wall Street Journal*, January 25, 2008: “Steelmakers, already anticipating iron-ore costs as much as 75% higher than a year earlier, now face higher coal prices, likely meaning further price increases for steel, particularly in Asia....Steelmakers around the world have been raising their prices steadily over the last year -- including several in recent weeks -- trying to recoup high energy, raw-materials and shipping costs. In the last month, the price for hot rolled steel, considered an industry benchmark, has increased 5% to \$633 a metric ton. Analysts expect production to remain tight and prices to increase further this quarter.”

<sup>5</sup> Greg Basheda and Mark Chupka, “Sticker Shock: Increasing Prices for Materials, Equipment and Services are Driving Utility Infrastructure Costs into Uncharted Territory,” *Public Utilities Fortnightly*, December 1, 2007 (hereinafter, “Basheda and Chupka”).

194 The recent rise in many utility construction cost components  
195 follows roughly a decade of relatively stable (or even declining)  
196 real construction costs, adding to a growing sense of sticker shock  
197 among power companies and state regulators....Infrastructure costs  
198 were relatively stable during the 1990s. But between January 2004  
199 and January 2007, prices increased rapidly. Costs for steam-  
200 generation boilers, transmission facilities and distribution-grid  
201 equipment rose by 25 percent to 35 percent, compared to an 8  
202 percent increase in inflation, expressed by the GDP deflator....  
203 Similarly, distribution-system investments began rising in the mid-  
204 1990s, preceding the corresponding boom in generation, and the  
205 flow of distribution investments shows no sign of diminishing. In  
206 2006, utilities invested more than \$17 billion to upgrade and  
207 expand distribution systems, a 32 percent increase over  
208 investments in 2004. EEI estimates distribution investment during  
209 2007 will again exceed \$17.0 billion. While much of the recent  
210 increase in distribution investment reflects expanding physical  
211 infrastructure, a substantial portion of this investment reflects the  
212 increased input costs of materials and labor. Cost estimates likely  
213 will increase further if market trends persist.<sup>6</sup>

214 According to the authors of this study, Greg Basheda and Mark Chupka,  
215 some of the factors leading to cost trends are “straightforward. For example, costs  
216 for steel, copper and concrete have risen sharply due to high global demand, as  
217 well as production and transportation costs (in part owing to high fuel prices), and  
218 a weakening U.S. dollar. Other drivers are less transparent. Labor costs generally  
219 have tracked inflation rates, but shortages in skilled workers have driven costs  
220 higher for utility equipment and construction services.”<sup>7</sup>

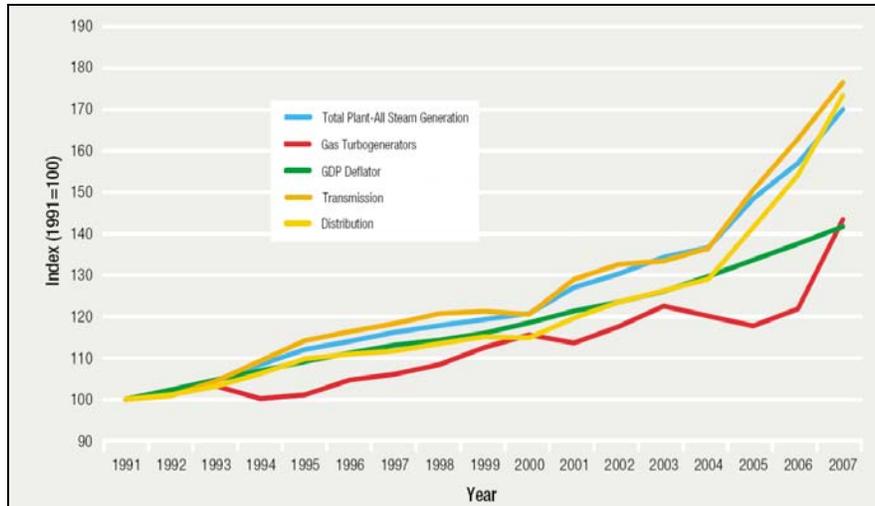
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<sup>6</sup> Basheda and Chupka, pages 57-58.

<sup>7</sup> Basheda and Chupka, page 57. They explain these trends further: “Broadly speaking, four factors are driving rising costs for utility infrastructure: 1) material costs, including such commodities as steel and cement, as well as manufactured components; 2) limited shop and fabrication capacity for manufacturing major components; 3) costs for construction field labor, both unskilled and craft labor; and 4) the market for large construction-project management and EPC services. Utility construction projects involve large quantities of steel, aluminum and copper (and components manufactured from these metals) as well as cement for foundations, footings and structures. All these commodities have experienced substantial recent price increases, due to increased domestic and global demands as well as increased energy costs in mineral extraction, processing and transportation (*see Fig. [3], “Raw Materials Costs”*). In addition, since many of these materials are traded globally, the recent performance of the U.S. dollar affects domestic costs. In particular, various sources point to the rapid growth of steel production and demand in China as a primary

221 The Basheda/Chupka study includes a number of charts which show the  
222 trends in the cost information they describe in their paper. I include several of  
223 these charts below (as Figures 2 through 4), indicating the rising costs for  
224 materials and other construction inputs of electric distribution companies:

225 Figure 2: National Average Utility Infrastructure Costs (1991-2007)



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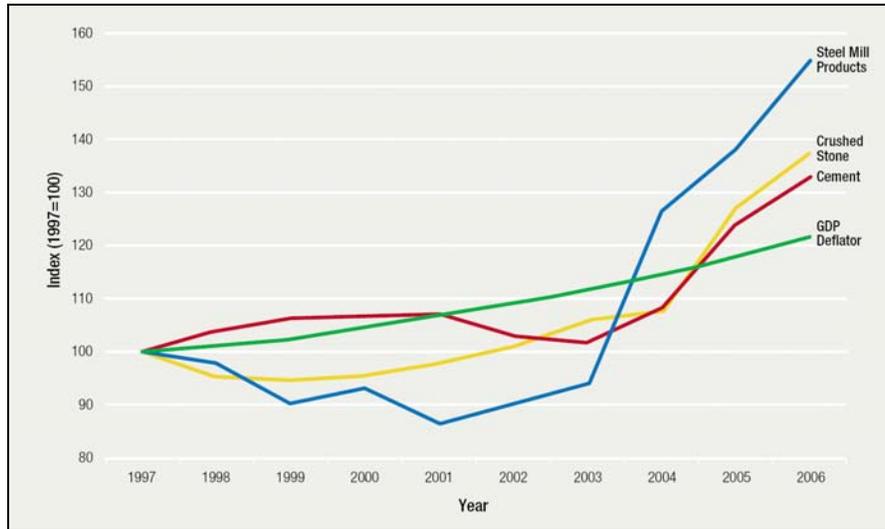
Source: Basheda and Chupka, Figure 1, using Brattle Group/Edison Foundation data.

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cause of the increases in both steel prices and the prices of steelmaking inputs. Today's steel prices remain at historically elevated levels and likely will remain high for the near future. Other metals important for utility infrastructure display similar price patterns: declining real prices over the first five years or so of the previous 10 years, followed by sharp increases in the last few years. These price increases also were evident in other metals—such as nickel and tungsten—that contribute to steel alloys used broadly in electrical infrastructure. Prices for wire products have spiked compared to the inflation rate, highlighting the impact of underlying metal price increases (see Fig. [4], "Electric Wire and Cable Price Indices")."

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Figure 3: Raw Material Cost Trends (1997 – 2006)



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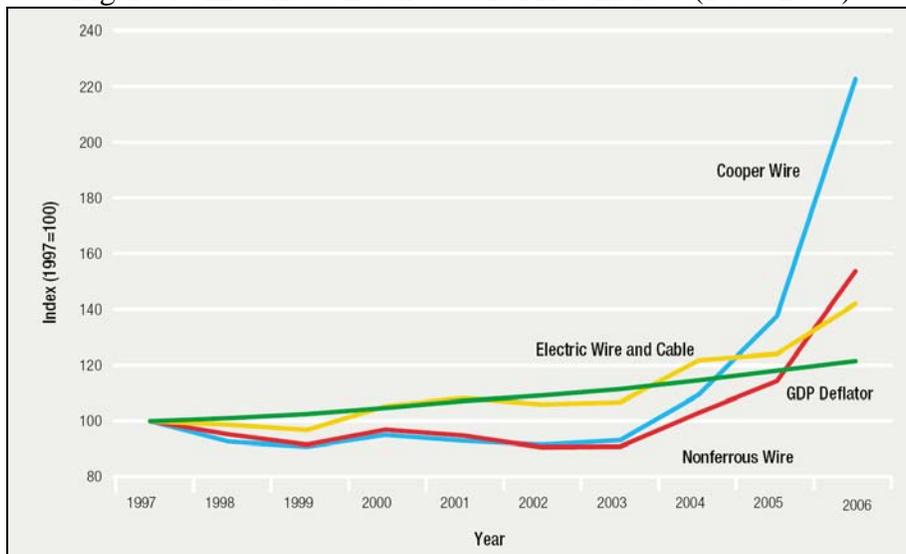
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Source: Basheda and Chupka, Figure 2, using data from U.S. Geological Survey, Mineral Commodity Summaries and The Bureau of Economic Analysis

232

Figure 4: Electric Wire and Cable Price Indices (1997-2006)



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234

235

Source: Basheda and Chupka, Figure 3, using data from U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis.

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These cost issues are so significant that it would be imbalanced to prevent ComEd from making *any pro forma* adjustments for the full amount of reasonably certain investments through September 30, 2008, which would be the result of adopting Mr. Griffin’s narrow interpretation of what investments are “reasonably certain.”

240 **Q. Please summarize your recommendation about appropriate ratemaking**  
241 **treatment of ComEd’s proposed *pro forma* adjustments in this case.**

242 A. I recommend that in light of the clear standard in current ICC rules and the  
243 adverse effects of failure to recognize “reasonably certain” costs, the Commission  
244 should carefully review the merits of ComEd’s testimony regarding individually  
245 identified, specifically studied and supported *pro forma* adjustments for  
246 investments to determine whether the Commission is satisfied that known and  
247 measureable changes in plant investment up through September 30, 2008 are  
248 reasonably certain. It should not rely on a simplistic “bright line” test that  
249 establishes an insurmountable obstacle for the utility to meet. Adoption of this  
250 measured approach is good for both the utility and consumers, consistent with  
251 balancing the various goals of regulation (*e.g.*, rates reflecting cost of service,  
252 capital attraction, efficient provision of service). Doing so would mean rejecting  
253 Mr. Griffin’s recommendations to truncate *pro forma* adjustments for investments  
254 as of the last day of 2007.

255 **III. SYSTEM MODERNIZATION PROJECTS RIDER**

256 **Q. Earlier, you stated that you would respond to the recommendation of CUB’s**  
257 **witness, Dr. Kiesling, that the Commission should reject ComEd’s proposed**  
258 **Rider SMP. What is your objection to her position?**

259 A. My primary concern with Dr. Kiesling’s recommendation is that the company’s  
260 proposal seems to be precisely the type of mechanism that could enable her other  
261 recommendations to be accomplished. I understand that Rider SMP will provide  
262 regulatory certainty beyond that now available, that would allow ComEd to invest

263 in most if not all of the types of investments that she envisions as important for  
264 bringing to ComEd's customers the benefits of a smart grid.

265 On the one hand, Dr. Kiesling compellingly articulates the benefits of a  
266 smart grid. Her points, in combination with the testimony of such ComEd  
267 witnesses as Mr. Terence Donnelly and Mr. Crumrine, provide ample evidence of  
268 the value of investment in smart-grid technologies as well as of some sort of  
269 collaborative process to ensure that the appropriate architecture is in place to  
270 enable a smart grid to evolve over time.

271 In light of these points, it is hard to understand why she recommends that  
272 the Commission reject Rider SMP.

273 **Q. But Dr. Kiesling does not support the specific smart-grid investments that**  
274 **are being proposed by ComEd, and wouldn't approval of Rider SMP be**  
275 **tantamount to Commission approval of ComEd's proposed SMP projects?**

276 A. No. ComEd's Rider SMP proposal does not involve the immediate approval of  
277 any specific system modernization projects. As I interpret ComEd's proposal, the  
278 Rider SMP proposal consists of two components. The first component is to  
279 provide a procedural mechanism through which the Commission and stakeholders  
280 discuss and contribute to the identification of appropriate system modernization  
281 investments. The second component is the Rider itself, which is the mechanism  
282 through which ComEd will be able to recover a portion of the annual investments  
283 it will make in system modernization projects. I see the heart of the proposal to  
284 be a means to accomplish the kind of stakeholder discussions that Dr. Kiesling is  
285 hoping to see occur in Illinois. For example, even if the Commission agreed with

286 Dr. Kiesling that the specific technology investments identified by Ms. Clair and  
287 Mr. Donnelly in this general rate case were not the appropriate ones to approve,  
288 such a finding would not – and should not – prevent the Commission from  
289 approving the SMP Rider concept altogether. Approval of Rider SMP *per se* is  
290 not necessarily the same thing as approving the specific advanced technology  
291 projects proposed in this rate case.

292 **Q. What effect would outright rejection of Rider SMP have on ComEd?**

293 A. A Commission decision to reject the SMP Rider as a ratemaking mechanism – in  
294 addition to not approving the specific projects proposed this year – would  
295 materially and adversely affect the ability of ComEd to make the types of smart  
296 grid investments that Dr. Kiesling hopes for electricity customers in Illinois.  
297 Without approval of Rider SMP and the certainty it provides, I believe that there  
298 will not be substantial investment in advanced metering and/or other smart-grid  
299 technology enhancements in the near future. Without financial resources to  
300 support investment in advanced metering, for example, it may be many years  
301 before a significant number of customers in ComEd’s service territory have the  
302 opportunity to realize the benefits of advanced metering, faster outage responses  
303 and shorter down times.

304 **Q. Why do you view approval of Rider SMP as necessary and reasonable?**

305 A. Currently, ComEd faces two significant financial impediments that inhibit retail  
306 customers getting access to the benefits of such investments in the near term.  
307 These impediments are (i) uncertainty about ICC support for specific  
308 modernization programs, and (ii) limits on the utility’s access to capital to fund

309 them at the same level of priority as investments necessary to provide reliable,  
310 safe, adequate electricity service. Adoption of Rider SMP as a potential cost  
311 recovery mechanism between rate cases may overcome some of these  
312 impediments in ways that neither prejudice Commission approvals nor the utility's  
313 commitment to investment. Adoption of the proposed Rider SMP may simply  
314 permit the possibility, with appropriate procedural safeguards giving ComEd the  
315 option to propose worthy candidate projects, affording the public the opportunity  
316 to comment, and assuring the Commission a venue to determine whether specific  
317 "elective" system modernization projects are cost-beneficial for customers and  
318 merit approval for cost recovery in rates.

319 Without some mechanism like this, there is no "room" for such  
320 incremental capital investment in system modernization projects in the revenue  
321 requirement on which ComEd's new rates will be established, because whatever  
322 depreciation allowance and amount of return eventually is included in those rates  
323 will be based on recovery of and on ComEd's past investment in plant that is tied  
324 to assets already in place on ComEd's system. Rider SMP will allow for recovery  
325 of incremental SMP capital projects approved by the Commission and invested in  
326 by ComEd in the future.

327 Put simply, ComEd's proposal for the SMP Rider is a creative mechanism  
328 for funding discretionary projects that have the potential – if justified before the  
329 Commission – to create value to consumers but which are not "necessary" for the  
330 provision of safe, reliable, efficient distribution service.

331 **Q. Finally, you mentioned you would address the points made by certain Staff**  
332 **and Intervenor witnesses that approval of Rider SMP would reduce**  
333 **incentives for ComEd to act efficiently. What is that testimony?**

334 A. Several intervenors object to ComEd's proposed Rider SMP either explicitly or  
335 implicitly on the grounds that, in their views, the mechanism will undermine the  
336 incentive for the utility to manage its investments and costs efficiently. For  
337 example, Mr. Michael Brosch, on behalf of the AG and CUB, recommends that  
338 Rider SMP be rejected, arguing that it would eliminate the incentive introduced  
339 by "regulatory lag" in encouraging utility management to control and reduce costs  
340 and to maximize the opportunity to actually earn at or above the authorized return  
341 level between rate case test periods.<sup>8</sup> Mr. Ralph Smith (for AARP) states that  
342 Rider SMP would reduce efficiency and financial responsibility, and urges the  
343 Commission to reject the proposal since, in his view, ComEd has not shown it has  
344 unique problems with regulatory lag, unlike that of other public utilities.<sup>9</sup> Dr.  
345 Dennis Goins (for Nucor) similarly urges rejection of the proposed Rider because,  
346 in his view, it "would essentially eliminate regulatory lag between cost incurrence  
347 and cost recovery for designated SMPs."<sup>10</sup> Mr. Robert Stephens (for IIEC), Mr.  
348 Kevin Higgins (for Kroger) and Mr. Ronald Linkenback (for the ICC Staff)  
349 similarly urge the Commission to reject Rider SMP, because, they believe, it  
350 would compromise incentives for prudent and efficient utility operation and

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<sup>8</sup> Testimony of Mr. Michael Brosch (AG/CUB Exhibit MLB-1.0), pages 7 and 13.

<sup>9</sup> Testimony of Mr. Ralph Smith (AARP Exhibit 1.0), pages 8 and 12.

<sup>10</sup> Testimony of Dr. Dennis Goins (Nucor Exhibit 1.0), page 12.

351 capital budgeting.<sup>11</sup>

352 **Q. What is your response to this view that Rider SMP will undermine the**  
353 **incentives for efficient management of ComEd’s system?**

354 A. First, the proposal is designed not for essential investments, but rather for ones  
355 that are above and beyond those required for safe, reliable and adequate electric  
356 service. Given ComEd’s financial situation, it is unlikely that such system  
357 enhancement projects would be undertaken without Rider SMP, even if there  
358 were net benefits to customers that could be established in a special Commission  
359 proceeding. Therefore, the intervenors’ arguments that ComEd’s financial  
360 incentives to cut costs will be undermined are misplaced.

361 Second, Rider SMP does not affect the regulatory lag which will still be in  
362 place regarding the vast body of other investments and expenses that ComEd will  
363 need to incur during the period in which new rates are in effect, in order to assure  
364 safe, reliable and adequate service for its customers.

365 Third, as a rate adjustment mechanism for recovery of costs of a program  
366 that will provide ComEd a unique opportunity to modernize its system, Rider  
367 SMP should not be hampered by “single issue” ratemaking concerns. Regulatory  
368 bodies routinely employ such ratemaking mechanisms to enable utilities to  
369 address special circumstances. Dr. Goins himself seems to suggest,<sup>12</sup> there may  
370 be extreme circumstances in which regulators might pursue single-issue  
371 ratemaking (and I do not believe that this rider, once adopted as a mechanism,  
372 would be considered single-issue ratemaking either in Illinois or elsewhere). The

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<sup>11</sup> Testimony of Mr. Robert Stephens (IIEC, Exhibit 1.0), pages 19-20; Testimony of Mr. Kevin Higgins (Kroger Exhibit), pages 3-7; Testimony of Mr. Ronald Linkenback (ICC Staff, Exhibit 8.0), pages 4-5.

<sup>12</sup> Testimony of Dr. Goins (Nucor Exhibit 1.0), page 14.

373 Rider SMP framework would not prejudice when such system-modernization  
374 investments might be net beneficial for customers, and would allow the  
375 Commission to decide when to allow timely cost-recovery to create a better  
376 incentive for ComEd to pursue investments that go beyond its normal obligation  
377 to serve.

378 Fourth, these intervenors seem to overlook the important fact that  
379 ComEd's proposal anticipates that each one of them would have an annual  
380 opportunity to participate in a Commission-led evaluation of specific SMP project  
381 proposals in front of the Commission before those proposals were acted upon by  
382 the Commission and ComEd.

383 **Q. Do you think that a desire to encourage regulatory lag should provide a basis**  
384 **for the Commission to reject the proposed Rider SMP?**

385 A. No. Focusing on regulatory lag as a reason to disapprove proposed Rider SMP  
386 would deprive the Commission of the opportunity, with the input of stakeholders,  
387 to determine whether investments to modernize the system are beneficial, since it  
388 is unlikely that any of these investments will take place without this new  
389 mechanism. Regulatory lag is neither a core function nor principle of utility  
390 ratemaking, and should therefore not be viewed as an end in itself or the driving  
391 force by which to evaluate utility rate proposals.

392 Focusing opposition to the proposal on the basis of the argument that  
393 "regulatory lag creates incentives for efficient management" overlooks the severe  
394 pressure *already* placed on the utility associated with keeping its costs down to  
395 the amounts in the established rates, even if there were absolutely no regulatory

396 lag. At the moment, the former should be strong enough, since the utility's  
397 earnings are so low in light of the overall revenue requirement allowed in the last  
398 rate case. That alone would seem enough to create a compelling incentive for  
399 efficient management.

400 **IV. CONCLUSION**

401 **Q. Does that conclude your testimony?**

402 **A. Yes.**

**SUSAN F. TIERNEY, Ph.D.**  
**Managing Principal**

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Dr. Tierney, a Managing Principal at Analysis Group, is an expert on economics, regulation and policy in the electric and gas industries and utility sector. She has consulted to business, industry, government, non-profit and other organizations on energy markets, economic and environmental regulation and strategy, and energy facility projects. Her expert witness, business consulting and arbitration services have involved industry restructuring, market analyses, wholesale and retail market design, contract disputes, resource planning and analysis, asset valuations, regional transmission organizations, the siting of generation and transmission and natural gas pipeline projects, natural gas markets, electric system reliability, ratemaking policy, and environmental policy and regulation. She has participated as an expert and advisor in civil litigation cases, regulatory proceedings before state and federal agencies, arbitrations, negotiations, mediations, and business consulting engagements.

Prior to joining Analysis Group, she was Senior Vice President at Lexecon. She has also served as the Assistant Secretary for Policy at the U.S. Department of Energy, appointed by President Bill Clinton and confirmed by the U.S. Senate. She was also Secretary for Environmental Affairs in Massachusetts under Governor William Weld, and Commissioner at the Massachusetts Department of Public Utilities, to which she was appointed by Governor Michael Dukakis. She served as Chairman of the Board of the Massachusetts Water Resources Authority. Previously, she also was executive director of the Massachusetts Energy Facilities Siting Council. She recently served as chair of the Massachusetts Ocean Management Task Force, appointed by Governor Romney. And most recently, she co-chaired the Energy/Environment Working Group for the transition of Governor Deval Patrick.

Dr. Tierney has authored numerous articles and speaks frequently at industry conferences. She serves on a number of boards of directors and advisory committees, including the National Commission on Energy Policy. She is chairman of the board of the Energy Foundation and the board of Clean Air – Cool Planet; a director of Renegy Holdings, Inc. (a biomass to electricity company); a director of the Northeast States Clean Air Foundation, and the Climate Policy Center; and a member of the Advisory Council of the National Renewable Energy Laboratory (NREL), the Massachusetts Renewable Energy Trust Advisory Council, the Environmental Advisory Council of the New York Independent System Operator, and the China Sustainable Energy Program's Policy Advisory Council. She was previously chair of the Electricity Innovations Institute, a director of Catalytica Energy Systems Inc., a director of the Electric Power Research Institute, a member of the Advisory Council of the New England Independent System Operator, and a director of ACORE (American Council on Renewable Energy). She has taught at the University of California at Irvine, and she earned her Ph.D. and M.A. degrees in regional planning at Cornell University and her B.A. at Scripps College.

## EDUCATION

- 1980 Ph.D. in Regional Planning, Public Policy, Cornell University, Ithaca, NY  
Dissertation: *Congressional policy making on energy policy issues*
- 1976 M.A., in Regional Planning, Public Policy, Cornell University, Ithaca, NY
- 1973 B.A. in Art History, Scripps College, Claremont, CA
- 1971-72 Studied political science, L'Institut d'Etudes Politiques, Paris, France

## PROFESSIONAL EXPERIENCE

- 2003-present Analysis Group, Inc., Boston, MA  
Managing Principal
- 1999-2003 Lexecon, Inc., Cambridge, MA (formerly The Economics Resource Group, Inc.)  
*Senior Vice President*
- 1995-1999 Economics Resource Group, Inc., Cambridge, MA  
*Principal and Managing Consultant*
- 1993-1995 U.S. Department of Energy, Washington, DC  
*Assistant Secretary for Policy*
- 1991-1993 Commonwealth of Massachusetts, Executive Office of Environmental Affairs, Boston, MA  
*Secretary of Environmental Affairs,*  
*Chairman of the Board of Directors of the Massachusetts Water Resources Authority*
- 1988-1991 Commonwealth of Massachusetts, Department of Public Utilities, Boston, MA  
*Commissioner*
- 1984-1988 Commonwealth of Massachusetts, Energy Facilities Siting Council, Boston, MA  
*Executive Director*
- 1983-1984 Commonwealth of Massachusetts, Executive Office of Energy Resources, Boston, MA  
*Senior Economist*
- 1982-1983 Commonwealth of Massachusetts, Energy Facilities Siting Council, Boston, MA  
*Policy Analyst*
- 1982 National Academy of Sciences, Washington, DC  
*Researcher*
- 1978-1982 University of California at Irvine, Irvine, CA  
*Assistant Professor*

## SELECTED CONSULTING EXPERIENCE

- **Various confidential engagements** involving power sales agreements, gas supply contracts, advisory services on gas and electric matters, oil market issues, water utility issues, and market power and monitoring issues.
- **National Association of Regulatory Utility Commissioners (NARUC)**  
Preparing study on best practices relating to state regulatory agency policies and utility practices on competitive procurement of resources to serve retail electricity customers. (2007).
- **Sierra Pacific Power Company**  
Provides testimony on policy issues relating to the use of historic, future, and hybrid test years in state utility rate cases (2007-2008).
- **Harvard University**  
Provides strategic assistance relating to regulatory issues affecting the planning and design of Harvard's "green campus" development in Allston Landing. (2007).
- **Public Service Gas & Electric Company of New Jersey**  
Provided assistance in facilitating the development of a policy to address "leakage" of greenhouse gas emissions associated with the adoption of a cap-and-trade program in various Northeast states and the interstate sales of electricity in various Northeast/MidAtlantic power markets. (2007).
- **Electric Power Supply Association**  
Prepared white paper on economic, environmental and regulatory trends in the electric industry (2007).
- **Sempra Energy Company – San Diego Gas & Electric Company and SoCalGas Company**  
Provided testimony on policy issues relating to the provision of financial incentives to electric and gas utilities for the successful provision of energy efficiency programs. (2007).
- **PECO Energy Company**  
Provided advice on various economic and policy issues relating to electric industry restructuring policy. (2007).  
Provided testimony on issues relating to the market for alternative energy credits and the proposal of PECO to voluntarily solicit, procure and bank alternative energy credits. (2007).
- **Commonwealth Edison Company**  
Provided testimony on issues relating to the relationship of auctions for wholesale supply for basic service customers and alternative proposals for utility resource procurement. (2007).
- **ISO New England**  
Assisting Regional Transmission Organization in scenario planning process examining various future technology mixes for New England's electric system. (2006-2007).
- **Major Regional Transmission Organization**  
Preparing report on market monitoring functions performed under various federal regulatory agencies with responsibility to oversee electricity and energy markets (i.e., the Federal Energy Regulatory Commission and the Commodities Futures Trading Commission). (2006-2007).
- **Major Industrial and Power Plant Company**  
Assisted company (located outside of New England) in analyzing market and negotiating the price and other terms and conditions for long-term gas supply (2006-2007).  
Assisted company in valuing a power plant asset. (2007).

- **Major Regional Transmission Organization**  
Performed analysis of market conditions and trends, and benchmarking market rules and reliability performance with other comparable organizations – in support of RTO’s strategic planning process. (2006-2007).
- **Special LNG Committee, Commonwealth of Massachusetts**  
Prepared report on the need for natural gas and liquefied natural gas in the Northeast, the need for LNG facilities, the role of government in the LNG facility siting process, and other issues relating to LNG proposals in the Commonwealth. Provided on *pro-bono* basis to the Commonwealth. (2006).
- **Ute Indian Tribe of the Uintah and Ouray Reservation**  
Prepared a report on economic and policy issues relating to use of tribal lands for energy rights-of-way, as called for in Section 1813 of the Energy Policy Act of 2005. (2006).
- **New York ISO**  
Prepared white papers on long-term contracting issues in states with restructured electric industries, and on the economic foundations for single-clearing-price markets versus pay-as-bid markets. (2007).  
Performed economic benefit/cost study of the introduction of competition into the wholesale electric market in the region (2006-2007).
- **Commonwealth Edison Company**  
Provided testimony on appropriate ratemaking principles for recovery of pension-related costs in proceeding to set rates to go into effect following the transition period. (2006).
- **Commonwealth Edison Company**  
Provided testimony on economic principles associated with single-price auction design versus pay-as-bid auction design, for the procurement of wholesale power supplies to meet the needs of retail all-requirements customers. (2006).
- **Exelon Corporation**  
Provided analysis of designs of mandatory carbon control policies. (2005-present).
- **Sonosky, Chambers, Sachse, Endreson & Perry, LLP, on behalf of various Indian Tribes**  
Provided analysis in support of comments filed with the Departments of Interior and Energy with respect to the study of energy rights of way on tribal land which was called for in Section 1813 of the Energy Policy Act of 2005 (2005-2006)  
Provided analysis in support of various tribal negotiations with energy companies with respect to valuation of energy rights of way on tribal reservation lands. (2007).
- **Electric utility company**  
Performed independent evaluator services in procurement for power resources. (2005-2006).
- **Power Generation Company**  
Provided analysis of product market development in MidWest and Eastern RTOs. (2005).
- **New England Energy Alliance**  
Prepared a white paper on energy infrastructure needs in the New England states. (2005).
- **Committee on Regional Electric Power Cooperation (of the Western Interstate Energy Board)**  
Provides research and advising with respect to market monitoring and assessment for the Western wholesale electric markets. (2005-2007).
- **Southern California Edison Company**  
Provided Independent Evaluator services for a competitive procurement of new long-term generation resources and renewable resources. (2005).

- **LNG / Interstate Gas Pipeline project – Duke Energy/Excelerate project**  
Prepared regional market study for the project proposed for Massachusetts. (2004-2005).
- **Electric Generating Company**  
In a contract dispute, provided expert witness services relating to whether changes in a region's wholesale power market rules nullified a power sales agreement. (2004-2006).
- **Louisville Gas & Electric and Kentucky Utilities**  
For two vertically integrated electric companies, provided expert witness services in a state investigation of which regional transmission approach satisfies state policy objectives.(2004-present).
- **Independent Generating Company**  
For a power company owned by commercial lenders in a Northeast power market, provided consulting services to monitor state regulatory policies and actions with respect to utility regulation and environmental regulation, and legislation affecting power plants. (2004).
- **Major Electric and Gas Company**  
Performed confidential study of the benefits, costs and current conditions in certain wholesale and retail electric power markets. (2004-2005).
- **Regional Transmission Organization**  
For a confidential project, analyzes market monitoring and mitigation approaches (2004-2005).
- **Major Commercial Bank**  
For a confidential project, advise with regard to electric industry restructuring and profitability of large energy marketer and trading organization (2004-2005).
- **Consumer Energy Council of America**  
For a group of electric industry market participants, regulators, and interest groups, prepared white papers on the need for transmission enhancements in U.S. power markets. (2004).
- **Retail electric company**  
Provides confidential analysis of business models and regulation approaches for providing retail electric service in the state. (2004).
- **Independent system operator**  
Provided confidential analysis and research on alignment of retail and wholesale market policies. (2004).
- **California State attorney general**  
Provided expert witness services with regard to state resource adequacy and planning practices. (2004).
- **Pacific Gas & Electric Company**  
Provided expert witness services relating to the public benefits of the settlement between PG&E and the California Public Utility Commission, to enable PG&E to emerge from bankruptcy. (2003).
- **Independent power company**  
Provided consulting advice on economics of compliance strategies for air and water permits. (2003).
- **Major public utility company**  
Provided expert advisory services to a buyer of power supplies relating to the pricing and other terms for a long-term purchase power agreement. (2003).
- **Duke Power**  
Provided expert advisory services relating to state rate-making and other regulatory practices. (2003).

- **Exelon Generation**  
Provided strategic advice and analytic services relating to market conditions affecting the client's generating assets in New England. (2003).
- **Entergy Services Inc.**  
Provides services as the independent monitor of Entergy's Fall 2002, Spring 2003 and Fall 2003 Requests for Proposals for Supply-Side Resources. (2002-2005).
- **Power generation company in New England**  
Provided expert testimony in contract dispute regarding allocation of uplift costs in an agreement concerning the supply of wholesale power for standard offer service. (2002).
- **Connecticut Light and Power Company**  
Provided expert testimony in contract dispute regarding allocation of congestion costs in an agreement concerning the supply of wholesale power for standard offer service. (2002 - 2003).
- **Ocean State Power**  
Provided arbitration services in a dispute regarding a gas purchase contract between Ocean State Power and ProGas Ltd. (2002-2003).
- **Regional independent system operator**  
Provided strategic advice on regional transmission organization strategy. (2002).
- **PJM Interconnection**  
Provided advice to the appointed mediator as part of the Alternative Dispute Resolution process, in a dispute involving PJM and a market participant. (2002).
- **Duke Energy Corporation**  
Provided analysis on strategic issues in gas and electric regulatory policy for Duke Energy's corporate office, including with regard to code of conduct issues, wholesale competition, regional transmission organization policy. (2001-2002).
- **Pacific Gas and Electric Corporation**  
Provided expert witness testimony in proceedings of the Federal Energy Regulatory Commission on public benefits of the proposed restructuring of PG&E assets as part of its emergence from bankruptcy. (2001-2002).
- **Massachusetts Renewables Trust**  
Provided assistance in support of the Trust's renewables and power quality program. (2001-2002).
- **Major electric holding company**  
Prepared an analysis of the regulatory policies for reviewing merger applications in states where potential merger candidates are located. (2001).
- **Western Massachusetts Electric Company**  
Provided expert testimony in contract disputes regarding allocation of congestion costs in agreements concerning the supply of wholesale power for standard offer service. (2001-2002).
- **The Energy Foundation**  
Researched and wrote a white paper on California's process for permitting new power plants. (2001).
- **Cross-Sound Cable Company**  
Provided expert testimony regarding public benefits of proposal to construct merchant transmission facility across Long Island Sound. (2001-2002).
- **Major independent power company**  
Provides expert witness support in litigation surrounding power plant development project, involving

viability of project's environmental and siting permitting. (2001 - 2004).

- **MASSPOWER Inc.**  
Mediator in a contract dispute involving pricing of power purchases. (2001).
- **NRG Energy and Dynegy**  
Provided expert witness support in regulatory proceeding to review these companies' acquisition of power plants being divested by Sierra Pacific and Nevada Power. (2001)
- **Occidental Chemical Corporation**  
Provided expert witness support and economic analysis of a major electric utility's transmission policies and practices, and review of the proposed RTO. (2000)
- **PP&L Global**  
Provided economic and environmental analysis and expert witness support for proposal to build the Kings Park Energy power plant in Long Island, New York. (2000).
- **Calpine Corporation**  
Provided economic and environmental analysis and expert witness support for proposal to build the Wawayanda power project in Rockland County, New York (2000).  
  
Provided environmental analysis and expert witness support for proposal to build the Towantic power plant in Oxford, Connecticut. (2001).
- **American National Power, Calpine, El Paso, NRG Energy, Sithe, Southern Energy**  
Provided support for the development of a proposal for a Regional Transmission Organization for New England. (2000 - 2001).
- **Duke Energy/Maritimes and Northeast Pipeline**  
Provided expert reports on the market and environmental impacts of new natural gas infrastructure and supply in New England and the public benefits of the Maritimes and Northeast Phase III and Hubline project. (2000-2003).
- **Arkansas Electric Distribution Cooperatives and Arkansas Electric Cooperative Corporation**  
Provided expert witness support and analysis on economic and public policy issues associated with various aspects of wholesale and retail competition in Arkansas. (2000 - 2001).
- **TransÉnergie U.S.**  
Provided expert testimony regarding public benefits of proposal to construct merchant transmission facility. (2000 - 2001).
- **Conectiv**  
Provided strategic wholesale market analysis and support for procurement of supplies for distribution utility company's provision of Basic Generation Services to retail customers. (2000).
- **SCS Energy Corp. – Astoria Energy**  
Provided economic and environmental analysis and expert witness support for proposal to build new power plant in New York City. (2000 - 2001).
- **HEFA Power Options**  
Provided strategic advice regarding wholesale electricity market for retail buyers' group. (2000-2003).
- **Major real estate development company**  
Provided strategic support for configuration of electric and gas infrastructure for large regional mixed-use development project. (2000 - 2001).

- **Investment company**  
Provided strategic advice to investment company with regard to potential investment in major electric generating equipment manufacturing company. (2000).
- **Major independent power company**  
Provided economic and environmental support for company's application to construct a merchant power plant in Florida. (2000).
- **Major railroad company**  
Provided expert witness support on economic and regulatory policy issues for railroad in state regulatory proceeding on a proposed utility merger. (2000).
- **Coalition of Wireless Telecommunications Carriers**  
Prepared an expert report on economic benefits of wireless telecommunications. (2000).
- **Major brownfield property developer**  
Provided economic valuation of property to be developed as site for new electric generating facility. (2000).
- **Fitchburg Gas and Electric Company**  
Provided litigation support for a gas and electric company on rate design policy. (2000).
- **Consortium of electric companies**  
Provided economic analysis, contract review, and litigation support for a consortium of electric companies with power purchase agreements with PURPA projects. (1999).
- **FirstEnergy Corp.**  
Provided expert witness support regarding generation asset valuation and the impacts of a new electric industry restructuring law on the company. (1999 - 2000).
- **Ozone Attainment Coalition**  
Provided strategic analysis and advice on electric system reliability issues relating to electric companies' implementation of 2003 NOx requirements issued by the U.S. EPA. (1999).
- **Municipal electric department**  
Provided expert witness services and analysis of the economics and need for a new natural gas pipeline proposed to serve an existing electric power plant in Massachusetts. (1998 - 2001).
- **Seneca Nation**  
Provided expert analysis and strategic advice regarding the value of transmission rights of way, in a dispute with an electric utility company. (1998 - 2000).
- **Major cable company**  
Provided strategic advice in a series of regulatory and court cases involving inter-affiliate transactions of electric utility company entering into competitive telecommunications and cable markets. (1998).
- **Major electric utility company**  
Provided expert witness support regarding structural changes in the electric industry, in litigation pertaining to the company's restructuring plans. (1998 - 1999).
- **Sithe Energies, Inc.**  
Provided strategic advice and regulatory support on a variety of issues (market analysis, transmission and ISO issues, federal and state market rules, legislation, siting, environmental strategy) relating to the company's participation in the New England, New York, and PJM markets. (1997 to 2003).  
Provided transition assistance to the company in its acquisition and integration of approximately 2,000-megawatts of existing fossil fuel generation from Boston Edison Company. (1997 - 1998).

Provided transition assistance to the company in its acquisition and integration of approximately 4,100-megawatts of existing fossil and hydroelectric generation capacity from GPU Genco. (1998 - 1999).

Provided support for the company's participation in electricity product markets structured by NEPOOL and operated by the Independent System Operator-New England, the New York power pool and the New York ISO, and PJM. (1997 to 2002).

Provided strategic project development advice and expert witness support for the company's applications to construct three natural gas merchant power plants (totaling 2865 megawatts) in Everett, Weymouth, and Medway, Massachusetts. (1998 to 2001).

Provided strategic guidance and regulatory support regarding design of air quality improvement plan for existing fossil units at Mystic Station. (1998 to 2001).

Provided strategic guidance regarding company's natural gas-fired merchant power plant development projects in Ontario, Canada. (2000 to 2001).

- **Various private electric companies, state legislative committees, gas companies, electric asset investor groups**

Provided workshops and presentations on changes under way in the electric industry, with focus on issues of strategic importance to these particular decision-makers and stakeholders. (1995 - present).

- **Natural Resources Canada**

Prepared a white paper on the implications for electric system reliability in Canada that are associated with restructuring the electric industry in the United States. (1999).

- **Cummins Engine Company, Inc.**

Provided strategic analysis on implications of national energy and environmental policies for the Company's long-term business opportunities. (1999).

- **Electric utility company**

Provided advice and regulatory support with regard to the economics and prudence of an existing long-term power purchase agreement. (1998).

- **National Association of Regulatory Utility Commissioners (NARUC)**

Assisted the Executive Director and NARUC leadership in updating its strategic plan and in preparing a business plan for its implementation. (1998).

- **State energy office**

Assisted the office in analyzing options for supporting renewable resource development in the state and in designing a market-based strategy to implement a new legislative mandate for a "renewables portfolio standard." (1997-1998).

- **U.S. Generating Company (now PG&E Generating Company)**

Provided analysis of the economic, reliability, and environmental benefits to the host state and region of a new merchant power generation facility: the 360-megawatt Millennium project in Massachusetts. Provided expert witness testimony on the results of this analysis to the Massachusetts Energy Facility Siting Board. (1996-1997).

Provided analysis of the economic, reliability, and environmental benefits of a new merchant power generation facility: the 792-megawatt Lake Road Generating Project in Connecticut. Provided expert witness testimony on the need for this project to the Connecticut Siting Board. (1997-1998).

- **Pennsylvania Power & Light Company**

Provided strategic guidance, economic and policy analysis, and regulatory support for electric utility company as it developed and proposed its plan for restructuring its company for retail competition.

Issues and tasks included electricity market price estimation, rate design, revenue analysis, consumer protection, corporate structure, and regulatory strategy. Provided expert witness testimony on rate design policy issues. (1996-1998).

- **Major diversified electric equipment company**  
Provided strategic advice and analysis on market opportunities and risk in various regions of the U.S. electric industry, under numerous restructuring scenarios. (1996-1997).
- **Major nationwide electricity consumer**  
Conducted analysis of buying options and strategies for acquisition of electricity services in states with customer choice in retail generation markets. Analysis included review and comparison of eight states' implementation of customer choice, from the perspective of how retail rate and function are unbundled, how the commercial and reliability functions are structured in the regional generation market, and how the customer should approach the market to competitively procure power across various states. (1997).
- **National Council on Competition in the Electric Industry**  
Prepared a Briefing Paper on Regional Issues in Electric Industry Restructuring, for the NCCEI—a joint project of the National Association of Regulatory Utility Commissioners, the National Conference of State Legislatures, the U.S. Department of Energy, and the U.S. Environmental Protection Agency. Analyzed regional issues, including electric system reliability, transmission access and siting, environmental protection, market power, interstate reciprocity in retail access policies, and regulation of multi-state electric utility companies. (1997).
- **Major western coal company**  
Analysis of western states' electric industry restructuring policies and market prices for power in various states within the Western Systems Coordinating Council area. (1996-1997).
- **Major gas pipeline company**  
Provided analysis of market structures and prices for generation and delivery services in electric service territories where the gas pipeline would locate facilities that use electricity. (1997).
- **Major electric supply company**  
Provided analysis of regional electricity market conditions to support this company's analysis of the value of various utility assets that were being divested as part of an electric utility company's corporate restructuring. (1997).
- **Massachusetts Division of Energy Resources**  
Analyzed Boston Gas Company's proposal for unbundling its retail service, its proposal for performance-based rates, and its plan for departing the merchant function. Provided analytic, policy and negotiation support on gas industry restructuring issues in a variety of cases. (1996-1998).
- **Massachusetts Division of Energy Resources**  
Assisted the state's energy office in developing policies for establishing a statewide fund to support renewable resource development as part of the state's electric industry restructuring plan. Provided analytic support to the energy office as it participated in a working group of stakeholders attempting to reach consensus on the institutional design of such a renewables fund. Drafted legislative language to create the fund and the non-bypassable charge on electric distribution service in the state. (1997).

- **Massachusetts Water Resources Authority Advisory Board**  
Analyzed opportunities for the MWRA, a public authority with major energy-using and –producing assets, to position itself beneficially as a participant in a restructured retail electricity market in New England. (1996-1997).
- **Coalition of marketers and independent power producers**  
Analyzed a state public utility commission’s proposed rules for restructuring the electric industry, from the point of view of whether the proposed structure would assure a workably competitive market. Examined the regional power pool’s proposal for an independent system operator. (1996-1997).
- **Major independent power producer**  
Analyzed market opportunities and risks for merchant plant development in a region of the U.S. (1996).
- **Major independent power producer**  
Analyzed the expected market price of power in two regions of the U.S. electricity markets. Presented results to company board of directors. (1996).
- **MCI, Inc.**  
Provided strategic regulatory advice in local competition proceeding before a state public utility commission. Provided testimony on local competition policy issues in public utility commission proceedings in Massachusetts and New York. (1996).
- **Group of municipal electric companies in New York State**  
Provided expert witness testimony on cost allocation issues in court litigation on wholesale power contracts. (1996).
- **Intercontinental Energy Corporation**  
Provided strategic guidance, analytic support, and regulatory support for the company, a major independent power producer, as it developed its position in the state’s electric industry restructuring proceeding. Issues involved regional industry structure (including independent system operator proposals), stranded cost recovery policy, stranded cost calculation methodologies, horizontal and vertical market power issues, environmental protection, and securitization. Provided expert witness testimony in state retail restructuring proceedings in Massachusetts and New Jersey. (1995-1997).
- **Nextel Communications**  
Provided economic and policy analysis on barriers to entry in the local commercial mobile radio service market in region. Provided expert witness testimony before the Massachusetts Department of Public Utilities. (1995-1998).
- **Arizona Public Service Company**  
Provided expert witness testimony on regulatory reforms necessary to align traditional existing utility planning proceedings with competitive retail markets as being proposed in the state. (1995).

#### **TESTIMONY ON BEHALF OF CLIENTS**

- **Several confidential expert reports, testimonies, declarations, affidavits, and depositions in confidential arbitrations and mediations.**
- **Sierra Pacific Power Company**  
Before the Public Utilities Commission of Nevada, In the Matter of the Application of Sierra Pacific Power, filed pursuant to NRS 704.110(3), for authority to increase its general rates charged to all classes of electric customers to reflect an increase in annual revenue requirement, Docket No. 07-12 (filed December 3, 2007), Prefiled Direct Testimony (with David Sosa).

- **Sempra Energy Company – San Diego Gas & Electric Company and SoCalGas Company**  
Before the *California Public Utility Commission*, Order Instituting Rulemaking to Examine the Commission’s post-2005 Energy Efficiency Policies, Programs, Evaluation, Measurement and Verification and Related Issues, Rulemaking Docket 06-04-010 (Filed April 13, 2006), testimony filed May 3, 2007, cross examination, May 29, 2007.
- **Commonwealth Edison Company**  
Before the *Illinois Commerce Commission*, Investigation of Rider CPP of Commonwealth Edison Company, and Rider MV of Central Illinois Light Company d/b/a AmerenCILCO, of Central Illinois Public Service Company d/b/a AmerenCIPS, and of Illinois Power Company d/b/a Ameren IP, pursuant to Commission Orders regarding the Illinois Auction, Docket No. 06-0800, testimony filed April 6, 2007; cross-examination, April 24, 2007.
- **PECO Energy Company**  
Before the *Pennsylvania Public Utility Commission*, Petition of PECO for Approval of (1) a Process to Procure Alternative Energy Credits During the AEPS Banking Period, and (2) A Section 1307 Surcharge and Tariff to Recover AEPS Costs, Prefiled Direct Testimony, March 19, 2007.
- **Masspower**  
Before the Superior Court Department of Suffolk County, Massachusetts, *Massachusetts Municipal Wholesale Electric Company v. Masspower, et al.*, Civil No. 05-02710 (BLS1), on the changes in conditions in the electric industry in New England as they relate to Masspower’s performance under its power supply agreement with MMWEC; Expert Report, September 11, 2006; oral testimony under cross examination at trial, October 16-17, 2006.
- **Commonwealth Edison Company**  
Before the *Illinois Commerce Commission*, Proposed general increase in electric rates, general restructuring of rates, price unbundling of bundled service rates, and revision of other terms and conditions of service, Docket No. 05-0597, Rebuttal Testimony, January 30, 2006; Surrebuttal Testimony, March 14, 2006; oral testimony under cross-examination, March 23, 2006. Testimony on rehearing, September 20, 2006.
- **Commonwealth Edison Company**  
Before the *Illinois House of Representatives, Electric Utility Oversight Committee*, on the Pay-as-Bid versus Uniform Price Auction Approach To Procurement of Wholesale Power for ComEd’s Full-Requirements Customers, January 18, 2006, Springfield, Illinois.
- **Louisville Gas & Electric Company and Kentucky Utilities Company**  
Before the *Kentucky Public Service Commission*, Application of LG&E and KU to transfer functional control of their transmission assets, Case No. 2005-xxxx, Direct Testimony, November 19, 2005.
- **Western Massachusetts Electric Company**  
Before the Superior Court Department of Norfolk County, Massachusetts, *Alternative Power Source, Inc., v. Western Massachusetts Electric Company*, Civil Action No. 00-1967, on the allocation of costs related to transmission congestion in wholesale power contract for standard offer service. Expert Report, September 19, 2001; deposition, October 15, 2001; testimony at trial, July 15, 2005.
- **Entergy Louisiana, Inc. and Entergy Gulf States Inc.**  
Before the *Louisiana Public Service Commission*, Application of Entergy Louisiana, Inc. for Approval of the Purchase of Electric Generating Facilities and Entergy Gulf States, Inc. for Authority to Participate in Contract for the Purchase of Capacity and Electric Power, Docket No. U27836, January 21, 2005.
- **Louisville Gas & Electric Company and Kentucky Utilities Company**

Before the *Kentucky Public Service Commission*, Investigation Into The Membership of Louisville Gas and Electric Company and Kentucky Utilities Company In The Midwest Independent Transmission System Operator, Inc., Case No. 2003-00266, September 29, 2004; Supplemental Rebuttal Testimony, January 10, 2005; testimony at hearing, June 2005.

- **Entergy Services Inc.**  
Before the *Federal Energy Regulatory Commission*, Entergy Services Inc., et al., in support of the application for approval of market-based power purchase agreements under Section 205 of the Federal Power Act. Affidavit, February 28, 2003; Affidavit, March 31, 2003; Testimony, September 2003; Testimony at deposition, November 20, 2003; Rebuttal Testimony, May 11, 2004; Deposition, May 27, 2004, and June 10-11, 2004; Testimony under cross-examination, July 19-23, 26-27, 2004.
- **Pacific Gas & Electric Company**  
Before the *California Public Utilities Commission*, In Re: Order Instituting Investigation into the ratemaking implications for Pacific Gas and Electric Company (PG&E) pursuant to the Commission's Alternative Plan of Reorganization under Chapter 11 of the Bankruptcy Code for PG&E, in the United States Bankruptcy Court, Northern District of California, San Francisco Division, In re Pacific Gas and Electric Company, Investigation 02-04-026, Pre-Filed Testimony, July 23, 2003, Testimony under cross-examination, September 12, 2003.
- **Entergy Louisiana, Inc.**  
Before the *Louisiana Public Service Commission*, *Entergy Service*, In Re: Application of Entergy Louisiana, Inc., for Authorization to Enter into Certain Contracts for the Purchase of Capacity and Energy, Docket No. U-27136, Rebuttal Testimony, April 25, 2003.
- **Pacific Gas and Electric Company/PG&E Corporation**  
Before the *Federal United States Bankruptcy Court, Northern District of California, San Francisco Division*, In Re: Pacific Gas and Electric Company, Debtor, Federal I.D. No. 94-0742640, on the public policy concerns raised by the proposed reorganization plan of PG&E Corporation. Expert report, November 8, 2002; rebuttal report, November 26, 2002.
- **PP&L Global**  
Before the *New York Public Service Commission, Article X Siting Board*, on the economic and environmental benefits of the Kings Park Energy power plant. Prefiled direct testimony (with James Potter, Stephen T. Marron, David J. Kettler, and Thomas Conoscenti), January 2002; rebuttal testimony (with James Potter, Stephen T. Marron, William C. Miller, Jr., N. Dennis Eryou, and Robert W. Brown), October 23, 2002.
- **Connecticut Light & Power Company**  
Before the *Federal United States District Court, District of Connecticut, Connecticut Light & Power Company v. NRG Power Marketing Inc.*, on their standard offer service wholesale sales agreement. Expert report, August 30, 2002; deposition, September 27, 2002.
- **Pacific Gas and Electric Company/PG&E Corporation**  
Before the *Federal Energy Regulatory Commission, in the Matter of Pacific Gas and Electric Company, PG&E Corporation, on behalf of its Subsidiaries Electric Generation LLC, ETrans LLC, and GTrans LLC*, on the public benefits of the application seeking approval under Section 203 of the Federal Power Act and Section 12 of the Natural Gas Act for various actions relating to restructuring of the company to emerge from bankruptcy, November 30, 2001.
- **Cross-Sound Cable Company LLC**  
Before the *Connecticut Siting Council*, on the public benefits of the proposed Cross Sound Cable Project's *Application for a Certificate of Environmental Compatibility and Public Need*, Docket No.

208. Prepared direct testimony, July 23, 2001; oral testimony under cross-examination, October 24-26, 29-30, 2001.

- **Sithe New England (Sithe Edgar LLC, Sithe New Boston LLC, Sithe Framingham LLC, Sithe West Medway LLC, Sithe Mystic LLC)**  
Before the *Federal Energy Regulatory Commission, in the Matter of NSTAR Electric & Gas Corp., v. Sithe Edgar LLC, Sithe New Boston LLC, Sithe Framingham LLC, Sithe West Medway LLC, Sithe Mystic LLC, and PG&E Energy Trading*, Docket No. EL01-79-000. Affidavit comparing historical cost recovery by Boston Edison for its portfolio of fossil generation units (pre-divestiture) under rate regulation, versus Sithe's revenue recovery for these same units (post-divestiture) under market prices, June 5, 2001.
- **NRG Energy Inc. and Dynegy Holdings Inc.**  
Before the *Public Utilities Commission of Nevada*, In Re: petition of the Attorney General's Bureau of Consumer Protection to issue an Order staying further proceedings regarding divestiture of Nevada's electric generation assets and to open a docket to consider whether to issue a moratorium on divestiture in Nevada. Supplemental prepared direct testimony on behalf of Valmy Power LLC, April 6, 2001; testimony under cross-examination.  
  
Before the *Public Utilities Commission of Nevada*, In Re: petition of the Attorney General's Bureau of Consumer Protection to issue an Order staying further proceedings regarding divestiture of Nevada's electric generation assets and to open a docket to consider whether to issue a moratorium on divestiture in Nevada, prepared direct testimony on behalf of Reid Gardner Power LLC and Clark Power LLC, April 3, 2001; testimony under cross-examination.
- **Sithe New England, LLC**  
Before the *Federal Energy Regulatory Commission, In the Matter of Maine Public Utilities Commission and The United Illuminating Company v. ISO New England, Inc.*, affidavit on the role of price "spikes" in compensating generators for the services that they provide in the region, September 7, 2000.
- **Arkansas Electric Distribution Cooperatives**  
Before the *Arkansas Public Service Commission, In the Matter of a Generic Proceeding to Establish Uniform Policies and Guidelines for a Standard Service Package*. Prepared joint reply testimony (with Janet Gail Besser), July 21, 2000; prepared joint surreply testimony (with Janet Gail Besser), August 3, 2000.
- **TransEnergie U.S.**  
Before the *Connecticut Siting Council*, on the public benefits of the proposed Cross Sound Cable Project. Expert report, July, 2000; prepared direct testimony, September 20, 2000; oral testimony, September 27, 2000; supplemental written testimony, December 7, 2000; oral testimony under cross-examination, December 14, 2000; oral testimony January 9-11, 2001.
- **SCS Energy Corp.**  
Before the *New York State Public Service Commission*, on the economic and environmental impact of a new combined cycle power plant in Queens, NY, June 19, 2000.
- **Reading Municipal Light Department**  
Before the *Massachusetts Energy Facilities Siting Board, Docket No. EFSB 97-4*, on the economics and need for a new natural gas pipeline, June 19, 2000; testimony under cross-examination September 19, 2000, September 21-22, 2000, October 5, 2000, and October 17, 2000.
- **Fitchburg Gas and Electric Light Company**  
Before the *Massachusetts Department of Telecommunications and Energy, Docket D.T.E. 99-66*, on gas and electric company rate design policy, testimony under cross-examination, January 14, 2000.

- **FirstEnergy Corp.**  
Before the *Public Utilities Commission of Ohio*, In the Matter of the Application of FirstEnergy Corp. on behalf of Ohio Edison Company, the Toledo Edison Company, and The Cleveland Electric Illuminating Company: for Approval of an Electric Transition Plan and for Authorization to Recover Transition Revenues (Case No. 99-1212-EL-ETP); for Approval of New Tariffs (Case No. 99-1213-EL-ATA); for Certain Accounting Authority (Case No. 99-1214-EL-AAM), on recovery of transition costs and calculation of the market value of generation assets. Joint testimony (with Dr. Scott T. Jones), December 22, 1999; supplemental testimony (with Dr. Scott T. Jones), April 4, 2000; deposition, April 7, 2000.
- **Sithe New England, LLC**  
Before the *Massachusetts Energy Facilities Siting Board, Docket EFSB 98-10*, in support of an application to construct a 540 MW gas-fired single cycle peaking power plant in Medway, Massachusetts. Prepared direct testimony, April 1999; oral testimony under cross-examination, July 27, 1999.
- **Village of Bergen, et al.**  
Before the *Supreme Court of the State of New York, Index No. 081556*, Affidavit in Response to Defendant's Submission of February 25, 1999, in *Village of Bergen, et al., Plaintiffs, v. Power Authority of the State of New York, Defendant*, March 3, 1999.  
  
Before the *Supreme Court of the State of New York, Index No. 081556*, Affidavit in Support of Petition to Correct Rates, in *Village of Bergen, et al., Plaintiffs, v. Power Authority of the State of New York, Defendant*, October 17, 1996.
- **Sithe New England, LLC**  
Before the *Massachusetts Energy Facilities Siting Board, Docket EFSB 98-7*, in support of an application to construct a 750 MW gas-fired combined cycle power plant at the Fore River Station in Weymouth, Massachusetts (Edgar). Prepared direct testimony, February 10, 1999; oral testimony under cross-examination, July 26, 1999.
- **Sithe New England, LLC**  
Before the *Massachusetts Energy Facilities Siting Board, Docket EFSB 98-8*, in support of an application to construct a 1500 MW gas-fired combined cycle power plant at the Mystic Station in Everett, Massachusetts. Prepared direct testimony, February 10, 1999; oral testimony under cross-examination, May 25, June 2, 1999.
- **U.S. Generating Company**  
Before the *Connecticut Siting Board, Docket No. 189*, on an application to construct a new Lake Road Generating Project, September 1998. Oral testimony under cross-examination.
- **Central Hudson Gas & Electric Corporation**  
Before the *Supreme Court of New York, Index No. 255/1998, CHGE v. West Delaware Hydro Associates*, on issues relating to ratemaking treatment of costs relating to power contracts, April 13, 1998.
- **Sithe New England Holdings, LLC**  
Before the *Massachusetts Department of Telecommunications and Energy and the Massachusetts Energy Facilities Siting Board, Docket Nos. DTE98-84 and EFSB98-5*, on issues pertinent to forecast and supply planning by electric companies, September 14, 1998.
- **Sithe Energies, Inc.**  
Before the *Massachusetts Energy Facilities Siting Board, Docket No. EFSB98-3*, on issues related to the agency's rulemaking establishing a Technology Performance Standard, June 8, 1998.

Before the *Massachusetts Energy Facilities Siting Board, Docket No. EFSB98-1*, on issues related to the agency's review of project viability as part of its review of power plant applications, March 16, 1998.

- **Pennsylvania Power & Light**

Rebuttal testimony on codes of conduct governing affiliate relations. *Pennsylvania Public Utility Commission, Docket Nos. A-122050F0003, A-120650F0006*, testimony under cross-examination, February 17, 1998.

Rebuttal testimony on rate unbundling and rate design issues, on consumer protection issues. *Pennsylvania Public Utility Commission, Docket No. R-00973954*, testimony under cross-examination, August 5, 1997.

Before the *Pennsylvania Public Utility Commission, Docket No. R-00973954*, on rate design, April 1, 1997.

- **Nextel Communications**

Before the *Massachusetts Department of Public Utilities, Docket 95-59-B*, on telecommunications facility matters, testimony under cross-examination, January 1997.

- **Arizona Public Service Company**

Before the *Arizona Corporation Commission, Docket No. U-0000-95-506*, on integrated resource planning and competition, October 1996.

- **U.S. Generating Company**

Before the *Massachusetts Energy Facilities Siting Board, Docket 96-4*, on an application to construct a new Millennium power generating facility, testimony under cross-examination, October 1996.

- **MCI Communications, Inc.**

Before the *Massachusetts Department of Public Utilities*, in the NYNEX interconnection docket. Opening up the Local Exchange Market to Competition: Common Themes with Retail Competition in Electricity and Natural Gas Industries, August 30, 1996.

- **Intercontinental Energy Corporation**

Before the *New Jersey Board of Public Utilities, No. EX94120585Y*, on the Energy Master Plan Phase I Proceeding to Investigate the Future Structure of the Electric Power Industry, July 1996.

Before the *Massachusetts Department of Public Utilities, DPU 96-100*, on the Investigation Commencing a Notice of Inquiry/Rulemaking for Electric Industry Restructuring, July 1996.

## **PUBLICATIONS, REPORTS, ARTICLES**

Tierney, Susan, et. al., "Pay-as-Bid vs. Uniform Pricing: Discriminatory auctions promote strategic bidding and market manipulation," *Public Utilities Fortnightly* (Forthcoming March 2008).

Tierney, Susan, "Statement on Pennsylvania House Bill No. 54 – Why Extending Electricity Rate Caps Ultimately Would Not Protect Consumers From Rising Electricity Prices," February 2008.

Tierney, Susan. "Pennsylvania's Electric Power Future: Trends and Guiding Principles," January 2008, Prepared for the Energy Association of Pennsylvania.

Tierney, Susan. "Decoding Developments in Today's Electric Industry — Ten Points in the Prism," October 2007, Prepared for the Electric Power Supply Association.

Baldick, Ross Baldick, Ashley Brown, James Bushnell, Susan Tierney, and Terry Winter. "A National Perspective on Allocating the Costs of New Transmission Investment: Practice and Principles," A White Paper Prepared by The Blue Ribbon Panel on Cost Allocation for WIRES, the Working group for Investment in Reliable and Economic electric Systems, September 2007.

Tierney, Susan, "Adaptation and the Energy Sector," National Summit on Coping with Climate Change, University of Michigan, Ann Arbor, May 8-10, 2007.

Tierney, Susan, and Edward Kahn, "A Cost-Benefit Analysis of the New York Independent System Operator: The Initial Years," March 2007.

Tierney, Susan, and Paul Hibbard, "Market Monitoring at U.S. RTOs: A Structural Review," March 2007 (Appendix 17 of PJM 2007 Strategic Report, April 2, 2007).

Tierney, Susan, "Recollections of a State Regulator," NRRI 30<sup>th</sup> Anniversary, *Journal of Applied Regulation*, Volume 4, December 2006.

Barmack, Matthew, Edward Kahn, Susan Tierney, and Charles Goldman, "A Regional Approach to Market Monitoring in the West," Prepared for the Western Interstate Energy Board Committee on Regional Electric Power Cooperation and Office of Electricity Delivery and Energy Reliability, Department of Energy, LBNL-61313, October 2006.

"Electric Reliability," letter to the Editor, *Issues in Science and Technology*, Fall 2006, Forum.

"A Cost-Benefit Assessment of Wholesale Electricity Restructuring and Competition in New England," co-authored with Dr. Matthew Barmack and Dr. Edward Kahn, May 2006; forthcoming, *Journal of Regulatory Economics*.

Report to the Massachusetts Special Commission Relative to Liquefied Natural Gas Facility Siting and Use, June 2006.

"Energy Policy Act Section 1813 Comments: Report of the Ute Indian Tribe of the Uintah and Ouray Reservation for Submission to the U.S. Departments of Energy and Interior," co-authored with Paul J. Hibbard, In Cooperation With The Ute Indian Tribe of the Uintah and Ouray Reservation, May 15, 2006.

"In support of a Sound plan," Op Ed co-authored with John DeVillars, *Boston Globe*, April 23, 2006.

"Let's Talk About the Weather: Interview with Susan Tierney on climate change risks that corporate boards of directors should know about and address," *Corporate Board Member Magazine*, January/February 2006.

"New England Energy Infrastructure – Adequacy Assessment and Policy Review," White Paper prepared for the New England Energy Alliance; co-authored with Paul J. Hibbard November 2005.

"New energy bill doesn't do enough." Op Ed, *Boston Globe*, July 29, 2005.

"The Benefits of New LNG Infrastructure in Massachusetts and New England: The Northeast Gateway Project," Prepared for Northeast Gateway Energy Bridge, L.L.C., and Algonquin Gas Transmission, LLC, White Paper co-authored with Paul. J. Hibbard, June 2005.

"Principles for Market Monitoring and Mitigation in PJM: A Review of Economic Principles, Legal and Regulatory Structures, and Practices of Other Regions, with Recommendations," White Paper prepared for PJM Interconnection, January 3, 2005.

"Keeping the Power Flowing: Ensuring a Strong Transmission System to Support Consumer Needs For Cost-Effectiveness, Security and Reliability – A Report of the Transmission Infrastructure Forum of the Consumer Energy Council of America," co-authored the report with CECA staff for this CECA Transmission Infrastructure Forum, January 2005.

Signatory to "Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges, Summary of Recommendations," Washington, DC: National Commission on Energy Policy, December 2004.

"Comments of Susan F. Tierney and Paul. J. Hibbard on their own behalf," before the *Federal Energy Regulatory Commission, in the Matters of Solicitation Processes for Public Utilities (Docket No. PL04-6-000) and Acquisition and Disposition of Merchant Generation Assets by Public Utilities (Docket No.*

PL04-9-000), on the role of independent monitors and independent evaluators in public utility resource solicitations, July 1, 2004.

“Energy and Environmental Policy in the United States: Synergies and Challenges in the Electric Industry” (with Paul J. Hibbard), prepared for Le Centre Français sur les Etats-Unis (The French Center on the United States), July 2003; presentation in Paris, October, 2003.

“Supplemental Report on the Benefits of New Gas Infrastructure in New England: The Everett Extension Project” (with Charles Augustine), prepared for Algonquin Gas Transmission Company, February 5, 2003.

“The Political Economy of Long-Term Generation Adequacy: Why an ICAP Mechanism Is Needed as Part of Standard Market Design” (with Janet Gail Besser and John Farr), *The Electricity Journal*, August/September 2002.

“Siting Power Plants in the New Electric Industry Structure: Lessons California and Best Practices for Other States” (with Paul J. Hibbard), *The Electricity Journal*, June 2002.

"Maritimes Phase III and Algonquin Hubline: 'Coastal Dependency' " *CZM Consistency Review*, May 2002.

“Siting Power Plants: Recent Experience in California and Best Practices in Other States” (with Paul J. Hibbard), prepared for The Hewlett Foundation and The Energy Foundation, February 2002.

“Economic and Environmental Benefits of the Kings Park Energy Project: System Production Modeling Report” (with Joseph Cavicchi), prepared for PPL Global, January 25, 2002.

“The Benefits of New Gas Infrastructure in New England: The Maritimes & Northeast Phase IV Pipeline Project” (with Charles Augustine), prepared for Maritimes & Northeast Pipeline, LLC, January 2002.

“Activating Ontario’s Capacity Market: Design and Implementation Issues” (with Janet Gail Besser and John Farr), prepared for Sithe Energies, Inc., October 24, 2001.

White paper on “Ensuring Sufficient Capacity Reserves in Today's Energy Markets” (with Janet Gail Besser and John Farr), prepared for submission as part of comments filed by Sithe Power Marketing LLC, Sithe New England Holdings, and FPL Energy LLC, in FERC Docket No. EX01-1-000, October 17, 2001.

“The Rationale and Need for Capacity Obligations and a Capacity Market in a Restructured Ontario Electricity Industry” (with Janet Gail Besser and John Farr), prepared for Sithe Energies, Inc., September 27, 2001.

“Economic and Environmental Benefits of the Wawayanda Energy Center: System Production Modeling Report” (with Joseph Cavicchi), prepared for Wawayanda Energy Center, LLC, August 24, 2001.

“A Better CO<sub>2</sub> Rule,” op-ed, *The New York Times*, May 16, 2001.

“Air Pollution Reductions Resulting from the Kings Park Energy Project” (with Joseph Cavicchi), prepared for PPL Global, January 24, 2001.

“Report on “Economic Benefits of Wireless Telecommunications,” prepared on behalf of the New Hampshire Coalition of Wireless Carriers for the New Hampshire HB 733 Study Committee, November 13, 2000.

Expert Report: “Public Benefits of the Proposed Cross Sound Cable Project Prepared for TransÉnergie U.S. Ltd.,” July 2000.

“The Benefits of New Gas Infrastructure in Massachusetts and New England: The Maritimes & Northeast Phase III Pipeline and the Algonquin Gas Transmission Company HubLine Projects” (with Wayne Oliver of Navigant Consulting), prepared for Maritimes & Northeast Pipeline, LLC and Algonquin Gas Transmission Company, October 2000.

“Production Modeling for the Astoria Project: Report on Results” (with John G. Farr), report for SCS Energy Corp., June 14, 2000.

“Observations from Across the Border: Implications for Canadian Reliability of Recent Changes in U.S. Electricity Markets and Policy,” white paper for Natural Resources Canada, 1999.

“Research Support for the Power Industry” (with M. Granger Morgan), *Issues in Science and Technology*, Fall 1998.

“Maintaining Reliability in a Competitive U.S. Electricity Industry,” Final Report of the Task Force on Electric System Reliability, U.S. Department of Energy, September 29, 1998.

“Regional Issues in Restructuring the Electric Industry,” *The Electricity Industry Briefing Papers*, The National Council on Competition and the Electric Industry, April 1998.

“Fueling the Future: America’s Automotive Alternatives” (with Philip Sharp), The American Assembly, Columbia University, Arden House, NY, September, 1995.

“Needed: Broad Perspective, Fresh Ideas,” guest editorial, *The Electricity Journal*, November 1994.

Foreword in J. Raab, *Using Consensus Building to Improve Utility Regulation*, American Council for an Energy-Efficient Economy, Washington, DC, 1994

“Massachusetts’ Pre-Approval Approach to Prudence in Massachusetts,” *The Electricity Journal*, December 1990.

“Using Existing Tools to Pry Open Transmission—A New England Proposal,” *The Electricity Journal*, April 1990.

“Sustainable Energy Strategy: Clean and Secure Energy for a Competitive Economy” (directed), National Energy Policy Plan, July 1995.

“The Domestic Natural Gas and Oil Initiative: First Annual Progress Report” (directed), U.S. Department of Energy, February 1995.

General Guidelines for Voluntary Reporting of Greenhouse Gases under Section 1605(b) of the Energy Policy Act of 1992 (directed), U.S. Department of Energy, October 1994.

“Fueling a Competitive Economy: Strategic Plan for the U.S. Department of Energy” (directed), 1994.

“The Domestic Natural Gas and Oil Initiative: Energy Leadership in the World Economy” (directed), U.S. Department of Energy, December 1993.

“Siting Needs: Issues and Options,” U.S. Department of Energy, June 1993.

“The Nuclear Waste Controversy,” in D. Nelkin, *Controversy: The Politics of Technical Decisions*, Sage, 1977; 1984 (second edition).

*DATAWARS: Computer Models in the Federal Government* (with Kenneth L. Kraemer, Siegfried Dickhoven, and John Leslie King), Columbia University Press, 1987.

“The Evolution of the Nuclear Debate: The Role of Public Participation,” *Annual Review of Energy*, 1978.

## **RECENT SPEECHES AND PRESENTATIONS**

“Energy Systems and Adaptation to Climate Change” presentation to the Annual Meeting of the American Meteorological Society, Panel on Adaptation to Climate Change, New Orleans – January 21, 2008.

“Decoding Developments in Today’s Electric Industry —The Larger Context for Western Mass’ Energy Situation,” presentation to the Western Massachusetts Energy Forum, January 15, 2008.

“Decoding Developments in Today’s Electric Industry — Ten Points in the Prism” COMPETE/EPSC Meeting, Washington, DC, November 5th, 2007

“Climate Science Research for the Energy Sector ,” presentation to the National Academy of Science Working Group, U.S. Climate Change Science Program, Washington, D.C., October 17, 2007

“Climate and Energy – Facts on the Ground – A view from outside the region,” Presentation to the Environmental Entrepreneurs Meeting, Boston, September 18, 2007.

“New England’s Electric Industry in an Era of Climate Change, Globalization, and Alzheimer’s: Where We Stand, Where We Need to Go. . . ,” Presentation to the New Hampshire Legislature, Electric Utility Restructuring Oversight Committee, Concord, New Hampshire, September 20, 2007.

“Summing Up,” presentation to the Kleiner Perkins Caufield & Byers Greentech Innovation Network Forum, Aspen, Colorado, July 19, 2007.

“Market Monitoring at RTOs: Review of the Issues,” presentation to the ISO/RTO Council – 2nd Annual IRC Board Conference, Boston, May 23, 2007

“Adaptation and the Energy Sector,” presentation to the University of Michigan – National Summit on Coping with Climate Change, Ann Arbor, May 8 2007

“Lessons Learned from the Relationship Between Energy Legislation, Energy Strategy and Energy Institutions in the United States,” presentation to the China Energy Law International Symposium, Diaoyutai State Guesthouse – Beijing, China, April 27-28, 2007

“Siting Energy Facilities in New England: What, Why, Where, and How,” presentation to the Energy and Climate Forum, Tufts University, Medford MA, April 19, 2007

“New England’s Electric Industry in an Era of Climate Change, Globalization, and Alzheimer’s: Where We Stand, Where We Need to Go. . . . ,” presentation, 100<sup>th</sup> Massachusetts Restructuring Roundtable, “*What Have We Accomplished With Electric Restructuring in New England Over the Past Decade, and What Do We Need To Accomplish Over the Next Decade?*” Boston, March 30, 2007

“Electricity and Gas – Two Unique Energy Commodities: How They Work,” presentation to Law Seminars International course on Introduction to Electricity & Natural Gas Regulation – A Primer Law Seminars International, Washington, DC, March 15, 2007

“The Effect of Federal and State Policies on Traditional Generation Technologies.” presentation to Yale School of Management; Yale School of Forestry and Environment – course on Energy Economics & the Environment, New Haven CT, February 21, 2007

“National Energy Policy – The one we’ve got, others being pursued: Formulating a Comprehensive (and Stakeholder-Driven) U.S. National Energy Policy,” presentation to MIT course on Developing Energy/Environmental Policies for a Sustainable Future, Cambridge, February 12, 2007

“New England’s energy outlook: How it looks from where I Sit,” presentation to the Joint Meeting of the Board of the Massachusetts Technology Collaborative and the Governing Board of the John Adams Innovation Institute, Boston, February 12, 2007

“Climate Workshop – Approaches for Dealing with Costs: Safety Valve, Circuit Breaker, Offsets, Allocation,” Senate Energy Committee, Washington DC, February 16, 2007

“Working together regionally on energy and environmental issues ,” presentation to the Ministerial Forum – Conference of New England Governors and Eastern Canadian Premiers, Québec, February 11, 2007

“Revisiting the Energy Policy Act of 2005: What's Working – and What’s Not?” presentation to the Analysis Group Seminar, Denver, November 15, 2006

## **OTHER PROFESSIONAL ACTIVITIES**

Member, Board of Directors, Renegy Holdings, 2007 to present.

Member, Blue Ribbon Commission on Cost-Allocation Issues for Transmission Investment, WIRES, 2007.

Member, Advisory Council, National Renewables Energy Laboratory, 2006 to present.

Member, National Academy of Sciences Committee on Enhancing the Robustness and Resilience of Electrical Transmission and Distribution in the United States to Terrorist Attack, 2005 to present.

Member, New York Independent System Operator, Environmental Advisory Council, 2004 to present.

Member, National Commission on Energy Policy, 2002 to present.

Advisory Council member, Clean Air Task Force, 2002 to present.

Member, Board of Directors, Catalytica Energy Systems Inc., 2001 to 2007.

Member, Board of Directors, Climate Policy Center, 2001 to present.

Member, Advisory Committee, Carnegie Mellon Electricity Industry Center, 2001 to present.

Member, Policy Advisory Committee, China Sustainable Energy Project—A Joint Project of The Packard Foundation and The Energy Foundation, 1999 to present.

Director, NorthEast States Center for a Clean Air Future (formerly, Northeast States Clean Air Foundation), 1998 to present.

Chair of the Board of Directors, The Energy Foundation, 2000 to present; Vice-Chair, 1999-2000; Director, 1997 to present.

Chair of the Board of Directors, Clean Air—Cool Planet: A Northeast Alliance, 2004 to present; director, 1999-2004; Chairman of the Board, 2004 to present.

Member, Board of Directors, ACORE (American Council on Renewable Energy), 2006-2007.

Co-Chair, Energy/Environment Working Group, Governor Deval Patrick Transition Team (2005-2006).

Presenter, Economic Issues, National LNG Forums, U.S. Department of Energy, Boston Massachusetts; Astoria, Oregon (2006).

Chair of the Technical Review Panel, Critical Infrastructure Protection Decision Support Systems (CIP-DSS), Argonne, Los Alamos and Sandia National Laboratories, 2006.

Advisory Council member, New England Energy Alliance, 2005-2006.

Member, Board of Directors, Electric Power Research Institute, 1998 to 2003, 2005-2006.

Chair of the Laboratory Direction's Division Review Panel for the Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, 2005.

Chair, Ocean Management Task Force, Commonwealth of Massachusetts, 2003-2004.

Co-Chair, RTO Futures: Regional Power Working Group, 2001-2002.

Chair, Board of Directors, Electricity Innovations Institute, 2002 to 2004; Director, 2001 to 2002.

Member, Florida Energy 2020 Study Commission, Environmental Technical Advisory Committee, 2001.

Technical Advisor, Mid-Atlantic Area Council/PJM, Dispute Resolution Procedure, 1998 to 2000.

Member, "ISO-New England" (Independent System Operator) Advisory Committee, 1998 to 2003.

Director, The Randers Group (subsidiary of Thermo TERRATEK), 1997 to 2000.

Director, MHI, Inc. (electric utility aggregator in Massachusetts), 1997 – 1999.

Director, Thermo ECOTEK Corporation, 1996 – 1999.

Member, United States Department of Energy, Electricity Reliability Task Force, 1996-1998.

Member, Harvard Electricity Policy Group, 1993 to 2005.

## **HONORS AND AWARDS**

Distinguished Alumna Award, Scripps College, Claremont, CA, 1998

Award for Individual Leadership in Public Service, *The Energy Daily*, 1995

Special Recognition Award for Outstanding Contribution to the Industry, Cogeneration and Competitive Power Institute, Association of Energy Engineers, 1994

Leadership Award, National Association of State Energy Officials, 1994

Commencement Speaker and Honorary Doctorate of Laws, Regis College, Weston, MA, 1992.