

**STATE OF MICHIGAN**  
**BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION**

In the matter of the application of	)	
CONSUMERS ENERGY COMPANY	)	
for approval of a Power Purchase Agreement and	)	Case No. U-14992
for other relief in connection with the sale of the	)	
<u>Palisades Nuclear Plant and other assets.</u>	)	

**DIRECT TESTIMONY OF**  
**J. RICHARD HORNBY**

**ON BEHALF OF**  
**ATTORNEY GENERAL MICHAEL A. COX**

**PUBLIC VERSION**

December 20, 2006

**Direct Testimony of J. Richard Hornby  
Case No. U-14992**

1 **Q. Please state your name, position and business address.**

2 A. My name is J. Richard Hornby. I am a Senior Consultant at Synapse Energy  
3 Economics, Inc, 22 Pearl Street, Cambridge, MA 02139.

4 **Q. On whose behalf are you testifying in this case?**

5 A. I am testifying on behalf of Attorney General Michael A. Cox (“Attorney  
6 General”).

7 **Q. Please describe Synapse Energy Economics.**

8 A. Synapse Energy Economics ("Synapse") is a research and consulting firm  
9 specializing in energy and environmental issues, including electric generation,  
10 transmission and distribution system reliability, market power, electricity market  
11 prices, stranded costs, efficiency, renewable energy, environmental quality, and  
12 nuclear power.

13 **Q. Please summarize your work experience and educational background.**

14 A. I am a consultant specializing in planning, market structure, ratemaking and gas  
15 supply/fuel procurement in the electric and gas industries. Over the past twenty  
16 years I have presented expert testimony and provided litigation support on these  
17 issues in approximately 100 proceedings in over thirty jurisdictions in the United  
18 States and Canada. Over this period my clients have included staff of public  
19 utility commissions, state energy offices, consumer advocate offices and  
20 marketers.

21 Prior to joining Synapse in 2006, I was a Principal with CRA International,  
22 formerly Tabors Caramanis & Associates. From 1986 to 1998 I worked with the  
23 Tellus Institute (formerly Energy Systems Research Group); initially as Manager  
24 of the Natural Gas Program and subsequently as Director of their Energy Group.  
25 Prior to 1986 I was Assistant Deputy Minister of Energy for the Province of Nova  
26 Scotia.

27 I have a Master of Science in Energy Technology and Policy from the  
28 Massachusetts Institute of Technology and a Bachelor of Industrial Engineering

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1 from the Technical University of Nova Scotia, now merged with Dalhousie  
2 University.

3 I have attached my current resume to this testimony as Exhibit AG-2 (JRH-1)

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

5 A. Synapse was retained to assist the Attorney General in the review of the proposal  
6 by Consumer Energy Company (“Consumers Energy”) to sell its Palisades plant  
7 and enter a Power Purchase Agreement (PPA) with the buyer, Michigan Public  
8 Service Commission Case No. U-14992. In particular, Synapse was asked to  
9 assist in determining whether the proposed sale and PPA are in the public interest.

10 This testimony and that of my colleague David Schlissel presents the results of  
11 our investigation of this issue. Mr. Schlissel addresses the merits of the proposed  
12 PPA relative to Consumers costs of continued ownership. My testimony  
13 examines the evolution of the key terms of the transaction between the  
14 Company’s evaluation of initial bids and its selection of the winning bid.

15 **Q. What data sources did you rely upon to prepare your testimony?**

16 A. My primary sources of data were the Direct Testimony, exhibits and workpapers  
17 of the Consumer Energy witnesses as well as their responses to information  
18 requests.

19 **Q. Did you analyze the detailed accounting implications of the proposed  
20 transaction?**

21 A. No. My testimony identifies several of the accounting issues associated with the  
22 proposed transaction. I do not analyze the implications of those issues since I am  
23 not an accountant. I understand that these implications will be addressed in detail  
24 in the Company’s next rate case.

25 **Q. Please summarize your conclusions.**

26 A. My conclusions are that:

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- 1           • Consumers had a conflict of interest in the design of its auction process,  
2           and in particular in its final negotiations with the bidders in response to  
3           their initial bids. Its objective of recovering the book value of the plant for  
4           its shareholders conflicted with the objective of maximizing the value of  
5           the other components of the transaction for its ratepayers.
- 6           • Consumers is proposing to remove approximately 542 acres of Big Rock  
7           land from rate base in conjunction with the proposed transaction, however  
8           it will convey only 107 acres to Entergy for the ISFSI site.
- 9

10    **Proposed Transaction**

11    **Q.    Please summarize the process that Consumers followed to select the winning**  
12    **bidder for Palisades, the PPA and the Big Rock ISFSI.**

13    A.    Consumers followed an auction and negotiation process, as described in the  
14    Direct Testimony of Mr. Reed. During this process the Company identified  
15    prospective bidders, provided them with a Confidential Offering Memorandum<sup>1</sup>  
16    and asked them to submit bids in response to a set of Final Bid Instructions<sup>2</sup>.

17    **Q.    On what components of the transaction did Consumers invite economic bids?**

18    A.    Consumers solicited bids on the following components:

- 19           • the purchase price,
- 20           • the amount of Decommissioning trust funds to be retained,
- 21           • the pricing and other provisions of the PPA,
- 22           • the treatment of pension asset transfers,
- 23           • adjustments for inventory and capital expenditures,

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<sup>1</sup> Exhibit A-5 (JJR-3)

<sup>2</sup>Exhibit A-6 (JJR-4)

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- 1           • termination payment for the Big Rock ISFSI.

2   **Q. Did the Final Bid Instructions allow bidders to submit multiple bids?**

3   A. Yes. Section 3 of the Final Bid Instructions invites bidders to submit multiple bid  
4   options.

5   **Q. Why was Consumers interested in receiving multiple bids from the same**  
6   **bidder?**

7   A. Consumers was interested in receiving multiple bids from the same bidder  
8   because the proposed transaction consisted of several components. Consumers  
9   wished to maximize the value of each component but recognized that it might  
10   have to “trade-off” achieving a certain value on one component in order to  
11   achieve a desired value on another component<sup>3</sup>. If a bidder provided multiple  
12   bids, consisting of different values for different components, then Consumers  
13   would have a useful starting point for its final negotiations.

14   **Q. Please explain what you mean by the Company’s final negotiations.**

15   A. Section 9 of the Final Bid Instructions specified that Consumers had the right to  
16   enter limited negotiations with one or more bidders after it had received and  
17   evaluated all of the initial bids.

18   **Q. Would the values achieved for each of these components have different**  
19   **implications for the stockholders of Consumers as opposed to ratepayers?**

20   A. Yes. In reviewing Consumers auction process, and in particular its negotiation  
21   and selection of a final bid based upon the initial bids received, it is important to  
22   understand who receives the value from each component of the transaction, i.e.,  
23   ratepayers or stockholders, as well as when each party would receive that value.

- 24           • Ratepayers may receive the value associated with the pricing terms of the  
25           PPA, the amount of Decommissioning trust funds retained, and any net  
26           proceeds from the purchase price that exceed the book value of the plant.

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<sup>3</sup> John Reed Direct Testimony, page 3, lines 2 to 19.

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1 (Net proceeds from the purchase price are determined by subtracting  
2 inventory adjustments and the transaction costs of the sale).

- 3 • Stockholders may receive net proceeds from the purchase price up to the  
4 book value of the plant, the benefits of pension asset transfers, the  
5 termination payment for the Big Rock ISFSI and any deferred tax benefits.  
6 (Stockholders are prohibited from recovering anything above the book  
7 value according to a Securitization Order from October 2000 in MPSC  
8 case U-12505. Consumers cites this Order explicitly in the COM sent to  
9 prospective bidders.)

10 The fact that Consumers is negotiating the terms of all of the components, but that  
11 its stockholders only receive value from certain of the components, creates a  
12 conflict of interest. This conflict arises because a bidder is going to have a  
13 particular overall value for the transaction in mind, regardless of how that value is  
14 achieved through individual components. Thus, bidders who submitted multiple  
15 bids offered different values for certain components from bid to bid, but the  
16 overall value of the bid was approximately the same. In a given bid the more  
17 value a bidder provided in one component, such as the purchase price, the less  
18 that bidder offered in another component, such as the pricing terms of the PPA.  
19 Thus, throughout the auction process and particularly during final negotiations  
20 with bidders, Consumers' objective of achieving the book value of the plant was  
21 in conflict with its objective of maximizing the value of the other components of  
22 the transaction. In addition, Mr. Reed, the Company's consultant, had a vested  
23 interest in achieving as high a purchase price as possible as his compensation was  
24 tied to that objective.<sup>4</sup>

25 **Q. Is there evidence to indicate that this conflict of interest may have influenced**  
26 **the Company's negotiations with Entergy?**

27 A. Yes. There is evidence that, during its negotiations with Entergy, Consumers  
28 objective of recovering the book value of the plant for its shareholders conflicted

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<sup>4</sup> Response 14992-U-AG-CE-155, bates page 99201796.

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1 with the objective of maximizing the value of the other components of the  
2 transaction for its ratepayers. In addition a desire to achieve value in forms other  
3 than the purchase price, such as in the form of deferred taxes, may also have  
4 influenced its negotiations.

5 **Q. Please describe Consumers negotiations with Entergy after receiving its**  
6 **initial bids.**

7 A. Entergy submitted seven initial bids. Of those, had the highest total  
8 value, both before and after tax considerations. The value to Consumers before  
9 tax adjustments was \$ million while its value after tax considerations was  
10 million<sup>5</sup> (These are values prior to consideration of the Big Rock ISFSI  
11 component, but that component was the same in all seven initial Entergy bids).  
12 Initial bid # 3 also had the best PPA prices and hence offered the greatest savings  
13 to ratepayers relative to the Company's May 2006 estimate of its cost of  
14 continued operation. The net present value of those estimated savings was \$  
15 million.<sup>6</sup>

16 Despite those facts, Consumers appears to have identified Entergy's  
17 as the starting point for its final negotiations<sup>7</sup> had  
18 a lower total value than , as presented in Exhibit AG – 3 (JRH -2).  
19 In addition its PPA provided almost \$ million less in savings to ratepayers  
20 than the PPA under initial bid # 3, i.e., million versus \$331 million.  
21 However, the purchase price component of was \$ million,  
22 much higher than the purchase price component of (i.e., \$  
23 million).

24 During its negotiations the Company apparently made a counter-offer to  
25 Entergy in which it suggested a transaction with the PPA pricing  
26 a purchase price of million and a transfer of \$

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<sup>5</sup> Response 14992-AG-CE-102, Comparative Bid Summary.pdf, page 1, lines 57 and 59.

<sup>6</sup> Response 14992-AG-CE-102, Comparative Bid Summary.pdf, page 1, line 55.

<sup>7</sup> Response 14992-AG-CE-102, JJReed's Notes.pdf, page 1.

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1                                 Those three features of the counter-offer are recorded  
2                                 on page 6 of Mr. Reed's notes from the negotiations.<sup>8</sup>

3 **Q. Please compare the results of those negotiations, in the form of Entergy's**  
4 **final bid, to Entergy's**

5 A.   The Final  
6 Bid has a higher value than   . For example its value before tax  
7 adjustments is \$                                     million while its value after tax considerations is  
8 million.<sup>9</sup> Relative to initial bid # 1 Entergy has increased the purchase price as  
9 well as the amount of Qualified Decommissioning funds that the Company could  
10 retain. However Entergy has offset those increases somewhat by increasing the  
11 pricing under the PPA. As a result, the PPA under the Final Bid provides  
12 approximately \$           million less in savings to ratepayers than the PPA under  
13                                 i.e., \$           million versus \$           million.

14 **Q. Is Entergy's final bid an improvement over its   from the**  
15 **perspective of ratepayers?**

16 A. No. Relative to                                     ratepayers are worse off by approximately \$  
17 million under Entergy's final bid as presented in Exhibit AG-3 (JRH -2). Of that  
18 amount, \$           million is a shift in value from ratepayers to shareholders while the  
19 other \$           million is a shift in value from ratepayers to Entergy. The shift in value  
20 is primarily in the form of more proceeds flowing to shareholders from a higher  
21 purchase price and less savings flowing to ratepayers due to higher PPA prices.

22 **Q. Are you contesting Consumers' decision to conduct final negotiations with**  
23 **Entergy?**

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<sup>8</sup> Response 14992-AG-CE-102, JJReed's Notes.pdf, page 6

<sup>9</sup> Response 14992-AG-CE-102, Comparative Bid Summary.pdf, page 3, lines 57 and 59.



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1 A. No. My position is that from the viewpoint of ratepayers and the public interest  
2 Consumers should have begun its final negotiations using Entergy's  
3 as the starting point, rather than Entergy's initial bid # 1.

4 **Q. What explanation has Consumers provided for choosing Entergy's final bid**  
5 **over its ?**

6 A. Consumers states that it chose the final bid over because it has "... a  
7 higher total transaction value on a risk adjusted basis".<sup>10</sup> The Company is  
8 basically saying that under there is a risk that ratepayers would not  
9 actually receive all of the savings projected under the PPA because Entergy might  
10 not operate the plant through to 2021, and hence might not honor the prices it  
11 agreed to for the full term of the PPA. In that scenario Consumers might have to  
12 buy replacement power at market prices from the time Entergy shut the plant  
13 down. Consumers provides its risk analysis of that scenario in response 14992-  
14 AG-CE-291.

15 **Q. Does this explanation stand up to scrutiny?**

16 A. No. First, I could not find this risk analysis in the materials provided in response  
17 14992-AG-CE-102. That data request asked for all of the documentation in  
18 which the initial and final bids were evaluated, as well as the notes, minutes and  
19 reports of the negotiations that led to the ASA and PPA.

20 Second, the Company has only presented a risk analysis of the PPA under  
21 There are no risk analyses presented for any other initial bid or for the  
22 final bid. My application of this risk analysis methodology to initial bid # 1  
23 indicates that it has the same value at risk as because the prices  
24 under their respective PPAs are the same from 2014 onward. The proposed PPA  
25 under the final bid does have a lower value of risk, but the total amount  
26 ratepayers will pay under that PPA is higher than the amount they would pay  
27 under the PPA from .

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<sup>10</sup> U-14992-AG-CE-287

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1 Third, the “analysis of value at risk” that the Company did provide in response  
2 14992-AG-CE-291 uses with the wrong reference point, and hence leads one to  
3 the wrong conclusion regarding the merits of versus the final bid.

4 **Q. Please explain why Consumers’ risk analysis leads one to the wrong**  
5 **conclusion regarding the relative merits of initial bid # 3?**

6 A. Consumers’ risk analysis leads one to the wrong conclusion because it focuses  
7 upon the difference between the costs under a given PPA over 15 years versus the  
8 costs under that same PPA for 10 years and replacement power at market prices  
9 thereafter. Instead, it should compare the total costs under each of those scenarios,  
10 to the total costs of purchasing electricity under the raw CCO and under the  
11 PPA’s of other bids.

12 Consumers’ analysis of the PPA under has three steps.

- 13 • First, calculate the present value (pv) of the payments for electricity  
14 purchased under the PPA over the fifteen year term 2007 to 2021. This is  
15 billion.
- 16 • Then calculate the pv of the payments for the same quantity of electricity  
17 under a scenario in which Entergy shuts Palisades down in mid-2017.  
18 That supply comes from the PPA through mid-2017 and from replacement  
19 power purchased at market prices from mid-2017 until 2021. The present  
20 value is \$ billion.
- 21 • Finally, calculate the difference in pv costs under the two scenarios. That  
22 amount, million, is the value at risk.

23 This approach is misleading because it uses the wrong reference point.  
24 Consumers has evaluated all of the PPA options against its May 2006 estimate of  
25 raw CCO costs through 2021.

26 **Q. Can you illustrate how Consumers’ risk analysis leads one to the wrong**  
27 **conclusion?**

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1 A. Yes. I illustrate this by applying Consumers' risk analysis methodology to its  
2 final bid. My calculations are presented in Exhibit AG-4 (JRH -3). These  
3 calculations do not yield the exact same results as in the Company's data response  
4 because I did not have their electronic workbook and the inputs they report do not  
5 correspond to the results they report due to rounding. Nevertheless, my Exhibit  
6 replicates their methodology and my results illustrate the problem with their  
7 approach.

8 First I calculate the value at risk for using the Company's  
9 methodology, presented on page 1 of my Exhibit. My calculation of that value is  
10 \$ million, while my calculation of the pv of payments for supply from the  
11 PPA through mid-2017 and from replacement power purchased at market prices  
12 from mid-2017 until 2021 is \$ billion.

13 I then do the same calculations for the final bid on page 2 of my Exhibit. That  
14 value at risk under the PPA of the final bid is lower, million. However, the  
15 pv of payments for supply from the PPA through mid-2017 and from replacement  
16 power purchased at market prices from mid-2017 until 2021 is \$ billion.  
17 Thus, the absolute amount that ratepayers would pay under the PPA of the final  
18 bid in that walk away scenario is almost **million** more than under  
19

20 The fact that the PPA under has a value at risk of million is  
21 not the point. What should be of concern to Consumers is the absolute amount  
22 that ratepayers would pay under each of the PPAs.

23 **Q. Does the value that ratepayers would receive from the other components of**  
24 **the final bid offset the additional amount they would pay under its PPA?**

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1 A. No. A comparison of the final bid to indicates that ratepayers  
2 would receive a higher level of net proceeds from the purchase price and a higher  
3 level of qualified funds. However those incremental amounts do not offset the  
4 additional amount that ratepayers would pay under the PPA of the final bid. This  
5 comparison is presented in Exhibit AG-3 (JRH -2).

6 **Q. Did Consumers prepare any quantitative analyses of the risks associated**  
7 **with the proposed sale if various assumptions proved to be incorrect during**  
8 **the term of the PPA?**

9 A. No. The Company's witnesses did not present any quantitative risk analyses in  
10 their Direct Testimony and I did not find any in their responses to data requests.  
11 This is somewhat surprising given that the Company has made numerous  
12 assumptions about the CCO, Entergy performance under the PPA and market  
13 prices for fifteen years into the future, and that there is uncertainty associated with  
14 any set of long-term forecasts and assumptions. The Company was also aware of  
15 the uncertainty associated with future capital expenditures at Palisades.<sup>11</sup>

16 **Q. Did Consumers prepare any quantitative analyses of the risks associated**  
17 **with the proposed sale after the PPA expires?**

18 A. No. After 2021 the Company will have to replace the annual supply of electricity  
19 it had been obtaining under the PPA from other sources. The Company has not  
20 prepared an analysis of the costs and risks of acquiring supply during that period,  
21 other than its projection of the raw CCO through 2030.<sup>12</sup>

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<sup>11</sup> Response 14992-AG-CE-102, 3-22-06 Palisades Steering Committee Briefing Paper.pdf, page 1.

<sup>12</sup> Responses 14992-U-AG-CE-183 and 14992-U-AG-CE-184

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1 **Disposition Of Additional Benefits Associated with the Proposed Sale**

2 **Q. Would Consumers receive a benefit in the form of deferred taxes under the**  
3 **proposed sale?**

4 A. Yes. For example, under Entergy's final bid the Company would have deferred  
5 taxes of approximately \$71 million.<sup>13</sup> None of the Company witnesses identify  
6 these deferred taxes as a benefit of the transaction in their Direct Testimony. I do  
7 not know whether the benefit of these deferred taxes would flow to stockholders,  
8 ratepayers, or some combination thereof. This is an issue that requires a review  
9 by an accountant.

10 **Q. Is there a potential benefit associated with sale of the Big Rock ISFSI site?**

11 A. Yes. If the proposed transaction is approved Consumers would convey the Big  
12 Rock ISFSI site to Entergy. That site has an area of approximately 107 acres.  
13 However, in conjunction with the proposed transaction Consumers is proposing to  
14 remove all of the land it owns at Big Rock from rate base. That is a total area of  
15 542 acres with a book value of \$108,000.<sup>14</sup> Thus, there is a potential benefit  
16 from the sale of the remaining 435 acres. I understand that that remaining land  
17 may have an estimated commercial real estate value in the order of \$19 million.<sup>15</sup>  
18 The benefit of any such sale would flow entirely to stockholders if an order in this  
19 proceeding allows Consumers to remove those 435 acres from rate base.

20 **Q. Does this complete your testimony at this time?**

21 A. Yes.

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<sup>13</sup> Response 14992-U-AG-CE-127, bates page 99201184.

<sup>14</sup> Response to 14992-AG-CE-297.

<sup>15</sup> *Wait Before Buying Nuke Plant Land*, Detroit Free Press, December 5, 2006.

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### **PROFESSIONAL EXPERIENCE**

**Synapse Energy Economics, Inc.**, Cambridge, MA. *Senior Consultant*, 2006 to present.

Analysis and expert testimony regarding planning, market structure, ratemaking and contracting issues in the electricity and natural gas industries.

**Charles River Associates (formerly Tabors Caramanis & Associates)**, Cambridge, MA.

*Principal*, 2004-2006.

*Senior Consultant*, 1998-2004.

Provided expert testimony and litigation support in several energy contract price arbitration proceedings, as well as in electric and gas utility ratemaking proceedings in Ontario, New York, Nova Scotia and New Jersey. Managed a major productivity improvement and planning project for two electric distribution companies within the Abu Dhabi Water and Electricity Authority. Analyzed a range of market structure and contracting issues in wholesale electricity markets.

**Tellus Institute**, Boston, MA.

*Vice President and Director of Energy Group*, 1997–1998.

Presented expert testimony on rates for unbundled retail services in restructured retail markets and analyzed the options for purchasing electricity and gas in those markets.

*Manager of Natural Gas Program*, 1986–1997.

Prepared testimony and reports on a range of gas industry issues including market structure, unbundled services, ratemaking, strategic planning, market analyses, and supply planning.

**Nova Scotia Department of Mines and Energy**, Halifax, Canada; 1981–1986

*Member*, Canada-Nova Scotia Offshore Oil and Gas Board, 1983–1986

Member of a federal-provincial board responsible for regulating petroleum industry exploration and development activity offshore Nova Scotia.

*Assistant Deputy Minister of Energy* 1983–1986

Responsible for analysis and implementation of provincial energy policies and programs, as well as for Energy Division budget and staff. Directed preparation of comprehensive energy plan emphasizing energy efficiency and use of provincial energy resources. Senior technical advisor on provincial team responsible for negotiating and implementing a federal/provincial fiscal, regulatory, and legislative regime to govern offshore oil and gas. Directed analyses of proposals to develop and market natural gas, coal, and tidal power resources. Also served as Director of Energy Resources (1982-1983) and Assistant to the Deputy Minister (1981-1982).

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**Nova Scotia Research Foundation**, Dartmouth, Canada, Consultant, 1978–1981  
Edited Nova Scotia's first comprehensive energy plan. Administered government-funded industrial energy conservation program—audits, feasibility studies, and investment grants.

**Canadian Keyes Fibre**, Hantsport, Canada, Project Engineer, 1975–1977

**Imperial Group Limited**, Bristol, England, Management Consultant, 1973–1975

### **SELECTED TESTIMONY**

Arizona Corporation Commission, Docket E-01345A-05-0816, August 2006 and September 2006. Review of Arizona Public Service hedging strategy and Base Fuel Recovery Amount.

Michigan Public Service Commission, Case No. U-14274-R, October 2006. Review the Resource Conservation Plan for purchases from Midland Cogeneration Venture Limited Partnership.

Illinois Commerce Commission, Docket No. 06-0540, October and December 2006. Review of service quality issues.

State Of Connecticut, Department Of Public Utility Control. Docket No. 06-03-04PH01, November 2006. Review gas supply strategy and proposed rate recovery.

Testimony before an arbitration panel in Toronto, Ontario, on behalf of a cogeneration plant regarding a dispute over a component of the price for steam under a 20-year contract. January 2006.

Testimony before an arbitration panel in Halifax, Nova Scotia, on behalf of Nova Scotia Power against Shell Canada regarding the determination of a new price under their ten year natural gas supply contract. October 2005.

State of New York, Public Service Commission, Case 00-M-0504, September 2002 and October 2002. Review of estimates of embedded costs of unbundled services (e.g., supply, distribution, metering, billing), and associated proposed rates, filed by Consolidated Edison of New York and New York State Electric and Gas respectively.

State of New Jersey Board of Public Utilities, BPU Docket GM00080564, April 2001. Analysis of the proposed transfer of gas supply and capacity contracts from Public Service Electric and Gas to an unregulated affiliate, and the full requirements supply contract associated with that transfer.

Nova Scotia Utility and Review Board, NSUARB-NG-SEMPRA-SEM-00-08, February 2001. Review of proposed distribution service tariff, including methodology for setting market-based rates, rates for large customers and default supply.

State of New Jersey Board of Public Utilities, BPU Docket EX99009676, March 2000. Analysis of the design and pricing of customer account services to be offered by utilities on an unbundled basis.

United States of America Bonneville Power Administration, BPA Docket WP-02, (TCA #391), November 1999. Functionalization of Communication Plant.

South Carolina Public Service Commission, 99-006-G, South Carolina Electric and Gas, October 1999. Reasonableness of purchased gas costs.

State of New Jersey Board of Public Utilities, BPU Dockets GO99030122–GO99030125, July 1999 and sur-rebuttal September 1999. Analysis of service unbundling policies and rates proposed in filings of Public Service Electric & Gas, South Jersey Gas, New Jersey Natural Gas, and Elizabethtown Gas.

Maine Public Utilities Commission, Docket 97-393, Northern Utilities Inc., September 1998 and rebuttal December 1998. Review of request for approval of rate redesign and partial unbundling proposal.

Pennsylvania Public Utility Commission, R-00984281, A-12250F0008, Peoples Natural Gas, May 1998. Analysis of the reasonableness of 1998 1307(f) filing and proposal to transfer production assets to affiliate.

State of New Jersey, Board of Public Utilities, BPU E09707 0465, OAL PUC-7309-97, BPU E09707 0464, OAL PUC-7310-97, January 1998 with Supplemental and Sur-rebuttal March 1998. Analysis of rate unbundling filing of Rockland Electric Company.

State of New Jersey, Board of Public Utilities, BPU EO9707 0459, OAL PUC- 7308-97, BPU E09707 0458, OAL PUC-7307-97, November 1997. Analysis of rate unbundling filing of Jersey Central Power & Light Company d/b/a GPU Energy.

Pennsylvania Public Utility Commission, R-00963858, Equitable Gas Company, June 1997 with rebuttal and sur-rebuttal July 1997. Analysis of the reasonableness of rate structure proposals.

Pennsylvania Public Utility Commission, R-00973896 and A-0012250F-0007, (Tellus 97-065) Peoples Natural Gas Company, May 1997. Review of 1997 1307(f) filing, proposal to transfer producing assets to CNG Producing Company, and proposed Migration Rider.

South Carolina Public Service Commission, 97-009-G, South Carolina Pipeline Corporation, April 1997. Reasonableness of proposal to acquire an additional 75,700 Mcf/day of capacity from Transco.

Federal Energy Regulatory Commission, RP95-197-001, RP97-71-000, March 1997. Review of proposed rolled-in ratemaking for Leidy Line incremental facilities.

Arkansas Public Service Commission 95-401-U, Arkla, September 1996. Review of proposed gas purchasing and transportation plan.



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Maryland Public Service Commission, 8339, (Tellus 91-79), July 1991, cost allocation and rate design issues in rate case application of Baltimore Gas and Electric Company.

Public Utilities Commission of Rhode Island, 1727, (Tellus 90-135), June 1991, review of gas procurement practices of Bristol and Warren Gas Company. Sept. 1991, (Tellus 91-165), Supplemental Direct Testimony in above docket.

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Pennsylvania Public Utility Commission, R-880958, (ESRG 88-29), June 1988, Purchased Gas Adjustment, Pennsylvania Gas & Water Company.

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## **SELECTED RESEARCH AND CONSULTING, PUBLICATIONS, AND PRESENTATIONS**

List available upon request.

**Consumers Energy Company, Case U-14992  
Comparison of Entergy Final Bid to its Initial Bids # 1 and # 3 (\$ million)**

Line	Component a	Initial Bid 1 b	Final c	Final - Initial # 1 Better (Worse) d = c - b	Initial Bid 3 e	Final f	Final - Initial #3 Better (Worse) g = f - e
<b>A. Pre-tax Value of Total Transaction</b>							
1	Purchase Price		\$ 380.0			\$ 380.0	
2	Inventory Adjustments		\$ (2.4)			\$ (2.4)	
3	NQF Retained - ratepayer \$		\$ 200.2			\$ 200.2	
4	QF retained - ratepayer \$		\$ 115.7			\$ 115.7	
5	Pension/OPEB savings		\$ 24.1			\$ 24.1	
6	Letter of Credit & other fees		\$ (17.4)			\$ (17.4)	
7	PPA savings		\$ 199.3			\$ 199.3	
8	Total		\$ 899.5			\$ 899.5	
<b>B. Disposition of Pre-tax Value between Shareholders and Ratepayers</b>							
<b>Shareholders</b>							
9 = 1 - 2	Purchase Price net of inventory	\$ -	\$ 377.6		\$ -	\$ 377.6	
10	Transaction cost		\$ (30.0)			\$ (30.0)	
11 = 9 - 10	Net Proceeds up to Book Value		\$ 315.0			\$ 315.0	
12 = 5	Pension/OPEB savings		24.1			24.1	
13 = 6	Letter of Credit & other fees		-17.4			-17.4	
14 = 11+12+13	<b>Sub-Total</b>		\$ 321.7			\$ 321.7	
<b>Ratepayers</b>							
15 = +\$315 million - 11	Net Proceeds in excess of Book Value	0	\$ 32.6		0	\$ 32.6	
16 = 3	NQF Retained - ratepayer \$	0	200.2		0	200.2	
17 = 7	PPA savings	0	199.3		0	199.3	
18 = 4	QF retained - ratepayer \$	0	115.7		0	115.7	
Total	Sub-Total	0	\$ 547.8		0	\$ 547.8	

<b>Source</b>	Response 14992-AG-CE-102, Comparative Bid Summary.pdf, pages 3 and 7.
1	Purchase Price line 2
2	Inventory Adjustments line 12 - line 2
3	NQF Retained - ratepayer \$ line 17
4	QF retained - ratepayer \$ line 23
5	Pension/OPEB savings line 36
6	Letter of Credit & other fees line 52
7	PPA savings line 55
10	Transaction cost David Joos, Direct Testimony, page 15.

Consumers Energy Company, Case U-14992																
Analysis of Value at Risk if Plant Shuts Down After Year 10 of the 15 year PPA																
NPV Discount Rate		9.17%														
Initial Bid #3		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>PPA for Full 15 Year Term</b>																
1	PPA MWh (000)															
2	PPA \$/MWh															
3 = 1 * 2	PPA Total Cost (\$ 000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	PV of PPA Total Cost (\$ 000)	\$0														
<b>PPA Terminated after Year 10</b>																
5 = 1	PPA MWh (000)	4,808	6,597	5,335	5,886	6,578	5,896	5,886	6,578	5,877	4,919	1,078	-	-	-	-
6 = 2	PPA \$/MWh	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7 = 5 * 6	PPA Total Cost (\$ 000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8	PV of PPA Total Cost (\$ 000)	\$0														
9	Market MWh (000)	-	-	-	-	-	-	-	-	-	-	-	5,500	5,877	5,886	6,597
10	Market \$/MWh	\$ 58.71	\$ 58.47	\$ 58.89	\$ 58.35	\$ 58.17	\$ 57.98	\$ 58.13	\$ 59.06	\$ 60.84	\$ 61.49	\$ 63.22	\$ 67.60	\$ 69.85	\$ 67.56	\$ 67.83
11 = 9 * 10	Market Total Cost (\$ 000)	\$ 2,000,430	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
12	PV of Market Total Cost (\$ 000)	\$639,902														
13 = 7 + 11	Total Cost of Power (Market + PPA)															
14 = 8 + 12	PV of Total Cost of Power															
15	<b>Value at Risk</b>															
<b>Sources</b>																
1, 9, 10	Response 14992-AG-CE-291															
2	Response 14992-AG-CE-102, <i>Hornet PPA Option 3.pdf</i> , page 3															

Consumers Energy Company, Case U-14992																	
Analysis of Value at Risk if Plant Shuts Down After Year 10 of the 15 year PPA																	
NPV Discount Rate		9.17%															
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
<b>Final Bid</b>																	
<b>PPA for Full 15 Year Term</b>																	
1	PPA MWh (000)																
2	PPA \$/MWh		\$ 43.50	\$ 44.00	\$ 44.50	\$ 45.75	\$ 47.00	\$ 48.25	\$ 49.00	\$ 50.00	\$ 51.00	\$ 52.50	\$ 54.00	\$ 55.50	\$ 57.00	\$ 58.50	\$ 60.00
3 = 1 * 2	PPA Total Cost (\$ 000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	PV of PPA Total Cost (\$ 000)	\$0															
<b>PPA Terminated after Year 10</b>																	
5 = 1	PPA MWh (000)																
6 = 2	PPA \$/MWh		\$ 43.50	\$ 44.00	\$ 44.50	\$ 45.75	\$ 47.00	\$ 48.25	\$ 49.00	\$ 50.00	\$ 51.00	\$ 52.50	\$ 54.00	\$ 55.50	\$ 57.00	\$ 58.50	\$ 60.00
7 = 5 * 6	PPA Total Cost (\$ 000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8	PV of PPA Total Cost (\$ 000)	\$0															
9	Market MWh (000)												5,500	5,877	5,886	6,597	5,877
10	Market \$/MWh		\$ 58.71	\$ 58.47	\$ 58.89	\$ 58.35	\$ 58.17	\$ 57.98	\$ 58.13	\$ 59.06	\$ 60.84	\$ 61.49	\$ 63.22	\$ 67.60	\$ 69.85	\$ 67.56	\$ 67.83
11 = 9 * 10	Market Total Cost (\$ 000)	\$ 2,000,430	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 347,710	\$ 397,285	\$ 411,137	\$ 445,660	\$ 398,637
12	PV of Market Total Cost (\$ 000)	\$639,902															
13 = 7 + 11	Total Cost of Power (Market + PPA)	\$ 2,000,430															
14 = 8 + 12	PV of Total Cost of Power	\$ 639,902															
15	<b>Value at Risk</b>																
<b>Sources</b>																	
1, 9, 10	Response 14992-AG-CE-291																
2	Response 14992-AG-CE-136, WP-WEG-1																