

# EXHIBIT A

## CONCORD STEAM RESPONSES TO REQUESTS TO JOHN DALTON

Public Service Company of New Hampshire  
Petition for Approval of Power Purchase Agreement

NHPUC Docket No. DE 10-195

Response to First Set of Data Requests by PSNH

Date of Request: December 26, 2010

Date of Response: January 11, 2011

Witness: John Dalton

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**REQUEST:**

4. Ref. pg. 2, line 14, you stated, “have reviewed numerous electric utility avoided cost estimates and advised clients on the reasonableness of these estimates and the methodologies for developing them.” Please identify the electric utilities and clients referenced in this statement.

**OBJECTION:** See Concord Steam’s Objection to Request 2, above.

**RESPONSE:**

There were numerous reviews of electric utility avoided cost estimates performed before the electricity industry restructured when such estimates had greater relevance for power procurement efforts. Many of the electricity price forecasts identified in the previous response could be viewed as equivalent to avoided cost estimates. Electric utility avoided cost estimates, the clients for whom the review was performed or the forecast developed since 2005 include:

- Ontario, Hydro One, 2005
- Ontario, Association of Major Power Consumers of Ontario, 2005
- Ontario, Ontario Electricity Financial Corp., 2005
- Ontario, Ministries of Energy and Finance, 2005
- Ontario, Ministry of Energy, 2006
- New England, PJM, MISO, Macquarie North America, 2006
- New England, Ventus Energy, 2006
- Entergy Louisiana, Cajun Power, 2007
- Florida Power & Light Company, Wheelabrator Technologies, 2008
- Alberta and British Columbia, Atlantic Power, 2008
- New England, Canadian Wind Energy Association, 2009
- Ontario, Pure Energy Resources, 2009
- Ontario, Hydro One, 2010
- New England, New York & PJM, Northland Power, 2010

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**REQUEST:**

5. Ref. pg. 1, line 12, you stated you have developed “detailed financial pro formas for numerous generation projects.” Please identify the referenced generation projects.

**OBJECTION:**

Concord Steam objects to this request on the grounds that it is overbroad and unduly burdensome. As noted in Mr. Dalton’s testimony, he has provided consulting services to the electric industry in the United States for over twenty five years.

See also Concord Steam’s Objection to Request 2, above.

**RESPONSE:**

Consulting projects for which detailed financial pro formas were developed since 2008 are identified below. For several of these consulting projects financial pro formas were developed for a wide range of generation technologies.

- Ontario Power Authority, Development of Clean Energy Standard Offer Pricing, 2008
- Ontario Power Authority, Development of Feed-in Tariff Rates, 2008-2009
- Canadian Wind Energy Association, Review of Wind Project Costs, 2009
- Vermont Public Service Board, Development of Standard Offer Rates, 2009
- Nova Scotia Department of Energy, Review of Feed-in Tariff Rate Impacts, 2010
- Capital Power, Costs of Peaking Generation, 2010
- Ontario Market Assessment Report, Costs of Generation Alternatives, 2010

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**REQUEST:**

6. Ref. pg. 3, line 1, you stated that you “have assisted clients in drafting long-term power purchase agreements.” Please identify all such clients.

**OBJECTION:** See Concord Steam’s Objection to Requests 2 & 5, above.

**RESPONSE:**

From 1999 to 2007, while at Navigant Consulting, I advised the Ontario Electricity Financial Corporation (OEFC) on the more than 90 power purchase agreements (PPAs) representing over 1,600 MW of capacity and energy that it was a counterparty to. For OEFC, I was involved in numerous contract negotiations and renegotiations.

Some of the clients that I assisted with drafting PPAs are:

- Ontario Electricity Financial Corp.
- Ontario Power Authority
- Vermont Public Service Board
- Nalcor Energy

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**REQUEST:**

7. Ref. pg. 3, line 4, you stated that you “have led the negotiations of power purchase agreements.” Please identify the parties involved in all such negotiations.

**OBJECTION:** See Concord Steam’s Objection to Requests 2 & 5, above.

**RESPONSE:**

Please also see the response to PSNH-006. Some of the parties that were involved in the PPA negotiations that I led include:

Ontario Electricity Financial Corp. and TransCanada Energy

Ontario Electricity Financial Corp. and Northland Power

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**REQUEST:**

9. Ref. pg. 4, line 20. You refer to “a term sheet submitted by Concord Steam and Power to PSNH.” Would Concord Steam be supplying the energy, RECs and capacity under that term sheet from its existing generating facility, or from its proposed new generating facility? If any of the products to be supplied would be from the proposed new facility, please provide copies of all contracts, agreements, or other arrangements that Concord Steam Corporation has to sell energy, capacity or RECs from that proposed new facility.

**OBJECTION:** Concord Steam objects to this requests on the grounds that:

- A. Concord Power and Steam, LLC is not a party to this proceeding under Puc 203.09 (b) and therefore not subject to discovery. Concord Steam Corporation is a separate entity and does not have legal authority to disclose Concord Power and Steam, LLC’s confidential financial information.
- B. The information requested of Concord Power and Steam, LLC is confidential financial information that is not subject to disclosure under RSA 91-A:5, Puc 203.08, and Order No. 25,174.

**RESPONSE:**

This term sheet was for the sale of energy, RECs and capacity from Concord Steam and Power’s proposed new facility.

I did not review any other contracts or agreements for the sale of energy, capacity or RECs from this facility.

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Date of Request: December 26, 2010

Date of Response: January 16, 2011

Witness: John Dalton

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**\*\*\* REDACTED RESPONSE \*\*\***

**REQUEST:**

9. Ref. pg. 4, line 20. You refer to “a term sheet submitted by Concord Steam and Power to PSNH.” Would Concord Steam be supplying the energy, RECs and capacity under that term sheet from its existing generating facility, or from its proposed new generating facility? If any of the products to be supplied would be from the proposed new facility, please provide copies of all contracts, agreements, or other arrangements that Concord Steam Corporation has to sell energy, capacity or RECs from that proposed new facility.

**OBJECTION:** Concord Steam objects to this requests on the grounds that:

- A. Concord Power and Steam, LLC is not a party to this proceeding under Puc 203.09 (b) and therefore not subject to discovery. Concord Steam Corporation is a separate entity and does not have legal authority to disclose Concord Power and Steam, LLC’s confidential financial information.
- B. The information requested of Concord Power and Steam, LLC is confidential financial information that is not subject to disclosure under RSA 91-A:5, Puc 203.08, and Order No. 25,174.

**AMENDED RESPONSE:**

Since my initial response, I have been provided with a recent power purchase agreement between Concord Power & Steam, LLC and a New Hampshire power supplier (the Concord Power PPA). The Concord Power PPA contains a confidentiality provision. However, on January 13, 2011, the counterparty authorized its release to me and submission to the Commission on a confidential basis for the limited purpose of responding to PSNH’s data requests.

The pricing terms of the Concord Power PPA are generally consistent with the pricing contained in the Term Sheet submitted to PSNH by Concord Power and Steam that was attached to my testimony. The Fixed Energy Charge is \$[ ]/MWh versus \$33.50/MWh in the Term Sheet and the Escalating Energy Charge is \$[ ]/MWh versus \$34.30/MWh in the Term Sheet and in Exhibit JCD-3. With these changes, the levelized

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PPA pricing continues to be 18% below that of the Laidlaw PPA over the 20-year contract term evaluated.

The Concord Power PPA pricing supports my prior testimony that the Laidlaw PPA pricing appears to be higher than other alternatives available in the market and that PSNH should have used a competitive bidding process to determine which renewable generation project developers would be awarded contracts.

**Pursuant to Rule Puc 203.08(d), Concord Steam has a good faith basis for seeking confidential treatment of the attachment to this Response and intends to submit a motion for confidential treatment regarding such document at or before the commencement of the hearing in this proceeding.**

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**REQUEST:**

12. Ref. pg. 7, line 18, you stated that “Schiller paid suppliers \$30/ton which was then more than 20% above the then market price for wood fuel.” Please provide a listing of what all other biomass generators have paid for wood fuel since Schiller began operation to present.

**OBJECTION:** Concord Steam objects on the grounds that:

- A. The quotation is not contained in Mr. Dalton’s testimony.
- B. The request is overly broad and unduly burdensome as he cannot produce a “listing of what all other biomass generators have paid for wood fuel since Schiller began operation to present.”
- C. See Concord Steam’s Objection to Request 2.

**RESPONSE:**

This information is consistent with Mark Saltsman’s Testimony on behalf of Concord Steam. I have no information regarding what other biomass generators referenced in his testimony have paid for fuel.

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**REQUEST:**

14. Ref. pg. 8 lines 9 through 18. Please list any currently operating renewable generation or renewable generation under construction that have PPAs resulting from a competitive RFP solicitation.

**OBJECTION:**

Concord Steam objects on the grounds that this request is overly broad and unduly burdensome and to the extent it calls for information outside of Concord Steam's control.

**RESPONSE:**

There are almost 1,000 MW of operating renewable generation or renewable generation projects that are under construction in Ontario that were procured by the Ontario Ministry of Energy or Ontario Power Authority through RFPs. California, Washington State, Minnesota, Colorado and Nevada electric utilities have also used RFPs extensively to award contracts to renewable generation projects, many of which are in operation.

The Massachusetts LDCs also issued an RFP as allowed by the Massachusetts *Green Communities Act*. Furthermore, the New England Governors' *Renewable Energy Blueprint* indicated that:

"In connection with the states' power procurement and contracting authority, the New England Governors observe the following:

1. Every New England state has current statutory authority to approve long-term contracts for capacity, energy and/or renewable energy credits (RECs).
2. Across New England, procurement is generally executed through competitive solicitations.
3. Typically, competitive procurement is implemented by electric distribution companies, subject to the review and approval by the states' Public Utility Commissions. In some states, such as Vermont and Maine, state entities are authorized to act on the state's behalf. In all cases, however, the states are the ultimate arbiter of whether and what resources are awarded contracts." (p. 8).

## **EXHIBIT B**

**CONCORD STEAM RESPONSES  
TO REQUESTS TO JOHN DALTON  
SUBJECT TO OBJECTIONS**

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Petition for Approval of Power Purchase Agreement

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Witness: John Dalton

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**REQUEST:**

1. Ref. pg. 1, line 15, you stated that CSC has “secured financing commitments for the vast majority of the required investment capital.” What percentage of the required investment capital has been secured? Provide all documents related to the financing of the purchase or construction of CSC’s facility. Please provide details concerning the financing commitments that have been obtained, specifying the sources of the financing, any conditions that must be met for such financing to be provided, the dates that such financing commitments end.

**OBJECTION:** Concord Steam objects to this data request on the grounds that:

- A. Concord Power and Steam, LLC is not a party to this proceeding under Puc 203.09 (b) and therefore not subject to discovery. Concord Steam Corporation is a separate entity and does not have legal authority to disclose Concord Power and Steam, LLC’s confidential financial information.
- B. The “details concerning the financing commitments” of Concord Power and Steam, LLC and other information requested is confidential financial information that is not subject to disclosure under RSA 91-A:5, Puc 203.08, and Order No. 25,174.
- C. The information requested concerning Concord Power and Steam, LLC is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding.
- D. The information requested concerning Concord Power and Steam, LLC is immaterial to this proceeding within the meaning of RSA 541-A:33, II.

**RESPONSE:**

My testimony was based on Concord Steam Corporation’s Petition to Intervene in this proceeding which stated that:

“Concord Steam has been developing a wood-fired combined heat and power plant in Concord since 2007. The project has all of the necessary permits and approvals and has financing lined up.”

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I have not been provided nor reviewed any of the financing commitments or other documents.

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**REQUEST:**

2. Ref. pg. 2, line 9, you stated that your professional experience includes “Development and oversight of numerous electricity market price forecasts across North America, including forecasts for the Independent System Operator of New England (ISO-NE) market in which PSNH participates.” Please provide copies of all such market price forecasts you have developed since 2007 that include the New England market and/or ISO-NE.

**OBJECTION:** Concord Steam objects to this data request on the grounds that:

- A. The requested market price forecasts are confidential and proprietary information belonging to third parties that are not a party to this proceeding under Puc 203.09 (b) and therefore not subject to discovery.
- B. The market price forecasts belonging to third parties that have not been publicly disclosed are confidential financial information that is not subject to disclosure under RSA 91-A:5, Puc 203.08, and Order No. 25,174.
- C. Subject to the foregoing, Mr. Dalton will provide publicly disclosed market price forecasts developed since 2007 that include the New England market and/or ISO-NE.

**RESPONSE:**

Since 2007 I have developed or overseen the development of six electricity market price forecasts for the New England market. All but one of these forecasts is client confidential. The one publicly available forecast is attached.

Note that this forecast was prepared almost two years ago and as such does not reflect current market conditions or expectations regarding future prices.

## Our electricity market price forecast is presented below.

- The table below presents our annual average energy market price forecast for the ISO-NE Mass Hub, Maine zone, and New Brunswick node for the 16-year period from 2010 to 2025.
  - ✓ All forecast values are in nominal US\$. We present our forecast in US\$ to avoid embedding a Canadian \$ to US \$ exchange rate in the analysis. This better allows for changes in exchange rates.
- The forecast indicates that energy prices are not forecast to return to the \$80/MWh level until 2017. These lower power prices are driven primarily by lower natural gas prices and the market's expectation that these relatively low natural gas price levels will be sustained. With increases in natural gas prices higher power prices are likely. This is a major forecast uncertainty which is evaluated further on the next several pages.

**Annual Average Energy Prices (\$/MWh)**

Year	Mass Hub	New Brunswick	Maine
2010	\$63	\$58	\$60
2011	\$68	\$63	\$64
2012	\$71	\$66	\$67
2013	\$73	\$67	\$69
2014	\$74	\$69	\$71
2015	\$76	\$70	\$72
2016	\$78	\$72	\$74
2017	\$80	\$74	\$76
2018	\$81	\$76	\$77
2019	\$83	\$77	\$79
2020	\$84	\$78	\$80
2021	\$86	\$80	\$82
2022	\$87	\$81	\$83
2023	\$89	\$82	\$84
2024	\$90	\$84	\$86
2025	\$92	\$86	\$88

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**REQUEST:**

10. Ref. pg. 5 line 2. Using the same analytical model, what would the after tax return on equity be for the for the Concord Steam and Power proposal. Please prepare and provide a version of Exhibit JCD-4 that models the Concord Steam proposal.

**OBJECTION:** Concord Steam objects to this request on the grounds that:

- A. This request seeks information from Concord Power and Steam, LLC. Concord Power and Steam, LLC is not a party to this proceeding under Puc 203.09 (b) and therefore not subject to discovery. Concord Steam Corporation is a separate entity and does not have legal authority to disclose Concord Power and Steam, LLC's confidential financial information.
- B. This request seeks confidential financial information that is not subject to disclosure under RSA 91-A:5, Puc 203.08, and Order No. 25,174.
- C. Concord Steam has already provided public documents responsive to this request.

**RESPONSE:**

To estimate the after return on equity an estimate of the project capital cost is required. I do not have and have not reviewed any capital cost estimates or other financial documents for the Concord Power and Steam, LLC project.

The capital cost estimate for the Laidlaw Project is not directly applicable given that "the existing infrastructure at the Facility provides a significant advantage in terms of the work involved in the construction of the the [sic] Berlin project as compared with a "Greenfield" project." (<http://www.laidlawenergy.com/berlin-nh-project.html>)

Laidlaw indicates that potential economies include: (1) installation of the bubbling fluidized bed in the existing Babcock & Wilcox boiler; (2) the installation of the back-end emissions equipment; (3) construction of the turbine building and installation of the steam turbine generator; and (4) construction of the fuel yard and installation of wood handling equipment.

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The Concord Power and Steam, LLC project is likely to have its own economies such as the ability to use steam for district heating purposes.

The economies offered by these facilities are another reason why an RFP process would have been a more effective approach for ensuring that the PPA represents a cost-effective realization of the goals of RSA 362:F-9 to New Hampshire customers.

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**REQUEST:**

18. Ref. JCD-4, please provide the same analysis using Concord Power and Steam's pricing structure and project assumptions and resulting IRR.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:** Please see my response to PSNH 010.

## EXHIBIT C

CONCORD STEAM RESPONSES TO  
REQUESTS TO MARK SALTSMAN

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Petition for Approval of Power Purchase Agreement

NHPUC Docket No. DE 10-195

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Date of Request: December 26, 2010

Date of Response: January 11, 2011

Witness: Mark Saltsman

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**REQUEST:**

27. Ref. pg. 4 line 22 through pg. 5 line 6. Please provide the basis and all supporting evidence for the numerous fuel prices noted.

**RESPONSE:**

Our wood costs are on file at the Public Utilities Commission. Concord Steam's most recent estimates and supporting information filed in NHPUC Docket No. DG 10-242 are attached to this response.

The prices paid by the other facilities are based on information provided to us from various wood suppliers.

**STATE OF NEW HAMPSHIRE**  
**BEFORE THE**  
**PUBLIC UTILITIES COMMISSION**

**Re: Concord Steam Corporation**  
**Cost of Energy**

**DG 10-\_\_\_\_\_**

**DIRECT PRE-FILED TESTIMONY**  
**OF**  
**PETER G. BLOOMFIELD**

**September 10, 2010**

1 **Q. Please state your name and address.**

2 A. My name is Peter G. Bloomfield. My business address is P.O. Box 2520, Concord, NH  
3 03302.

4 **Q. How are you associated with Concord Steam Corporation?**

5 A. I am President of Concord Steam Corporation (the “Company”).

6 **Q. Please describe your education and professional background.**

7 A. I graduated from Union College in 1976 with a BS in Mechanical Engineering. I am a  
8 registered Professional Engineer in New Hampshire, New York, and Colorado. I have  
9 been employed as an engineer in the steam and power industry since college. I became  
10 President of the Company in the fall of 1986.

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

12 A. The purpose of my testimony is to provide support for the Company’s cost of energy  
13 request for the upcoming heating season. I will present documents and other information  
14 in support of the Company’s request, and explain the development of the cost of energy  
15 charges and a calculation of the proposed charge. The exhibits that I am presenting  
16 consist of Schedules-1 to 8 as further described below.

17 **Q. Please describe the Company and its customers.**

18 A. Concord Steam provides district steam service from its facility at Pleasant Street in  
19 Concord, NH, and is the only steam utility in New Hampshire. It has approximately 110  
20 customers, all of which are located in the City of Concord and all of which are  
21 commercial or institutional customers, with the exception of one residential customer.

22 **Q. Are you familiar with the books and records of the Company?**

23 A. Yes.

1 **Q. Has this filing been prepared by you or under your supervision?**

2 A. Yes.

3 **Q. Will the proposed change to the Company's cost of energy charge have any effect on**  
4 **the Company's profit, net income or rate of return?**

5 A. No. This is a revenue neutral change.

6 **Q. What is the current cost of energy charge?**

7 A. The current cost of energy charge is \$19.89 per Mlb, as approved in Order No. 25,036.

8 **Q. Why is the Company filing this cost of energy case?**

9 A. The Company's projected cost of energy for the coming 12 months is less than the actual  
10 cost of the past 12 months, such that the currently approved rate is no longer reflective of  
11 its energy costs.

12 **Q. Are there any over or under charge adjustments that need to be made to the Cost of**  
13 **Energy for the upcoming year?**

14 A. Yes, we are estimating that there will be an over charge of \$9,874 over the previous Cost  
15 of Energy period. This is a change from the 2009-2010 under charge of \$31,747. Due to  
16 decreased fuel costs, the Company is requesting a decrease in its energy charge to  
17 \$16.64/Mlb, as set forth in Schedule-1 to my testimony.

18 **Q. Please explain Schedule -1.**

19 A. Schedule-1 is a table that lists the amount of steam that the Company expects to sell for  
20 the period of November 2010 through October 2011, as proformed. Also listed is the  
21 amount of fuel and the cost of the fuel that the Company expects to consume for the same  
22 period. Schedule-2 is the backup detail for Schedule-1.

23 **Q. Please explain Schedules-3 and -4.**

1 A. Schedule-3 is the worksheet showing how the steam sales figures were proformed based  
2 on the 30-year degree day average. Schedule-4 is the reconciliation of energy cost versus  
3 revenue for the 2009-2010 season. This shows an expected \$9,874 over collection for the  
4 year.

5 **Q. How will this change to the Company's cost of energy charge affect its customers?**

6 A. As set forth in Schedule-6 to my testimony, I estimate that the Company's customers will  
7 experience an approximate 4% overall decrease in their total bill. This is based upon an  
8 expected decrease in the Company's fuel costs for the upcoming year as set forth on  
9 Schedule-1.

10 **Q. Why is the cost of energy changing this heating season?**

11 A. The decrease in cost is due to decreases in the cost of all fuels: wood, oil and gas.

12 **Q. Can oil and gasoline prices affect the price of wood for the Company?**

13 A. A change in the cost of diesel fuel will cause a corresponding increase or decrease in the  
14 cost of wood. The loggers use diesel fuel to operate the logging equipment as well as the  
15 delivery tractor trailer trucks. For every \$1.00/gal increase in diesel, the cost of wood  
16 increases \$2.00/ton. Wet weather can also cause an increase in the cost of wood fuel, due  
17 to production problems with working in wet forest lots.

18 **Q. What different factors can affect the collection of the correct amount of energy  
19 charges over the year?**

20 A. Fluctuations in the amount of steam sold and in the cost of fuel.

21 **Q. Are there any changes in types of fuel being used at Concord Steam?**

22 A. There have been no significant changes from the prior year. The Company has been  
23 burning wood since January 1, 2004. Wood has replaced oil and gas as the primary fuel,

1 although the Company still uses some oil and gas. The Company does expect to burn  
2 more natural gas this year and reduce the amount of oil burned due to the lower price of  
3 natural gas. The Company procures natural gas through a competitive bid process. This  
4 year the Company has contracted with Santa Energy. Approximately 70% of the steam is  
5 generated by burning wood in two of the four boilers used by the Company. The  
6 Company's other two boilers are used as peaking units, and can burn natural gas, waste  
7 oil and oil.

8 **Q. What are the expected savings due to burning wood instead of oil and gas?**

9 A. The Company has entered into contracts for its wood supply that will result in an average  
10 delivered cost of approximately \$32/ton. Of this cost, approximately \$1.00 is for the  
11 actual cost of the wood, \$13.00 is for labor and chipping and \$12.00 for transport. A ton  
12 of wood is approximately equivalent to a barrel of oil in net steam energy out of the  
13 boiler. At the present cost of oil at \$88/bbl and gas at \$7.50/MMBtu, wood at \$32/ton is  
14 attractive and economical. The annual estimated savings to the Company's customers,  
15 including the allowance for additional direct costs associated with burning wood, is over  
16 \$600,000.

17 **Q. Are there any changes in the Company's wood storage and handling systems?**

18 A. No. The Company has been successfully operating the wood storage yard, and it has  
19 gone very well. The yard gives the Company better control over its wood supply and has  
20 allowed for some creative uses that have enabled the Company to keep the cost of wood  
21 fuel low. The yard also allows for better timing of deliveries of wood to the plant. In  
22 addition, by directly operating the wood yard, the Company has been able to use its  
23 employees more efficiently. Personnel work at the yard in the winter and are able to

1 work at the plant in the summer for maintenance.

2 **Q. Are any of the costs associated with operation of the wood yard included in this**  
3 **filing?**

4 A. Yes. The lease of the yard and the direct cost of running the yard are included in the cost  
5 of wood fuel. The monthly lease payment for the wood yard is \$11,816. The direct costs  
6 are the maintenance of the equipment, diesel fuel for the front end loader and the delivery  
7 truck, and utilities for the yard. These estimated costs are itemized on Schedule-8. As  
8 reflected on Schedule-8, the expected use of diesel fuel will increase from the prior year  
9 due to more fuel being delivered to the yard and less direct to the plant due to the  
10 expected reduction in the BCAP program. In addition, the Company incurred \$900 in  
11 costs for a software consultant to modify the truck scale data base program to allow the  
12 system to accept additional suppliers and different grades of fuel. The cost of labor has  
13 not been included in the cost of wood fuel which is consistent with how the costs of  
14 operating the wood yard have been treated in prior cost of energy proceedings.

15 **Q. What is the BCAP program and how does it affect wood supply?**

16 A. Biomass Crop Assistance Program is a subsidy paid by USDA through FSA to wood fuel  
17 suppliers. This was a new program last year which ran from February through April of  
18 2010 and resulted in our using more wood direct from the woods to the plant than was  
19 anticipated. As a result, we cycled less wood through the wood yard over a three month  
20 period of February through April.

21 **Q. How will you accurately estimate the cost of fuel 12 months ahead?**

22 A. The Company presently pre-purchases 25% of its wood fuel requirements and 90% of its  
23 fossil fuel requirements for the upcoming heating season. The remainder of the fuel is

1 priced according to the estimated cost of fuel as of the time of this filing. As the great  
2 majority of the Company's consumption occurs during the heating season, any fuel cost  
3 changes later in the Company's heating season will have a small effect on the annual  
4 charge. The Company is pre-buying market wood now for use later in the heating  
5 season. The wood the Company is buying now is being stored off site for reclamation  
6 during the heating season. The Company is expecting wood to be over 70% of total fuel  
7 consumed.

8 **Q. How will a change of annual steam sales affect the recovery of the actual energy**  
9 **costs?**

10 A. If the Company sells less steam in a year than forecasted, the amount of energy consumed  
11 is reduced as well. The reverse is also true, in that if sales increase, energy use would  
12 increase. This means that variations in steam sales will have a limited effect on energy  
13 recovery charges. A change in steam sales will result in a different mix of oil vs wood  
14 fuel, which can change our cost forecasts.

15 **Q. How much do steam sales vary from year to year?**

16 A. Steam sales generally are within a plus or minus 5% range of the Company's projections.  
17 Last heating season was well below average. The heating degree days were 88% of the  
18 30 year average, and the steam sales were reduced accordingly.

19 **Q. How did you calculate your steam sales projections?**

20 A. I weather normalized the Company's actual steam sales from Aug/09 through July/10 to a  
21 30-year degree-day average. See Schedule-3.

22 **Q. How will you account for over or under collection of annual energy costs?**

23 A. The Company tracks costs all year, and if the cost of energy changes significantly from

1 expected, the Company will apply a cost of energy adjustment part way through the year  
2 as authorized by the Commission. At the end of the energy cost adjustment year, the  
3 Company reconciles revenues collected versus cost of fuel and will adjust the energy cost  
4 calculation for the next year accordingly.

5 **Q. How did the collection of energy cost work out this past year? What was the**  
6 **amount of over or under collection?**

7 A. The Company projects it will over collect \$9,874 for the period from 11/09 to 10/10,  
8 which was less than 2% of its total energy charges for the year. This is itemized on  
9 Schedule-4, with the detail shown on Schedule-5. This under collection is due to normal  
10 fluctuations in fuel consumption, steam sales and fuel costs.

11 **Q. Has the number of customers changed over the past year?**

12 A. Not significantly. We are adding McCloud's Florist as of October, 2010 and have added  
13 the Rundlett Middle school as of August 15, 2010.

14 **Q. What does the Company project for the upcoming heating season?**

15 A. The Company will try to minimize the amount of over or under collection by adjusting its  
16 energy rates during the year as allowed by the Commission. In past years, the  
17 Commission has authorized the Company to adjust its energy rates by +/- 20%.

18 **Q. When does the Company seek to implement this new rate?**

19 A. The Company is requesting to implement this rate on a service rendered basis as of  
20 November 1, 2010.

21 **Q. Has the Company taken any steps to reduce losses of steam in its system?**

22 A. Yes. The Company has been continuing to repair and upgrade underground steam lines.  
23 We are investigating a system which can insulate existing piping systems in place. We

1 will be submitting a plan to the Commission for approval to use Federal grant money to  
2 fund a complete steam system thermal study to better track and control system line  
3 losses.

4 **Q. Is there anything else as part of this filing that you would like to explain?**

5 A. Yes. As part of Commission Order 24,147, the Company is required to submit a cost  
6 benefit analysis of the steam turbine cogeneration operations. As of January of 2005, the  
7 "Cogen" division of the Company has been made part of the utility, and all of the costs  
8 and revenues from that operation are part of the regulated company. Order 24,147  
9 requires the Company to justify that this combination makes economic sense. Schedules  
10 CB-1 through CB-5 provide the cost/benefit analysis with back up data.

11 **Q. Has the electric power generation operation been cost effective?**

12 A. Yes, from August 2009 to July 2010 the cogeneration system has saved the Company  
13 (and ultimately its ratepayers) over \$50,000, from sales of excess electricity to ISO-NE  
14 and from avoiding buying power from Unitil. This savings is after all costs, including  
15 fuel, are taken into account.

16 **Q. Has any progress been made on the new steam plant project?**

17 A. Yes. The project has all of its city permits and the State and federal permits are well  
18 under way. 73% of the power output of the facility has been sold under a 20 year  
19 contract. The project has arranged financing, and is working to find a purchaser for the  
20 remainder of the electricity and RECs from the facility, with the intent to start  
21 construction this year. The new plant will be in service by Fall of 2012.

22 **Q. Does this conclude your direct testimony?**

23 A. Yes, it does.

**Concord Steam Corporation  
Cost Of Energy (COE)**

**DG 10 -  
Schedule 1**

	Projected Steam Sales Mlbs	Projected Fuel Use MMBtu	\$/Mlb	Steam Revenue Energy	Cost of Energy	Projected Over/Under Collection
Nov-10	15,221	50,776	\$ 16.64	\$ 253,242	\$ 239,467	\$ 13,776
Dec-10	24,500	68,091	16.64	\$ 407,633	\$ 306,815	\$ 100,818
Jan-11	27,561	70,048	16.64	\$ 458,571	\$ 342,885	\$ 115,685
Feb-11	26,303	68,156	16.64	\$ 437,638	\$ 336,729	\$ 100,910
Mar-11	19,795	66,735	16.64	\$ 329,347	\$ 319,463	\$ 9,883
Apr-11	10,140	43,334	16.64	\$ 168,714	\$ 208,596	\$ (39,882)
May-11	4,216	28,651	16.64	\$ 70,143	\$ 128,796	\$ (58,654)
Jun-11	1,709	20,251	16.64	\$ 28,435	\$ 87,718	\$ (59,283)
Jul-11	931	20,700	16.64	\$ 15,490	\$ 88,710	\$ (73,220)
Aug-11	889	20,300	16.64	\$ 14,791	\$ 85,054	\$ (70,263)
Sep-11	1,626	21,904	16.64	\$ 27,054	\$ 91,522	\$ (64,468)
Oct-11	9,509	31,488	16.64	\$ 158,212	\$ 143,388	\$ 14,824
<b>TOTAL</b>	<b>142,399</b>	<b>510,434</b>		<b>2,369,269</b>	<b>\$ 2,379,143</b>	<b>(9,874)</b>

Over collection from previous year 9,874

Total of Cost of Energy Charge 2,369,269

**Energy Charge - \$ per Mlb \$ 16.64**

Average COE charge for last year \$ 17.83  
Percent reduction from last year 6.7%

Projected MMBtu's and Cost:

	Projected MMBtu's					Total
	Nat. Gas	Waste	#6 Resid	Waste+ #6	Wood	
Nov-10	9,670	1,000		1,000	40,106	50,776
Dec-10	10,087	1,000		1,000	57,004	68,091
Jan-11	12,031	1,000	2,000	3,000	55,017	70,048
Feb-11	12,756	1,000	1,800	2,800	52,600	68,156
Mar-11	9,453	1,000	2,000	3,000	54,282	66,735
Apr-11	5,385	500	1,800	2,300	35,649	43,334
May-11	5,216	500	-	500	22,935	28,651
Jun-11	1,719	0	500	500	18,032	20,251
Jul-11	1,500	0	500	500	18,700	20,700
Aug-11	1,100	200	300	500	18,700	20,300
Sep-11	1,350	300	200	500	20,054	21,904
Oct-11	6,400	500	-	500	24,588	31,488
	76,667	7,000	9,100	16,100	417,668	510,434
				6.13		
	bbls	bbls	bbls	tons		
		1,167	1,468	2,597	49,137	

	Projected Costs					Total
	Nat. Gas	Waste Oil	#6 Resid	Waste+ #6	Wood	
Nov-10	\$ 77,728	\$ 9,811	\$ -	\$ 9,811	\$ 151,928	\$ 239,467
Dec-10	\$ 81,066	\$ 9,811	\$ -	\$ 9,811	\$ 215,938	\$ 306,815
Jan-11	\$ 96,630	\$ 9,811	\$ 28,032	\$ 37,843	\$ 208,412	\$ 342,885
Feb-11	\$ 102,435	\$ 9,811	\$ 25,229	\$ 35,040	\$ 199,254	\$ 336,729
Mar-11	\$ 75,993	\$ 9,811	\$ 28,032	\$ 37,843	\$ 205,627	\$ 319,463
Apr-11	\$ 43,420	\$ 4,906	\$ 25,229	\$ 30,134	\$ 135,042	\$ 208,596
May-11	\$ 37,010	\$ 4,906	\$ -	\$ 4,906	\$ 86,881	\$ 128,796
Jun-11	\$ 12,403	\$ -	\$ 7,008	\$ 7,008	\$ 68,306	\$ 87,718
Jul-11	\$ 10,864	\$ -	\$ 7,008	\$ 7,008	\$ 70,838	\$ 88,710
Aug-11	\$ 8,050	\$ 1,962	\$ 4,205	\$ 6,167	\$ 70,838	\$ 85,054
Sep-11	\$ 9,809	\$ 2,943	\$ 2,803	\$ 5,747	\$ 75,967	\$ 91,522
Oct-11	\$ 45,340	\$ 4,906	\$ -	\$ 4,906	\$ 93,142	\$ 143,388
	\$ 600,747	\$ 68,678	\$ 127,544	\$ 196,222	\$ 1,582,174	\$ 2,379,143

	Projected mmbtu costs			Average oil		
	Gas	Waste	#6	#6 + waste	Wood	
\$/MMBtu	\$ 6.02	\$ 9.81	\$ 14.02	\$ 12.19	\$ 3.79	
\$/unit	\$ 6.02	\$ 61.81	\$ 88.30	\$ 76.78	\$ 32.20	

Other production related costs not in COE	
Ash disposal	28,070
State Air Permit fees	37,199
Water/Sewer	170,000
<b>Total</b>	<b>235,269</b>

**Concord Steam Corporation  
Cost Of Energy (COE)**

**DG 10 -  
Schedule-3**

	Actual Sales Mlbs 2009/10	Steam sold non heating	Steam sold heating	New customers	Actual Deg Days 2009/10	Deg Days 30 yr ave	Adjusted Base rate Sales 2008/09
Nov-09	12,298	1,500	10,798	1,420	697	794	15,221
Dec-09	22,692	1,500	21,192	1,700	1182	1188	24,500
Jan-10	24,708	1,500	23,208	1,600	1296	1366	27,561
Feb-10	23,431	1,500	21,931	1,420	1087	1159	26,303
Mar-10	14,034	1,500	12,534	1,080	715	982	19,795
Apr-10	7,863	1,500	6,363	640	474	596	10,140
May-10	3,575	1,500	2,075	500	196	299	4,216
Jun-09	1,709	1,709	-	-	97	85	1,709
Jul-09	931	931	-	-	36	16	931
Aug-09	889	889	-	-	36	35	889
Sep-09	1,226	1,226	-	400	223	184	1,626
Oct-09	10,066	1,500	8,566	530	591	516	9,509
<b>TOTAL</b>	<b>123,421</b>			<b>9,290</b>	<b>6,630</b>	<b>7,220</b>	<b>142,399</b>

Concord Steam Corporation  
 Cost Of Energy (COE)  
 2010-11

DG 10 -  
 Schedule-4

Summary of Reconciled Energy expenses/Revenue

	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10
Revenue:	\$ 213,490	\$ 405,964	\$ 442,022	\$ 419,173	\$ 251,089	\$ 140,660	\$ 63,956	\$ 22,935	\$ 16,827	\$ 17,682	\$ 36,495	\$ 170,031

Cost of Energy:	\$ 219,889	\$ 311,415	\$ 325,887	\$ 244,476	\$ 251,414	\$ 160,420	\$ 142,406	\$ 76,258	\$ 74,507	\$ 99,797	\$ 106,035	\$ 146,179
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Over/(Under) Collection:	\$ (31,747)	\$ (38,146)	\$ 56,403	\$ 172,538	\$ 347,234	\$ 346,889	\$ 327,129	\$ 248,679	\$ 195,356	\$ 137,676	\$ 55,561	\$ (13,978)
Beginning Balance	\$ (6,399)	\$ 94,549	\$ 116,135	\$ 174,696	\$ (345)	\$ (19,760)	\$ (78,450)	\$ (53,323)	\$ (57,680)	\$ (82,115)	\$ (69,539)	\$ 23,853
Current Month	\$ (38,146)	\$ 56,403	\$ 172,538	\$ 347,234	\$ 346,889	\$ 327,129	\$ 248,679	\$ 195,356	\$ 137,676	\$ 55,561	\$ (13,978)	\$ 9,874
Ending Balance												

Purchased fuel costs: \$ 2,158,683  
 Over/(Under) Collection 08/09: \$ (31,747)  
 Revenue requirement: \$ 2,190,430

Adjusted Revenue stream: \$ 2,200,304

Projected 2009-10 Over/(under) Collection: \$ 9,874

Concord Steam Company  
Cost of Energy (COE)  
2009-10

Revenue Summary

Nov-09 Dec-09 Jan-10 Feb-10 Mar-10 Apr-10 May-10 Jun-10 Jul-10 Aug-10 Sep-10 Oct-10

Month	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10
Cost of Energy	\$219,889	\$ 311,415	\$325,887	\$244,476	\$251,414	\$160,420	\$142,406	\$ 76,258	\$ 74,507	\$ -	\$ -	\$ -

Actual MMBtu's and Cost:

Month	Actual MMBtu's				Total	Actual Costs				Total	Projected/Actual Costs				Total
	Nat. Gas	Waste	Oil	Wood		Tons	Nat. Gas	Waste	Oil		Wood	Nat. Gas	Waste	Oil	
Nov-09	14,182	41	251	28,986	3410	\$ 85,290	\$ 2,694	\$ 131,904	\$ 219,889	\$ 85,290	\$ 2,694	\$ 131,904	\$ 219,889		
Dec-09	10,087	337	2,063	52,701	6200	\$ 78,601	\$ 20,066	\$ 212,748	\$ 311,415	\$ 78,601	\$ 20,066	\$ 212,748	\$ 311,415		
Jan-10	-	1,429	8,761	62,720	7379	\$ 445	\$ 83,080	\$ 242,362	\$ 325,887	\$ 445	\$ 83,080	\$ 242,362	\$ 325,887		
Feb-10	-	784	4,804	50,696	5964	\$ 402	\$ 47,190	\$ 196,884	\$ 244,476	\$ 402	\$ 47,190	\$ 196,884	\$ 244,476		
Mar-10	9,453	299	1,833	39,899	4694	\$ 72,565	\$ 18,525	\$ 160,324	\$ 251,414	\$ 72,565	\$ 18,525	\$ 160,324	\$ 251,414		
Apr-10	5,385	-	-	27,242	3205	\$ 41,417	\$ 217	\$ 118,786	\$ 160,420	\$ 41,417	\$ 217	\$ 118,786	\$ 160,420		
May-10	5,217	15	92	22,320	2626	\$ 39,437	\$ 9,409	\$ 93,560	\$ 142,406	\$ 39,437	\$ 9,409	\$ 93,560	\$ 142,406		
Jun-10	1,719	9	55	12,002	1412	\$ 13,260	\$ 1,279	\$ 61,719	\$ 76,258	\$ 13,260	\$ 1,279	\$ 61,719	\$ 76,258		
Jul-10	1,183	24	147	12,943	1523	\$ 9,834	\$ 1,892	\$ 62,781	\$ 74,507	\$ 9,834	\$ 1,892	\$ 62,781	\$ 74,507		
Aug-10	-	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Sep-10	-	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Oct-10	-	-	-	-	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Total	47,226	2,937	18,007	309,510	36,413	\$341,252	\$ 184,352	\$ 1,281,068	\$ 1,806,672	\$ 341,252	\$ 184,352	\$ 1,281,068	\$ 1,806,672		

Projected MMBtu's and Cost:

Month	Projected MMBtu's				Total	Projected Costs				Total
	Nat. Gas	Waste	Oil	Wood		Tons	Nat. Gas	Waste	Oil	
Nov-09	9670	1,000	1,000	38,106	48,776	\$ 75,736	\$ 7,222	\$ 14,444	\$ 245,686	\$ 255,801
Dec-09	10,100	2,000	2,000	57,004	69,104	\$ 79,090	\$ 14,444	\$ 24,667	\$ 388,048	\$ 398,200
Jan-10	0	3,000	12,500	15,500	18,500	\$ 310	\$ 21,667	\$ 128,968	\$ 150,635	\$ 237,104
Feb-10	0	2,600	10,200	12,800	15,400	\$ 310	\$ 18,778	\$ 105,238	\$ 124,016	\$ 226,885
Mar-10	11,000	1,000	1,000	54,282	67,282	\$ 86,110	\$ 7,222	\$ 17,540	\$ 233,935	\$ 337,585
Apr-10	5,900	1,000	2,000	35,649	43,549	\$ 46,330	\$ 7,222	\$ 17,540	\$ 153,633	\$ 217,502
May-10	5,155	0	-	21,935	27,090	\$ 40,519	\$ -	\$ -	\$ 98,842	\$ 139,361
Jun-10	1,750	0	-	18,032	19,782	\$ 13,960	\$ -	\$ -	\$ 77,710	\$ 91,670
Jul-10	1,500	0	-	18,459	19,959	\$ 12,010	\$ -	\$ -	\$ 80,590	\$ 92,600
Aug-10	1,100	0	1,000	12,449	14,549	\$ 8,890	\$ -	\$ -	\$ 80,590	\$ 99,797
Sep-10	1,350	500	1,000	17,054	19,404	\$ 10,840	\$ 3,611	\$ 5,159	\$ 86,425	\$ 106,035
Oct-10	6,400	1,000	1,000	31,926	39,326	\$ 50,230	\$ 7,222	\$ 7,222	\$ 88,726	\$ 146,179
Total	53,925	12,100	26,200	383,300	409,513	\$ 424,335	\$ 87,389	\$ 270,317	\$ 357,706	\$ 1,782,748

Other production related costs not in COE, but should be

Ash disposal	28,070
State Air Permit fees	37,199
Water/sewer	170,586
Total	235,855

Projected mmbtu costs

Month	Gas	Waste	Oil	Wood
Nov-09	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Dec-09	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Jan-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Feb-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Mar-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Apr-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
May-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Jun-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Jul-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Aug-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Sep-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03
Oct-10	\$ 7.87	\$ 7.22	\$ -	\$ 6.03

Actual mmbtu costs

Month	Gas	Waste	Oil	Wood
Nov-09	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Dec-09	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Jan-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Feb-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Mar-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Apr-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
May-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Jun-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Jul-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Aug-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Sep-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24
Oct-10	\$ 10.24	\$ 4.14	\$ -	\$ 10.24

**Concord Steam Corporation  
Cost Of Energy (COE)**

**DG10 -  
Schedule-6**

Customer Size	Annual usage M/lbs	Energy Charge at new rate 16.64	Energy Charge at 09/10 average 17.83	Meter Charge	Base Rate	New rate Total	Last year cost based on average energy cost over 09/10
Small	295	\$ 4,908	\$ 5,259	\$ 60	\$ 4,682	\$ 9,650	\$ 10,001 -3.51% % decrease from last year
Medium	1201	\$ 19,983	\$ 21,411	\$ 225	\$ 17,595	\$ 37,802	\$ 39,231 -3.64% % decrease from last year
Large	4797	\$ 79,814	\$ 85,519	\$ 480	\$ 65,959	\$ 146,252	\$ 151,958 -3.75% % decrease from last year

Concord Steam Company  
 Cost of Energy (COE)  
 2010-11 filing  
 Revenue Summary

DG 10 -  
 Schedule -7

	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10
Actual Mibs. Sold	12,298	22,692	24,708	23,431	14,034	7,863	3,575	1,282	846	889	1,835	8,549
Actual Rate Per Mib.	\$ 17.36	\$ 17.89	\$ 17.89	\$ 17.89	\$ 17.89	\$ 17.89	\$ 17.89	\$ 17.89	\$ 19.89	\$ 19.89	\$ 19.89	\$ 19.89
Actual/Projected Revenues	\$ 213,490	\$ 405,964	\$ 442,022	\$ 419,173	\$ 251,069	\$ 140,660	\$ 63,956	\$ 22,935	\$ 16,827	\$ 17,682	\$ 36,495	\$ 170,031

Projected Mibs. and Revenues:

Projected/Actual Mibs. and Projected/Adjusted Revenues:

	Projected Mibs.	Rate per Mib.	Projected Revenue \$		Actual/Projected Mibs.	Rate per Mib.	Revenue \$
Nov-09	15,516	\$ 17.36	\$ 269,360	Nov-09	12,298	\$ 17.36	\$ 213,490
Dec-09	22,744	\$ 17.89	\$ 406,886	Dec-09	22,692	\$ 17.89	\$ 405,964
Jan-10	30,612	\$ 17.89	\$ 547,640	Jan-10	24,708	\$ 17.89	\$ 442,022
Feb-10	25,744	\$ 17.89	\$ 460,566	Feb-10	23,431	\$ 17.89	\$ 419,173
Mar-10	21,361	\$ 17.89	\$ 382,153	Mar-10	14,034	\$ 17.89	\$ 251,069
Apr-10	11,169	\$ 17.89	\$ 199,812	Apr-10	7,863	\$ 17.89	\$ 140,660
May-10	4,578	\$ 17.89	\$ 81,908	May-10	3,575	\$ 17.89	\$ 63,956
Jun-10	1,683	\$ 17.89	\$ 30,116	Jun-10	1,282	\$ 17.89	\$ 22,935
Jul-10	931	\$ 17.89	\$ 16,656	Jul-10	846	\$ 19.89	\$ 16,827
Aug-10	889	\$ 17.89	\$ 15,904	Aug-10	889	\$ 19.89	\$ 17,682
Sep-10	1,835	\$ 17.89	\$ 32,826	Sep-10	1,835	\$ 19.89	\$ 36,495
Oct-10	8,549	\$ 17.89	\$ 152,934	Oct-10	8,549	\$ 19.89	\$ 170,031
<b>Total</b>	<b>145,611</b>	<b>\$ 17.83</b>	<b>\$ 2,596,761</b>	<b>Total</b>	<b>122,000</b>	<b>\$ 18.04</b>	<b>\$ 2,200,304</b>



DG 10 -  
Concord Steam  
Cost-Benefit Ratio Summary

Schedule CB-1

**Cogen Turbines - Benefit - Cost Analysis  
Including Savings from Cogeneration of Electricity**

*Estimated cost to purchase all electricity from Unitil  
(If there was no self generation)* \$ 193,123

*Cost of electricity with self generation*

*Purchased power from Unitil* \$ 86,657

*Cost to generate electricity* \$ 119,850

*Subtotal all costs* \$ 206,507

*Revenue from sale of power* \$ 75,133

*Net cost of electricity for CSC* \$ 131,374

**Benefits:**

Sale of Electricity to ISO \$ 75,133

Savings from generating own electricity in lieu of purchasing from Unitil \$ 106,466

Total Benefits from continuing Cogen \$ 181,599

**Costs:**

Operating Expenses, Return and Fuel Costs for Self Generation \$ 119,850

\$ 119,850

**Benefits in Excess of Costs** \$ 61,749

**Benefit/Cost Ratio** 1.52

DG 10 -  
Concord Steam  
Benefit Computation

Schedule CB-2

**Benefits**

***Sale of Power to ISO-New England:***

<i>Volume of kWh's sold from 8/09 - 7/10</i>		1,495,996
Revenues received	\$	<b>75,133</b>
Rate per kWh	\$	0.050

<i>Estimated Cost if there was no Self Generation:</i>	\$	193,123
--	----	---------

***Savings from self-generation of Electricity:***

<i>Power purchased from Unitil</i>	\$	86,657
Value of avoided power purchase from Unitil	\$	<b>106,466</b>

Self generated Electricity Consumed (Excl. kWh purchased from Unitil)		1,076,804
Average Unitil cost \$/kWh	\$	0.10

***Total Benefits from Sales to ISO and Self-Generation***

Turbine Generator  
 Operating/Maintenance Costs

**Cost of Sales:**

	7/09-6/10	7/09-12/09	1/10-6/10
5-7051 Consumables/Mech.	\$ 765	433	332
5-7052 Pipe fittings	\$ 350		350
5-7053 Valves	\$ 605		605
5-7055 Misc. small tools	\$ 109	109	
5-7060 Consumables/Elec.	\$ -		
5-7065 Consumables/Structural Repairs	\$ 33	33	
5-7085 Rental Fees/Generator Maint.	\$ -		
5-7095 Repair Parts/Mech.	\$ 1,458	1189	269
5-7100 Repair Parts/Elec.	\$ 58	58	0
5-7110 Contract Maintenance & Repair	\$ -		0
<b>Total Cost of Sales</b>	<u>\$ 3,378</u>		

**Expenses:**

Payroll	Maintenance - 40hrs @ \$25/hr	\$ 1,000
Depreciation		\$ 20,485
Amortization		\$ 436
Property Tax		\$ 1,016
Employer FICA		\$ 77
Bank Fees		
Telephone		\$ 600
Other Consultants		
Insurance/Plant		\$ 6,281
Employees Ins. Med.,etc.		\$ 200
Uniforms		
<b>Total</b>		<u>\$ 30,095</u>

Total Revenue Deductions \$ 33,473

Net Operating Income (Loss) Before Taxes

Federal Income Taxes

Net Operating Income/(Loss) After Taxes \$ -

**Summary of Revenue Requirements:**

Rate Base	\$ 144,044
Rate of Return	7.24%
Allowed Return	<u>\$ 10,429</u>
Net Operating Income, per above	\$ -
Revenue Requirements Deficiency/(Surplus)	<u>\$ 10,429</u>
Gross-up for Taxes (x 1.68)	<u><u>\$ 17,531</u></u>

**Costs**

	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Total
<b>Fuel:</b>													
Total kWh's Generated	532,800	427,200	352,800	182,400	136,800	9,600	50,400	16,800	2,400	14,400	343,200	504,000	2,572,800
Total kWh's Sold	292,687	205,897	161,465	81,438	35,459	1,467	49,805	15,429	3,369	15,155	337,445	296,380	1,495,996
\$ received from sales	\$ 18,997	\$ 11,365	\$ 6,048	\$ 2,902	\$ 1,526	\$ 154	\$ 1,575	\$ 555	\$ 104	\$ 696	\$ 12,386	\$ 18,825	\$ 75,133
Btu's/kWh	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Btu/Lb Steam @ 125 psig. 430 F	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150
Total M Lbs of Steam	1,853	1,486	1,227	634	476	33	175	58	8	50	1,194	1,753	8,949
Fuel cost \$/MMBtu	4.06	4.17	5.21	5.29	5.76	6.33	5.35	5.71	6.03	5.24	5.06	4.78	
Fuel Cost per MLb	\$ 7.79	\$ 8.00	\$ 9.99	\$ 10.14	\$ 11.05	\$ 12.13	\$ 10.25	\$ 10.94	\$ 11.55	\$ 10.04	\$ 9.71	\$ 9.16	
Total Fuel Cost of Steam	\$ 14,430	\$ 11,883	\$ 12,257	\$ 6,431	\$ 5,256	\$ 405	\$ 1,796	\$ 639	\$ 96	\$ 503	\$ 11,587	\$ 16,052	\$ 81,336
<b>Total Fuel Cost of Steam</b>	<b>\$ 14,430</b>	<b>\$ 11,883</b>	<b>\$ 12,257</b>	<b>\$ 6,431</b>	<b>\$ 5,256</b>	<b>\$ 405</b>	<b>\$ 1,796</b>	<b>\$ 639</b>	<b>\$ 96</b>	<b>\$ 503</b>	<b>\$ 11,587</b>	<b>\$ 16,052</b>	<b>\$ 81,336</b>
<b>Overhead:</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 2,789</b>	<b>\$ 33,473</b>
Total Overhead	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 2,789	\$ 33,473
<b>Return on Investment</b>													
Rate Base													\$ 144,044
Rate of Return													3.50%
Total Return on Investment	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 942	\$ 5,042
<b>Grand Total Costs</b>	<b>\$ 18,161</b>	<b>\$ 15,614</b>	<b>\$ 15,988</b>	<b>\$ 10,162</b>	<b>\$ 8,987</b>	<b>\$ 4,136</b>	<b>\$ 5,527</b>	<b>\$ 4,370</b>	<b>\$ 3,827</b>	<b>\$ 4,234</b>	<b>\$ 15,318</b>	<b>\$ 19,783</b>	<b>\$ 119,850</b>
<b>Total Volume kWh's</b>													<u>2,572,800</u>
<b>Rate per kWh</b>													<u>\$ 0.04658</u>

Purchased Power Costs  
 Cost Benefit Analysis  
 09/15/2008

DG 10 -  
 Concord Steam  
 Purchased Power Costs

Schedule CB-5

	Purchased Power kWh	Demand Charge	Energy Charge	Delivery Charge	Total	Cost \$/kWh
Jan-10	202	\$ 1,839	\$ 19	\$ 4	\$ 1,862	0.11
Feb-10	768	\$ 1,930	\$ 73	\$ 15	\$ 2,018	0.11
Mar-10	4,426	\$ 2,485	\$ 378	\$ 87	\$ 2,950	0.11
Apr-10	39,408	\$ 1,988	\$ 3,305	\$ 771	\$ 6,064	0.10
May-10	22,733	\$ 1,988	\$ 1,653	\$ 445	\$ 4,086	0.09
Jun-10	106,762	\$ 1,988	\$ 7,411	\$ 2,089	\$ 11,488	0.09
Jul-09	71,242	\$ 2,235	\$ 5,603	\$ 1,550	\$ 9,388	0.10
Aug-09	111,053	\$ 1,967	\$ 8,063	\$ 2,198	\$ 12,228	0.09
Sep-09	139,008	\$ 1,938	\$ 9,780	\$ 2,720	\$ 14,438	0.09
Oct-09	112,493	\$ 1,938	\$ 8,301	\$ 2,201	\$ 12,440	0.09
Nov-09	47,059	\$ 2,298	\$ 3,406	\$ 921	\$ 6,625	0.09
Dec-09	12,172	\$ 1,850	\$ 982	\$ 238	\$ 3,070	0.10
<b>Total</b>	<b>667,326</b>	<b>\$ 24,444</b>	<b>\$ 48,974</b>	<b>\$ 13,239</b>	<b>\$ 86,657</b>	

Average Cost/ \$ 0.10

**STATE OF NEW HAMPSHIRE  
BEFORE THE  
PUBLIC UTILITIES COMMISSION**

**Re: Concord Steam Corporation  
Cost of Energy**

**DG 10-242**

**SUPPLEMENTAL PRE-FILED TESTIMONY  
OF  
PETER G. BLOOMFIELD**

**September 28, 2010**

1 **Q. Please state your name and address.**

2 A. My name is Peter G. Bloomfield. My business address is P.O. Box 2520, Concord, NH  
3 03302.

4 **Q. Have you previously filed testimony in this docket?**

5 A. Yes. I filed direct testimony on September 10, 2010.

6 **Q. What is the purpose of this supplemental testimony?**

7 A. I am filing supplemental testimony to provide additional information to the Commission  
8 regarding grant funds received by the Company during the prior heating season and to  
9 request that the Commission allow those funds to be used to improve the Company's  
10 steam distribution system.

11 **Q. Please provide a detailed description of the grant funds received by the Company.**

12  
13 A. The United States Department of Agriculture, through the Farm Service Agency, has a  
14 program that is intended to support and encourage the use of biomass as an energy  
15 source. The program was funded for three months during the spring of 2010. The  
16 Biomass Crop Assistance Program (BCAP) provides financial assistance to producers or  
17 entities that deliver eligible biomass material to designated biomass conversion facilities  
18 for use as heat, power, biobased products or biofuels. Initial assistance was provided for  
19 the Collection, Harvest, Storage and Transportation (CHST) costs associated with the  
20 delivery of eligible materials.

21 BCAP provides payment to those that collect, harvest, store and transport eligible  
22 biomass material. The payments are made at a rate of \$1 for every \$1 dollar (per ton dry  
23 ton equivalent) received from a qualified biomass conversion facility up to a maximum  
24 matching payment of \$20/dry ton. The owner may be a landowner, logger, trucker or

1 chipping facility.

2 In 2010, the USDA classified Concord Steam as a qualified biomass conversion facility.

3 Concord Steam participated in the BCAP program in the first few months of 2010.

4 Specifically, the Company shared in a 50/50 split of BCAP funds with the loggers that  
5 supplied wood to Concord Steam in the spring of 2010. During this period, the Company

6 paid loggers \$20/ton for fuel for which it otherwise would have paid \$30/ton. The

7 loggers in turn were paid an additional \$20/ton by the Farm Service Agency, thereby

8 netting \$40/ton.

9 **Q. How much in grant funds did Concord Steam receive through this program?**

10

11 A. In total, Concord Steam received a total of \$94,699 from the Farm Service Agency in the

12 form of a subsidy from January 19, 2010 to April 30, 2010. This subsidy took the form

13 of reduced payments to the Company's wood suppliers.

14 **Q. How has the Company treated those funds for purposes of determining its cost of  
15 energy for the 2009/2010 heating season?**

16 A. The Company's September 10, 2010 filing in this docket contained schedules calculating

17 its cost of energy for the upcoming heating season, which includes a reconciliation of

18 prior year expense. See Schedules 4 and 5 to September 10 Pre-filed direct testimony of

19 Peter Bloomfield. The calculation of the revenues from the 2009/2010 heating season are

20 based on the price of wood at \$30/ton for the prior heating season, and does not take into

21 account the subsidy the Company received in the months during which it paid \$20/ton for

22 wood.

23 **Q. Why didn't the Company included the actual cost of wood in its reconciliation of the  
24 prior year's cost of energy?**

1 A. The Company proposes to use the funds from the subsidy to improve the efficiency of its  
2 steam distribution system rather than apply these dollars as a one time reduction in  
3 energy costs. Specifically, the Company seeks to improve the effectiveness of the pipe  
4 insulation in its distribution system, and to spot steam leaks while still small. This will  
5 allow the Company to reduce line losses. While this will not result in an immediate  
6 reduction to customers' bills, it will result in steam savings which will take the form of  
7 reduced energy costs once the improvements are completed.

8 **Q. How does the Company propose to use the funds?**

9 A. The Company proposes to use the funds to purchase state of the art thermal imaging  
10 cameras to map and analyze every foot of steam line in its distribution system. The  
11 breakdown on the costs of the proposed equipment and the labor required to implement  
12 this first phase of the project is attached as Schedule 9.  
13 By mapping and analyzing its system, the Company will be able to identify immediate  
14 problem areas of the system and establish a baseline. Once the baseline database is set,  
15 annual inspections with the thermal camera will enable Company personnel to locate and  
16 repair problems and leaks before they are large enough to spot by visible means. Once  
17 problem sections of piping are identified, a quantitative analysis will be done to  
18 determine the extent of the problem and the actual amount of heat loss. This will be done  
19 by the installation of meters to accurately measure steam losses. This phase of the  
20 proposed study is to measure the actual condensate flow from suspect areas of the system  
21 to achieve an accurate quantitative measure of heat loss from the piping sections, before  
22 and after insulation repair. The Company will accomplish this with the temporary  
23 installation of a condensate meter on the condensate trap discharge lines in the manholes

1 and with a new, very accurate steam flow meter measuring steam flow from the plant to  
2 the underground steam distribution system.

3 **Q. How is this different than the Company's current approach to addressing system**  
4 **losses?**

5 **A.** The Company is aware that there are areas of the steam system that are losing heat due to  
6 failed insulation systems, but currently has no way of rating these locations in terms of  
7 which ones are bad enough to require repair or which areas need to be repaired first.  
8 Presently the Company will excavate a section of line if a leak or line failure is suspected,  
9 usually by visual indications of steam coming up from the ground. When the section of  
10 line is opened, and the steam line is repaired, the insulation system for that section is  
11 repaired or upgraded at that time.

12 With the remaining funds plus what ever additional subsidy grants the Company might  
13 receive from the new BCAP program which may commence in October 2010, the  
14 Company would reinsulate and repair the worst of the pipe insulation systems identified  
15 in the study. The methods and techniques of reinsulation/repair/upgrade to the existing  
16 pipe insulation system would depend on the type of insulation system involved.

17 **Q. Please describe the types of pipe insulation in the Company's distribution system.**

18  
19 **A.** There are four general types of steam lines insulation systems in service on our steam  
20 distribution system. These insulation systems have changed as technology and laws  
21 changed since the original steam system was installed in 1938.

22 1938 – 1960's (Asbestos insulation on the pipe, generally installed inside a terracotta or  
23 concrete pipe vault): This system is very stable and generally does a good job, although  
24 if other excavation is done near the terracotta, the tile tends to break and allow ground  
25 water into the duct. The method used to upgrade and repair of this type of system will  
26 depend on the condition of the tile/concrete pipe chase and the amount of space around  
27 the existing insulation. The best method would be to inject a high temperature expanding

1 foam between the asbestos and the inside of the pipe chase. This encapsulates the  
2 Asbestos and significantly improves the thermal insulation.

3  
4 1960's – 1980 (Protexulate and Wicolite): This is a loose bagged material that was  
5 poured over the steam line in the dirt trench. Over time, the material degrades and shifts,  
6 exposing the piping to soil. In some situations, the insulation causes the piping to bow  
7 and bend, causing operational problems of pooling of condensate. The only reasonable  
8 solution to upgrading this type of pipe insulation, depending on the size of the carrying  
9 pipe, is to either excavate the length of the line and reinsulate with Foamglas, or replace  
10 the carrying pipe entirely with a preinsulated, prefabricated system.

11  
12 1980 – 1990 (Ricwil): Ricwil is a system that encases fiberglass pipe insulation inside a  
13 larger lightweight steel pipe. This comes factory assembled in 20 – 40 foot long pieces.  
14 The Company has had problems with this system when the outside protective steel pipe  
15 rusts and provides a hole for groundwater to enter the casing. The water causes the  
16 insulation to deteriorate and make it lose effectiveness. The best method for insulation  
17 repair would be to inject a high temperature expanding foam between the fiberglass  
18 insulation and the inside of the steel casing pipe. This encloses and seals the fiberglass  
19 and significantly improves the thermal insulation. However there may not be enough  
20 space between the existing fiberglass and the casing for this to work in all cases. If the  
21 conditions call for another approach, the entire pipe can be encased with an extra external  
22 casing and the expanding foam placed into that air space, or sections of the existing  
23 casing and insulation can be removed and reinsulated with Foamglas.

24  
25 1990 – present (Foamglas with a Pittwrap cover, directly buried): This is a closed cell  
26 foam made from silica and glass. It is water proof and does not deteriorate over time. It  
27 can fail when sections of pipe have been stressed and caused to shift with very large  
28 amounts of ground water. However, the Company has found this to be very stable and  
29 long lasting, and is easy to patch in pieces to match with the other existing insulation  
30 systems. When installing new long piping runs such as the steam line to the Rundlett  
31 school, the Company is now using a pre-insulated piping system similar to the old Ricwil  
32 system. The new system has a Foamglas inner insulation layer, an air gap, a light gauge  
33 steel casing, a layer of high temperature polyurethane foam, and an outer PVC casing.

34  
35 Depending on the type of piping system and its condition, the Company would repair  
36 sections of insulation using materials and techniques as conditions call for. The  
37 Company expects to improve the quality of the insulation and measurably reduce system  
38 line loss with these steps and with the help of the thermal imaging equipment and meters  
39 to identify the sections in most need of upgrade. Specifically, the Company projects that  
40 it will reduce system losses by 5% within the first year, and continue to improve the

1 system from there.

2 **Q. What is the benefit to customers of the allocation of funds in this manner in lieu of a**  
3 **one-time reduction to its cost of energy?**

4 A. If this proposal results in a reduction of line loss of 5%, the customers will see a  
5 reduction in energy costs of almost \$40,000/yr, with a simple payback of less than 2.5  
6 years. If the study results in a reduction of 12% of line loss, the program will save over  
7 \$95,000/yr, paying back the invested funds in less than a year. This is detailed in  
8 Schedule 10.

9 **Q. What happens if the Company starts this program but does not receive further**  
10 **funding from the Farm Service Agency?**

11 A. The equipment and baseline data will still be of critical use in maintaining the steam  
12 system. If no further funds are received, then major overhaul and repairs to the insulation  
13 systems will need to be postponed until cash flow allows for the system upgrades.

14 **Q. Why doesn't the Company purchase the necessary equipment and fund the labor**  
15 **costs to begin these improvements?**

16 A. The Company does not have excess capital (or access to no-cost capital) to otherwise  
17 fund this project. The receipt of the Farm Service Agency funds has provided a unique  
18 opportunity to the Company to make necessary upgrades to its steam system without  
19 incurring the costs of borrowing capital to do so.

20 **Q. If the Company were to credit customers for the Farm Service Agency subsidy, how**  
21 **would that affect the rates being charged for the upcoming 2010/2011 heating**  
22 **season?**

23 A. The Company has revised Schedule 1 from its September 10 filing to reflect the impact

1 of the application of the subsidy to the reconciliation of the prior year's fuel costs. As  
2 reflected on this schedule, this would result in an approximate \$0.67/Mlb or a 4%  
3 reduction in energy cost or a 1.9% reduction in total steam cost, including base rate.  
4 Given the significant benefit that would be achieved by reducing line losses on the  
5 Company's system, the Company believes that use of the funds for distribution system  
6 losses is reasonable and in the public interest.

7 **Q. Does this conclude your supplemental direct testimony?**

8 A. Yes, it does.

**Concord Steam Corporation  
Cost Of Energy (COE)**

**DG 10 -242  
Schedule 1  
rev 9/27**

	Projected Steam Sales Mlbs	Projected Fuel Use MMBtu	\$/Mlb	Steam Revenue Energy	Cost of Energy	Projected Over/Under Collection
Nov-10	15,221	50,776	\$ 15.97	\$ 243,120	\$ 239,467	\$ 3,654
Dec-10	24,500	68,091	15.97	\$ 391,340	\$ 306,815	\$ 84,525
Jan-11	27,561	70,048	15.97	\$ 440,242	\$ 342,885	\$ 97,356
Feb-11	26,303	68,156	15.97	\$ 420,146	\$ 336,729	\$ 83,418
Mar-11	19,795	66,735	15.97	\$ 316,183	\$ 319,463	\$ (3,281)
Apr-11	10,140	43,334	15.97	\$ 161,970	\$ 208,596	\$ (46,626)
May-11	4,216	28,651	15.97	\$ 67,339	\$ 128,796	\$ (61,457)
Jun-11	1,709	20,251	15.97	\$ 27,298	\$ 87,718	\$ (60,420)
Jul-11	931	20,700	15.97	\$ 14,871	\$ 88,710	\$ (73,839)
Aug-11	889	20,300	15.97	\$ 14,200	\$ 85,054	\$ (70,854)
Sep-11	1,626	21,904	15.97	\$ 25,972	\$ 91,522	\$ (65,550)
Oct-11	9,509	31,488	15.97	\$ 151,888	\$ 143,388	\$ 8,500
<b>TOTAL</b>	<b>142,399</b>	<b>510,434</b>		<b>2,274,570</b>	<b>\$ 2,379,143</b>	<b>(104,573)</b>

Subsidy from BCAP program \$ 94,699  
Over collection from previous year 9,874

**Energy Charge with BCAP - \$ per Mlb** \$ 15.97  
Total of Cost of Energy Charge 2,274,570

**Energy Charge without BCAP- \$ per Mlb** \$ 16.64  
Total of Cost of Energy Charge 2,369,269

Average COE charge for last year \$ 17.83  
Percent reduction from last year with BCAP 10.4%  
Percent reduction from last year without BCAP 6.7%

**Concord Steam Corporation  
Cost Of Energy (COE)**

**DG 10 -242  
Schedule 9**

BCAP grant  
Energy efficiency study

System thermal heat loss analysis and setting of baseline

**Materials**

Thermal imager camera				\$ 10,000
Condensate meter				\$ 3,500
Instrumentation				\$ 1,000
Condensate reciever/pump				\$ 3,500
Pipe, fittings, misc.				\$ 800
Main line steam flow meter				\$ 10,000
			Subtotal	\$ 28,800

**Labor**

	hours	rate	total	
Engineering				
Modify and upgrade Autocad system map to integrate with thermal data base.	200	30	\$ 6,000	
Establish procedures and schedule of sections to investigate	50	30	\$ 1,500	
Field work	500	30	\$ 15,000	
			Subtotal	\$ 22,500
Mechanics/pipefitter				
(Assume installation and removal of condensate meter 5 times)				
Install temporary high temp condensate meter in manholes	40	45	\$ 1,800	
Install condensate receiver/pump	40	45	\$ 1,800	
Install main line steam flow meter	12	45	\$ 540	
			Subtotal	\$ 4,140

**TOTAL** \$ 55,440

**Concord Steam Corporation  
Cost Of Energy (COE)**

**DG 10 -242  
Schedule 10**

		Mlbs
2009		
Total Steam generated		277,857
Line loss (Unaccounted for)		90,992
Used in plant		50,865
Steam sold		136,001
Estimated line loss reduction	5%	4,550
Percent of total generation		1.6%
Projected COE for 2011		\$ 2,264,696
Amount of BCAP subsidy	\$	94,699
Projected annual savings in COE	\$	37,082
# years payback		2.55
ROI		39%

**Concord Steam Corporation**  
**Cost of Energy (COE) DG 10-242**  
**2010-11**  
**Summary**

	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11
<b>Revenue:</b>	\$ 233,708	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Cost of Energy:</b>	\$ 214,313	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Over/(Under) Collection:</b>												
Beginning Balance	\$ 12,335	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Current Month	\$ 19,395	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ending Balance	\$ 31,730	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

\*Adjusted Annual Purchased fuel costs: \$ 2,353,990  
 \*Adjusted Annual Revenue requirement: \$ 2,341,655  
**\*Adjusted Annual Revenue stream: \$ 2,349,961**

Monthly Projection of Year-End <b>Over/(under) Collection:</b>	\$ 8,306	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
---	----------	------	------	------	------	------	------	------	------	------	------	------

**Current COE Year-End Projection:**

Purchased fuel costs: \$ 2,353,990  
**REVISED Over/(Under) Collection: \$ 12,335 (COE final 2009-10 reconciliation report)**  
 Revenue requirement: \$ 2,341,655  
  
**Revenue stream: \$ 2,349,961**  
  
 Over/(under) collection: \$ 8,306

\*Adjusted costs, revenues and requirements (lines A19 - A21) are representing the annual projection of each line item adjusted for the current and previous months actual fuel costs and revenues

Concord Steam Company  
 Cost of Energy (COE) DG 10-242  
 2010-11  
 Revenue Summary

	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11
Actual Mlbs. Sold	14,045	-	-	-	-	-	-	-	-	-	-	-
Actual Rate Per Mlb.	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64	\$ 16.64
Actual Extended Revenues	\$ 233,708	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Projected Mlbs. and Revenues:

	Projected Mlbs.	Rate per Mlb.	Projected Revenue \$
Nov-10	15,221	\$ 16.64	\$ 253,269
Dec-10	24,500	\$ 16.64	\$ 407,677
Jan-11	27,561	\$ 16.64	\$ 458,619
Feb-11	26,303	\$ 16.64	\$ 437,685
Mar-11	19,795	\$ 16.64	\$ 329,382
Apr-11	10,140	\$ 16.64	\$ 168,732
May-11	4,216	\$ 16.64	\$ 70,150
Jun-11	1,709	\$ 16.64	\$ 28,438
Jul-11	931	\$ 16.64	\$ 15,492
Aug-11	889	\$ 16.64	\$ 14,793
Sep-11	1,626	\$ 16.64	\$ 27,057
Oct-11	9,509	\$ 16.64	\$ 158,229
<b>Total</b>	<b>142,399</b>	<b>\$ 16.64</b>	<b>\$ 2,369,522</b>

Projected/Adjusted Mlbs. and Projected/Adjusted Revenues:

	Adjusted Mlbs.	Rate per Mlb.	Adjusted Revenue \$
Nov-10	14,045	\$ 16.64	\$ 233,708
Dec-10	24,500	\$ 16.64	\$ 407,677
Jan-11	27,561	\$ 16.64	\$ 458,619
Feb-11	26,303	\$ 16.64	\$ 437,685
Mar-11	19,795	\$ 16.64	\$ 329,382
Apr-11	10,140	\$ 16.64	\$ 168,732
May-11	4,216	\$ 16.64	\$ 70,150
Jun-11	1,709	\$ 16.64	\$ 28,438
Jul-11	931	\$ 16.64	\$ 15,492
Aug-11	889	\$ 16.64	\$ 14,793
Sep-11	1,626	\$ 16.64	\$ 27,057
Oct-11	9,509	\$ 16.64	\$ 158,229
<b>Total</b>	<b>141,224</b>	<b>\$ 16.64</b>	<b>\$ 2,349,961</b>

Concord Steam Corporation  
 Cost of Energy (COE) DG 10-242  
 2010-11  
 Purchased Fuel Costs

	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11
Cost of Energy	\$ 214,313	\$ 306,815	\$ 342,885	\$ 336,729	\$ 319,463	\$ 208,596	\$ 128,796	\$ 87,718	\$ 88,710	\$ 85,054	\$ 91,522	\$ 143,388

Actual MMBtu's and Cost:

	Actual MMBtu's				Actual Costs				Projected/Actual Costs			
	Nat. Gas	Waste + #6	Wood	Total	Nat. Gas	Waste + #6	Wood	Total	Nat. Gas	Waste + #6	Wood	Total
Nov-10	10,513	257	29,503	40,272	\$ 86,574	\$ 2,013	\$ 125,726	\$ 214,313	\$ 86,574	\$ 2,013	\$ 125,726	\$ 214,313
Dec-10									\$ 81,066	\$ 9,811	\$ 215,938	\$ 306,815
Jan-11									\$ 96,630	\$ 37,843	\$ 208,412	\$ 342,885
Feb-11									\$ 102,435	\$ 35,040	\$ 199,254	\$ 336,729
Mar-11									\$ 75,993	\$ 37,843	\$ 205,627	\$ 319,463
Apr-11									\$ 43,420	\$ 30,134	\$ 135,042	\$ 208,596
May-11									\$ 37,010	\$ 4,906	\$ 86,881	\$ 128,796
Jun-11									\$ 12,403	\$ 7,008	\$ 68,306	\$ 87,718
Jul-11									\$ 10,864	\$ 7,008	\$ 70,838	\$ 88,710
Aug-11									\$ 8,050	\$ 6,167	\$ 70,838	\$ 85,054
Sep-11									\$ 9,809	\$ 5,747	\$ 75,967	\$ 91,522
Oct-11									\$ 45,340	\$ 4,906	\$ 93,142	\$ 143,388
<b>Total</b>	<b>10,513</b>	<b>257</b>	<b>29,503</b>	<b>40,272</b>	<b>\$ 86,574</b>	<b>\$ 2,013</b>	<b>\$ 125,726</b>	<b>\$ 214,313</b>	<b>\$ 2,353,990</b>			

  

Actual mmbtu costs \$/MMBtu	\$ 8.24	\$ 7.85	\$ 4.26	\$ 5.32
therm	Bbl	Ton		
\$	0.82	\$ 48.10	\$ 36.22	

Projected MMBtu's and Cost:

	Projected MMBtu's						Projected Costs					
	Nat. Gas	Waste	#6 Resid	Waste+ #6	Wood	Total	Nat. Gas	Waste Oil	#6 Resid	Waste+ #6	Wood	Total
Nov-10	9,670	1,000		1,000	40,106	50,776	\$ 77,728	\$ 9,811	\$ -	\$ 9,811	\$ 151,928	\$ 239,467
Dec-10	10,087	1,000		1,000	57,004	68,091	\$ 81,066	\$ 9,811	\$ -	\$ 9,811	\$ 215,938	\$ 306,815
Jan-11	12,031	1,000	2,000	3,000	55,017	70,048	\$ 95,630	\$ 9,811	\$ 28,032	\$ 37,843	\$ 208,412	\$ 342,885
Feb-11	12,756	1,000	1,800	2,800	52,600	68,156	\$ 102,435	\$ 9,811	\$ 25,229	\$ 35,040	\$ 199,254	\$ 336,729
Mar-11	9,453	1,000	2,000	3,000	54,282	66,735	\$ 75,993	\$ 9,811	\$ 28,032	\$ 37,843	\$ 205,627	\$ 319,463
Apr-11	5,385	500	1,800	2,300	35,649	43,334	\$ 43,420	\$ 4,906	\$ 25,229	\$ 30,134	\$ 135,042	\$ 208,596
May-11	5,216	500	-	500	22,935	28,651	\$ 37,010	\$ 4,906	\$ -	\$ 4,906	\$ 86,881	\$ 128,796
Jun-11	1,719	0	500	500	18,032	20,251	\$ 12,403	\$ -	\$ 7,008	\$ 7,008	\$ 68,306	\$ 87,718
Jul-11	1,500	0	500	500	18,700	20,700	\$ 10,864	\$ -	\$ 7,008	\$ 7,008	\$ 70,838	\$ 88,710
Aug-11	1,100	200	300	500	18,700	20,300	\$ 8,050	\$ 1,962	\$ 4,205	\$ 6,167	\$ 70,838	\$ 85,054
Sep-11	1,350	300	200	500	20,054	21,904	\$ 9,809	\$ 2,943	\$ 2,803	\$ 5,747	\$ 75,967	\$ 91,522
Oct-11	6,400	500	-	500	24,588	31,488	\$ 45,340	\$ 4,906	\$ -	\$ 4,906	\$ 93,142	\$ 143,388
<b>Total</b>	<b>76,667</b>	<b>7,000</b>	<b>9,100</b>	<b>16,100</b>	<b>417,668</b>	<b>510,434</b>	<b>\$ 606,747</b>	<b>\$ 68,678</b>	<b>\$ 127,544</b>	<b>\$ 196,222</b>	<b>\$ 1,582,174</b>	<b>\$ 2,379,143</b>

  

Projected mmbtu costs \$/MMBtu	\$ 7.84	\$ 9.81	\$ 14.02	\$ 12.19	\$ 3.79	\$ 4.66
therm	Bbl	Bbl		Ton		
\$	0.78	\$ 62.79	\$ 89.70	\$ 74.71	\$ 32.20	

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**REQUEST:**

28. Ref. pg. 6, lines 8 – 9. Please provide all documents, studies or analyses you relied on in reaching your conclusion that wood prices will increase to over \$40 per ton as soon as Laidlaw begins stockpiling wood.

**RESPONSE:**

The conclusion is based on our experience in the market as purchasers of wood fuel and historical indicators as set forth in the attachments to my testimony. I did not rely on any documents, studies or analyses.

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**REQUEST:**

29. Ref. pg. 6 line 16, you testify that “Concord Steam expects that the increase in fuel demand caused by Laidlaw will increase the cost of wood to Concord Steam by at least 50% and possibly as much as 100%.” Did CSC prepare, or have prepared on it behalf, any studies that support these expected price increases? If so, please supply copies of all such studies.

**OBJECTION:** See Concord Steam’s Objection to Request 10.

**RESPONSE:**

No. See Response to Request 28.

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**REQUEST:**

30. Please provide any and all wholesale market energy price projections and natural gas price projections in the possession of CSC that are not older than 1/1/2008.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation projects natural gas prices as a part of its Cost of Energy filing at the PUC each year to which reference should be made. Concord Steam's most recent cost energy filing is provided in response to PSNH Request No. 27.

Concord Steam Corporation does not have any additional information responsive to this request.

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**REQUEST:**

31. Please provide any and all Forward Capacity Market (FCM) price projections in the possession of CSC that are not older than 1/1/2008.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation does not have any of this information.

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**REQUEST:**

32. Please provide any and all renewable energy certificate (REC) price projections in the possession of CSC that are not older than 1/1/2008.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation does not have any of this information.

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**REQUEST:**

33. Please provide copies of all offers, counter offers, proposals, bids, etc. that are not older than 1/1/2008 made by CSC for the sale of energy, capacity and RECs from its present facility, or from its proposed new facility.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation did not make any offers, counter offers, proposals or bids for the sale of energy, capacity or RECs. See my responses to PSNH 27 and 43.

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**REQUEST:**

35. Please provide any and all wood price projections in the possession of CSC that are not older than 1/1/2008.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation projects wood fuel prices as a part of its Cost of Energy filing at the PUC each year to which reference should be made.

See Concord Steam Corporation's Response to PSNH Request No. 27.

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**REQUEST:**

36. Please provide any estimates or forecast prices of Massachusetts, Connecticut or Rhode Island Class I RECs in the possession of CSC that are not older than 1/1/2008.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation does not have any of this information.

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**REQUEST:**

37. Provide copies of the models or other analyses or studies and all documents utilized or relied upon by CSC in development of its offer to PSNH contained in the term sheet referenced and attached to Mr. Dalton's testimony, including but not limited to, models, forecasts and analyses of the electric, capacity, fuel and REC markets.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation does not have any of this information. Concord Steam Corporation did not make any offer to PSNH.

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**REQUEST:**

39. Ref. pg. 8, line 19. Please provide a list of the wood-fired IPPs in New Hampshire who have a power sale contract in place for 2011.

**OBJECTION:** Concord Steam objects to this request on the grounds that this request calls for documents or information beyond Concord Steam's knowledge or control.

**RESPONSE:**

Concord Steam Corporation is not privy to the contractual relationships enjoyed by the IPPs and any knowledge it may have concerning power sales contracts is anecdotal. According to its Response to OCA-003, PSNH had long-term PPAs with Bethlehem and Tamworth, both of which expire in December 2010 and a short-term agreement with Alexandria. It is our understanding that, with these exceptions, the IPPS sell energy in the ISO-NE day ahead auctions.

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Witness: Mark Saltsman

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**REQUEST:**

40. Ref. pg. 8, line 19. For the IPPs identified in response to question 4, please describe why those IPPs were able to find a buyer for their output, while others have not.

**OBJECTION:** See Concord Steam's Objection to Request 39.

**RESPONSE:**

Concord Steam Corporation was not a party to these negotiations and is unaware of any such agreements. therefore, it is not able to answer this question.

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Witness: Mark Saltsman

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**REQUEST:**

43. Ref. pg. 12, line 8, the testimony describes a price level in which it is uneconomical for Concord Steam to run on wood. What are the assumptions on future wood pricing used to assess the decision to expand the size of the current facility?

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Steam Corporation is not expanding its facility. The new facility will be owned and operated by Concord Power and Steam, LLC, that is a distinct legal entity under an agreement approved by the Commission in Docket No. DG 08-107 (see attached).

Concord Power and Steam, LLC's wood pricing assumptions, its equity partners and other financial documents are confidential.

Concord Steam Corporation has provided a cost benefit analysis concerning the use of wood fuel in response to PSNH Request No. 27.

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Witness: Mark Saltsman

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**REQUEST:**

52. Why does Concord Power and Steam seek a 20 year fixed price long-term PPA from PSNH?

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

Concord Power and Steam, LLC is not a party to this Docket. See Responses to Requests 27 and 43. Concord Steam Corporation does not purport to represent Concord Power and Steam's interests or to speak on its behalf. Concord Steam Corporation intervened because of its concerns about the impact of the PPA on wood prices and the effect on its ratepayers.

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Witness: Mark Saltsman

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**REQUEST:**

53. Referencing the Term Sheet for Purchase of Power for Concord Power & Steam provided in John Dalton's testimony, did Concord Power and Steam have any knowledge of the Laidlaw PPA at the time it submitted its proposal?

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

To the best of my knowledge, the pricing terms of the Laidlaw PPA were not known until the Commission ordered them to be disclosed on November 12, 2010, long after CPS submitted its proposal to the PUC in July of 2009.

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**REQUEST:**

54. Referencing the Term Sheet for Purchase of Power for Concord Power & Steam provided in John Dalton's testimony, did Concord Power and Steam have any knowledge of any other proposals being submitted to PSNH at the time it submitted its proposal? If so, what level of knowledge was known?

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

It is my understanding that it was aware of the proposal of CPD.

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**REQUEST:**

55. Referencing the Term Sheet for Purchase of Power for Concord Power & Steam provided in John Dalton's testimony, please provide the names of companies that Concord Power and Steam provided bids to between 2008 and 2010 and the status of each of the bids.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

N/A.

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Date of Response: January 11, 2011

Witness: Mark Saltsman

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**REQUEST:**

56. Referencing the Term Sheet for Purchase of Power for Concord Power & Steam provided in John Dalton's testimony, why does Concord Power and Steam seek a 20 year fixed price long-term PPA from PSNH?

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

See Response to Request 52.

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Date of Response: January 11, 2011

Witness: Mark Saltsman

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**REQUEST:**

57. Referencing the Term Sheet for Purchase of Power for Concord Power & Steam provided in John Dalton's testimony, please provide the wood price forecast and assumptions used to develop the PPA proposal.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

N/A.

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Witness: Mark Saltsman

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**REQUEST:**

58. Referencing the Term Sheet for Purchase of Power for Concord Power & Steam provided in John Dalton's testimony, please provide the Class I REC market forecast and assumptions used to develop the PPA proposal.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

N/A.

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Witness: Mark Saltsman

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**RESPONSE:**

59. Referencing the Term Sheet for Purchase of Power for Concord Power & Steam provided in John Dalton's testimony, please provide the Forward Capacity Market forecast and assumptions used to develop the PPA proposal.

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

N/A.

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**REQUEST:**

60. What level of return on equity and internal rate of return is acceptable to Concord Power and Steam?

**OBJECTION:** See Concord Steam's Objection to Request 10.

**RESPONSE:**

N/A.