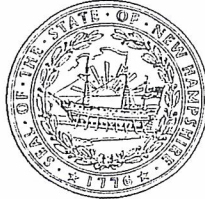


THE STATE OF NEW HAMPSHIRE

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ASSISTANT CONSUMER ADVOCATE
Kenneth E. Traum

Exhibit No. DE 10-195	OFFICE OF THE CONSUMER ADVOCATE
Witness K. Traum	21 S. FRUIT ST., SUITE 18
	CONCORD, NEW HAMPSHIRE 03301-2429
DO	OM FILE

January 20, 2011

Debra Howland
Executive Director & Secretary
New Hampshire Public Utilities Commission
21 S. Fruit Street, Suite 10
Concord, New Hampshire 03301-7319

RE: DE 10-195 PSNH

Petition for Approval of Power Purchase Agreement between PSNH
and Laidlaw Berlin BioPower, LLC; Revised OCA Public Testimony

Dear Ms. Howland:

Enclosed for filing please find an original and six copies of a public revised version of testimony of Kenneth E. Traum on behalf of the Office of Consumer Advocate (OCA), along with an Errata sheet explaining the changes. The revision to Mr. Traum's testimony is necessary as a result of a filing made on January 18, 2011 by PSNH in DE 10-257, PSNH's 2011 Energy Service Rate. In that filing, PSNH has released a figure related to the pricing of RECs which was included in Mr. Traum's testimony in the Laidlaw PPA case but was marked confidential. As a result, the full text of Mr. Traum's testimony is now public. We also now have a redacted version of Attachment KET-7 to Mr. Traum's testimony.

In addition, a confidential version of the testimony is still necessary due to other Attachments that still contain confidential information. We will file that version under separate cover.

This public version of the filing has been provided to the parties via email. Thank you for your assistance. Please do not hesitate to contact me if you require additional information.

Respectfully,

Meredith A. Hatfield
Consumer Advocate

cc: Service List via electronic mail



ERRATA SHEET

The following changes have been made to Direct Prefiled Testimony of Kenneth E. Traum on behalf of the OCA:

1. Page 5, line 22 replaced "confidential" with "redacted".
2. Page 5, line 23 replaced "Confidential" with "Redacted".
3. Page 6, line 1, removed "<<BEGIN CONFIDENTIAL".
4. Page 6, line 1, removed "END CONFIDENTIAL>>".
5. Page 6, line 1, "\$18.45" is now on line 2.
6. Attachment KET – 4, footnote (4), replaced "confidential" with "redacted".
7. Attachment KET – 7, replaced the original public version with the new public version from PSNH's filing dated January 18, 2011, response Staff 1-12 in DE 10-257.

BEFORE THE STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

In the matter of:)
DE 10-195)
Public Service Company of New Hampshire)
Petition for Approval of Power Purchase Agreement with)
Laidlaw Berlin BioPower, LLC)

Direct Prefiled Testimony

of

Kenneth E. Traum

on behalf of

the Office of the Consumer Advocate

Revised: January 20, 2011

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

2 A. My name is Kenneth E. Traum. I am employed as the Assistant Consumer Advocate
3 by the New Hampshire Office of the Consumer Advocate (OCA), which is located at
4 21 South Fruit Street, Suite 18, Concord, New Hampshire 03301. The OCA is
5 charged by RSA 363:28 with representing the interests of residential ratepayers in
6 cases before the New Hampshire Public Utilities Commission (Commission), as well
7 as in other forums.

8

9 **Q. How long have you been employed for the OCA?**

10 A: I have been employed by the OCA for approximately 21 years.

11

12 **Q: Is a summary of your experience attached to this testimony?**

13 A: Yes. Attachment KET - 1 is my résumé.

14

15 **Q: Have you previously testified before the Commission?**

16 A: Yes. I have testified before the Commission on behalf of the OCA on many
17 occasions in adjudicatory proceedings involving electric, natural gas, water, and
18 telecommunications utilities.

19

20 **Q: What is the purpose of your testimony in this case?**

21 A: The purpose of my testimony is to explain the OCA's recommendations with respect
22 to Public Service Company of New Hampshire's (PSNH's) request for approval of a
23 long term Purchase Power Agreement (PPA) with Laidlaw Berlin Bio Power, LLC
24 (Laidlaw). For the reasons discussed in my testimony, including the 20-year term of

1 the PPA, the over-market costs that result from the proposed pricing terms which
2 would be paid by PSNH's Default Energy Service (ES) customers, and the right of
3 first refusal to purchase the plant, the OCA recommends that the Commission reject
4 the PPA as proposed.

5
6 **Q: Please briefly describe PSNH's proposal in this case.**

7 **A:** On July 26, 2010 PSNH filed a petition under RSA 362-F:9 for approval of a long-
8 term PPA with Laidlaw. If approved, the PPA would require PSNH to purchase the
9 net output of Laidlaw's plant including energy, capacity, and NH Class 1 Renewable
10 Energy Certificates (RECs) for a term of 20 years, starting in 2014. Below I discuss
11 each aspect of the proposed PPA in detail.

12
13 **Q: Please begin with the energy pricing terms and briefly explain them.**

14 **A:** As described in Section 6.1.2(a) of the PPA, the base energy price is set at \$83/MWh.
15 This base energy price is subject to a quarterly adjustment, up or down, using a
16 "Wood Price Adjustment" or "WPA." The calculation of the WPA begins with the
17 difference between the actual average \$/ton that PSNH pays for Biomass Fuel at its
18 Schiller Station biomass unit,¹ and \$34/ton. The difference between the two amounts
19 is then multiplied by a factor of 1.8 and added to the base price. For example, if the
20 price that PSNH pays for wood at Schiller Station is \$40/ton, then the WPA would be
21 \$10.80. That amount would then be added to the \$83/MWh for a total cost of
22 \$93.80/MWh.

23
24

¹ Costs for biomass fuel at Schiller Station are paid by ratepayers who take PSNH's Default Energy Service through the Energy Service rate, which is set annually in a Commission proceeding.

1 **Q: Please describe the capacity terms of the PPA.**

2 A: As described in Section 6.1.2 (b) of the PPA, PSNH's Energy Service ratepayers will

3 also be required to purchase capacity from the facility at the rate of \$4.25/kW-month

4 of capacity for each of the first five operating years. For each subsequent operating

5 year, the capacity price would be increased by \$0.15 per kW-month.

6

7 **Q: Please turn now to the REC terms of the PPA, and briefly explain them.**

8 A: As described in Section 6.1.2 (c) of the PPA, for the first five years of the PPA,

9 PSNH's ES ratepayers will be required to purchase NH Class 1 RECs delivered to

10 PSNH equal to 80% of the then-applicable "Renewable Products Payment." The

11 "Renewable Products Payment" is defined in Section 1.57 of the PPA as the

12 Alternative Compliance Payment (ACP) pursuant to RSA 362-F:10, and updated by

13 the Commission annually. For years six through ten, the payment declines from 80%

14 of the applicable ACP to 75%. For years eleven through fifteen, the payment is based

15 on 70% of the applicable ACP, while for the remaining years the payment will be

16 based on 50% of the applicable ACP. As I discuss in more detail below, the current

17 market rate for NH Class 1 RECs is approximately 30% of ACP.

18

19 **Q: Have your reviewed the pricing terms of the PPA in order to assess how they**

20 **compare to market prices?**

21 A: Yes.

22

23 **Q: Are the pricing terms comparable to prices that PSNH would pay for energy**

24 **and capacity in the market?**

25 A: No. According to PSNH's base case forecast, the costs for energy, which ES

1 customers would pay, are above market for each of the 20 years of the PPA, for a
2 total of more than \$140 million. See Attachment KET-2 (PSNH's Response to Staff
3 01-011, Attachment 2) and Attachment KET-3 (PSNH's Response to Staff 01-011,
4 Attachment 3). The pricing terms for capacity are also above market for the first six
5 years of the PPA. See Attachment KET-2.

6
7 **Q: How do the REC pricing terms compare to market?**

8 **A:** PSNH did not forecast market prices for REC's, and instead assumed that the
9 percentage discounts of the ACP required in the PPA would reflect market prices.
10 See Attachment KET-3. Based on my own analysis, which I discuss in detail below,
11 the PPA is likely to result in REC payments that also exceed market prices.

12
13 **Q: Did you calculate the projected annual and cumulative over market costs for**
14 **energy that would result under the PPA?**

15 **A:** Yes. I calculated estimates of over market energy costs utilizing PSNH's base case
16 annual energy forecast, as well as their projected annual energy payments under the
17 PPA. I have provided my calculations in Attachment KET- 4. My calculations show
18 that under the PPA, PSNH's ES customers would pay approximately \$7 million over
19 market every year, or a total of \$144 million over the 20 year term of the PPA. This
20 result is consistent with PSNH's calculations. See Attachment KET- 3.

21
22 **Q: What does your analysis of capacity costs under the PPA show?**

23 **A:** Using PSNH's projections, for the first six years of the PPA Laidlaw would receive
24 payments that exceed market costs for capacity totaling \$6.3 million. See Attachment
25 KET-4. Starting in year seven, under PSNH's base case projections, the capacity

1 price under the PPA will be below market. Therefore, the net effect of the payments
2 for capacity over the term of the PPA, assuming that PSNH's forecast for capacity
3 prices is correct, result in the PPA capacity costs being \$11 million under market. It
4 is important to note, however, that forecasts generally tend to be less certain over
5 longer time periods, as I discuss later in this testimony.

6
7 **Q: Did you perform similar calculations to analyze the REC costs under the PPA?**

8 **A:** Yes. As I stated above, PSNH did not provide a forecast of REC prices but instead
9 used a percentage of ACP prices to project future REC costs under the PPA. In my
10 analysis I considered several data points, including the current ACP price for NH
11 Class 1 RECs, which is \$60.93 for 2010 pursuant to the Commission's update of the
12 ACP under RSA 362-F:10. I also reviewed an example of a recent market-based
13 transaction for RECs in order to determine the current relationship between ACP and
14 market prices for RECs. Specifically, I reviewed an October 14, 2010 press release
15 by a company called Evolution Markets² announcing the results of a recent auction
16 for University of New Hampshire 2010 and 2011 Class 1 RECs, which sold for
17 \$13.16 and \$18.90 per REC, respectively. See Attachment KET-5.

18
19 I also noted that in discovery, PSNH referenced 2012 Class 1 REC price forecasts in
20 Massachusetts of \$20/REC. See Attachment KET-6 (PSNH Response to Staff 06-
21 001). Finally, I considered recent REC pricing information provided by PSNH in a
22 redacted discovery response in the Company's 2011 Default Energy Service rate
23 proceeding, DE 10-257. See Attachment KET-7 (PSNH Redacted Response to Staff

² Evolution Markets is a trading firm that provides brokerage services for energy and environment products including RECs. See www.evomarkets.com.

1 01-012). In that response PSNH indicated that they were forecasting a market price
2 of \$18.45 for Class 1 RECs for 2011.

3
4 Under the current RPS pricing scheme, it is fair to assume a minimal increase in the
5 ACP for 2011, so that the ACP will be similar to the \$60.93 set by the Commission
6 for 2010. Using that amount, I then compared the market pricing information that I
7 discussed above and calculated that those recent market prices and forecasts show
8 that current market prices for Class 1 RECs in 2010 and 2011 are about 30% of the
9 ACP. Therefore, for the purposes of my analysis of how the REC prices in the PPA
10 compare to the market, I used amounts equal to 30% of the future ACPs over the life
11 of the PPA as a proxy for future REC market prices. In contrast, the percentages of
12 ACP specified in the PPA start at 80% in 2014 and drop to 50% over the term of the
13 PPA.

14
15 **Q: What does your analysis regarding the costs of RECs under the PPA suggest?**

16 **A:** Based on my assumptions for REC prices as described above, my analysis shows that
17 in Year 1 (2014) alone, the cost for RECs under the PPA would be more than \$14
18 million over market. See Attachment KET-4. If future REC prices continue to be
19 significantly below the ACP cost, Attachment KET-4 also shows that these over
20 market costs would continue for every year of the PPA, resulting in cumulative over
21 market payments for RECs that could be as high as \$276 million. I understand that it
22 is very difficult to forecast the future costs of RECs, and that my analysis may over or
23 understate the costs of RECs in the future. That said, the significant amounts over
24 market that ES customers could pay for energy alone is a sufficient basis to reject the
25 PPA as proposed, and the potential for over market REC costs makes it even riskier

1 for customers.

2

3 Also, as I discuss later in my testimony, the migration of PSNH's large customers
4 impacts the amount of RECs that PSNH is required to purchase. Consequently,
5 locking into REC purchases at a time when there are high levels of large customer
6 migration increases the risk that the PPA will result in the purchase of RECS that
7 PSNH may not even need.

8

9 **Q: What does your analysis indicate are the total over market costs that PSNH**
10 **customers could face under the PPA?**

11 A: In the first year of the PPA alone, Attachment KET-4 shows that ES customers would
12 pay as much as \$22 million over market for energy, capacity and RECs from
13 Laidlaw. Over the 20 year term of the PPA the over market payments could exceed
14 as much as \$400 million.

15

16 Forecasts generally tend to be less certain over longer time periods. Nevertheless,
17 because of the conservative nature of my calculations, I conclude that the risks to
18 PSNH's ES customers of substantial overpayment to Laidlaw far outweigh the
19 benefits of the PPA.

20

21 **Q. How are your calculations conservative?**

22 A. First, my analysis used PSNH's base-case which assumed net output of 58 MWhs
23 and capacity factor of 86%. According to Laidlaw's initial application to the Site
24 Evaluation Committee (SEC), Laidlaw was then projecting a net output of 64MWhs
25 and a 70 - 100% capacity factor. See Attachment KET-8 (Laidlaw Application to

1 Site Evaluation Committee, December 15, 2009, at p. 38 and 44). In addition, page
2 32 of the PPA itself states: "The facility will be designed to have a net electric output
3 at standard conditions of approximately 64 MW (winter) and 61 MW (summer)." If
4 my analysis had been based on output of approximately 61 - 64 MWhs as opposed to
5 58 MWhs, the cumulative over market payments included in ES rates would increase
6 by up to 10%, to approximately \$450 million.

7
8 My analysis is also conservative because I used PSNH's base energy price. To
9 calculate its base energy price, PSNH assumed a 2011 market energy price of
10 \$59.99/MWh (as shown in Attachment KET-3), and projected the later years to grow
11 from that price, so that in 2014 PSNH's base case market energy price is
12 \$66.63/MWh. However, in PSNH's 2011 Default Energy Service rate docket, DE
13 10-257, the Company used the amount of \$45.10 per MWh as the market figure for
14 2011, which is \$14.89 lower than the PSNH base case used for purposes of
15 calculating the over-market costs of the PPA. See Attachment KET-9 (PSNH
16 Response to Tech-01, Q-TS-04 in DE 10-257). If this difference in the market price
17 of energy were forecast to remain for the life of the PPA, then the over market
18 payments under the PPA would be increased by another \$130 million, to \$580
19 million.

20
21 In addition, a recent analysis of historical and forecasted Henry Hub spot market
22 prices for natural gas from 1990 to 2035 in 2008 dollars, prepared by the US
23 Department of Energy confirms that PSNH's base energy price is too high. See
24 Attachment KET-10 (Report # DOE/EIA-0383(2010), Figure 69). Natural gas prices,
25 which generally set the marginal electricity price in New England, have declined

1 significantly since PSNH developed its base energy price forecast in 2008. Further,
2 PSNH provided the Henry Hub Gas prices from August 14, 2008, which at that time
3 projected the 2011 price to be \$8.89/MMbtu. See Attachment KET-11, PSNH
4 Response to CSC 04-001, p.3). By comparison, PSNH's current estimate for the
5 2011 gas price to be below \$6.00/MMbtu. Attachment KET-9. This recent gas price
6 data supports my characterization of my forecast as conservative and increases my
7 confidence that my forecast appropriately depicts the risk resulting from the PPA of
8 substantial overpayment by PSNH ES customers.

9
10 **Q: Does PSNH propose to mitigate the above market payments that result from the**
11 **PPA?**

12 **A:** Yes, but PSNH's proposal is not effective in my view. PSNH proposes to create a
13 "cumulative reduction" mechanism by which a negative or positive adjustment will
14 be determined for each MWh of energy delivered under the PPA. See, e.g., Direct
15 Testimony of Richard C. Labrecque, p. 8, line 1, through p. 9, line 2. PSNH proposes
16 to aggregate these negative and positive adjustments over the 20 year term of the PPA
17 and, if the aggregate balance is negative, to use this quantity (i.e., the "Cumulative
18 Reduction") for the purposes of reducing the purchase price of the Project as
19 provided in the Purchase Option Agreement. Id. See also Section 6.1.3 of the PPA
20 (the cumulative reduction is a "Reduction of Facility Purchase Price for Over-Market
21 Energy Payments").

22
23 It is important to note that the cumulative reduction only applies to the over market
24 payments for energy, not those for capacity or RECs, and is only intended to reduce
25 the potential purchase price of the plant. In addition, PSNH does not propose to pay

1 ES customers interest on the over market costs under the cumulative reduction, which
2 I have estimated at \$4.7 million. See Attachment KET-4.

3
4 **Q: What is your concern with the cumulative reduction mechanism?**

5 **A:** Simply put, the cumulative reduction mechanism does not change the fact that
6 ratepayers are likely to pay hundreds of millions of dollars in over market energy
7 costs under the PPA, as it is currently structured, over its 20 year term. This alone
8 makes the PPA too risky for ES customers.

9
10 In addition, if the cumulative reduction provides any benefit, it is only a hypothetical
11 benefit that would accrue to future ratepayers, if PSNH seeks to purchase the plant, if
12 that purchase is found to be in the interest of ratepayers under a future regulatory
13 regime, and if the value of the plant exceeds the cumulative reduction amount. The
14 cumulative reduction does not compensate current ratepayers for the over market
15 energy costs that they will pay under the PPA. Consequently, there is not a
16 “matching” of those who pay the costs, and those who receive the benefits. As a
17 result, the cumulative reduction mechanism, at best, results in intergenerational cost
18 shifting and is therefore unfair to customers.

19
20 Finally, although I am not a lawyer, it is my understating that under RSA 374-F, the
21 state’s electric restructuring law, PSNH does not have the legal authority to purchase
22 the plant. Therefore, in order for customers to get any of the hypothetical benefits
23 from the cumulative reduction, the law must be changed. Importantly, the plant must
24 also still have value at least equal to the cumulative reduction when PSNH
25 hypothetically purchases the plant, which could be as late as 2033.

1 **Q:** Do you have any concerns regarding the Wood Price Adjustment Mechanism
2 (WPA)?

3 A: Yes. As I described earlier, the WPA would result in a quarterly adjustment equal to
4 the difference between the actual average \$/ton that PSNH pays for Biomass Fuel at
5 its Schiller Station biomass unit, and \$34/ton. The difference is then multiplied by a
6 factor of 1.8 and added to the base price of energy. The main concern that I have
7 with the structure of the WPA is that it is based on the prices that PSNH pays at its
8 own Schiller Station, rather than a true market-based price. This could cause wood
9 prices to be higher for ratepayers at both plants, as the Schiller plant has a limited
10 area from which to draw wood fuel, which may overlap with that of the proposed
11 Laidlaw facility. In addition, setting the WPA based on the wood price paid at
12 Schiller could generally put upward pressure on wood prices, which would impact the
13 costs passed on to ratepayers for energy produced at both plants. Therefore, we
14 believe that if a WPA is necessary, it should be designed to ensure that PSNH ES
15 customers benefit from the lowest wood prices possible.

16
17 **Q:** Please summarize the OCA's concerns about the proposed 20 year term of the
18 PPA.

19 A: First, we believe that locking into pricing that is not tied to market prices presents an
20 unacceptable level of risk for ES customers. In fact, in PSNH's 2010 Least Cost
21 Integrated Resource Plan (DE 10-261) filed on September 30, 2010, on page 19,
22 Section B.1, the Company acknowledges this. It states, "PSNH does not utilize long-
23 term forecasts greater than five years for financial and business planning purposes
24 because of uncertainty in the market and the inherent inaccuracy of forecasts." We
25 only have to remember the above-market costs of the old wood plant (IPP) rate orders

1 paid by ratepayers, as PSNH points out, as an illustration of why fixed-cost long term
2 contracts are generally not in the best interests of ratepayers. See Direct Testimony
3 of Richard C. Labrecque, page 9 (Bates page 098). PSNH also stated at the
4 prehearing conference in this proceeding that ratepayers have paid more than \$2
5 billion in over market costs for the IPP contracts. Therefore, we believe that any PPA
6 proposed by a utility should be more closely tied to market prices, such as the PPA
7 between PSNH and the Lempster Wind facility that was approved by the
8 Commission in 2009. The Lempster PPA, unlike the proposed Laidlaw PPA, is
9 based on pricing "that is calculated as a percentage of the ISO-NE energy price,
10 subject to a \$/MWh floor." Order No. 24,965 in DE 08-077 (May 12, 2009) at p. 7.³

11
12 Second, we believe that this PPA must be considered in the context of the significant
13 migration of large customers that PSNH is experiencing due to low market prices and
14 its management of its ES portfolio. As has been discussed at length in DE 10-160,
15 the Commission's investigation into PSNH's ES migration, as large customers
16 migrate to competitive suppliers, costs have shifted to smaller customers. Those who
17 now must shoulder the costs related to PSNH's decisions about how to generate and
18 purchase energy for its Default Energy Service are largely residential and small
19 business customers who do not in reality have retail competitive electric choice.

20

³ In its approval of the Lempster PPA, the Commission noted:

Energy and capacity pricing in the power purchase agreement are both established by reference to actual prices experienced in the ISO-NE market, therefore allowing PSNH to pay energy and capacity prices that align with movements of market prices. Regarding the energy floor price, we find that the inclusion of this pricing term, while providing income protection to Lempster Wind, does so at a price level that is significantly discounted from current market energy prices.

Order No. 24,965 in DE 08-077 (May 12, 2009) at p. 17 (emphasis added).

1 As shown in Attachment KET-12 (PSNH's Response to Staff 05-002), the percentage
2 of PSNH total retail load served by competitive suppliers reached an all time high of
3 33% in September 2010. This level of migration not only means that an increasingly
4 smaller group of ES customers will have to pay the above market costs of the PPA
5 under PSNH's proposal, but it also raises the question about PSNH's need for RECs
6 under RSA 362-F:9. To meet PSNH's current REC obligations, the Company has
7 stated in discovery that in 2014 and 2015 the Laidlaw RECs would cover more than
8 100% of PSNH's ES Class 1 REC requirement. See Attachment KET-13 (PSNH
9 Response to Staff 06-003). This means that in addition to paying over market prices
10 for the Laidlaw RECs, PSNH is buying RECs that it may not need.

11
12 **Q: Does the OCA have any other concerns about the PPA's potential impact on**
13 **customers?**

14 **A:** Yes, we have three additional concerns. First, in response to discovery, PSNH
15 acknowledged that it is possible under the PPA for Laidlaw to expand the facility,
16 which could increase the amount of over market payments by ES customers. See
17 Attachment KET-14 (PSNH Response to Staff 05-001). This means that the PPA
18 could be even more costly and more risky for customers.

19
20 Second, we are concerned that PSNH is not taking advantage of offers from other
21 renewable energy producers that could be at lower costs than Laidlaw. In response to
22 discovery, PSNH provided information about recent offers received from other
23 renewable energy plants who seek to sell their output to PSNH. In one response,
24 provided in Attachment KET-15 (PSNH Response to Staff 01-032-RV01,
25 Attachment 1 Revised), the Company provided information that compared offers

1 from Clean Power Development and Concord Steam to the Laidlaw PPA. In
2 addition, PSNH also provided confidential information in an updated discovery
3 response regarding proposals made by renewable energy developers since the time
4 that negotiations with Laidlaw began. See Attachment KET-16 (PSNH Confidential
5 Responses to Staff 1-017 RV01 and Staff 05-006 RV01). This information suggests
6 that other options exist that should be evaluated, and that it may be appropriate for
7 PSNH to utilize a competitive process, such as an RFP, for its REC and energy needs.

8
9 Finally, the proposed term of the PPA extends beyond the current RPS statute, RSA
10 362-F, which currently sets renewable portfolio standard requirements until 2025.
11 However, the PPA commits PSNH ES customers to purchasing RECs beyond the
12 period currently required, out to 2033. There is also the risk that the RPS statute
13 could be amended or repealed, which could make the RECs potentially worthless to
14 customers who would be locked into paying for them.

15
16 **Q: Please summarize your testimony.**

17 **A:** In summary, the OCA believes that the Commission must reject the PPA as proposed.
18 The pricing terms in the PPA are significantly above market, and could result in more
19 than \$400 million in over market payments by ratepayers between 2014 and 2033.
20 We also believe that the purported benefits of the “cumulative reduction” mechanism
21 are illusory at best, and if they do materialize through the required change in the
22 restructuring law, they will accrue only to future ratepayers and not to those who
23 would pay the over market costs required by the PPA. In sum, the risks of substantial
24 overpayment by PSNH ES customers under the PPA far outweigh any of the
25 purported benefits of long-term price stability and the hypothetical price reduction of

1 the plant many years from now.

2

3 We understand that there is a strong desire on the part of many to site a new wood to
4 energy plant in the North Country, and the OCA is certainly supportive of renewable
5 energy development. However, as proposed, the terms of the PPA expose PSNH's
6 ES ratepayers to undue risk and financial exposure.

7

8 **Q: Do you have any final comments?**

9 A: At this time the OCA has not been provided access to the confidential Site Evaluation
10 Committee (SEC) transcripts in Docket 2009-02, even in redacted form. Therefore,
11 we wish to reserve our rights regarding that information in the event that the
12 Commission considers it in making its determinations in this case.

Kenneth E. Traum Qualifications

My name is Kenneth E. Traum. I am the Assistant Consumer Advocate for the Office of Consumer Advocate (OCA). My business address is 21 S. Fruit Street, Suite 18, Concord, New Hampshire 03301. I have been affiliated with the OCA for approximately twenty one (21) years.

I received a B.S. in Mathematics from the University of New Hampshire in June, 1971, and an MBA from UNH in June, 1973. Upon graduation, I first worked as an accountant/auditor for a private contractor and then for the New Hampshire State Council on Aging, before going to the New Hampshire Public Utilities Commission (NHPUC) in February, 1976. At the NHPUC I started as an Accountant III, advanced to a PUC Examiner and later become Assistant Finance Director.

In my positions with the NHPUC, I was involved in all aspects of rate cases, assisted others in the preparation of testimony and presented direct testimony, conducted cross examination of witnesses, directed and participated in audits of utilities, and performed other duties as required. While employed at the NHPUC, I was a member of the NARUC Regulatory Studies Program at Michigan State.

In 1984, I left the NHPUC for Bay State Gas Company. With Bay State, I was involved in various aspects of financial analysis for Northern Utilities, Inc., Granite State Gas Transmission, Inc., and Bay State Gas Company, as well as regulatory activities with regard to Maine, New Hampshire, Massachusetts and the FERC.

In early 1986, I returned to New Hampshire to join the EnergyNorth companies, where my areas of responsibility included cash management, regulatory affairs, forecasting and other financial matters. While with EnergyNorth, I was a member of the New England Utility Rate Forum and the New England Gas Association. I also represented the utility, which is the largest natural gas utility in New Hampshire, over a two year period in the generic Commission docket (DE 86-208) which developed a methodology for conducting gas marginal cost studies.

In 1989 I joined the Office of Consumer Advocate with overall responsibility for advising the Consumer Advocate and its Advisory Board on all Financial, Accounting, Economic and Rate Design issues which arise in the course of utility ratemaking or cases concerning determinations of revenue responsibility, competition, mergers, acquisitions and supply/demand issues. I assist the Consumer Advocate and the OCA Advisory Board in formulating policy, and in implementation of that policy. In that role, I have testified before the NHPUC on many occasions. In early 2005, I was promoted to Assistant Consumer Advocate.

I am a member of the NASUCA (National Association of State Utility Consumer Advocates), Committees on Electricity and Gas. I am currently on the Board of Directors for Granite State Independent Living (GSIL) and formerly served as Chair as well as a member on the GSIL's Finance and Audit Committees.

REC Market (% of ACP)																Attachment					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Base Case																					
100% Market Energy Price (\$/MWh)	\$69.63	\$86.60	\$69.32	\$70.06	\$71.92	\$73.80	\$75.67	\$77.53	\$79.37	\$81.38	\$83.43	\$85.54	\$87.70	\$89.92	\$92.19	\$94.52	\$96.91	\$99.33	\$101.82	\$104.36	
100% REC Capacity Price (\$/KW-Mo)	\$2.80	\$2.80	\$1.75	\$1.64	\$3.21	\$4.29	\$4.78	\$5.35	\$5.95	\$6.49	\$7.05	\$7.36	\$7.52	\$7.66	\$7.82	\$8.02	\$8.22	\$8.43	\$8.64	\$8.85	
80% REC Alternative Compliance Price (\$/MWh)	\$67.26	\$88.94	\$70.66	\$72.43	\$74.24	\$76.09	\$78.00	\$79.95	\$81.94	\$83.99	\$86.09	\$88.24	\$90.45	\$92.71	\$95.03	\$97.41	\$99.84	\$102.34	\$104.90	\$107.52	
All-in Mkt Price (\$/MWh) at 80%CF	\$125.23	\$126.55	\$127.85	\$130.81	\$136.61	\$142.02	\$146.27	\$150.65	\$155.11	\$159.68	\$164.38	\$169.74	\$172.94	\$177.21	\$181.61	\$186.18	\$190.86	\$195.63	\$200.52	\$205.53	
High Market Case																					
120% Market Energy Price (\$/MWh)	\$79.92	\$91.99	\$94.07	\$96.31	\$98.66	\$101.00	\$103.40	\$105.84	\$108.32	\$110.84	\$113.40	\$116.00	\$118.64	\$121.32	\$124.04	\$126.80	\$129.60	\$132.44	\$135.32	\$138.24	
100% Market Capacity Price (\$/KW-Mo)	\$2.80	\$2.80	\$1.75	\$1.64	\$3.21	\$4.29	\$4.78	\$5.35	\$5.95	\$6.49	\$7.05	\$7.36	\$7.52	\$7.66	\$7.82	\$8.02	\$8.22	\$8.43	\$8.64	\$8.85	
100% REC Alternative Compliance Price (\$/MWh)	\$81.26	\$88.94	\$70.66	\$72.43	\$74.24	\$76.09	\$78.00	\$79.95	\$81.94	\$83.99	\$86.09	\$88.24	\$90.45	\$92.71	\$95.03	\$97.41	\$99.84	\$102.34	\$104.90	\$107.52	
All-in Mkt Price (\$/MWh) at 80%CF	\$152.01	\$153.65	\$155.65	\$159.30	\$166.04	\$171.99	\$177.00	\$182.14	\$187.38	\$192.76	\$198.28	\$203.50	\$208.57	\$213.73	\$219.05	\$224.56	\$230.21	\$235.96	\$241.86	\$247.91	
Low Market Case																					
80% Market Energy Price (\$/MWh)	\$53.31	\$53.28	\$54.66	\$56.05	\$57.54	\$59.04	\$60.53	\$62.03	\$63.50	\$65.10	\$66.75	\$68.43	\$70.16	\$71.94	\$73.75	\$75.62	\$77.53	\$79.47	\$81.45	\$83.49	
100% Market Capacity Price (\$/KW-Mo)	\$2.80	\$2.80	\$1.75	\$1.64	\$3.21	\$4.29	\$4.78	\$5.35	\$5.95	\$6.49	\$7.05	\$7.36	\$7.52	\$7.66	\$7.82	\$8.02	\$8.22	\$8.43	\$8.64	\$8.85	
50% REC Alternative Compliance Price (\$/MWh)	\$67.26	\$68.94	\$70.66	\$72.43	\$74.24	\$76.09	\$78.00	\$79.95	\$81.94	\$83.99	\$86.09	\$88.24	\$90.45	\$92.71	\$95.03	\$97.41	\$99.84	\$102.34	\$104.90	\$107.52	
All-in Mkt Price (\$/MWh) at 80%CF	\$91.73	\$92.54	\$92.99	\$95.07	\$100.15	\$104.43	\$107.73	\$111.15	\$114.66	\$118.21	\$121.86	\$125.16	\$128.26	\$131.41	\$134.66	\$138.05	\$141.52	\$145.06	\$148.69	\$152.41	
Contract Payment																					
Contract Energy Payment (\$/MWh)	\$93.00	\$84.53	\$86.10	\$87.71	\$89.35	\$91.04	\$92.77	\$94.55	\$96.37	\$98.23	\$100.14	\$102.10	\$104.11	\$106.16	\$108.27	\$110.44	\$112.65	\$114.92	\$117.25	\$119.64	
Contract Capacity Payment (\$/KW-Mo)	\$4.25	\$4.25	\$4.25	\$4.25	\$4.25	\$4.40	\$4.55	\$4.70	\$4.85	\$5.00	\$5.15	\$5.30	\$5.45	\$5.60	\$5.75	\$5.90	\$6.05	\$6.20	\$6.35	\$6.50	
Contract REC Payment (\$/MWh)	\$7.28	\$7.28	\$7.28	\$7.28	\$7.28	\$7.53	\$7.79	\$8.05	\$8.30	\$8.56	\$8.82	\$9.08	\$9.33	\$9.59	\$9.85	\$10.10	\$10.36	\$10.62	\$10.87	\$11.13	
All-in Contract Price (\$/MWh) at 80%CF	\$144.08	\$146.98	\$149.50	\$152.92	\$156.02	\$159.07	\$162.06	\$165.06	\$168.13	\$171.29	\$174.52	\$177.77	\$181.00	\$184.29	\$187.64	\$191.04	\$194.49	\$197.98	\$201.47	\$204.95	

Assumptions		
Net MWs	58	
Capacity Factor	85%	
Expected Annual MWhs	431,868	
Base Energy Price (\$/MWh)	\$83.00	
Base Wood Cost (\$/ton)	\$34.00	
Fixed Fuel Factor (Tons/MWh)	1.80	
2012 Energy Margin	\$22	
2012 Rec Rate	\$63.05	
2012 Capacity	\$1.25	
Inflation Index	2.50%	
Starting O&M	\$6,000,000	
Starting Variable Costs	\$2,979,889	

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Attachment 3

DE 10-195 PSNH Laidlaw PPA
OCA Testimony of Traum
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[illegible]

DE 10-195 PSNH Laidlaw PPA
OCA Testimony of Traum
Attachment KET -3

Laidlaw Arrangement
20-year Option

Assumptions		Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17
		Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case
Net MWs	Time Period	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capacity Factor	Actual Schiller Wood Cost (\$/Ton)	7	8	9	10	11	12	13	14	15	16	17
Expected Annual MWhs	Capacity Payment (\$/kW-Mo)	\$39.43	\$40.42	\$41.43	\$42.46	\$43.52	\$44.61	\$45.73	\$46.87	\$48.04	\$49.24	\$50.47
Base Energy Price (\$/MWh)	Class 1 Alternative Compliance Price (\$/Ton)	\$4.55	\$4.70	\$4.85	\$5.00	\$5.15	\$5.30	\$5.45	\$5.60	\$5.75	\$5.90	\$6.05
Base Wood Cost (\$/ton)	REC Adjustment (PSNH Option)	\$78.00	\$79.95	\$81.94	\$83.99	\$86.09	\$88.24	\$90.45	\$92.71	\$95.03	\$97.41	\$99.84
Fixed Fuel Factor (Tons/MWh)	CPI Adjustment	75%	75%	75%	75%	70%	70%	70%	70%	70%	50%	50%
2012 Energy Margin	Market Energy Price (\$/MWh)	115.00%	117.50%	120.00%	122.50%	125.00%	127.50%	130.00%	132.50%	135.00%	137.50%	140.00%
2012 Rec Rate	Market Capacity Price (\$/kW-Mo)	\$75.67	\$77.53	\$79.37	\$81.38	\$83.43	\$85.54	\$87.70	\$89.92	\$92.19	\$94.52	\$96.91
2012 Capacity	Adjusted Basis Price (\$/MWh)	\$4.79	\$5.35	\$5.95	\$6.49	\$7.05	\$7.36	\$7.52	\$7.66	\$7.82	\$8.02	\$8.22
Inflation Index	Over Market Value	\$92.77	\$94.55	\$96.37	\$98.23	\$100.14	\$102.10	\$104.11	\$106.16	\$108.27	\$110.44	\$112.65
Starting O&M	Cumulative Reduction Value	(\$7,357,413)	(\$7,348,792)	(\$7,340,289)	(\$7,279,078)	(\$7,216,101)	(\$7,151,308)	(\$7,084,844)	(\$7,016,060)	(\$6,945,500)	(\$6,872,909)	(\$6,798,229)
Starting Variable Costs	Buyout Value of Plant	(\$59,820,230)	(\$59,820,230)	(\$67,160,520)	(\$74,439,598)	(\$81,655,699)	(\$88,807,005)	(\$95,881,849)	(\$102,907,709)	(\$109,853,209)	(\$116,726,118)	(\$123,524,347)
Revenue		\$ 68,495,429	\$ 69,997,677	\$ 71,534,871	\$ 73,107,885	\$ 74,718,594	\$ 76,368,800	\$ 78,057,769	\$ 79,787,416	\$ 81,561,868	\$ 83,387,233	\$ 85,261,528
Capacity		\$ 3,166,800	\$ 3,271,200	\$ 3,375,600	\$ 3,480,000	\$ 3,584,400	\$ 3,688,800	\$ 3,793,200	\$ 3,897,600	\$ 4,002,000	\$ 4,106,400	\$ 4,210,800
Energy		\$ 40,065,792	\$ 40,892,069	\$ 41,617,503	\$ 42,422,572	\$ 43,247,769	\$ 44,093,595	\$ 44,960,367	\$ 45,849,213	\$ 46,760,075	\$ 47,693,709	\$ 48,650,683
RECs		\$ 25,262,837	\$ 25,894,408	\$ 26,541,768	\$ 27,205,312	\$ 27,886,416	\$ 28,583,872	\$ 29,297,076	\$ 30,026,033	\$ 30,770,753	\$ 31,531,244	\$ 32,307,615
Expenses		\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000
Lease Payment		\$ 6,900,000	\$ 7,050,000	\$ 7,200,000	\$ 7,350,000	\$ 7,500,000	\$ 7,650,000	\$ 7,800,000	\$ 7,950,000	\$ 8,100,000	\$ 8,250,000	\$ 8,400,000
Fixed O&M		\$ 3,426,873	\$ 3,501,370	\$ 3,575,867	\$ 3,650,364	\$ 3,724,862	\$ 3,799,359	\$ 3,873,856	\$ 3,948,353	\$ 4,022,850	\$ 4,097,348	\$ 4,171,845
Variable O&M		\$ 30,651,070	\$ 31,417,347	\$ 32,202,780	\$ 33,007,550	\$ 33,833,046	\$ 34,678,872	\$ 35,545,844	\$ 36,434,490	\$ 37,345,353	\$ 38,278,966	\$ 39,235,961
Fuel Costs		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NADCO Royalty Payment		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Management Fee		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses		\$ 60,977,943	\$ 61,966,717	\$ 62,978,647	\$ 64,000,214	\$ 65,037,908	\$ 66,082,231	\$ 67,137,700	\$ 68,203,843	\$ 69,280,603	\$ 70,367,986	\$ 71,465,986
Net Profit (as defined by agreement)		\$ 7,517,487	\$ 8,028,961	\$ 8,556,224	\$ 9,099,671	\$ 9,657,676	\$ 10,231,240	\$ 10,820,069	\$ 11,424,572	\$ 12,034,165	\$ 12,648,989	\$ 13,269,122
Percentage Rent at 15%		\$1,127,623	\$1,204,344	\$1,283,434	\$1,364,951	\$1,448,101	\$1,532,866	\$1,618,244	\$1,704,236	\$1,790,844	\$1,878,069	\$1,965,814
Pre-tax Profit		\$ 6,389,864	\$ 6,824,616	\$ 7,272,790	\$ 7,734,720	\$ 8,209,575	\$ 8,698,374	\$ 9,198,825	\$ 9,720,336	\$ 10,263,321	\$ 10,817,920	\$ 11,384,308
Calculated Tax at 40%		\$ 2,555,946	\$ 2,729,847	\$ 2,909,116	\$ 3,093,888	\$ 3,283,830	\$ 3,479,359	\$ 3,680,544	\$ 3,887,336	\$ 4,099,728	\$ 4,317,768	\$ 4,541,561
Net Income		\$ 3,833,918	\$ 4,094,770	\$ 4,363,674	\$ 4,640,832	\$ 4,925,745	\$ 5,219,015	\$ 5,518,281	\$ 5,833,000	\$ 6,163,593	\$ 6,500,152	\$ 6,842,747
Profit Margin		5.60%	5.85%	6.10%	6.35%	6.56%	6.71%	6.86%	6.99%	7.11%	7.22%	7.32%
Average Profit Margin												

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Laidlaw Arrangement
20-year Option

Assumptions
Net MWs
Capacity Factor
Expected Annual MWhrs
Base Energy Price (\$/MWh)
Base Fuel Cost (\$/ton)
Fixed Fuel Factor (Tons/MWh)
2012 Energy Margin
2012 Rec Rate
Initiation Index
Starting O&M
Starting Variable Costs

Year	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29
Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case	Base Case
Time Period	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Actual Schiller Wood Cost (\$/ton)	18	19	20	21	22	23	24	25	26	27	28	29
Capacity Payment (\$/kW-Mo)	\$51.74	\$53.03	\$54.32	\$55.61	\$56.90	\$58.19	\$59.48	\$60.77	\$62.06	\$63.35	\$64.64	\$65.93
Class I Alternative Compliance Price (\$/MWh)	\$6.20	\$6.35	\$6.50	\$6.65	\$6.80	\$6.95	\$7.10	\$7.25	\$7.40	\$7.55	\$7.70	\$7.85
REC Adjustment (PSNH Option)	\$102.34	\$104.90	\$107.46	\$110.02	\$112.58	\$115.14	\$117.70	\$120.26	\$122.82	\$125.38	\$127.94	\$130.50
CPI Adjustment	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Market Energy Price (\$/MWh)	142.50%	145.00%	147.50%	150.00%	152.50%	155.00%	157.50%	160.00%	162.50%	165.00%	167.50%	170.00%
Market Capacity Price (\$/kW-Mo)	\$99.33	\$101.82	\$104.31	\$106.80	\$109.29	\$111.78	\$114.27	\$116.76	\$119.25	\$121.74	\$124.23	\$126.72
Adjusted Basis Price (\$/MWh)	\$8.43	\$8.64	\$8.85	\$9.07	\$9.30	\$9.53	\$9.77	\$10.02	\$10.27	\$10.52	\$10.79	\$11.06
Over Market Value	\$114.92	\$117.25	\$119.58	\$121.91	\$124.24	\$126.57	\$128.90	\$131.23	\$133.56	\$135.89	\$138.22	\$140.55
Cumulative Reduction Value	(\$6,732,816)	(\$6,665,759)	(\$6,598,702)	(\$6,531,645)	(\$6,464,588)	(\$6,397,531)	(\$6,330,474)	(\$6,263,417)	(\$6,196,360)	(\$6,129,303)	(\$6,062,246)	(\$5,995,189)
Buyout Value of Plant	(\$130,257,163)	(\$136,922,932)	(\$143,588,701)	(\$150,254,470)	(\$156,920,239)	(\$163,586,008)	(\$170,251,777)	(\$176,917,546)	(\$183,583,315)	(\$190,249,084)	(\$196,914,853)	(\$203,580,622)
Revenue	\$ 76,044,803	\$ 77,707,075	\$ 79,369,347	\$ 81,031,619	\$ 82,693,891	\$ 84,356,163	\$ 86,018,435	\$ 87,680,707	\$ 89,342,979	\$ 91,005,251	\$ 92,667,523	\$ 94,329,795
Capacity	\$ 4,315,200	\$ 4,419,800	\$ 4,524,400	\$ 4,629,000	\$ 4,733,600	\$ 4,838,200	\$ 4,942,800	\$ 5,047,400	\$ 5,152,000	\$ 5,256,600	\$ 5,361,200	\$ 5,465,800
Energy	\$ 49,631,582	\$ 50,637,004	\$ 51,642,426	\$ 52,647,848	\$ 53,653,270	\$ 54,658,692	\$ 55,664,114	\$ 56,669,536	\$ 57,674,958	\$ 58,680,380	\$ 59,685,802	\$ 60,691,224
RECs	\$ 22,098,021	\$ 22,650,471	\$ 23,202,921	\$ 23,755,371	\$ 24,307,821	\$ 24,860,271	\$ 25,412,721	\$ 25,965,171	\$ 26,517,621	\$ 27,070,071	\$ 27,622,521	\$ 28,174,971
Expenses												
Lease Payment	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000
Fixed O&M	\$ 8,550,000	\$ 8,700,000	\$ 8,850,000	\$ 9,000,000	\$ 9,150,000	\$ 9,300,000	\$ 9,450,000	\$ 9,600,000	\$ 9,750,000	\$ 9,900,000	\$ 10,050,000	\$ 10,200,000
Variable O&M	\$ 4,246,342	\$ 4,320,839	\$ 4,395,336	\$ 4,469,834	\$ 4,544,331	\$ 4,618,828	\$ 4,693,325	\$ 4,767,823	\$ 4,842,320	\$ 4,916,817	\$ 4,991,314	\$ 5,065,812
Fuel Costs	\$ 40,216,860	\$ 41,222,281	\$ 42,227,702	\$ 43,233,123	\$ 44,238,544	\$ 45,243,965	\$ 46,249,386	\$ 47,254,807	\$ 48,260,228	\$ 49,265,649	\$ 50,271,070	\$ 51,276,491
NADCO Royalty Payment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Management Fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses	\$ 73,013,202	\$ 74,243,121	\$ 75,473,040	\$ 76,702,959	\$ 77,932,878	\$ 79,162,797	\$ 80,392,716	\$ 81,622,635	\$ 82,852,554	\$ 84,082,473	\$ 85,312,392	\$ 86,542,311
Net Profit (as defined by agreement)	\$ 3,031,601	\$ 3,463,955	\$ 3,896,309	\$ 4,328,663	\$ 4,761,017	\$ 5,193,371	\$ 5,625,725	\$ 6,058,079	\$ 6,490,433	\$ 6,922,787	\$ 7,355,141	\$ 7,787,495
Percentage Rent at 15%	\$ 454,740	\$ 519,593	\$ 584,446	\$ 649,299	\$ 714,152	\$ 779,005	\$ 843,858	\$ 908,711	\$ 973,564	\$ 1,038,417	\$ 1,103,270	\$ 1,168,123
Pre-tax Profit	\$ 2,576,861	\$ 2,944,361	\$ 3,311,861	\$ 3,679,361	\$ 4,046,861	\$ 4,414,361	\$ 4,781,861	\$ 5,149,361	\$ 5,516,861	\$ 5,884,361	\$ 6,251,861	\$ 6,619,361
Calculated Tax at 40%	\$ 1,030,744	\$ 1,177,745	\$ 1,324,746	\$ 1,471,747	\$ 1,618,748	\$ 1,765,749	\$ 1,912,750	\$ 2,059,751	\$ 2,206,752	\$ 2,353,753	\$ 2,500,754	\$ 2,647,755
Net Income	\$ 1,546,117	\$ 1,766,617	\$ 1,987,117	\$ 2,207,617	\$ 2,428,117	\$ 2,648,617	\$ 2,869,117	\$ 3,089,617	\$ 3,310,117	\$ 3,530,617	\$ 3,751,117	\$ 3,971,617
Profit Margin	2.03%	2.27%	2.51%	2.75%	2.99%	3.23%	3.47%	3.71%	3.95%	4.19%	4.43%	4.67%
Average Profit Margin				15.36%	15.44%	15.53%	15.62%	15.71%	15.81%	15.90%	16.00%	16.10%

DE 10-195 OCA Calculation of Total and Above Market Costs of PSNH/Laidlaw PPA

DE 10-195 PSNH Laidlaw PPA
OCA Testimony of Traim
Attachment KT-4

	Year 1 - 2014	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20 - 2033
Energy Costs																				
Contract price \$/MWh (1)	\$83.00	\$84.53	\$86.10	\$87.71	\$89.35	\$91.04	\$92.77	\$94.55	\$96.37	\$98.23	\$100.14	\$102.10	\$104.11	\$106.16	\$108.27	\$110.44	\$112.65	\$114.92	\$117.25	\$119.64
PSNH Base Case Mkt Energy price (1)	\$66.63	\$68.60	\$68.32	\$70.06	\$71.92	\$73.80	\$75.67	\$77.55	\$79.37	\$81.38	\$83.43	\$85.54	\$87.70	\$89.92	\$92.19	\$94.52	\$96.91	\$99.33	\$101.82	\$104.36
PSNH Base Case vs PSNH's Est Mkt energy price	\$16.37	\$17.93	\$17.78	\$17.65	\$17.43	\$17.24	\$17.10	\$17.02	\$17.00	\$16.85	\$16.71	\$16.56	\$16.41	\$16.24	\$16.08	\$15.92	\$15.74	\$15.59	\$15.43	\$15.28
Expected Annual MWh's (1)	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868
Total Annual Payment over Market	\$7,069,679	\$7,703,393	\$7,678,613	\$7,622,470	\$7,527,459	\$7,445,404	\$7,384,943	\$7,350,393	\$7,341,756	\$7,276,976	\$7,216,514	\$7,151,734	\$7,086,954	\$7,013,536	\$6,944,437	\$6,875,339	\$6,797,602	\$6,732,822	\$6,663,723	\$6,598,943
Cumulative over Market	\$7,069,679	\$14,813,072	\$22,491,685	\$30,114,156	\$37,641,615	\$45,087,019	\$52,471,962	\$59,822,355	\$67,164,111	\$74,441,087	\$81,657,601	\$88,809,336	\$95,896,289	\$102,909,826	\$109,854,263	\$116,729,602	\$123,527,204	\$130,260,026	\$136,923,749	\$143,522,692
Capacity Costs																				
Contract Price in \$/kW-Month (2)	\$4.25	\$4.25	\$4.25	\$4.25	\$4.25	\$4.40	\$4.55	\$4.70	\$4.85	\$5.00	\$5.15	\$5.30	\$5.45	\$5.60	\$5.77	\$5.90	\$6.05	\$6.20	\$6.35	\$6.50
PSNH Base Case est. mkt. price (1)	\$2.80	\$2.80	\$1.75	\$1.64	\$5.21	\$4.29	\$4.79	\$5.35	\$5.95	\$6.49	\$7.05	\$7.36	\$7.52	\$7.66	\$7.82	\$8.02	\$8.27	\$8.43	\$8.64	\$8.85
Difference vs PSNH's est Market	\$1.45	\$1.45	\$2.50	\$2.61	\$1.04	\$0.11	\$0.24	\$0.65	\$1.10	\$1.49	\$1.90	\$2.06	\$2.07	\$2.06	\$2.25	\$2.12	\$2.17	\$2.23	\$2.29	\$2.35
Expected kW-Month over 12 months (3)	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000	696,000
Total Annual Payment over Market	\$1,009,200	\$1,009,200	\$1,740,000	\$1,818,126	\$724,464	\$76,626	\$167,184	\$452,790	\$766,260	\$1,037,934	\$1,323,540	\$1,434,996	\$1,441,962	\$1,434,996	\$1,567,350	\$1,476,792	\$1,511,622	\$1,553,418	\$1,595,214	\$1,637,010
Cumulative over Market	\$1,009,200	\$2,018,400	\$3,758,400	\$5,576,526	\$6,300,990	\$6,377,616	\$6,210,432	\$5,757,642	\$4,991,382	\$3,953,448	\$2,629,908	\$1,194,912	-\$247,050	-\$1,682,046	-\$3,249,396	-\$4,726,188	-\$6,237,810	-\$7,791,228	-\$9,386,442	-\$11,023,452
REC Costs																				
Alternative Compliance Price (1)	\$67.26	\$68.94	\$70.66	\$72.43	\$74.24	\$76.09	\$78.00	\$79.95	\$81.94	\$83.99	\$86.09	\$88.24	\$90.45	\$92.71	\$95.03	\$97.41	\$99.84	\$102.34	\$104.90	\$107.52
Contract Price as a % of ACP (1)	80%	80%	80%	80%	80%	75%	75%	75%	75%	75%	70%	70%	70%	70%	70%	50%	50%	50%	50%	50%
Current Mkt Price as a % of ACP (4)	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Projected Mkt Price	\$20.18	\$20.68	\$21.20	\$21.73	\$22.27	\$22.83	\$23.40	\$23.99	\$24.58	\$25.20	\$25.83	\$26.47	\$27.14	\$27.81	\$28.51	\$29.22	\$29.95	\$30.70	\$31.47	\$32.26
Difference versus Market	\$33.63	\$34.47	\$35.33	\$36.22	\$37.12	\$38.24	\$39.50	\$40.96	\$42.58	\$44.34	\$46.24	\$48.24	\$50.30	\$52.48	\$54.76	\$57.14	\$59.61	\$62.17	\$64.82	\$67.56
Expected Annual MWh's (1)	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868
Total Annual Payment over Market	\$14,523,721	\$14,886,490	\$15,257,896	\$15,640,100	\$16,030,940	\$16,478,376	\$16,985,567	\$17,557,531	\$18,194,269	\$18,892,667	\$19,652,340	\$20,434,806	\$21,248,984	\$22,095,993	\$22,974,120	\$23,882,552	\$24,823,540	\$25,799,474	\$26,809,591	\$27,852,267
Cumulative over Market	\$14,523,721	\$29,410,211	\$44,668,107	\$60,308,207	\$76,359,147	\$91,126,523	\$106,285,090	\$121,822,621	\$137,746,890	\$154,069,557	\$168,941,363	\$184,184,576	\$199,809,560	\$215,824,953	\$232,241,120	\$249,054,772	\$267,278,312	\$285,917,787	\$304,960,591	\$324,412,857
Annual Total Over Mkt for Energy, Capacity, & REC's	\$22,602,600	\$23,639,083	\$24,676,509	\$25,080,696	\$24,282,863	\$22,309,407	\$22,376,326	\$22,435,134	\$22,499,765	\$22,561,709	\$20,764,781	\$20,959,951	\$21,269,976	\$21,593,933	\$21,793,254	\$19,812,199	\$19,909,521	\$14,018,878	\$14,129,100	\$14,248,823
Cumulative Over Mkt Energy, Cap, & REC's	\$22,602,600	\$46,241,683	\$70,918,193	\$95,998,889	\$120,281,752	\$142,591,158	\$164,967,484	\$187,402,618	\$209,902,383	\$232,464,092	\$253,228,873	\$274,188,824	\$295,458,800	\$317,052,733	\$338,845,987	\$552,658,186	\$665,567,706	\$380,586,585	\$394,715,685	\$408,964,507
Est Total Annual Payments under PPA	\$62,040,997	\$63,282,186	\$64,554,469	\$65,863,852	\$67,197,460	\$67,027,930	\$68,498,202	\$70,003,024	\$71,538,077	\$73,109,839	\$74,860,413	\$76,761,325	\$78,801,970	\$79,775,004	\$79,366,702	\$72,839,573	\$74,423,211	\$76,047,876	\$77,711,410	\$79,413,811
Est Total Cumulative Payments under PPA	\$62,040,997	\$125,323,183	\$189,877,652	\$255,741,504	\$322,938,964	\$389,966,894	\$458,465,096	\$528,468,121	\$600,006,198	\$673,116,036	\$745,976,449	\$820,437,775	\$896,536,745	\$974,314,749	\$1,053,681,451	\$1,128,521,023	\$1,200,944,234	\$1,276,992,110	\$1,354,703,520	\$1,434,117,331
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EVOI

DE 10-195 PSNH Laidlaw PPA OCA Testimony of Traum Attachment KET -5

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From the Renewable Energy Desk

10.14.10

Evolution Completes REC Auction for University of New Hampshire

Sale on the EvoAuction(tm) Platform of 35,000 New England RECs Yields Nearly \$540,000.

The University of New Hampshire successfully completed the sale of 35,000 vintage 2010 and 2011 New England renewable energy certificates (RECs) using Evolution Markets' online auction platform, EvoAuction™.

The RECs on offer are generated at UNH's landfill gas-to-energy project that uses methane gas from the Rochester Landfill as the primary fuel for a 7.9 MW cogeneration plant and a 4.6 MW landfill gas-to-energy power plant. The plant is part of the University's EcoLine™ project, which develops sustainable energy sources for the campus.

The 20,000 vintage 2010 RECs, which are eligible as Class I certificates in Massachusetts, New Hampshire, Connecticut, and Maine, sold for an average price of \$13.16. The 15,000 vintage 2011 RECs, which are also eligible as Class I certificates in Massachusetts, New Hampshire, Connecticut, and Maine, sold for an average price of \$18.90.

You can read more about the auction in our press release or view the full auction results on our web site.

FEEDS

[Renewable Energy](#)

MONTHLY ARCHIVE

- > November 2010 (1)
- > October 2010 (1)
- > September 2010 (2)
- > August 2010 (1)
- > July 2010 (3)
- > May 2010 (2)
- > April 2010 (1)
- > March 2010 (1)
- > January 2010 (2)
- > December 2009 (3)

IN THE RENEWABLE ENERGY BLOG

11.3.10

[Evolution to Host NE REC Auction Nov. 10](#)

10.14.10

[Evolution Completes REC Auction for University of New Hampshire](#)

9.22.10

[Evolution to Host REC Auction for University of New Hampshire](#)

9.1.10

[Upheaval in CA Legislature leads to the demise of SB 722](#)

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Public Service Company of New
Hampshire
Docket No. DE 10-195

Data Request STAFF-06

Dated: 11/30/2010
Q-STAFF-001
Page 1 of 1

Witness: Richard C. Labrecque
Request from: New Hampshire Public Utilities Commission Staff

Question:

Ref. PSNH Response to Staff 1-8. Please specify the year to which the \$20 REC price relates.

Response:

The \$20 REC price referenced in the response in Staff 1-8 is the 2012 MA REC price.

Witness: Frederick White
Request from: New Hampshire Public Utilities Commission Staff

DE 10-195 PSNH Laidlaw PPA
OCA Testimony of Traum
Attachment KET - 7

Question:

Reference Attachment RAB-2, page 3, line 40. Please provide, in a format similar to the response to NSTF-01, Q-STAFF-014 in DE 09-180, the following information regarding PSNH's estimated costs of compliance with the NH RPS:

- a. Breakdown of the \$10.808 million by RPS class;
- b. For each class, supporting information as to whether and to what extent PSNH currently estimates it will be acquiring RECs, using RECs from its own facilities, or making alternative compliance payments;
- c. Details concerning any contracts PSNH has entered into to acquire RECs from other facilities (such details to include class, amount, price and duration); and
- d. For each of PSNH's qualified renewable resources, detailed information concerning how many RECs from that resource are under contract for sale during 2011 and future years, the contracted price(s), and in which state market(s) the RECs will be sold.

Response:

- a. The \$10.808 million RPS total is detailed in the table below (in thousands of dollars):

	Total
NH RPS Compliance Costs Class I	\$2,072
NH RPS Compliance Costs Class II	\$186
NH RPS Compliance Costs Class III	\$7,192
NH RPS Compliance Costs Class IV	\$1,358
Total RPS Costs	\$10,808

b. Class I - The current expense estimate (\$2,072,000) assumes a total requirement of BEGIN CONFIDENTIAL [] END CONFIDENTIAL RECs; of which BEGIN CONFIDENTIAL [

] END CONFIDENTIAL. The current forecast assumes additional contracting at a market price of \$18.45 per REC.

Class II - The expense estimate (\$186,000) will be updated via the final filing in this docket. BEGIN CONFIDENTIAL [

] END CONFIDENTIAL.

Class III - The current expense estimate (\$7,192,000) assumes a total requirement of BEGIN CONFIDENTIAL [

] END CONFIDENTIAL

Class IV - The current expense estimate (\$1,358,000) assumes a total requirement of BEGIN CONFIDENTIAL [

] END CONFIDENTIAL.

c. Please see table below:

BEGIN CONFIDENTIAL [

] END CONFIDENTIAL.

d. There are currently no contracted sales of RECs from PSNH's qualified renewable resources during 2011 and future years.



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December 15, 2009

Via Hand Delivery

Thomas S. Burack, Chairman
Site Evaluation Committee
N.H. Department of Environmental Services
29 Hazen Drive
Concord, NH 03302-0095

Re: Application of Laidlaw Berlin Biopower, LLC for a Certificate of Site and
Facility for a Renewable Energy Facility in Berlin, New Hampshire

Dear Chairman Burack:

I enclose for filing with the New Hampshire Site Evaluation Committee an original and eighteen (18) copies of the Application of Laidlaw Berlin BioPower, LLC for a Certificate of Site and Facility for a renewable energy facility in Berlin, New Hampshire pursuant to RSA 162-H. I also enclose a disc containing an electronic pdf version of the Application and supporting materials.

Laidlaw Berlin BioPower, LLC ("LBB") is proposing to convert and upgrade much of the remaining facility equipment and infrastructure located at the former Fraser Pulp Mill in Berlin, New Hampshire in order to develop a biomass-fueled energy facility. LBB will use whole tree wood chips and other low-grade clean wood as fuel, and will be capable of generating up to nominally 70 megawatts (MW) of electric power (gross output).

The Project is a renewable energy facility under RSA 162-H:2. XII and is therefore subject to the review process and time frames established in RSA 162-H:6-a and Administrative Rule Site 301.05. The Project also qualifies for review by a subcommittee pursuant to RSA 162-H:4, V(b) and Administrative Rule Site 301.02 and 301.03.

The Application contains pre-filed testimony, exhibits and other information sufficient for the Subcommittee to commence its review. In preparing the Application, we have followed the format and content requirements of Administrative Rule Site 301.02 and 301.03.

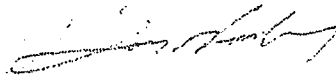
Thomas S. Burack, Chairman
December 15, 2009
Page 2

LBB will assist the Subcommittee and its staff in any way necessary to facilitate an expeditious review of this Application. Assuming that the Application is deemed complete pursuant to RSA 162-H:6-a, we request that a prehearing conference be conducted to establish a procedural schedule for the duration of the adjudicative proceeding.

LBB looks forward to working with the subcommittee to arrange for the public comment hearing required under RSA 162-H:6-a, IV in Berlin. LBB also respectfully requests, pursuant to Administrative Rule Site 202.13, that the subcommittee and public counsel visit the site of the proposed facility. We suggest that visit coincide with the public hearing in Berlin.

Please do not hesitate to contact me if you have any questions. Thank you for your assistance with LBB's Application.

Very truly yours,

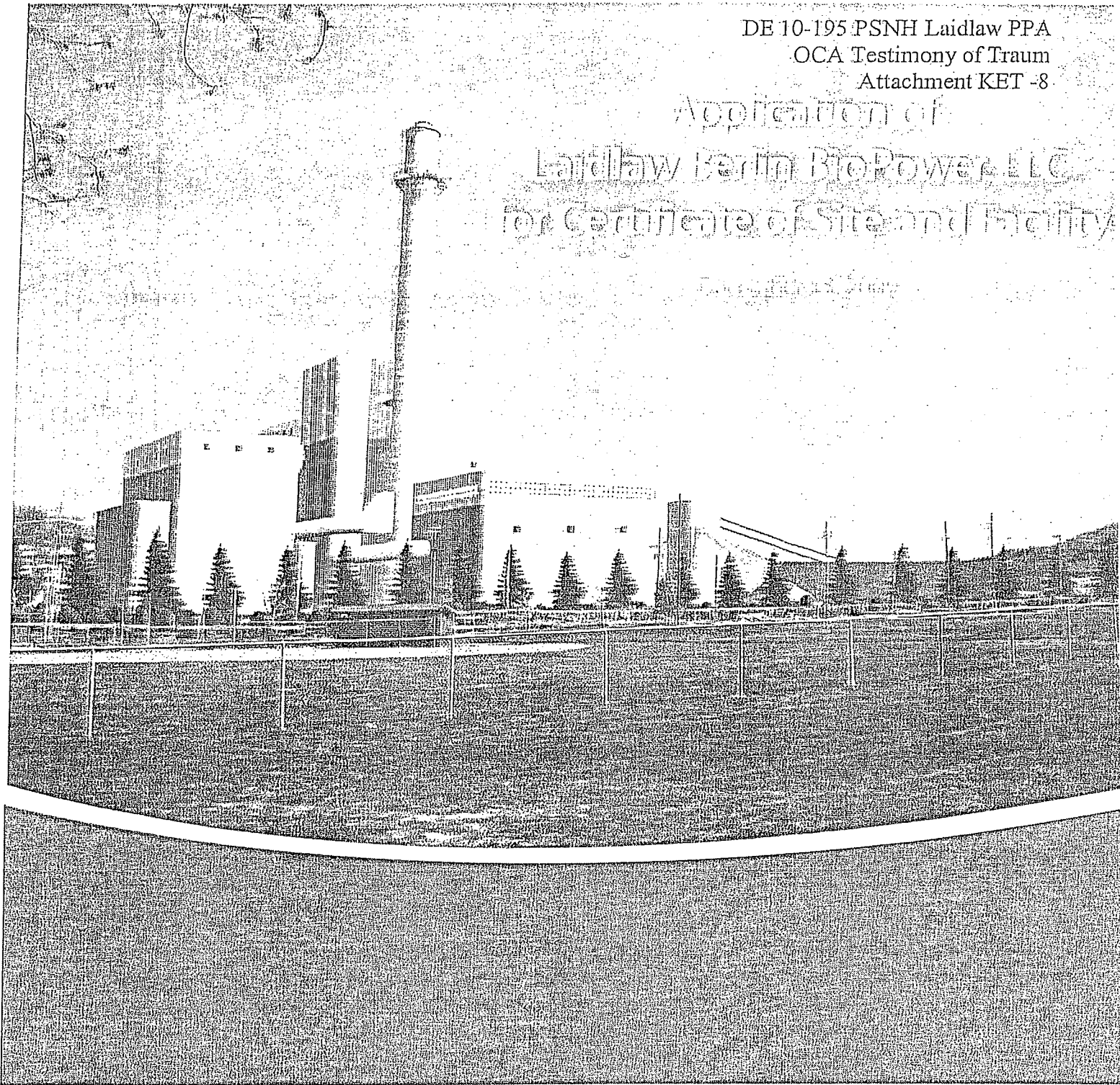


Barry Needleman

Enclosures

cc: Attorney General Michael L. Delaney
City of Berlin
Laidlaw Berlin BioPower, LLC

Application of
Laidlaw Berlin BioPower, LLC
for Certificate of Site and Facility



Submitted to:
New Hampshire Site Evaluation Committee
Docket No. 2009-XX

Prepared by:



LAIDLAW LAIBACH

Laidlaw Berlin BioPower, LLC
90 John Street, 4th Floor
New York, New York 10038

Supported by:



ESS Group, Inc.
888 Worcester Street, Suite 240
Wellesley, MA 02482

The McLane Law Firm
Waldron Engineering & Construction, Inc.
The Babcock & Wilcox Company
Stantec Engineering, Inc.

APPLICATION OF LAIDLAW BERLIN BIOPOWER, LLC FOR CERTIFICATE OF SITE AND FACILITY

**BERLIN BIOPOWER
COOS COUNTY, NEW HAMPSHIRE**

SUBMITTED TO New Hampshire Site Evaluation Committee
Docket No. 2009 -

PREPARED BY Laidlaw Berlin BioPower, LLC
90 John Street, 4th Floor
New York, New York 10038

SUPPORTED BY ESS Group, Inc.
888 Worcester Street, Suite 240
Wellesley, Massachusetts 02482

IN ASSOCIATION WITH The McLane Law Firm
Waldron Engineering & Construction, Inc.
The Babcock & Wilcox Company
Stantec Engineering, Inc.

December 15, 2009

(f) RENEWABLE ENERGY FACILITY INFORMATION

(1) Make, model and manufacturer of the unit

The Facility will be comprised of all of the individual components required to produce electrical energy from the fuel described below. The make, model and manufacturer of the majority of the components will not be finalized until the detailed engineering and procurement phase of the Project. One of the major components that is currently known is the existing boiler which will be converted to a bubbling fluidized bed boiler by Babcock and Wilcox, the original manufacturer.

(2) Capacity, in megawatts, as designed and as intended for operation

The rated electrical output of the steam turbine generator is expected to be approximately 70 MW. It is expected that the net electrical output of the Facility, after allowance for all internal "parasitic" loads, will be approximately 64 MW.

(3) Type of unit, including:

a. Fuel utilized

The biomass boiler will be fueled with clean biomass as defined in New Hampshire's Renewable Portfolio Standard (HB 0873, 2007 Session)⁹, and ULSD auxiliary fuel used for boiler start-up and flame stabilization.

b. Method of cooling condenser discharge

The steam turbine condenser will be cooled with recirculating water from an open cycle wet cooling tower. The warmed cooling water will be cooled by direct contact with counter flowing ambient air that will be drawn through the cooling tower and exhausted vertically upward by electric motor driven fans.

c. Whether the unit will serve base, intermediate or peaking loads

The Facility is designed to serve base load duty, with occasional intermediate dispatch.

d. Unit efficiency

Based on the annual average heat input rate provided by B&W at a fuel moisture content of 37.6% (932 MMBtu/hr) and a gross power output of 70 MW, the Facility will have a gross heat rate of approximately 13,300 Btu/kWh. This equates to a fuel to gross power output efficiency of approximately 25%. This efficiency will vary to some degree with fuel moisture content, as added heat input is required to vaporize water contained in fuels with higher moisture content than the design fuel. The efficiency may be further improved during more detailed design engineering. Further, when completely designed and incorporated, the

⁹ "Biomass Fuels" means plant-derived fuel including clean and untreated wood such as brush, stumps, lumber ends, and trimmings, wood pallets, bark, wood chips or pellets, shavings, sawdust, and slash, agricultural crops, biogas, or liquid biofuels, but shall exclude any materials derived in whole or in part from construction and demolition debris. RSA 362-F:II.

(h) ADDITIONAL INFORMATION

(1) A description in detail of the type and size of each major part of the proposed facility

The Facility will be a base loaded electric energy generating facility with an expected nominal gross electrical output of approximately 70 MW. The heart of the Facility will be a BFB boiler; a highly efficient and advanced technology for the conversion of biomass fuel to energy. The boiler and other major components of the Project are described below.

(i) Biomass Boiler & Steam Generator

The existing B&W recovery boiler will be converted to a biomass-fueled BFB boiler with air-locked hopper bottoms for removal of bed sand particles and other non-combustible materials. An air distribution system consisting of fluidizing air and overfire air will be added to assure efficient fuel combustion. A flue gas recirculation system will be utilized to adjust the bed temperature depending on the moisture content of the incoming fuel. The existing feedwater economizer, which will preheat the feedwater to the boiler drum, will be modified to optimize boiler efficiency. The use of a tubular air pre-heater will ensure efficient use of the energy released in the boiler.

The boiler will be capable of generating up to 600,000 pounds per hour of steam at temperatures up to 900°F and 850 psig. Stable operation and compliant emission levels will be maintained over the range of expected operating loads from 70% to 100% of maximum steam output. A series of double sided retractable soot blowers will be utilized on heat transfer surfaces within the superheater and convective sections of the boiler to maintain design performance levels.

The boiler will be capable of firing clean biomass and has been designed to handle variable fuel moisture contents ranging from 35% up to 50%. At an average moisture content of 37.6%¹⁰, the wood fuel will have a higher heating value of approximately 5,060 Btu/lb. The heat input rate to the boiler will vary primarily depending on the moisture content of the wood fuel. The average heat input rate at maximum steam load will be 932 MMBtu/hr with 37.6% moisture content fuel. The maximum heat input rate will be 1,013 MMBtu/hr with 50% moisture content fuel. Individual fuel feeders will be equipped with adjustable air swept distributors to adjust the flow of fuel into the boiler. The fuel chutes will each be equipped with backdraft dampers.

The boiler will also be equipped with four No. 2. distillate oil fired burners for use during startup, with a maximum expected heat input capacity of 240 MMBtu/hr. The Facility will also include a 500 kW emergency diesel generator set and a 288 horsepower diesel fire pump. The boiler startup burners, the emergency generator, and the diesel fire pump will be

¹⁰ This fuel moisture content has been established as the design point for equipment supplier performance guarantee purposes.

Public Service Company of New
Hampshire
Docket No. DE 10-257

Technical Session TECH-01

Dated: 11/19/2010
Q-TS-004
Page 1 of 2

Witness: Frederick White
Request from: New Hampshire Public Utilities Commission Staff

Question:

Ref. Staff 01, Q-STAFF-006. Please show how you derived the ISO-NE forward energy market price for 2011

Response:

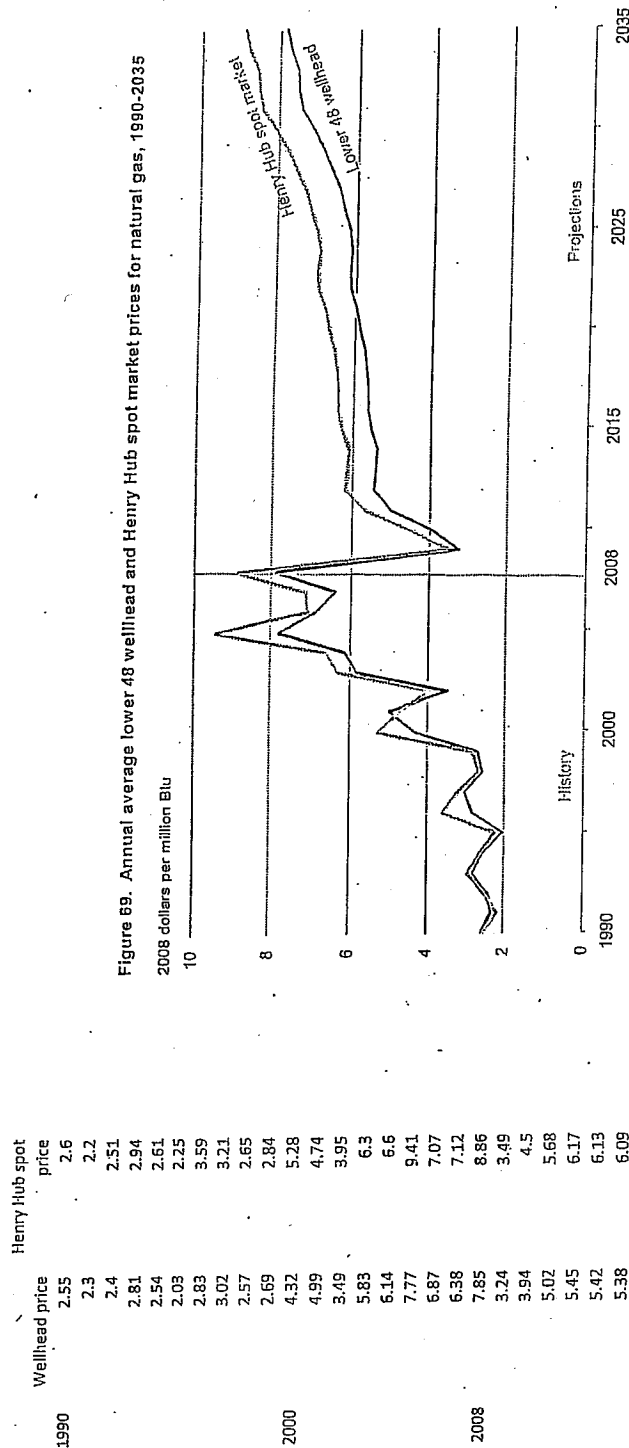
Please see attached file (Tech-01, Q-TS-4, Page 2 of 2) and associated notes explaining the derivation of monthly forward market energy prices for 2011.

Derivation of ISO-NE Forward Market Energy Prices

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	<u>NYMEX Prices</u>		<u>Natural Gas</u>	<u>Q4</u>	<u>ISO-NE Power</u>		<u>ISO-NE Forward Market Energy</u>		
	<u>ISO-NE Power</u>		<u>\$/MMBtu</u>	<u>NG Price</u>	<u>\$/MWh</u>		<u>\$/MWh</u>		
	<u>Peak</u>	<u>Off-Peak</u>	<u>New England</u>	<u>Distribution</u>	<u>Peak</u>	<u>Off-Peak</u>	<u>Peak</u>	<u>Off-Peak</u>	<u>24 Hr</u>
2011									
Jan	55.7	45.7	5.609				55.7	45.7	50.2
Feb	55.7	45.7	5.595				55.7	45.7	50.5
Mar	49.5	37.7	4.976				49.5	37.7	43.6
Apr	45.5	37.7	4.753				45.5	37.7	41.4
May	46.7	36.6	4.782				46.7	36.6	41.2
Jun	48.1	36.8	4.840				48.1	36.8	42.3
Jul	57.0	40.2	4.912				57.0	40.2	47.4
Aug	57.0	40.2	4.964				57.0	40.2	48.5
Sep	48.0	37.2	4.986				48.0	37.2	42.3
Oct	50.2	40.0	5.068	92.7%	46.5	37.1	46.5	37.1	41.3
Nov	50.2	40.0	5.371	98.2%	49.3	39.3	49.3	39.3	44.0
Dec	50.2	40.0	5.966	109.1%	54.7	43.6	54.7	43.6	48.7
Total							51.1	39.8	45.1

- NOTES:** 1) Columns a, b, & c are NYMEX settlement prices used in PSNH's preliminary 2011 ES filing. For column c reference Staff-01, Q6a.
- 2) Column d percentages are the relative values of column c Q4 values, to the column c Q4 3-month average. e.g. - Column c Oct. value of 5.068 is 92.7% of the column c Oct-Dec average of 5.468.
- 3) Columns e & f are column d values times columns a & b, respectively. i.e. - Q4 average power prices in columns a & b are distributed consistent with Q4 natural gas prices.
- 4) Columns g & h are columns a & b for Jan-Sep and columns e & f for Oct-Dec, respectively. Reference Staff-01, Q6d (columns g & h).
- 5) Column i is the 24 hour average of columns g & h based on the number of peak & off-peak hours in each month. Annual averages are also shown.

Figure 69. Annual average lower 48 wellhead and Henry Hub spot market prices for natural gas, 1990-2035 (2008 dollars per million Btu)



U.S. Energy Information Administration, Natural Gas Annual 2007, DOE/EIA-0131(2007) (Washington, DC, January 2009). Henry Hub natural gas prices: U.S. Energy Information Administration, Short-Term Energy Outlook Query System, Monthly Natural Gas Data, Variable NGHHUUS. Projections: AEO-2010 National Energy Modeling System, run AEO2010R.D111809A.

Public Service Company of New
Hampshire
Docket No. DE 10-195

Data Request CSC-04

Dated: 11/30/2010
Q-CSC-001
Page 1 of 3

Witness: Richard C. Labrecque
Request from: Concord Steam Corporation

Question:

Please explain and provide the calculations and work papers for the cost of wood fuel delivered to Schiller Station provided in the attachments to Q-Staff-011 (Set 1) and Q-Staff-011 (Set 3).

Response:

The analyses provided via Staff 1-11 RV01 index the initial wood price by an inflation escalator (calculation provided in the attachment). The analyses in attachments 3, 4, 5, and 7 to Staff 1-11 use an escalator of 2.5%. The analysis in attachment 6 uses an escalator of 0.50%. Both of these values are estimates and are not based on any study, report, forecast or calculation. The initial wood price of \$34/ton is an estimate and is not based on any study, report, forecast or calculation.

The analyses provided via Staff 3-11 RV01 index the initial wood price by the year-to-year change in the NYMEX natural gas forward market prices from Aug 14, 2008 (calculation provided in the attachment). The initial wood price of \$38/ton is an estimate and is not based on any study, report, forecast or calculation.

Assumed Wood Price Inflation Index	
2.50%	0.50%

	Schiller Delivered Fuel Cost (\$/ton)	
	STAFF 1-11 Attachments 3, 4, 5, 7	STAFF 1-11 Attachment 6
2010	34.00	34.00
2011	34.00	34.00
2012	34.00	34.00
2013	34.00	34.00
2014	34.00	34.00
2015	34.85	34.17
2016	35.72	34.34
2017	36.61	34.51
2018	37.53	34.69
2019	38.47	34.86
2020	39.43	35.03
2021	40.42	35.21
2022	41.43	35.38
2023	42.46	35.56
2024	43.52	35.74
2025	44.61	35.92
2026	45.73	36.10
2027	46.87	36.28
2028	48.04	36.46
2029	49.24	36.64
2030	50.47	36.82
2031	51.74	37.01
2032	53.03	37.19
2033	54.35	37.38
2034	55.71	37.57
2035	57.11	37.75
2036	58.53	37.94
2037	60.00	38.13
2038	61.50	38.32
2039	63.03	38.52
2040	64.61	38.71
2041	66.23	38.90
2042	67.88	39.10
2043	69.58	39.29
2044	71.32	39.49
2045	73.10	39.69
2046	74.93	39.88
2047	76.80	40.08
2048	78.72	40.28
2049	80.69	40.48
2050	82.71	40.69
2051	84.77	40.89
2052	86.89	41.10
2053	89.07	41.30

DE 10-195 PSNH Laidlaw PPA
OCA Testimony of Traum
Attachment KET -11

DE 10-195
Q-CSC-04-001
Attachment

	STAFF 3-11 Schiller Delivered Fuel Cost (\$/ton)	Henry Hub Gas (\$/Mbtu) - NYMEX (from Aug 14, 2008)	Year / Year Change in NYMEX Price
2010	38.00	9.17	
2011	36.84	8.89	96.95%
2012	35.82	8.64	97.22%
2013	35.04	8.45	97.84%
2014	34.95	8.43	99.72%
2015	35.49	8.56	101.55%
2016	35.94	8.67	101.26%
2017	36.41	8.78	101.31%
2018	36.91	8.90	101.38%
2019	37.49	9.04	101.57%
2020	38.23	9.22	101.99%
2021	38.83	9.37	101.56%
2022	39.44	9.51	101.56%
2023	40.06	9.66	101.56%
2024	40.68	9.81	101.56%
2025	41.32	9.97	101.56%
2026	41.96	10.12	101.56%
2027	42.62	10.28	101.56%
2028	43.28	10.44	101.56%
2029	43.96	10.61	101.56%

Public Service Company of New
Hampshire
Docket No. DE 10-195

Data Request STAFF-05

Dated: 11/01/2010
Q-STAFF-002
Page 1 of 1

Witness: Richard C. Labrecque
Request from: New Hampshire Public Utilities Commission Staff

Question:
Ref. PSNH Response to Staff 1-19. Please provide for the period October 2008 through September 2010 the percentage of PSNH's monthly retail load met by competitive suppliers.

Response:
The percentage of PSNH's total retail load served by competitive suppliers for October 2008 through September 2010 is as follows:

Oct-08	2.9%
Nov-08	6.0%
Dec-08	7.4%
Jan-09	7.5%
Feb-09	10.4%
Mar-09	12.1%
Apr-09	13.5%
May-09	15.7%
Jun-09	17.8%
Jul-09	18.8%
Aug-09	19.7%
Sep-09	22.6%
Oct-09	25.7%
Nov-09	26.2%
Dec-09	26.8%
Jan-10	24.7%
Feb-10	26.4%
Mar-10	28.5%
Apr-10	30.6%
May-10	31.9%
Jun-10	31.8%
Jul-10	30.1%
Aug-10	30.6%
Sep-10	33.0%

Public Service Company of New
Hampshire
Docket No. DE 10-195

Data Request STAFF-06

Dated: 11/30/2010
Q-STAFF-003
Page 1 of 1

Witness: Richard C. Labrecque
Request from: New Hampshire Public Utilities Commission Staff

Question:

Ref. PSNH Response to Staff 1-19. Please explain why the energy service forecast is 73% of the delivery service forecast instead of 69%.

Response:

In the response to Staff 1-19, the delivery service forecast was adjusted upward using a delivery efficiency factor of 0.945 to adjust load to the pool transmission level in addition to adjusting for migration. The formula used to calculate Energy Service sales is Delivery Sales x (1-Migration Rate) x (1/Delivery Efficiency Factor).

The proper calculation of RPS requirements would not have used the delivery efficiency, since RPS obligations are a percentage of end-use customers sales (as measured at the meter). The table provided in the response to Staff 1-19 has been corrected below.

	2011	2012	2013	2014	2015
Delivery Service Forecast w/EE/DSM (MWh)	7,788,024	7,877,125	7,903,333	7,995,366	8,064,644
Migration Rate (Base case)	31%	31%	31%	31%	31%
Energy Service Forecast	5,373,737	5,435,216	5,453,300	5,516,803	5,564,604
Class I RPS Requirement (%)	2.00%	3.00%	4.00%	5.00%	6.00%
Class I RPS Requirement (MWh)	107,475	163,056	218,132	275,840	333,876
Laidlaw RECs Produced	0	0	203,232	406,464	406,464
% of Class I Requirement met by Laidlaw	0%	0%	93%	147%	122%

Public Service Company of New
Hampshire
Docket No. DE 10-195

Data Request STAFF-05

Dated: 11/01/2010
Q-STAFF-001
Page 1 of 1

Witness: Richard C. Labrecque
Request from: New Hampshire Public Utilities Commission Staff

Question:

Article 5.1 states that seller shall sell and deliver and PSNH shall purchase and accept delivery of 100% of the Products produced by the Facility. Article 1.18 defines the term Facility as the generating plant described in Appendix A. Appendix A states that the Facility will be designed to have a net electric output at standard conditions of approximately 64 MW (winter) and 61 MW (summer). Please respond to the following:

- (i) Does the PPA allow Laidlaw to expand, at any time before or during the term, the output of the Facility above the level specified in Appendix A? If the answer is yes, please specify where in the PPA Laidlaw is provided that right.
- (ii) If Laidlaw expands the output of the facility above the level specified in Appendix A, is PSNH obligated to purchase the incremental products produced as a result of that expansion? If the answer is yes, please specify where in the PPA PSNH incurs that obligation.

Response:

- (i) The PPA is silent on the ability of Laidlaw to expand the facility.

(ii) Regarding plant expansion, the relevant language in the PPA is Article 1.18 and Article 5.1. Article 1.18 defines the "Facility" as the generating plant described in Appendix A. If and when the Facility is expanded such that the description in Appendix A is no longer valid, PSNH will determine the appropriate course of action consistent with the PPA terms and conditions.

Public Service Company of New
Hampshire
Docket No. DE 10-195

Data Request STAFF-01

Dated: 10/08/2010
Q-STAFF-032-RV02
Page 1 of 9

Witness: Richard C. Labrecque
Request from: New Hampshire Public Utilities Commission Staff

Question:

Ref. Labrecque Testimony, page 3. Regarding NH RSA Chapter 362-F, identify all other long-term renewable resource options that PSNH considered for meeting its New Hampshire Class I REC obligations. Provide all evaluations, studies, reports, spreadsheets, correspondence, notes, presentation materials, and work papers related to these renewable resource options.

Response:

As is more fully detailed in Docket DE 09-067, PSNH received proposals from both Clean Power Development, LLC and Concord Steam Corporation in July 2009, several months after negotiations with Laidlaw were in progress. These proposals are attached to the response to Q-STAFF-017.

Attachment 1 to this response is a comparison of the two proposals (CPD, CSC) to the Laidlaw PPA using the forward market prices provided in response to Q-STAFF-003.

Attachment 2 is an additional comparison of the three proposals.

DE 10-195 PSNH Laidlaw PPA

OCA Testimony of Traum Attachment KET -15

Summary of Biomass PPA Proposals 2012-2031

	CPD	Concord	Laidlaw
Capacity (MW)	19.5	10.2	58
Energy (MWh)/RECs	163,000	75,949	431,868
Offer Comparison:			
NPV, 2012	\$1,578.01	\$1,507.90	\$1,725.58
Levelized 2012-2031 (\$/kWh)	\$0.1431	\$0.1367	\$0.1564
Market Comparison:			
NPV, 2012	Aug-09	Aug-09	Aug-08 Aug-09
Levelized 2012-2031 (\$/kWh)	\$1,469.86	\$1,482.37	\$1,888.48 \$1,482.37
	\$0.1333	\$0.1344	\$0.1712 \$0.1344
Lifetime Over (Under) Market (\$M)	\$22.9	(\$1.6)	(\$182.6) \$152.0
NPV, 2012	\$17.6	\$1.9	(\$70.4) \$105.0

Assumptions:

All proposals used a 2.5% inflator

Capacity payments begin in 2013 for Concord and Laidlaw

Wood prices assumed to start at \$32.50/ton

Laidlaw's Base Energy Price is assumed to be able to go below \$83/MWh wood prices go below \$34/ton

CPD and Concord market comparison is based on Aug 4, 2009 market prices; Laidlaw market comparison is based on Aug 1, 2008 market prices

Note: Laidlaw market comparisons do not include the disposition of the proposed cumulative Realization

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
REC Need*	172,168	253,892	337,726	424,392	516,364	608,366	704,836	802,311	908,041	1,012,803	1,120,488	1,231,159	1,344,884	1,461,728
NWP RECs	0	0	0	0	0	0	0	0	0	315,000	315,000	315,000	315,000	315,000
REC Need with NWP	172,168	253,892	337,726	424,392	516,364	608,366	704,836	802,311	908,041	697,803	805,488	916,159	1,029,884	1,146,728
REC Need with Laidlaw	(259,700)	(177,976)	(94,142)	(7,476)	84,496	176,498	272,968	370,443	476,173	265,935	373,620	484,291	598,016	714,860

*Assumes 8,000 RECs for Smith Hydro, 60,549 RECs for Lempster, and 34,355 Class IV Hydro RECs

CLEAN POWER DEVELOPMENT - BERLIN
INDICATIVE BID PRICES - AUG-2009

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Non-fuel Variable O&M - Electricity price escalated (\$/MWh)	\$36.00	\$36.90	\$37.82	\$38.77	\$39.74	\$40.73	\$41.75	\$42.79	\$43.86	\$44.96	\$46.08	\$47.24	\$48.42	\$49.63	\$50.87	\$52.14	\$53.44	\$54.78	\$56.15	\$57.55
Fixed - Electricity price energy fixed (\$/MWh)	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10	\$35.10
Fuel - Electricity price Fuel (\$/MWh)	\$52.94	\$54.26	\$55.62	\$57.01	\$58.44	\$59.90	\$61.39	\$62.93	\$64.50	\$66.11	\$67.77	\$69.46	\$71.20	\$72.98	\$74.80	\$76.67	\$78.59	\$80.55	\$82.57	\$84.63
INDICATIVE BID PRICES - PROPOSAL THREE (\$/MWh)	\$124.04	\$128.26	\$128.54	\$130.88	\$133.27	\$135.73	\$138.24	\$140.82	\$143.46	\$146.17	\$148.95	\$151.80	\$154.71	\$157.70	\$160.77	\$163.91	\$167.13	\$170.43	\$173.82	\$177.28
2012 Discount Rate (based on PSNH WACC)	6.49%																			
NPV, 2012	\$1,578.01																			
Levelized 2012-2031	\$143.06																			
Footnotes:																				
Capacity Value Sharing in 2013 (\$/KWh-Mo)	\$0.00	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70
Annual Capacity (KW)	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500
Annual Energy Production (MWh)	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000	163,000
Alternative Compliance Payment of NH REC (\$/MWh)	\$65.60	\$67.24	\$68.93	\$70.65	\$72.41	\$74.23	\$76.08	\$77.98	\$79.93	\$81.93	\$83.98	\$86.08	\$88.23	\$90.44	\$92.70	\$95.01	\$97.39	\$99.82	\$102.32	\$104.98
Assumed CPI	2.5%																			
Wood Price (\$/Ton)	\$32.50	\$33.31	\$34.15	\$35.00	\$35.87	\$36.77	\$37.69	\$38.63	\$39.60	\$40.59	\$41.60	\$42.64	\$43.71	\$44.80	\$45.92	\$47.07	\$48.25	\$49.45	\$50.69	\$51.95
Fuel Factor	1.53																			
Wood Price Baseline (\$/Ton)	\$40.00	\$41.00	\$42.03	\$43.08	\$44.15	\$45.26	\$46.39	\$47.55	\$48.74	\$49.95	\$51.20	\$52.48	\$53.80	\$55.14	\$56.52	\$57.93	\$59.38	\$60.85	\$62.39	\$63.95
Wood Price Adjustment (WPA) (\$/Ton)	\$52.84	\$54.25	\$55.62	\$57.01	\$58.44	\$59.90	\$61.39	\$62.93	\$64.50	\$66.11	\$67.77	\$69.46	\$71.20	\$72.98	\$74.80	\$76.67	\$78.59	\$80.55	\$82.57	\$84.63
August 4, 2009 Market Price Forecast:																				
Energy (\$/MWh)	\$55.21	\$56.78	\$58.45	\$60.17	\$61.92	\$63.72	\$65.56	\$67.45	\$69.39	\$71.37	\$73.40	\$75.49	\$77.63	\$79.82	\$82.06	\$84.35	\$86.72	\$89.14	\$91.62	\$94.16
Capacity (\$/KWh-Mo)	\$3.02	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95
Class I RECs (\$/MWh)	\$0.00	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23	\$4.23
Class II RECs (\$/MWh)	\$37.00	\$37.93	\$38.87	\$39.84	\$40.84	\$41.86	\$42.91	\$43.98	\$45.08	\$46.21	\$47.36	\$48.55	\$49.76	\$51.00	\$52.28	\$53.59	\$54.93	\$56.30	\$57.71	\$59.15
Total Energy Price (\$/MWh)	\$102.21	\$108.94	\$111.56	\$114.25	\$117.68	\$121.75	\$125.99	\$130.37	\$134.90	\$139.59	\$144.45	\$149.50	\$154.83	\$159.57	\$164.09	\$168.55	\$172.81	\$177.15	\$181.14	\$185.15
NPV, 2012	\$1,459.86																			
Levelized 2012-2031	\$133.26																			
Over (Under) Market (\$/MWh)	\$21.83	\$17.32	\$16.98	\$16.63	\$15.59	\$13.97	\$12.25	\$10.45	\$8.56	\$6.58	\$4.50	\$2.50	\$1.38	\$1.13	\$0.87	(\$0.18)	(\$1.43)	(\$2.23)	(\$3.34)	(\$4.69)
Over (Under) Market (\$)	\$3,557,883	\$2,823,022	\$2,767,823	\$2,711,244	\$2,540,930	\$2,277,906	\$1,997,016	\$1,702,903	\$1,395,528	\$1,072,514	\$733,819	\$473,002	\$306,402	\$184,835	\$141,018	(\$28,575)	(\$233,030)	(\$387,855)	(\$544,579)	(\$628,572)
Lifetime Over (Under) Market (\$)	\$22,852,934																			
NPV, 2012	\$17,527,777																			

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Capacity Price (\$/MWh)																				
Fixed Price (\$/MWh)	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Variable Price (\$/MWh)	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50	\$33.50
Fixed Price (\$/MWh)	\$4.30	\$35.16	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04	\$36.04
Fuel Charge (\$/MWh)	\$46.35	\$47.91	\$46.70	\$49.91	\$47.91	\$46.70	\$49.91	\$47.91	\$46.70	\$49.91	\$47.91	\$46.70	\$49.91	\$47.91	\$46.70	\$49.91	\$47.91	\$46.70	\$49.91	\$47.91
Total Price Proposal (\$/MWh)	\$114.15	\$121.97	\$124.03	\$126.15	\$128.32	\$130.55	\$132.83	\$135.17	\$137.57	\$140.02	\$142.54	\$145.12	\$147.77	\$150.48	\$153.26	\$156.11	\$159.03	\$162.02	\$165.09	\$168.22
NPV, 2012																				
2012 Discount Rate (based on PSNH WACC)																				
NPV, 2012	\$1,907.90																			
Leveraged 2012-2031	\$136.71																			
Footnote:																				
Capacity Price Starting in 2012 (\$/MWh-Mo)																				
Capacity Price (\$/MWh-Mo)	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 85% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 90% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 95% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 100% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 105% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 110% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 115% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 120% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 125% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Capacity Price (\$/MWh-Mo) 130% CP	\$0.00	\$5.60	\$20.14	\$5.80	\$5.80	\$5.80														

DE 10-195
Data Requests 10/08/2010
O-STAFF-01-032-RV01
Attachment 1
Revised

Laidlaw - Berlin
AUG-2008 PROPOSAL PRICES

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capacity Price (\$/MWh)	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Energy Price (\$/MWh)	\$80.30	\$79.50	\$78.70	\$77.90	\$77.10	\$76.30	\$75.50	\$74.70	\$73.90	\$73.10	\$72.30	\$71.50	\$70.70	\$69.90	\$69.10	\$68.30	\$67.50	\$66.70	\$65.90	\$65.10
Chast REC (\$/MWh)	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
Chast PPA (\$/MWh)	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21
Total Price Forecast (\$/MWh)	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21
2012 Discount Rate (Based on PSNH (WACC))	6.4%																			
NPV, 2012	\$1,725.59																			
Levelized 2012-2031	\$195.42																			
Feelinates																				
Capacity Value Starting in 2013 (\$/KW-Hr)	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Net Annual Capacity (KW)	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Annual Energy Production (MWh) 85% CF	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868
Alternative Compliance Payment of NH REC (\$/MWh)	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50	\$95.50
Assumed CFI	2.5%																			
Rec Energy Price (\$/MWh)	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00	\$83.00
Rec Wind Price (\$/MWh)	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50	\$32.50
Wind Price Baseline (\$/MWh)	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00	\$34.00
Wind Price Adjustment (WPA) (\$/MWh)	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70	\$-2.70
August 1, 2008 Market Price Forecast:																				
Energy (\$/MWh)	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00	\$85.00
Capacity (\$/MWh)	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00
Chast REC (\$/MWh)	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
Chast PPA (\$/MWh)	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21
Total Energy Price (\$/MWh)	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48	\$132.48
NPV, 2012	\$1,885.48																			
Levelized 2012-2031	\$171.21																			
Over (Under) Market (\$/MWh)	\$0.29	\$1.85	\$0.73	\$0.73	\$0.52	\$0.33	\$0.30	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31
Over (Under) Market (\$)	\$125.415	\$799.007	\$550.984	\$317.031	\$257.111	\$273.717	\$3,984.348	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319	\$5,478.319
NPV, 2012	\$182,567,895																			
Levelized 2012-2031	\$170,352,574																			
August 1, 2009 Market Price Forecast:																				
Energy (\$/MWh)	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21	\$55.21
Capacity (\$/MWh)	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00
Chast REC (\$/MWh)	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
Chast PPA (\$/MWh)	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21	\$12.21
Total Energy Price (\$/MWh)	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21	\$102.21
NPV, 2012	\$1,482.37																			
Levelized 2012-2031	\$134.39																			
Over (Under) Market (\$/MWh)	\$0.87	\$20.84	\$33.17	\$33.40	\$22.87	\$28.00	\$25.88	\$25.68	\$24.42	\$23.08	\$21.40	\$19.39	\$16.05	\$15.55	\$15.55	\$15.55	\$15.55	\$15.55	\$15.55	\$15.55
Over (Under) Market (\$)	\$11,202,569	\$14,227,302	\$14,324,996	\$14,425,133	\$14,192,593	\$12,090,007	\$11,408,524	\$11,093,356	\$10,546,110	\$9,956,881	\$7,313,343	\$7,080,381	\$5,931,922	\$5,622,885	\$5,622,885	\$5,622,885	\$5,622,885	\$5,622,885	\$5,622,885	\$5,622,885
NPV, 2012	\$151,892,005																			
Levelized 2012-2031	\$108,035,349																			

CPI-U All Urban Consumers, Not Seasonally Adjusted, U.S. city average, All items

Actual			Forecast		
Year	Annual	% Chg	Year	Annual	% Chg
2000	172.2		2000	1.722	
2001	177.1	2.8%	2001	1.770	2.8%
2002	179.9	1.6%	2002	1.799	1.6%
2003	184	2.3%	2003	1.840	2.3%
2004	188.9	2.7%	2004	1.889	2.7%
2005	195.3	3.4%	2005	1.953	3.4%
2006	201.6	3.2%	2006	2.016	3.2%
2007	207.342	2.8%	2007	2.073	2.9%
2008	215.303	3.8%	2008	2.152	3.8%
Avg 2001-2008		2.8%	2009	2.139	-0.6%
			2010	2.174	1.6%
			2011	2.217	2.0%
			2012	2.261	2.0%
			2013	2.304	1.9%
			2014	2.351	2.0%
			2015	2.402	2.2%
			2016	2.455	2.2%
			2017	2.510	2.2%
			2018	2.566	2.2%
			2019	2.623	2.2%
			2020	2.680	2.2%
			2021	2.739	2.2%
			2022	2.799	2.2%
			2023	2.860	2.2%
			2024	2.922	2.2%
			2025	2.985	2.2%
			2026	3.049	2.1%
			2027	3.114	2.1%
			2028	3.180	2.1%
			Avg 2009-2028		2.0%

Source: BLS
<http://www.bls.gov/cpi/home.htm>

Source: Economy.com

GDP Implicit Price Deflator

Actual			Forecast		
Year	Annual	% Chg	Year	Annual	% Chg
2000	88.647		2000	1.0000	
2001	90.650	2.3%	2001	1.0240	2.4%
2002	92.118	1.6%	2002	1.0419	1.7%
2003	94.100	2.2%	2003	1.0640	2.1%
2004	96.770	2.8%	2004	1.0945	2.9%
2005	100.000	3.3%	2005	1.1303	3.3%
2006	103.257	3.3%	2006	1.1667	3.2%
2007	106.214	2.9%	2007	1.1981	2.7%
2008	108.483	2.1%	2008	1.2242	2.2%
Avg 2001-2008		2.6%	2009	1.2427	1.5%
			2010	1.2459	0.3%
			2011	1.2588	1.0%
			2012	1.2765	1.4%
			2013	1.2959	1.5%
			2014	1.3159	1.5%
			2015	1.3374	1.6%
			2016	1.3603	1.7%
			2017	1.3835	1.7%
			2018	1.4070	1.7%
			2019	1.4308	1.7%
			2020	1.4546	1.7%
			2021	1.4789	1.7%
			2022	1.5034	1.7%
			2023	1.5278	1.6%
			2024	1.5527	1.6%
			2025	1.5772	1.6%
			2026	1.6018	1.6%
			2027	1.6263	1.5%
			2028	1.6507	1.5%
Avg 2009-2028		1.5%			

Source: BEA
<http://www.bea.gov/national/nipaweb/TableVit>

Source: Economy.com

RPS Requirements Analysis

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Delivery Service Forecast (MWH)	7,916,354	7,856,039	7,995,127	8,023,918	8,061,017	8,125,506	8,215,681	8,355,901	8,461,436	8,593,166	8,708,803	8,878,066	9,011,267	9,145,439	9,283,533	9,422,887	9,564,231
Energy Service Forecast (MWH)	7,916,354	7,856,039	7,995,127	8,023,918	8,061,017	8,125,506	8,215,681	8,355,901	8,461,436	8,593,166	8,708,803	8,878,066	9,011,267	9,145,439	9,283,533	9,422,887	9,564,231
RPS Requirement (%)																	
Class I	0.50%	1.00%	2.00%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%	11.00%	12.00%	13.00%	14.00%	15.00%	16.00%
Class II	0.00%	0.04%	0.08%	0.15%	0.20%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
Class III	4.50%	5.00%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
Class IV	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
RPS Requirement (MWH)																	
Class I	39,582	78,560	156,703	240,718	322,441	405,275	492,941	584,913	676,915	773,385	870,860	976,591	1,081,352	1,189,037	1,299,709	1,413,433	1,530,277
Class II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class III	355,236	432,192	515,783	521,555	523,966	528,158	534,019	543,134	549,993	558,556	566,059	577,076	585,732	594,516	603,435	612,489	621,575
Class IV	78,164	76,580	79,351	80,239	80,610	81,255	82,157	83,559	84,614	85,932	87,086	88,781	90,113	91,456	92,856	94,229	95,642
Current Supply Sources (MWH)																	
Class I	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549	68,549
Class II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class IV	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355	34,355
Potential Supply Sources (MWH)																	
Class I	0	0	0	0	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868	431,868
Class II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class IV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Supply Deficit (MWH)																	
Class I	(28,967)	10,031	90,153	172,168	(177,976)	(94,142)	(7,476)	84,496	176,498	272,968	370,443	476,173	580,935	689,620	799,291	913,015	1,029,850
Class II	0	3,143	6,348	12,036	16,122	24,377	24,647	25,068	25,394	25,779	26,126	26,534	27,034	27,439	27,851	28,259	28,593
Class III	355,236	432,192	515,783	521,555	523,966	528,158	534,019	543,134	549,993	558,556	566,059	577,076	585,732	594,516	603,435	612,489	621,575
Class IV	44,809	44,225	44,986	45,884	46,255	46,900	47,802	49,204	50,259	51,577	52,731	54,426	55,758	57,109	58,481	59,874	61,287
CPI (%)	2.1%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
ACP (\$/MWH)																	
Class I	\$60.92	\$62.25	\$63.64	\$65.14	\$66.67	\$68.21	\$69.78	\$71.35	\$72.95	\$74.58	\$76.25	\$77.95	\$79.69	\$81.47	\$83.29	\$85.14	\$87.04
Class II	\$159.98	\$163.46	\$167.14	\$171.06	\$175.07	\$179.13	\$183.25	\$187.38	\$191.57	\$195.86	\$200.24	\$204.71	\$209.27	\$213.94	\$218.72	\$223.50	\$228.58
Class III	\$29.87	\$30.52	\$31.21	\$31.94	\$32.69	\$33.45	\$34.22	\$34.99	\$35.77	\$36.57	\$37.39	\$38.22	\$39.07	\$39.95	\$40.84	\$41.75	\$42.59
Class IV	\$29.87	\$30.52	\$31.21	\$31.94	\$32.69	\$33.45	\$34.22	\$34.99	\$35.77	\$36.57	\$37.39	\$38.22	\$39.07	\$39.95	\$40.84	\$41.75	\$42.59
Assumptions:																	
Energy Service Forecast - Assumes no migration.																	
Smith Hydro - PSNH receives RECs for everything above a minimum threshold amount. Can generate between 0 and 31,000 RECs in a given year. Assumed 8,000 for this analysis.																	
Lampster - Has the option to sell a portion of RECs to a 3rd party if the price is higher than the contract price. Assumed that they would sell 90% to PSNH for this analysis.																	
Laidlaw - Assume in service in 2013.																	
NWP - Assume 315,000 RECs																	



Public Service
of New Hampshire

DE 10-195 PSNH Laidlaw PPA
OCA Testimony of Traum
Attachment KET-16

PSNH Energy Park
780 North Commercial Street, Manchester, NH 031
Public Service Company of New Hampshire
P.O. Box 330
Manchester, NH 03105-0330
(603) 669-4000
www.psnh.com

The Northeast Utilities System

December 3, 2010

Ms. Debra A. Howland
Executive Director & Secretary
State of New Hampshire
Public Utilities Commission
21 S. Fruit Street, Suite 10
Concord, NH 03301-2429

Re: Docket No. DE 10-195 - Laidlaw PPA

Dear Ms. Howland:

Enclosed for filing are PSNH's responses to STAFF-01 Q-STAFF-017-RV01 and STAFF-05 Q-STAFF-006-RV01 with confidential attachments.

STAFF-01 Q-STAFF-017-RV01

Based on Order 25,174 (page 13) the Commission has ruled that this information is confidential and should be protected from disclosure. However, the order directed PSNH to provide to the Wood-Fired IPPs an aggregated summary of proposals received, including the range of price and products offered, but without information identifying the suppliers. That summary is being provided in the response to STAFF 1-17 RV02.

Based on the ruling in Order 25,174, PSNH will not be filing a motion for confidential treatment, but requests that the attachments to this response be handled as confidential.

STAFF-05 Q-STAFF-006-RV01

Based on Order 25,174 (page 15) the Commission has ruled that this information is confidential and should be protected from disclosure. Therefore, PSNH will not be filing a motion for confidential treatment, but requests that the attachment to this response be handled as confidential.

If you have any questions, please contact me.

Very truly yours,

Richard C. Labrecque, Manager
Supplemental Energy Sources

cc: Suzanne Amidon
Ken E. Traum

Witness: Terrance J. Large
Request from: New Hampshire Public Utilities Commission Staff

Question:

Please provide each and every offer, bid or proposal made by a renewable energy developer to sell renewable energy certificates, energy, or capacity to PSNH which was received after negotiations with Laidlaw began.

Response:

Since the original filing of PSNH's response to STAFF 1-17 (Oct 18, 2010) PSNH has received both new and revised proposals. As such, PSNH is providing the revised response. See attachments 1, 2, and 3 for the new and revised proposals.

Based on Order 25,174 (page 13) the Commission has ruled that this information is confidential and should be protected from disclosure. However, the order directed PSNH to provide to the Wood-Fired IPPs an aggregated summary of proposals received, including the range of price and products offered, but without information identifying the suppliers. That summary is being provided in the response to STAFF 1-17 RV02.

Based on the ruling in Order 25,174, PSNH will not be filing a motion for confidential treatment, but requests that the attachment to this response be handled as confidential.

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DE 10-195 PSNH Laidlaw PPA

OCA Testimony of Traum

Public Service Company of New Hampshire Attachment KET-16
Docket No. DE 10-195

Data Request STAFF-05

Dated: 11/01/2010

Q-STAFF-006-RV01

Page 1 of 8

Witness: Terrance J. Large
Request from: New Hampshire Public Utilities Commission Staff

Question:

Regarding the proposals provided to Staff by PSNH in response to Staff 1-17, please provide copies of all correspondence between PSNH and the developers concerning such proposals including PSNH's final response.

Response:

Since the original filing of PSNH's response to STAFF 5-6 (Nov 8, 2010) PSNH has received and/or provided additional correspondence related to the proposals provided in Staff 1-17 and Staff 1-17 RV01. As such, PSNH is providing this revised response. See attachments 1 for the additional correspondence.

Based on Order 25,174 (page 15) the Commission has ruled that this information is confidential and should be protected from disclosure. Therefore, PSNH will not be filing a motion for confidential treatment, but requests that the attachment to this response be handled as confidential.

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