

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

Dated: December 17, 2010

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 you 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 confidential discovery response in the Company's 2011 Default Energy Service rate
23 proceeding, DE 10-257. See Attachment KET-7 (PSNH Confidential Response to
24 Staff 01-012). In that response PSNH indicated that they were forecasting a market

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

1 price of <<BEGIN CONFIDENTIAL END CONFIDENTIAL>> for Class
2 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.