

BEFORE THE NEW HAMPSHIRE

PUBLIC SERVICE COMMISSION

PANEL TESTIMONY OF

GEORGE E. SANSOUCY, P.E.

ANDREA CURTIS

BRIAN FOGG

DOCKET NO. DE 17-124

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1           **Introduction/Background**  
2

3           **Q.     Please state your name, business address, and affiliation.**

4           A.     My name is George E. Sansoucy. My business address is 7 Greenleaf Woods  
5 Drive, Unit 2, Portsmouth, New Hampshire 03801. I am the owner of George E. Sansoucy, P.E.,  
6 LLC. I am testifying on behalf of Intervenors the City of Berlin, NH (“the City”), the Town of  
7 New Hampton, NH, and the Town of Bristol, NH (“the Towns”).

8           **Q.     Are you testifying alone or as a panel?**

9           A.     We are testifying as a part of a panel of three (3); myself, Andrea Curtis, and  
10 Brian Fogg.

11          **Q.     Have all three of you contributed to this testimony?**

12          A.     Yes.

13          **Q.     What are your educational background and professional qualifications to**  
14 **appear in this proceeding?**

15          A.     I have a Bachelor and a Master of Science Degree in Civil Engineering, am a  
16 Registered Professional Engineer in New Hampshire, and am a Certified General Appraiser in  
17 New Hampshire as well as Connecticut, Maine, Massachusetts, Michigan, Missouri, New York,  
18 Ohio, Rhode Island, South Carolina, Texas, Vermont and Virginia. My firm, George E.  
19 Sansoucy, P.E., LLC, provides valuation, consulting and engineering services to clients  
20 throughout the United States. The firm’s two primary services are 1) the valuation of public  
21 utility infrastructure, energy projects, and complex industrial properties, and 2) consultation

1 services on energy and regulatory matters involving the public and private utilities sector in the  
2 United States. I have testified in legal and regulatory proceedings before state and federal courts  
3 and administrative agencies, including the New Hampshire Public Utilities Commission and the  
4 Michigan Public Service Commission for regulatory matters.

5 **Q. What are Andrea Curtis's educational background and professional**  
6 **qualifications to appear in this proceeding?**

7 A. Ms. Curtis graduated from the Whittemore School of Business at the University  
8 of New Hampshire in 1991 and earned her Masters of Business Administration from Plymouth  
9 State University in 2008.

10 Since 2008, Ms. Curtis has worked for George E. Sansoucy, P.E. LLC providing  
11 financial and economic analysis, consultation, and regulatory testimony related to all aspects of  
12 utility market sales analysis, utility rates, revenue requirements, utility depreciation, power  
13 supply and cost recovery, integrated resource planning, and reconciliation of energy price  
14 forecasts, etc. She has also provided testimony and consultation regarding utility asset valuation,  
15 preparation of financial models, review and consultation related to the transmission, distribution  
16 and generation of energy from varying fuel sources including coal, natural gas, wind, hydro-  
17 electric, solar, and biomass, and the analysis of power purchase agreements and renewable  
18 energy contracts.

19 **Q. What are Brian Fogg's educational background and professional**  
20 **qualifications to appear in this proceeding?**

1           A.     Mr. Fogg has a Bachelor's Degree in Business Management from Granite State  
2 College/ University of New Hampshire - Summa Cum Laude.

3           Mr. Fogg is a Certified General Appraiser (NH License# 953) and a New Hampshire  
4 Department of Revenue Administration Certified Property Assessor Supervisor with 11 years  
5 professional experience appraising special purpose, utility, and electric generation properties.

6           Along with Mr. Sansoucy, he has appraised approximately 40 hydroelectric facilities in  
7 New Hampshire, Maine, Vermont, and New York, many of which he has appraised multiple  
8 times over the years. Among these hydroelectric facilities are six (Jackman, Smith, Gorham,  
9 Ayers Island, Canaan, and Garvins Falls) of the nine hydros currently owned by PSNH in New  
10 Hampshire. His most recent appraisals of Jackman, Smith, Gorham, Ayers Island, and Canaan  
11 were completed in 2017.

12           Mr. Fogg has also been involved as a consultant to the State of Vermont Department of  
13 Taxes, and the Vermont Attorney General's office and various New Hampshire and Vermont  
14 communities in several property tax litigation mediations and settlement negotiations with  
15 representatives of hydroelectric plant owners.

16           Brian has provided testimony to the New Hampshire Senate and House of  
17 Representatives, most recently to the House Science, Technology and Energy Committee on the  
18 impacts HB324. He has also recently testified to the New Hampshire Assessing Standards Board  
19 on the same topic.

20           **Q.     In what states have you provided consulting services?**

21           A.     We have clients in the following states:

California
Connecticut
Iowa
Maine
Maryland
Massachusetts
Michigan
Missouri
New Hampshire
New York
Ohio
Rhode Island
Texas
Utah
Vermont

1

2           **Q.     Have any of you previously testified before the New Hampshire Public**  
3 **Utilities Commission (“the Commission”)?**

4           A.     Yes. Mr. Sansoucy has testified before the Commission in the following cases:

- 5           • Case No. DR 95-124 (Consumers New Hampshire Water Company, Inc., Petition for  
6           Permanent Rate Increase);
- 7           • Case No. DR 96-150 (Electric Utility Restructuring – Energy Efficiency Programs);
- 8           • Case No. DR 98-014 (Public Service Company of New Hampshire Fuel and Purchased  
9           Power Adjustment);
- 10          • Case No. DE 96-227 (Town of Hudson, Petition to Take Assets of an Investor-Owned  
11          Water Utility);
- 12          • Case No. DE 01-089 (PSNH, Petition for Approval of Renegotiated Power Supply  
13          Arrangements with Whitefield Power and Light Company);
- 14          • Case No. DW04-048 (Pennichuck Water Works v. City of Nashua, N.H.);

- 1       • Case No. DW08-098 (Aquarion Water Company, Permanent and Temporary Rate  
2       Proceeding);
- 3       • Case No. DE 10-195 (Request for Approval of Power Purchase Agreement between  
4       PSNH and Laidlaw Berlin BioPower, LLC);
- 5       • Case No. DE 14-238 (Terms of the Settlement Agreement Filed by Eversource/Public  
6       Service Company of New Hampshire on or about June 10, 2015).

7 Ms. Curtis and Mr. Fogg have not previously testified before the Commission.

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

9       A.     The purpose of our testimony is to inform the Commission of deficiencies  
10      associated with the sale of the hydro-electric generating facilities of Public Service Company of  
11      New Hampshire d/b/a Eversource Energy (“PSNH”) to Hull Street Energy (“HSE”).  
12      Specifically, (a) the bulk sale of PSNH’s hydro-electric facilities does not reflect the fair market  
13      value of the hydro-electric assets on a standalone basis; (b) the sale of PSNH’s hydro-electric  
14      generating facilities will be detrimental to the ratepayers; (c) the \$83 million purchase price for  
15      the hydro-electric facilities is unreasonably low when compared to recent, local sales of hydro-  
16      electric stations; and (d) the allocated purchase price prepared by HSE is not indicative of any  
17      facility’s fair market value.

18      **Q.     What is the general format of this testimony?**

19      A.     We have formatted this testimony to discuss four general conclusions concerning  
20      the purpose of this testimony. The four conclusions are:

21           I. *The Auction Process Did Not Result in a Sale That Meets Any Common*  
22           *Definition of Fair Market Value*

1           *II. The Structured Auction Results for the Sale of PSNH's Hydro Fleet is not in*  
2           *the Public Interest.*

3           *III. Recent Hydroelectric Plant Sales in the Region Reflect that the Auction Result for*  
4           *PSNH's Hydro Fleet is Not at Fair Market Value.*

5           *IV. Given That Property Taxes in New Hampshire Are Assessed Based on Fair Market*  
6           *Value, and That the Auction Purchase Price for PSNH's Hydro Fleet is Below Fair*  
7           *Market Value, the Resulting Sale Price, and the Allocation Thereof, Should Not be*  
8           *Relied Upon or Otherwise Used in Property Tax Assessment.*

9           **I. The Auction Process Did Not Result in a Sale That Meets Any**  
10           **Common Definition of Market Value**

11           **Q.     In general terms, what is meant by the term "fair market value"?**

12           A.     A commonly used appraisal definition of the term "Fair Market Value" is:

13           "The most probable price which a property should bring in a competitive and open  
14           market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and  
15           knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this  
16           definition is the consummation of a sale as of a specified date and the passing of title from seller  
17           to buyer under conditions whereby:

- 18           • Buyer and seller are typically motivated;
- 19           • Both parties are well informed or well advised, and acting in what they consider their  
20           own best interests;

- 1       • A reasonable time is allowed for exposure in the open market;
- 2       • Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements
- 3       comparable thereto; and
- 4       • The price represents the normal consideration for the property sold unaffected by special
- 5       or creative financing or sales concessions granted by anyone associated with the sale<sup>1</sup>.

6       Additionally - “Fair Market Value” is often defined in New Hampshire as “[t]he most probable

7       price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed

8       terms, for which the specified property rights should sell after reasonable exposure in a

9       competitive market under all conditions requisite to a fair sale, with the buyer and seller each

10      acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue

11      duress.” See The Appraisal of Real Estate, The Appraisal Institute, at 23 (13<sup>th</sup> Ed. 2008); see

12      also Society Hill at Merrimack Condo. Ass’n. v. Town of Merrimack, 139 N.H. 253, 255 (1994).

13           **Q.     Is the process by which PSNH has been ordered to divest its generation assets**

14      **designed to solicit the asset’s fair market value?**

15           A.     No. By the definition of fair market value, the process and proposed purchase

16      prices resulting from the State ordered divestiture of PSNH’s generation assets do not represent

17      the Fair Market Value of any one of PSNH’s generation assets.

18           **Q.     Why?**

19           A.     Fair Market Value is achieved through an arms-length negotiation between

20      parties. The buyer is motivated to buy and the seller is motivated to sell, both seeking to

21      maximize their financial interests. Here, the auction process and the purchase prices resulting

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<sup>1 1</sup> As defined by the Comptroller of the Currency, Department of the Treasury, 12 CFR, Chapter 1, part 34.42.

1 from the process do not reflect Fair Market Value of any one of PSNH's generation assets for  
2 three reasons.

3 First, PSNH is not a typically motivated seller of its generation facilities. PSNH is not a  
4 typically motivated seller because PSNH is acting under compulsion by the State of New  
5 Hampshire to sell these assets. PSNH is also not typically motivated because, regardless of the  
6 amount of the proceeds from a sale, PSNH will recover the entire remaining book value of the  
7 assets, either through sale proceeds, or through recovery of any unrecouped remaining book  
8 value as stranded costs. Unlike a typical seller, there is no incentive or provision in this process  
9 for PSNH to hold out for a higher sales price, because PSNH is guaranteed to recover all of its  
10 book value one way or another.

11 Second, the auction process itself is not designed to maximize the net proceeds from each  
12 of the individual assets. Instead, it is focused on the net Total Transaction Value as provided in  
13 the 2015 Settlement Agreement, as revised and amended:

14 "The goals of the asset auctions are to maximize the net Total Transaction Value  
15 ("TTY"), which reflects all of the cash and non-cash elements of the  
16 transaction(s), realized from the sale(s) in order to minimize Stranded Costs, to  
17 provide a market-based determination of Stranded Costs, and to establish a  
18 competitive energy market, while at the same time providing certain employee and  
19 host community protections."

20 Third, the potential sales proceeds are further affected by the additional auction goals to ensure  
21 certain employee protections.

1           **Q.     What facts lead you to conclude that PSNH is not a typically motivated**  
2 **seller?**

3           A.     PSNH is not typically motivated because the sale of PSNH’s generation assets  
4 was motivated by the Commission’s Order, brought on by legislative enactment, that PSNH  
5 divest itself of its generating assets based on an assumption that the divestiture would be in the  
6 economic public interest. As an incentive to proceed with the divestiture process, PSNH received  
7 certain benefits from the PUC, specifically, the ability to recover the majority of the costs  
8 associated with the Merrimack Scrubber, the ability to recover the difference between the auction  
9 proceeds and any remaining net book value of the assets, and any and all related sales expenses.  
10 Therefore, unlike typical sellers PSNH is not incentivized in this process to seek the highest  
11 purchase price possible because PSNH will be made whole regardless of the amount of the  
12 purchase price and regardless of how much the assets contribute towards a reduction of stranded  
13 costs.

14 **II. The Structured Auction Results for the Sale of PSNH’s Hydro**  
15 **Fleet is not in the Public Interest.**

16           **Q.     In your opinion is the divestiture of PSNH’s hydro portfolio in the economic**  
17 **public interest of New Hampshire ratepayers?**

18           A.     No. Based on our analysis of ratepayer benefits derived from selling the hydro  
19 assets, as prescribed in the current Purchase and Sale Agreement with Hull Street (“PSA”),  
20 versus ratepayer benefits derived from retaining and operating the hydro assets, PSNH’s  
21 ratepayers pay more under the divestiture scenario than under the retention scenario.

1           **Q.     Please describe your analysis.**

2           A.     The ratepayer's economic benefit in selling the hydro assets is derived from a  
3 reduction of approximately \$32 million in the stranded costs and, thus, the amount of Rate  
4 Recovery Bonds (RRBs). This \$32 million reduction constitutes the amount of the \$83.3 million  
5 sales price over the hydro-electric generation assets net book value of those facilities, many  
6 elements of which have been depreciated to zero dollars. The available proceeds from the sale of  
7 the hydro assets amounts to less than 5% of the current total estimated stranded costs.  
8 Consequently, the sale of the hydro fleet provides a small benefit to ratepayers given the overall  
9 amount of the stranded costs that same is designated to address. By comparison, the continued  
10 ownership of the hydro-electric assets by PSNH will prove, in the future, to be more  
11 economically beneficial to PSNH's ratepayers.

12           The ratepayer's economic benefit of retaining the hydro assets can be estimated by  
13 comparing the operating costs of owning and operating the hydro fleet to the cost to replace the  
14 annual hydro generation and capacity. The first step in this process is to estimate the total cost of  
15 purchased power to replace the hydro generation and any capacity lost through the sale of the  
16 hydro fleet. In 2016, the New England average cost of purchased power to serve New England  
17 customers, not including PSNH in New Hampshire, was \$0.0811 (GES Attachment #1). The  
18 Eversource average is \$0.0852/kWh. We utilize the New England average of \$0.011, which is  
19 shown in GES Attachment #1.

20           The cost to PSNH ratepayers to continue to operate PSNH's hydro fleet requires  
21 determining the cost to ratepayers for estimated operating and maintenance expenses, real estate

1 taxes, insurance expense, and the PSNH revenue requirement based on the remaining book value  
2 of the hydro fleet.

3         GES Attachment #2 provides a 10-year summary for PSNH's hydro fleet's operating  
4 statistics, which indicates that the combined 10-year average generation is 346,000 MWh/year  
5 (rounded). The O & M (operating and maintenance) expenses are estimated based on the actual  
6 3-year average of \$0.235 per kWh as reported in the PSNH FERC Form 1. Real estate taxes and  
7 insurance expenses are estimated at 3% and 1%, respectively, based on an assumed, aggregate  
8 assessed and insured value of \$150 million. Based on these inputs, we estimate the total  
9 operating costs of the hydro fleet to be \$0.0408/kWh, which is currently borne by PSNH  
10 ratepayers.

11         PSNH ratepayers are also required to fund PSNH's hydro fleet revenue requirement,  
12 which is comprised of PSNH's allowed return on equity, return on debt, depreciation and federal  
13 and state income taxes, all based on the current remaining book value of the hydro assets of  
14 approximately \$52 million. GES Attachment 3 provides the calculation of the revenue  
15 requirement cash flows to PSNH, which is realized each year over the next 20 years. Our  
16 estimated revenue requirement includes a capital expense of \$1.6 million, based on PSNH's  
17 disclosed average annual capital expense budget. The \$1.6 million is increased annually by an  
18 inflation rate of 2.5%. This analysis assumes PSNH's target 50/50 debt to equity ratio, an after-  
19 tax return on equity of 9.81% for generation assets, a debt rate of 5%, and a depreciation rate of  
20 1.25% per year, which is based on PSNH's reported aggregate hydroelectric depreciation rate.  
21 The first-year revenue requirement, not including pass through O&M expenses, is approximately  
22 \$6.1 million (see GES Attachment 3).

1           **Q.     What are the results of your analysis?**

2           A.     As noted above, and detailed in GES Attachment #1 the average cost to purchase  
3 power is \$0.0811 per kWh, and the operating costs are estimated to be \$0.0408 per kWh. The  
4 next step is to estimate the spread between the cost to generate 346,000,000 kWh-yr. and the  
5 costs to buy the equivalent amount of electricity via power purchase contracts. Given that the  
6 replacement cost of the electricity is estimated to be \$0.0811/kWh and the cost to make the  
7 electricity with the hydro fleet is estimated to be \$0.0408/kWh., the resulting spread is  
8 \$0.0403/kWh. We multiply the spread by the average annual generation, the result of which is  
9 approximately \$13.9 million per year.

10           This represents the ratepayer's gross annual financial benefit in continuing to own the  
11 PSNH hydro fleet. Conversely, in the divestiture scenario, the \$13.9 million represents the gross  
12 annual detriment to ratepayers. In our opinion, the spread will remain constant through a twenty-  
13 year holding period based on the premise that the replacement cost of energy/capacity and the  
14 hydro operating expenses will move equally with inflation over the next twenty years.

15           The next step is to offset the ratepayer's gross annual economic benefit with the ratepayer's  
16 revenue requirement as described above. We deduct the annual revenue requirement of \$6.1 million  
17 from the gross ratepayer economic benefit of \$13.9 million, resulting in an estimate of net annual  
18 economic benefits that flow to the ratepayer, which are \$7.8 million. This stream of net annual  
19 financial benefits to the ratepayers carries very little risk to the ratepayers, because the hydro fleet  
20 could simply be sold if the spread and the revenue requirement are ever in balance, or if the net  
21 benefits to the ratepayers ever becomes negative. Therefore, we discount the net economic benefit to

1 the ratepayers using a risk-free rate of 2%, which is approximately equal to the current 20-year  
2 Treasury bill rate.

3 Based on these assumptions, the net present value of the ratepayer's net annual economic  
4 benefits is approximately \$111.8 million.

5 **Q. What does the \$111.8 million represent in this analysis?**

6 A. The net present value of the ratepayer's economic benefits represents the net  
7 benefit to the ratepayers of retaining the hydro fleet, over and above the current net book value of  
8 the hydro fleet, that would need to be realized in order to cause no net harm to ratepayers.

9 **Q. What is the minimum sale price for the PSNH hydro fleet that would ensure no**  
10 **net harm to ratepayers?**

11 A. In order for the PSNH's ratepayers to be held harmless from the divestiture of  
12 PSNH's hydro fleet, the sales proceeds would need to be at least \$163.8 million (\$111.8 million  
13 plus the \$52 million net book value of the hydro fleet). Any amount paid for the assets that is  
14 less than \$163.8 million would result in significant net harm to the ratepayers.

15 **Q. Will the \$83.3 million sale of PSNH's hydro fleet result in a reduction in electric**  
16 **rates for PSNH's ratepayers and cause them no net harm?**

17 A. No, the auction process failed to result in positive economic benefits to PSNH's  
18 ratepayers that adequately offsets the benefits of continued ownership of the hydro fleet.

19 **Q. Should the Commission allow the PSNH hydro fleet sale to proceed?**

1           A.     No. The sale under its current terms does not, and will not, benefit PSNH's NH  
2 ratepayers. In fact, the sale will result in a significant net harm to the ratepayers.

3     **III. Recent Hydroelectric Plant Sales in the Region Reflect that the**  
4     **Auction Result for PSNH's Hydro Fleet is Not at Fair Market Value.**

5           **Q.     Other than the fact that they are currently owned by PSNH, are PSNH's multiple**  
6     **hydroelectric facilities unique in the market place?**

7           A.     No. In recent years, there have been several recent sales of multiple hydroelectric  
8 facilities, which are located on more than one river system, by a single owner, in the region. The  
9 most recent of these sales is TransCanada's (TC) April 2017 sale of its hydroelectric assets on  
10 the Connecticut River in New Hampshire and Vermont, and on the Deerfield River in Vermont  
11 and Massachusetts for \$1.06 billion.

12          **Q.     Are the TC hydroelectric plants similar in capacity/size to PSNH's hydros?**

13          A.     Yes, in general they are. The TC sale included 13 hydroelectric plants ranging in  
14 capacity from Moore Dam's 195 MW to Searsburg Hydro's 5 MW. All but two (Moore and  
15 Comerford Dams) of the 13 TC facilities are less than 50 MW and of them, seven have less  
16 installed capacity than PSNH's J. Brodie Smith (17.6 MW) and Amoskeag (16 MW) Projects.  
17 Six of the TC plants have fewer than 10 MW of installed capacity.

18          **Q.     Did the TC hydro fleet sell for a price that was consistent with other recent,**  
19     **regional hydro asset sales?**

20          A.     Yes. Based on our database of recent hydroelectric sales, and at the request of the  
21 Vermont Attorney General's office, we estimated that the TC assets would bring a total price of

1 approximately \$1.02 billion, which was based on our continued observation of the market and on our  
2 experience and knowledge about a majority of the TC facilities. The overall price paid by Great River  
3 Hydro was \$1.06 billion, or about 104% of our expectation.

4 **Q. Were you involved in the recent property tax appeal for TC's Bellows Falls**  
5 **Project that was ultimately decided by the Vermont Supreme Court?**

6 A. Yes. Mr. Sansoucy was the expert witness for the State of Vermont and the Town of  
7 Rockingham, Vermont in that case. Mr. Fogg authored a majority of the appraisal report for that tax  
8 appeal, and he and Mr. Sansoucy collaborated on the various appraisal methodologies employed in the  
9 valuation of the Bellows Falls Project. The Bellows Falls Project is an individually FERC licensed  
10 project, which is part of the overall hydro fleet that was sold by TC to Great River Hydro. Our  
11 valuation methodology, including our use of comparable sales metrics in that case was validated by  
12 the Vermont courts and by the recent purchase of the TC fleet by Great River Hydro.

13 **Q. What was the ultimate outcome of that property tax appeal?**

14 A. The Windham County Superior Court upheld the appealed assessment and TC  
15 appealed the decision to the Vermont Supreme Court. The Vermont Supreme Court made a small  
16 adjustment to the comparable sales used at trial, but affirmed our methodology, and our use of Sale  
17 Price/kWh-yr (dollars per kilowatt hours per year) as a comparable sales metric in the determination  
18 of fair market value. The average metric validated in that case was \$0.50/kWh-yr., which was based  
19 on our analyses of recent hydro sales in the region.

20 **Q. Do appraisers commonly develop and employ comparable sales metrics when**  
21 **they appraise hydroelectric facilities?**

1           A.     Yes. There are commonly utilized metrics that can be extracted from  
2 hydroelectric plant sales. Among them are:

- 3           • Sale Price to Annual Generation
- 4           • Sale Price to Installed Capacity
- 5           • Gross Revenue multipliers
- 6           • Net Operating Income (EBITDA) multipliers
- 7           • Market derived capitalization rates

8           **Q.     Have you extracted sales metrics from the TC sale of its hydros to Great River**  
9 **Hydro?**

10          A.     Yes, two of them; gross and net revenues for all 13 TC plants are not currently  
11 publicly available. The following sales metrics are indicated by the TC sale:

- 12          • Average Sale Price to Annual Generation<sup>2</sup> = \$0.62/kWh-yr (Based on taxable assets of  
13 \$1 billion and on TC's recent 10-year average historic generation).
- 14          • Average Sale Price to Installed Capacity = \$1.7 million per MW (Based on taxable assets  
15 of \$1 billion and the total combined installed capacity of the TC fleet).

16          **Q.     Are there other recent sales of multiple hydroelectric plants, which are located on**  
17 **multiple river systems in the region?**

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<sup>2</sup> Run-of-the-river hydros typically do not impound more than 24 hours of water for immediate use. Many of these plants do not store any significant amounts of water and generation is based on available water at any given moment. TC's hydro fleet is comprised of: (a) peaking plants, which typically sell in the range of \$0.70+/kWh-yr.; (b.) modified peaking/run-of-the-river plants, which typically sell in the range of \$0.60+/kWh-yr.; and (c.) typical run-of-the-river plants, which, on average, sell for approximately \$0.50/kWh-yr. The PSNH hydro fleet compares best to the TC run-of-the-river plants, for which the indicated sale price metric is \$0.50/kWh-yr.

1           A.           Yes, there are several. Two of the most comparable to the PSNH  
2 hydroelectric assets are Brookfield Asset Management's purchase of two sets of hydros in 2013  
3 and 2014 in Maine. The 2013 purchase was of 17 of Nextera's hydros in Maine. The 2014  
4 purchase was of Black Bear Hydro's six plants in Maine.

5           **Q.     Have you extracted sales metrics from these two sales?**

6           A.     Yes, for the Nextera sale<sup>3</sup> the metrics are as follows:

- 7           • Sale Price to Annual Generation = \$0.47/kWh-yr (Based on taxable assets of \$760  
8 million).
- 9           • Sale Price to Installed Capacity = \$2.16 million per MW (Based on taxable assets  
10 of \$760 million).

11          And for the Black Bear sale the metrics were:

- 12          • Sale Price to Annual Generation = \$0.61/kWh-yr (Based on taxable assets of \$244  
13 million).
- 14          • Sale Price to Installed Capacity = \$3.5 million per MW (Based on taxable assets  
15 of \$244 million).

16          **Q.     In your experience is there a typical range of hydroelectric sale metrics that can  
17 be used as a "rule of thumb" for hydroelectric sales in the region?**

18          A.     Yes, the recent average sale price to annual generation is about \$0.50/kWh-yr,  
19 with a typical range between \$0.40/kWh-yr and \$0.60/kWh-yr. In general, the sale price per

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<sup>3</sup> These plants are similar to the PSNH hydro fleet, except that they are located in Maine where spot energy prices are typically lower than they are in New Hampshire.

1 installed capacity typically averages around \$2 million/MW, and the range is generally between  
2 \$1.7 and \$2.2 million/MW.

3 **Q. Is one of these two metrics typically more reliable than the other?**

4 A. Yes, the sale price to annual generation generally reflects a tighter statistical  
5 cluster than the sale price to installed capacity. This is because, for most run-of-the-river  
6 hydroelectric plants, it is the electric generation, and occasionally REC sales from that  
7 generation, that creates a majority of the plant's revenues. For this reason, buyers will forecast  
8 energy revenues as a primary purchasing decision metric for non-peaking, run-of-the-river plants  
9 that are most similar to those owned by PSNH.

10 **Q. Is there a generally accepted method of estimating future generation for**  
11 **hydroelectric plants?**

12 A. Yes, for most appraisals, appraisers, (and in our experience, buyers) will often  
13 calculate the most recent 10-year average generation and utilize that average in estimating future  
14 generation in a cash flow analysis.

15 **Q. Have you calculated the 10-year average annual generation and the total installed**  
16 **capacity for the PSNH hydroelectric plants?**

17 A. Yes. The 10-year average annual generation for all nine of PSNH hydros is  
18 346,000 MWh-yr., and the total, combined installed capacity is 69 MW.

19 **Q. Is it possible to apply the comparable sales indicators that you discussed above to**  
20 **the PSNH hydro fleet?**

1           A.     Yes, these metrics indicate that, all else being equal, the PSNH hydros combined  
2 could sell in the following ranges:

- 3           • \$138 million @ \$0.40/kWh-yr
- 4           • \$172 million @ \$0.50/kWh-yr
- 5           • \$207 million @ \$0.60/kWh-yr

6           And

- 7           • \$117 million @ \$1.7 million/MW
- 8           • \$151 million @ \$2.2 million/MW

9           **Q.     Is it possible to apply the comparable sales indicators that you discussed above to**  
10 **the individual hydro plants owned by PSNH?**

11          A.     Yes. Purely based on an application of the previously discussed range of sale price to  
12 kWh-yr metrics, the individual plants could possibly sell in the following price ranges, which even at  
13 the low end of the range are significantly greater than the allocations provided by Hull Street:

Facility	Assumed Sale Price Metric		
	\$0.40/kWh-yr.	\$0.50/kWh-yr.	\$0.60/kWh-yr.
Amoskeage	\$31,480,000	\$39,350,000	\$47,220,000
Garvins Falls	\$17,600,000	\$22,000,000	\$26,400,000
Smith	\$43,200,000	\$54,000,000	\$64,800,000
Ayers Island	\$19,760,000	\$24,700,000	\$29,640,000
Canaan	\$4,240,000	\$5,300,000	\$6,360,000
Eastman Falls	\$10,360,000	\$12,950,000	\$15,540,000
Gorham	\$4,600,000	\$5,750,000	\$6,900,000
Hooksett	\$3,080,000	\$3,850,000	\$4,620,000
Jackman	\$4,120,000	\$5,150,000	\$6,180,000
<b>Total</b>	<b>\$138,440,000</b>	<b>\$173,050,000</b>	<b>\$207,660,000</b>

14

1           **Q.     Are there other reliable indicators that the use of the previously discussed**  
2 **comparable sales metrics are valid in estimating the fair market value of the PSNH hydros, both**  
3 **individually, and as a fleet?**

4           A.     Yes. Among these indicators is a decision by the NH BTLA in a property tax  
5 appeal brought by Great Lakes Hydro America, LLC (GLHA) in Berlin and Gorham, New  
6 Hampshire. That particular tax appeal (tax years 2010 and 2011) involved a dispute over the  
7 assessed values of five of GLHA’s plants, three of which are located in Berlin, and two of which  
8 are in Gorham. Both sides in that case relied on discounted cash flow analyses that relied on  
9 forecasts on energy, capacity, and O&M expenses, which were similar in make up with one  
10 major exception being the treatment of capital expenses. The five plants are co-located in  
11 Gorham and Berlin along with the PSNH Smith and Gorham plants, and all seven of the plants  
12 utilized the same controlled water source, the headwaters of the Androscoggin River, and they  
13 all benefit equally from the “fall” of the river in the Gorham and Berlin area. These seven plants  
14 could easily be owned by a single common owner, such as GLHA, or alternatively individually  
15 by separate owners without impact on the annual production output for any of the plants.

16           The BTLA decision in this case, included Market Value Findings and Tests of  
17 Reasonableness,<sup>4</sup> which said the following:

18           “The board’s detailed market value findings are stated above. These findings indicate a  
19 total market value of \$53.2 million in tax year 2010 and \$58.1 million in tax year 2011 for the

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<sup>4</sup> Great Lakes Hydro America, LLC v. Town of Gorham and Great Lakes Hydro America, LLC, v. City of Berlin, Decision dated 10/16/2014; Page 23 of 93, bullet #5.

1 five hydros. These hydros have a combined nameplate of approximately 27 MWs, indicating the  
2 board's estimates to equate to about \$2 million per MW."

3 The board went on to say: "These sales give a rough indication that hydros were selling  
4 in the market in the range of approximately \$1.8 million to \$3.5 million per MW of nameplate."  
5 Followed by "Therefore, the board's market value finding of approximately \$2 million per MW,  
6 which is near the low end of this range, appears reasonable.

7 **Q. Does BTLA's decision in the GLHA appeal remain relevant in a discussion of**  
8 **market values on the Androscoggin River in 2017?**

9 A. Yes. That appeal involved significant testimony about the future cost and timing  
10 of certain capital expenditures, including the completion of the Androscoggin headwaters dam  
11 restoration project (\$35 million estimated costs), which had not been started at the time of the  
12 trial. That project and the other disputed capital expense projects have now been completed, and  
13 to our knowledge, only one final allocated payment by each headwater user is due. Because of  
14 this, the BTLA's values included very significant lump sum capital expenses that are now no  
15 longer relevant, making the board's concluded value of \$2 million/MW very conservative, even  
16 with today's persistent low wholesale energy prices and forward curves.

17 **Q. Is the BTLA's \$2 million/MW for the Androscoggin River hydros applicable**  
18 **to the PSNH hydro fleet?**

19 A. Yes. For the reasons stated previously, the BTLA's decision is supportive of our  
20 ongoing research that indicates the same range of sale prices between \$1.7 and \$2.2 million/MW.  
21 We have illustrated the imputed values based on these metrics earlier in our testimony.

1           **Q.     Have you calculated the sales metrics from the PSNH auction results (\$83**  
2 **million) and compared them to the recent market activity in the region?**

3           A.     Yes. At \$83 million, the imputed sales price to annual generation is \$0.24/kWh-yr  
4 (\$83 million divided by 345,000,000 kwh), which is less than one half of the average recent sales  
5 prices expressed in those terms.

6           The imputed sales price in dollars per installed MW is \$1.2 million/MW (\$83 million  
7 divided by 69 MW) or about two thirds of the recent sales prices expressed in these terms.

8           **Q.     In your opinion, are there any unusual or pronounced defects, or functional**  
9 **issues in any of the PSNH hydro assets that would cause their sale price to be about one**  
10 **half of other recent hydro sale prices?**

11          A.     No. In our observation, which includes interviews of plant managers/operators,  
12 reviews of FERC Licenses and operating statistics, and multiple site inspections, PSNH's hydros  
13 are in excellent condition and have been very well maintained throughout PSNH's ownership of  
14 them. PSNH has been a very good steward of these plants, and it has provided the resources  
15 necessary for the continued operation of its facilities into the future by any owner. Our opinion  
16 is supported by the relatively few budgeted capital expenses reported in the various PSNH  
17 divestiture disclosures and other documents included in PSNH's divestiture disclosures.

18          **Q.     Are the PSNH hydroelectric plants subject to future water flow, generation,**  
19 **or interconnection restrictions that would make the plants less attractive to typical buyers**  
20 **in an open market?**

1           A.     No. Not to our knowledge. In fact, Smith and Gorham Station hydros operate on  
2 the Androscoggin River in Berlin and Gorham, along with five plants owned by Brookfield  
3 Asset Management in the same communities. Brookfield's plants currently operate profitably  
4 using the same water resources as Smith and Gorham Station, therefore there is no reason to  
5 assume that Smith or Gorham would suffer from added external obsolescence beyond what is  
6 currently experienced by Brookfield for its assets.

7           Additionally, PSNH has performed any/all necessary changes to the electrical switch gear  
8 and interconnections at each of its hydro sites at its own expense, which has paved the way for a  
9 new owner to operate the plants independently from PSNH's central operations without incurring  
10 additional upfront expenses to make these changes.

11           **Q.     In your experience is there a typical range of gross revenue multipliers from**  
12 **comparable hydroelectric sales?**

13           A.     Yes, the recent range is between 8 and 9.6 times gross revenue for typical  
14 hydroelectric plant sales.

15           **Q.     What is the 2017 estimated gross revenue from the PSNH hydros based on**  
16 **346,000 kWh-yr and the average FERC qualified capacity of 60 MW as the basis for**  
17 **capacity payments, assuming NH Class IV REC revenues for Canaan, Gorham, Hooksett,**  
18 **and Jackman plants, and no ancillary revenues?**

19           A.     The 2017 gross revenues are estimated to be \$17.3 million, which multiplied  
20 times a gross revenue multiplier of 8 equals \$136 million imputed value. \$136 million equals a

1 sale price to annual generation of approximately \$0.40/kWh-yr, which is on the low end of the  
2 recent range of sale prices to annual generation.

3 **Q. Based on an auction price of \$83 million and first year estimated revenues of**  
4 **\$17.3 million, what is the imputed gross revenue multiplier?**

5 A. 4.8 times gross revenue (\$83 million divided by \$17.3 million), which is about  
6 50% of the typical ratios indicated in recent market sales.

7 **Q. What is a typical hydro buyer's expectation of an after-tax return on its**  
8 **equity contribution to a hydro purchase?**

9 A. The current after-tax return on equity for a typical hydroelectric corporate buyer is  
10 approximately 11.5%, which imputes to pre-tax equity return of approximately 19.2% (11.5%  
11 divided by .6).

12 **Q. What is the current typical debt rate for hydro purchases?**

13 A. Typically, credit worthy hydro buyers can borrow at approximately 5.5%.

14 **Q. Given the auction price for the PSNH hydros of \$83 million, and based on a**  
15 **typical market debt rate of 5.5%, and on your estimated first year gross revenues of \$17.3**  
16 **million, and on market based O&M expenses, including capital expenses, what are the**  
17 **imputed after-tax and pre-tax returns on equity to the auction bidder?**

18 A. Based on those criteria, the imputed after-tax equity return rate is 21.5%, which  
19 imputes to a pre-tax equity return rate of 35.8% (21.5% divide by .6).

1 **IV. Given That Property Taxes in New Hampshire Are Assessed Based**  
2 **on Fair Market Value, and That the Auction Purchase Price for**  
3 **PSNH's Hydro-Electric Assets is Below Fair Market Value, the**  
4 **Resulting Sale Price and the Allocation Thereof, Should Not be Relied**  
5 **Upon or Otherwise used in Property Tax Assessment**  
6

7 **Q. Should the auction results for the PSNH hydro fleet be relied upon as the**  
8 **basis of any future property tax assessments for these facilities?**

9 A. No. Property tax assessments in New Hampshire are required, by law, to be based  
10 on the fair market value as defined here in our testimony and in RSA 72:8. The auction process  
11 for the sale of the PSNH fleet of hydros failed to result in a price that meets the statutory fair  
12 market value threshold in New Hampshire. If any other real estate property in New Hampshire  
13 were sold under the same conditions as were required in the PSNH hydro auction process, that  
14 transaction would be disqualified as not meeting the definition of fair market value and it would  
15 not be deemed to be an arm's length sale.

16 **Q. Does this conclude your testimony at this time?**

17 A. Yes.