

THE STATE OF NEW HAMPSHIRE

BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

PREPARED TESTIMONY OF JAMES G. DALY

PETITION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE D/B/A EVERSOURCE
ENERGY FOR APPROVAL OF A POWER PURCHASE AGREEMENT

Docket No. DE 16-xxx

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

2 A. My name is James G. Daly. I am employed by Eversource Energy Service Company
3 (“Eversource”) as the Vice President of Energy Supply. My business address is 247 Station
4 Drive, Westwood, MA 02090. Eversource Energy Service Company provides centralized
5 services to the Eversource Energy operating subsidiaries, including Public Service Company of
6 New Hampshire d/b/a Eversource Energy (“PSNH”). I am also Vice President of Energy Supply
7 for PSNH.

8 **Q. Have you previously testified before the New Hampshire Public Utilities Commission**
9 **(“Commission”)?**

10 A. I have testified on a number of occasions before the NHPUC as well as before the Connecticut,
11 Massachusetts, Maine commissions and the Federal Energy Regulatory Commission.

12 **Q. Please outline your education and qualifications.**

13 A. I graduated from Trinity College in Dublin, Ireland with a Bachelor’s Degree in Electric
14 Engineering and from University College in Dublin, Ireland with a Master’s Degree in Industrial
15 Engineering. From 1980 through 1988, I held the position of Regional Marketing
16 Engineer/Senior Engineer with responsibility for supply arrangements with large industrial
17 customers for the Electricity Supply Board in Dublin, Ireland. I joined Unitil Service Corporation

1 in 1988 and served in various positions including Senior Vice President and President of Unitil
2 Power Corporation. During my tenure at Unitil, I was responsible for the procurement,
3 operations and management of the electric power and natural gas portfolios for various Unitil
4 subsidiaries. From 1998 through 2000, I was President of Unitil Resources, Inc., developing an
5 energy consulting business to major energy companies. In 2000 through 2001, I held the position
6 of Executive Vice President, Network Operations for Enermetrix.com, Inc., where I was
7 responsible for developing an Internet-based network for large retail customers to procure
8 electricity and natural gas. From 2001 through 2003, I was Vice President/Director of Power
9 Market Development for Sprague Energy Corporation where I was responsible for developing a
10 start-up retail electricity business servicing large commercial and industrial customers. I joined
11 NSTAR Electric and Gas Corporation in July 2003. Following the merger of NSTAR and
12 Northeast Utilities, I was promoted to my current position.

13 **Q. Please explain your duties and responsibilities as the Vice President of Energy Supply.**

14 A. As Vice President - Energy Supply, I am responsible for securing a reliable and least-cost energy
15 supply on behalf of customers served by PSNH and its other Eversource Energy distribution
16 affiliates in Connecticut and Massachusetts. My responsibilities include the management of
17 Eversource's natural gas resource portfolio, Basic Service (default energy/standard offer) supply,
18 fuels procurement, and ISO-NE load settlement.

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

20 A. The purpose of my testimony is to explain the power purchase agreement ("PPA") between
21 PSNH and Hydro Renewable Energy Inc. ("HRE"), a subsidiary of Hydro-Québec for
22 hydropower to be delivered to Deerfield, New Hampshire over the proposed Northern Pass
23 transmission line. More specifically, I will describe the terms of the PPA, including the price to

1 be paid and the terms of delivery, the benefits to New Hampshire customers from the PPA and
2 why the PPA is in the public interest. The ratemaking treatment of the PPA will be covered in the
3 testimony of Eric H. Chung.

4 **Q. Please describe the proposed Northern Pass Transmission line (“NPT”).**

5 A. NPT is a proposed HVDC electric transmission line with 1,090 MW transfer capability running
6 approximately 192 miles from the international border between Canada and Pittsburg, New
7 Hampshire to Franklin, New Hampshire, where it will connect with a 345 kV alternating current
8 (“AC”) line that will ultimately interconnect with the existing regional transmission system in
9 Deerfield, New Hampshire.

10 **Q. What benefits will NPT bring to the State of New Hampshire?**

11 A. Once constructed and placed in service, NPT will deliver up to 1090 MW of clean, renewable
12 electric power to New Hampshire, together with substantial economic, environmental and other
13 benefits. Detailed information discussing the benefits of NPT are contained in the “Joint
14 Application of Northern Pass Transmission, LLC and Public Service Company of New
15 Hampshire d/b/a Eversource Energy for a Certificate of Site and Facility to Construct a High
16 Voltage Electric Transmission Line and Related Facilities in New Hampshire,” dated October 19,
17 2015, that is pending before the New Hampshire Site Evaluation Committee in its Docket No.
18 2015-06. Briefly, construction and operation of the line will provide an estimated \$3.8 billion in
19 economic stimulus in the State through the first 20 years of operation, including: \$80 million in
20 annual energy cost savings; 2,600 New Hampshire jobs; \$600 million in local, county and state
21 tax revenues; and \$200 million in funding for community betterment, economic development,
22 clean energy and tourism through the Forward New Hampshire Fund. Delivery of renewable
23 hydroelectric energy over NPT will reduce greenhouse gas emissions by over 3,000,000 tons per

1 year and thus, help achieve the goals of the NH Climate Action Plan and Regional Greenhouse
2 Gas Initiative. These benefits will be realized at no cost to New Hampshire customers and with
3 no demand on government services.

4 **Q. Why did PSNH enter into the PPA?**

5 A. PSNH entered into the PPA to ensure that its customers and the State of New Hampshire would
6 realize a unique, direct benefit from energy that would be delivered over NPT in addition to the
7 savings and other substantial benefits provided by commencement of construction and operations
8 of NPT described above. The PPA is intended to satisfy the following goals:

- 9 1) Ensure that New Hampshire receives no less than its regional load ratio share of the
10 energy delivered over NPT during on-peak hours when energy and reliability benefits
11 are highest to PSNH's customers;
- 12 2) Create a stable pricing formula that reduces volatility;
- 13 3) Ensure that all environmental attributes associated with the energy delivered under
14 the PPA would be transferred to PSNH for the benefit of its customers;

15 **Q. Is the PPA attached to your testimony?**

16 A. Yes. The PPA is attached to my testimony as Attachment A.

17 **Q. Please describe the PPA.**

18 A. In broad terms, under the PPA, PSNH will receive a substantial supply (approximately 400,000
19 MWHrs/Year) of firm, on-peak energy from renewable resources equal to approximately 100
20 MW. The energy supply is on-peak, Monday through Friday, from hour-ending 8 am through
21 hour-ending 11 pm (67% of weekday hours), every week of the year for the 20-year term of the
22 PPA. Additionally, PSNH will receive all of the environmental attributes associated with the

1 Hydro-Québec renewable resources for the delivered energy over that time. The energy will be
2 delivered at the southern terminus of the NPT line, which is expected to be PSNH's Deerfield
3 substation.

4 **Q. What are the pricing terms in the PPA?**

5 A. The pricing structure is designed to dampen volatility that has been present in the wholesale
6 markets in recent years and provide price stability for PSNH customers. [REDACTED]

7 [REDACTED]
8 [REDACTED]. Specifically, the first year contract price will be the
9 delivery point adjusted forward market price for energy. The contract price for the following
10 years will be set using the following pricing formula:

11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]

1 **Q Does the PPA contain any additional terms to help assure that New Hampshire continues to**
2 **receive unique economic benefits over the long term?**

3 A. Yes. To support the ongoing benefits of the transaction, the Agreement provides significant
4 “most favored nation” rights. First, if at any time prior to the tenth anniversary of the contract,
5 HRE (or any of its affiliates) enters into a third party power sales agreement over the NPT line for
6 a similar volume as this PPA, then HRE is required to give notice to PSNH of that agreement,
7 including the pricing terms of the agreement. PSNH will have the right to accept such pricing
8 terms in whole in lieu of the pricing terms described above, if PSNH determines that they are
9 more favorable. Second, if unit-specific environmental attributes are transferred in the NEPOOL
10 – GIS System under another long term contract where HRE energy is transmitted using the NPT
11 Line, PSNH would have the right to adopt that same unit-specific Environmental Attribute
12 transfer process.

13 **Q. Please summarize the benefits of the PPA.**

14 A. The PPA provides several important benefits to PSNH customers and the State of New
15 Hampshire. The PPA secures a source of clean energy and the associated environmental
16 attributes at beneficial rates over a 20-year period. PSNH’s customers and the State of New
17 Hampshire will receive direct and indirect energy cost savings, reduced energy price volatility,
18 and other economic benefits as a result of the PPA. Notably, New Hampshire customers will not
19 bear any costs for the purchase of the environmental attributes associated with the energy
20 delivered under the PPA.

21 **Q. What are the economic benefits of the PPA for PSNH’s customers?**

22 A. The key economic benefits of the PPA are that PSNH’s distribution customers will receive the
23 value of the below-market savings created by the PPA, as well as the value of all environmental

1 attributes that may materialize in the future, in the form of a credit to the Stranded Cost Recovery
2 Charge. The pricing formula used in the PPA has two key components. [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]. Incorporating these concepts into the PPA prevents substantial
6 swings in the price from one year to the next and therefore helps stabilize PPA pricing in a
7 volatile market. In addition, the contract provisions help reduce customer costs within a market
8 environment that rises over the long term, while allowing customers to realize benefits related to
9 falling energy costs on a year-over-year a basis.

10 **Q. Have these potential cost savings to customers been quantified?**

11 A. Yes. To demonstrate the range of potential savings to PSNH’s customers from the PPA,
12 Eversource developed and reviewed a number of different pricing scenarios, the economic results
13 of which are detailed in Attachment B, attached to this testimony. These scenarios were
14 developed with the aid of historical energy price, fuel price, and CPI data and span a reasonable
15 range of net benefits outcomes that customers could potentially realize during the 20-year term of
16 the contract. Some scenarios show energy prices being very volatile and rising rapidly during the
17 20-year term, while others show prices falling initially with very little volatility and price growth
18 thereafter.

19 As shown in Attachment B, the PPA results in up to approximately \$100 million in net customer
20 energy savings across the range of scenarios reviewed. Under all but one of the various scenarios
21 reviewed by PSNH, and without including any value for the environmental attributes PSNH will
22 receive under the PPA, customers would receive a net economic benefit from the PPA. The
23 scenario that did not suggest a net benefit assumed a sharply declining price environment in the

1 early years of the PPA, all years below the year 1 price, and low volatility; intuitively, the
2 likelihood that all of these situations would occur simultaneously is quite low. In summary, the
3 PPA pricing structure helps stabilize the PPA pricing in a volatile market and, in all but one
4 aberrant scenario, reduces costs to customers.

5 **Q. Please describe the clean energy benefits associated with the PPA.**

6 A. First, under the PPA, PSNH will receive a fully renewable energy supply derived from 100%
7 large hydro, low-carbon resources located in the Province of Québec and delivered to the
8 Deerfield, NH substation without any additional cost for the transmission service over the NPT
9 line.

10 Second, PSNH will receive the environmental attributes associated with the renewable energy
11 delivered under the PPA at no additional cost. Hydro-Québec's renewable fleet includes large
12 hydroelectric facilities, of which 2,500 MWs are new and have been developed and integrated
13 into the system since 2005. An additional 1,200 MWs are under construction and will come on-
14 line in phases through 2020.

15 **Q. What value do these environmental attributes provide to New Hampshire customers?**

16 A. New Hampshire and other New England states have set aggressive goals for the reduction of
17 carbon emissions. There is a growing recognition that hydroelectricity provides a clean,
18 renewable source of power that will have an important role in meeting these goals. In my
19 opinion, development of a market for these environmental attributes over the term of the contract
20 is likely as states pursue means to achieve their carbon reduction and other greenhouse gas goals.
21 Should New Hampshire, other states, the federal government, or regional grid operators
22 implement laws, regulations or rules for environmental attributes for large hydro that correspond

1 with the Hydro-Québec renewable energy, PSNH will be able to monetize those attributes for the
2 benefit of PSNH's customers.

3 By way of example, if the renewable energy were to be valued at a Renewable Energy Credit
4 (REC) price of \$40 which is representative of the current Class I market, then the environmental
5 attributes associated with the PPA would be worth in excess of \$300 million nominally over the
6 20-year term length, providing significant additional value to customers. While large-scale hydro
7 is not eligible for Class I RECs today, it provides a good proxy for the value of clean non-carbon
8 energy. Since New England adopted the Class I standard the cost to avoid carbon-based
9 generation has been the cost of a Class I REC. The decision to exclude large hydro from Class I
10 eligibility was based on the desire not to subsidize large hydro with the Class I compliance costs.
11 Even so, New England and NH continue to pay the Class I REC price to avoid carbon emissions.
12 In addition, hydro power has the added value of being dispatchable which makes it a good
13 resource to support intermittent resources such as wind and solar.

14 As previously stated, it is important to note that the net customer benefits cited in Attachment B
15 do not include any environmental benefits. Any revenue derived from the monetization of the
16 environmental benefits will be in addition to the energy benefits demonstrated in Attachment B.

17 **Q. Will PSNH use the energy from the PPA to supply default energy service?**

18 A. No. As more fully described in the testimony of Eric H. Chung, PSNH's entitlements to the
19 energy and environmental attributes will be sold bilaterally or into the wholesale market, with the
20 net proceeds credited to the Stranded Cost Recovery Charge.

1 **Q. Could the PPA potentially increase stranded costs?**

2 A. The pricing structure of the PPA is designed to avoid the creation of any additional stranded costs
3 by following wholesale market prices, thereby avoiding the risk of locking in high fixed costs
4 when market prices decline. The PPA will reduce market volatility by clipping off the high and
5 low prices, leading to price stability. As markets tend to skew toward high prices, on an annual
6 basis the benefits from clipping off the high prices is greater than the cost of giving up the lower
7 end of the price curve. The scenarios described in Attachment B demonstrate this. There may be
8 years where the market falls faster than the contract price, but over the term of the contract, the
9 benefits of cutting off high prices exceeds the cost in all but one of the scenarios reviewed.

10 **Q. Are there are public policies or goals that are supported by the PPA?**

11 A. Yes, a variety of public policies and goals are supported by the PPA. First, and perhaps most
12 important, this PPA helps to ensure that New Hampshire would receive a unique benefit from an
13 energy source that does not depend upon fossil fuels. Providing electricity from a different fuel
14 source, and one that relies upon renewable energy in contrast to the region's substantial reliance
15 upon natural gas for electric generation, is consistent with the State's public policy goals as they
16 are described in the State's 10-Year Energy Strategy. A number of other statutes also set forth
17 the public interest of having fuel diversity in electric generation, including RSA 4-E:1, I, (c);
18 RSA 378-7-a; RSA 374-F:8; RSA 374-G:1; and, RSA 362-F:1.

19 Further, the Legislature has declared that it is the State's policy to "meet the energy needs of the
20 citizens and businesses of the state at the lowest reasonable cost while providing for the reliability
21 and diversity of energy sources." RSA 378:37. Assuring that New Hampshire customers may
22 benefit from low cost, reliable power from a renewable source is clearly in line with the State's
23 clearly articulated policy goal.

1 Additionally, the proposed PPA is consistent with, and supports, the fundamental reason for
2 restructuring of the state’s electric industry – i.e., reducing “the highest average electric rates in
3 the nation” to ameliorate their “adverse impact on New Hampshire citizens.” (1996 N.H. Laws,
4 129:1). By helping to provide a stable and renewable energy source to New Hampshire the PPA
5 would contribute to the reliability of electric service, encourage environmental improvement, and
6 ensure that New Hampshire’s electric rates are more competitive with electric rates in the region.

7 **Q. Do you have an opinion on whether the PPA is just and reasonable to PSNH’s customers**
8 **and in the public interest?**

9 A. Yes. The terms of the PPA are just and reasonable because the energy price underlying the PPA
10 is market-based, the value associated with the environmental attributes would be transferred at no
11 additional cost to customers, and the key features of the PPA contract structure help promote the
12 traditional ratemaking concepts of stability and predictability.

13 **Q. Is the PPA conditioned on the NPT line being built and put into operation?**

14 A. Yes. The energy PSNH would purchase under the PPA is expressly limited to energy that Hydro-
15 Québec would deliver using the Northern Pass transmission line.

16 **Q. What is PSNH seeking from the Commission?**

17 A. Pursuant to RSA 374:57, PSNH is requesting that the Commission issue an order finding that
18 PSNH’s decision to enter into the PPA was reasonable and in the public interest. Specifically
19 PSNH requests that the Commission:

- 20 a. Find PSNH’s decision to enter into the PPA to be reasonable;
- 21 b. Find that the terms of the PPA are in the public interest;

- 1 c. Allow PSNH to flow the benefits and any costs of the PPA through its Stranded Cost
2 Recovery Charge consistent with the description in Mr. Chung's testimony, thereby
3 eliminating any adverse effect to competitive suppliers that might occur from impacts to
4 the default energy service price, and allowing all of PSNH's distribution customers to
5 share in the expected benefits of the PPA;
6 d. Order such further relief as may be just and equitable.

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

8 A. Yes, it does.