STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7874

Investigation into the Establishment of Standard-Offer)
Prices under the Sustainably Priced Energy Enterprise)
Development ("SPEED") Program)

Order entered: 2/7/2013

I. INTRODUCTION

In 2009, the Vermont General Assembly passed Act 45,[1] which mandated the establishment of a standard offer for a limited amount of Sustainably Priced Energy Enterprise Development ("SPEED") resources with a plant capacity of 2.2 MW or less.[2] In 2012, Act 170[3] mandated the establishment of a standard offer for existing hydroelectric plants with a nameplate capacity of 5 MW or less. The statute sets forth the elements that are to be used by the Public Service Board ("Board") in establishing a standard-offer price.

Pursuant to 30 V.S.A. § 8005a(p)(3)(B), the standard-offer price for existing hydroelectric plants must be the lesser of $0.08 per kWh or the sum of five elements identified in the statute. In this Order, pursuant to Section 8005a(p)(3)(B), we determine the methodologies for calculating each of the five statutory pricing elements, and establish the standard-offer prices (which are below the statutory maximum of $0.08 per kWh).

II. STATUTORY AND PROCEDURAL HISTORY

A. Background

In 2005, the Vermont General Assembly established the SPEED program to encourage the development of renewable energy resources in Vermont, as well as the purchase of renewable

1. Public Act No. 45 (2009 Vt., Bien. Sess.), codified in 30 V.S.A. § 8005.

2. Sections 8001 et seq, set out the SPEED program.

3. Public Act No. 170 (2012, Vt., Adj. Sess.), codified in 30 V.S.A. § 8005a(p).

power by the State's electric distribution utilities.[4] In response to the legislation, the Board promulgated Board Rule 4.300 to implement the SPEED program. Board Rule 4.300 also established a SPEED Facilitator to encourage the development of resources under the program.[5]

Act 45, as amended by Act 65 in 2011, and Act 170 in 2012, establishes a standard-offer component to the SPEED program. Section 8005a requires the Board to establish standard-offer prices for new renewable plants with a nameplate capacity of 2.2 MW or less and requires the SPEED Facilitator to enter into long-term contracts with such plants. Pursuant to Section 8005a(k)(2), the SPEED Facilitator distributes the energy and attendant costs to the Vermont distribution utilities based on each utility's pro-rata share of total Vermont retail kWh sales for the previous calendar year.

Act 170 mandates the establishment of a standard-offer price for certain existing hydroelectric plants. Pursuant to Section 8005a(p)(1)(A), an existing hydroelectric plant means:

> a hydroelectric plant of five MW plant capacity or less that is located in the state, that was in service as of January 1, 2009, that is a qualifying small power production facility under 16 U.S.C. § 796(17)(C) and 18 C.F.R. part 292, and that does not have an agreement with the board's purchasing agent for the purchase of its power pursuant to subdivision 209(a)(8) of this title and board rules adopted under subdivision (8). The term includes hydroelectric plants that have never had such an agreement and hydroelectric plants for which such an agreement has expired, provided that the expiration date is prior to December 31, 2015.

Section 8005a(p)(3) sets out the criteria for setting prices for existing hydroelectric plants, requiring that a standard-offer contract price be the lesser of the following:

> (A) $0.08 per kWh, adjusted for inflation annually commencing January 15, 2013, using the CPI;[6] or
> (B) The sum of the following elements:

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4. Those portions of Title 30 concerning renewable energy in general, and the SPEED program in particular, are set forth in 30 V.S.A. Chapter 89.

5. Section 8005(b)(1) requires the Board to "name one or more entities" as SPEED Facilitator. When this Section was enacted in 2005, the use of a SPEED Facilitator was at the Board's discretion; the Board decided to establish the SPEED Facilitator to help promote renewable development.

6. Section 8002(3) defines CPI as the Consumer Price Index for all urban consumers, designated as "CPI-U," in the northeast region, as published by the U.S. Department of Labor, Bureau of Labor Statistics.

(i) a two-year rolling average of the ISO New England Inc. (ISO-NE) Vermont zone hourly locational marginal price for energy;
(ii) a two-year rolling average of the value of the plant's capacity in the ISO-NE forward capacity market;
(iii) the value of avoided line losses due to the plant as a fixed increment of the energy and capacity values;
(iv) the value of environmental attributes, including renewable energy credits; and
(v) the value of a 10- or 20-year contract.

In addition, Section 8005a(p)(4)(A) requires, starting in 2014, that the Board annually "recalculate and adjust the energy and capacity elements of the price" and that the recalculated and adjusted energy and capacity elements shall apply to all executed contracts, "whether or not the contracts were executed prior to the adjustments." With respect to the price elements of avoided line losses, environmental attributes, and the value of a long-term contract, pursuant to Section 8005a(p)(4)(B)(i), these elements "remain fixed at their values at the time a contract is signed" for the duration of an executed contract, except that the Board may periodically adjust the value of environmental attributes of an executed contract based upon whether the plant becomes certified by the Low-Impact Hydropower Institute of Portland, Maine ("LIHI")[7] or loses such certification. Pursuant to Section 8005a(p)(4)(B)(ii), the Board annually may adjust "these elements for inclusion in contracts that are executed after the date any such adjustments are made."

Section 8005a(p)(5) further provides that no "existing hydroelectric plant receive a price in one year higher than its price in the previous year, adjusted for inflation using the CPI," except if a hydroelectric plant becomes certified by LIHI, then the Board "may add to the price any incremental increase in the value of the plant's environmental attributes resulting from such certification."

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7. The LIHI is a non-profit 501(c)(3) organization dedicated to reducing the impacts of hydroelectric generation through the certification of hydroelectric projects that have avoided or reduced their environmental impacts pursuant to the LIHI's criteria. In order to be LIHI-certified, a hydroelectric facility must meet criteria in the following eight areas: river flows, water quality, fish passage and protection, watershed protection, threatened and endangered species protection, cultural resource protection, recreation, and facilities recommended for removal.

B. Procedural History

On June 8, 2012, the Board issued an Order Opening Investigation and Notice of Workshop.

On June 22, 2012, Board staff held a workshop to begin discussion of the issues and determine the process for reviewing and deciding the issues in this Docket.

On December 28, 2012, the Vermont Independent Power Producers Association ("VIPPA") filed comments and recommendations on the statutory criteria for calculating a standard-offer price for existing hydro-electric plants.

On January 7, 2013, and January 9, 2013, the Department of Public Service ("Department") and Green Mountain Power Corporation ("GMP"), respectively, submitted reply comments.

On January 25, 2013, the Department, GMP, and VIPPA filed a stipulation concerning the methodology for calculating the standard-offer prices for existing hydroelectric plants.[8]

III. PARTIES' RECOMMENDATIONS

The Department, GMP, and VIPPA (the "parties") recommend that the Board adopt the following methodology for calculating each of the statutory pricing elements, pursuant to Section 8005a(p)(3)(B), for the establishment of standard-offer contract prices for existing hydroelectric plants.

Locational Marginal Price for Energy

The parties recommend that the energy price element be 4.14 cents per kWh based upon the two-year rolling average of the ISO-NE Vermont zone hourly real-time locational marginal price ("LMP") for calendar years 2011 and 2012.[9]

8. On January 29, 2013, the City of Burlington Electric Department filed comments on the proposed methodology for calculating the standard-offer prices. These comments were submitted well after the comment deadline, so the Board has not considered them in this Order.

9. ISO-NE LMP values are found at http://iso-ne.com/markets/hstdata/znl_info/monthly/index.html.

Value of Plant's Capacity

The parties recommend that, in order to determine the value of an existing plant's capacity each year, a total annual capacity revenue amount for each hydroelectric plant be calculated based on the Forward Capacity Market ("FCM") clearing price for the appropriate capacity period and the plant's ISO-NE capacity rating. The annual capacity revenue amount will then be divided by the plant's average annual kWh to determine an annual capacity price (in $ per kWh). Under the proposal, an annual true-up is not necessary, as variances over time should balance out.

The parties further recommend that the capacity rating be determined dependent on how the unit is classified by ISO-NE. An existing hydroelectric facility is categorized as either an ISO Settlements Only Generator ("ISO-SOG") or a load reducer.

If a unit is an ISO-SOG, then it will have FCM-qualified winter and summer capacity rating. The total annual capacity revenue for an ISO-SOG unit will be its capacity rating multiplied by the FCM clearing price.

If a unit is a load reducer, it will not have an FCM rating. Load reducers decrease the capacity obligation for a utility by reducing the utility's load requirement at the time of the peak load for the ISO-NE system. The capacity rating for a load-reducer unit will be based on its generation at the time of the ISO-NE peak for the previous two years. The total annual capacity revenue for a load-reducer unit will be its capacity rating multiplied by the FCM clearing price. Because the unit is reducing the utility's capacity reserve requirement, the parties recommend that a 15 percent adder be applied to the calculated annual capacity revenue amount.

Value of Avoided Line Losses

The parties recommend that the value of avoided line losses be determined depending on where an existing hydroelectric plant is interconnected to the electrical grid. The value for avoided line losses is calculated as either 3% or 5% of the sum of the value of the energy and capacity elements. If there is one transformation (from 115 KV to interconnection voltage), then the losses are assumed to be 3%. If there is an additional transformation (from sub-transmission voltage to interconnection voltage), then the losses are assumed to be 5%.

Value of Environmental Attributes

The parties recommend that the value for environmental attributes be determined based on the renewable energy credits ("RECs") attributable to the plant's generation. The recommended values are $23 per MWh LIHI-certified plants entering a 10-year contract, and $25 per MWh for LIHI-certified plants entering a 20-year contract, and $1 per MWh for non-LIHI-certified plants whether entering a 10- or 20-year contract.

Value of 10- or 20-Year Contract

The parties recommend a 5 percent adder to the value of the energy and capacity components of the price for 10-year contracts, and a 10 percent adder for 20-year contracts, be used to reflect the value for long-term contracts. The parties contend that the adder is appropriate due to the unique structure of the contract as prescribed under the statute. Specifically, the annual contract price is capped at 8 cents per kWh and cannot increase faster than the rate of inflation, but there is no limit on the amount it can decrease in any given year.

Initial Contract Prices

Based on the recommendations proposed by the parties concerning the various price elements, the following table shows an estimate of the hydroelectric prices (first-year values) that may result:

Recommended Price Elements for Existing Hydroelectric Plants				
	10-Year Contract LIHI certified	10-Year Contract	20-Year Contract LIHI certified	20-Year Contract
Energy	4.14 cents/kWh	4.14 cents/kWh	4.14 cents/kWh	4.14 cents/kWh
Capacity	0.49 cents/kWh	0.49 cents/kWh	0.49 cents/kWh	0.49 cents/kWh
Avoided Losses	3% or 5%	3% or 5%	3% or 5%	3% or 5%
Environmental Attributes	2.3 cents/kWh	0.1 cents/kWh	2.5 cents/kWh	0.1 cents/kWh
Contract Value	5%	5%	10%	10%
TOTAL	7.31 or 7.40 cents/kWh	5.11 or 5.20 cents/kWh	7.75 or 7.85 cents/kWh	5.35 or 5.45 cents/kWh
Note: An illustrative capacity price has been developed for a plant that has an FCM capacity market value (kW) equal to 50 percent of the plant's maximum capacity rating, and which is expected to achieve an annual energy capacity factor of 40 percent. An average FCM price of $2.84/kW-month was used.				

IV. DISCUSSION

Section 8005a(p)(3) sets out the criteria for establishing prices for existing hydroelectric plants, requiring that a standard-offer contract price be the lesser of $0.08 per kWh, adjusted annually for inflation, or the sum of five elements identified in the statute. The five elements are: (1) the two-year rolling average of the ISO-NE Vermont zone hourly LMP for energy; (2) the two-year rolling average of the value of the plant's capacity in the ISO-NE forward capacity market; (3) the value of avoided line losses; (4) the value of environmental attributes; and (5) the value of a 10- or 20-year contract.

We accept the parties' recommendations for the methodologies for calculating each of the five statutory pricing elements, pursuant to Section 8005a(p)(3)(B), for the establishment of standard-offer contract prices for existing hydroelectric plants.

The energy price element for all hydroelectric units shall be 4.14 cents per kWh based upon the average two-year rolling average of the ISO-NE Vermont zone hourly real-time LMP for calendar years 2011 and 2012. The capacity price element for each hydroelectric unit shall be calculated by multiplying the ISO-NE capacity rating by the FCM clearing price and dividing that

revenue value by the kWh the plant generates. We conclude that for plants that are load reducers a 15 percent adder shall be made to the capacity revenue value to reflect that the unit is reducing the utility's capacity reserve requirement.

The value for avoided line losses shall be calculated as either 3% or 5% of the sum of the value of the energy and capacity elements. If there is one transformation (from 115 KV to interconnection voltage), then the losses are assumed to be 3%. If there is an additional transformation (from sub-transmission voltage to interconnection voltage), then the losses are assumed to be 5%. The value for transmission line losses is consistent with the value used in screening energy efficiency measures.

The environmental attribute values shall be determined based on the renewable energy credits (RECs) attributable to the plant's generation. The values are $23 per MWh for LIHI-certified plants entering a 10-year contract, $25 per MWh for LIHI-certified plants entering a 20-year contract, and $1 per MWh for non-LIHI-certified plants whether entering a 10- or 20-year contract. The REC values are consistent with recent market trades for 2012-vintage and 2013-vintage RECs and the $25 per MWh represents a small discount on the likely value of LlHl-certified RECs in the Massachusetts market. This discount (which effectively increases over time as inflation increases the market value of RECs) would compensate Vermont ratepayers for the risk that ratepayers are taking that a change in policies in Massachusetts or another state would dramatically reduce the value of these RECs over the course of the decade or two decades following the signing of the standard-offer contract.[10]

A five percent adder to the value of the energy and capacity components of the price for 10-year contracts, and a 10 percent adder for 20-year contracts, shall be used to reflect the value for long-term contracts. These adders reflect that the contract structure provides price stability over its duration, due to the restriction that the total annual price paid cannot rise faster than inflation.

The value of the elements for use in establishing a standard-offer price for existing hydroelectric facilities with a nameplate capacity of 5 MW or less are summarized below.

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10. Department January 7, 2013, comments at 2.

2013 Price Elements for Existing Hydroelectric Plants				
	10-Year Contract LIHI certified	10-Year Contract	20-Year Contract LIHI certified	20-Year Contract
Energy	4.14 cents/kWh	4.14 cents/kWh	4.14 cents/kWh	4.14 cents/kWh
Capacity	TBD	TBD	TBD	TBD
Avoided Losses	3% or 5%	3% or 5%	3% or 5%	3% or 5%
Environmental Attributes	2.3 cents/kWh	0.1 cents/kWh	2.5 cents/kWh	0.1 cents/kWh
Contract Value	5%	5%	10%	10%
Note: The capacity price element for each hydroelectric unit shall be calculated by multiplying the ISO-NE capacity rating by the FCM clearing price and dividing that revenue value by the kWh the plant generates.				

In addition, Section 8005a(p)(4) requires, starting in 2014, that the Board annually adjust the values used for determining the energy and capacity elements of the price for both existing and future standard-offer contracts. With respect to the price elements of avoided line losses, environmental attributes, and the value of a long-term contract, these elements remain fixed in an existing contract or may be periodically adjusted for future contracts. The Board may also periodically adjust the value of environmental attributes of an executed contract based upon whether the plant becomes certified by LIHI or loses such certification.

Accordingly, we require that interested parties file, by November 15, 2013, recommendations with regard to the values to be used for determining the energy and capacity elements of the price for both existing and future standard-offer contracts. In addition, interested parties may make recommendations with respect to the price elements of avoided line losses, environmental attributes, and the value of a long-term contract for future contracts.

V. CONCLUSION

In conclusion, we establish that the standard-offer price for existing hydroelectric plants shall be the lesser of $0.08 per kWh, adjusted annually for inflation, or the sum of five elements identified in the statute, pursuant to Section 8005a(p)(3)(B). The actual price for a plant shall be

based upon the methodologies for calculating each of the statutory pricing elements set out in this Order.

VI. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that:

1. Effective for any standard-offer contract executed subsequent to the issuance of this Order, the standard-offer price for the existing hydroelectric plants under 30 V.S.A. § 8005a(p) shall be as determined herein.

2. On or before November 15, 2013, interested parties shall file recommendations with regard to the statutory criteria under 30 V.S.A. § 8005a(p)(3)(B) for calculating a standard-offer price for existing hydroelectric plants.

Dated at Montpelier, Vermont, this 7th day of February, 2013.

s/James Volz)
) PUBLIC SERVICE
)
s/David C. Coen) BOARD
)
) OF VERMONT
s/John D. Burke)

OFFICE OF THE CLERK

FILED: February 7, 2013

ATTEST: s/Judith C. Whitney
Deputy Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.clerk@state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and Order.