

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: 2/20/2014

ORDER RE STANDARD-OFFER PRICES FOR EXISTING HYDROELECTRIC PLANTS

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 170³ mandated the establishment of a standard offer for existing hydroelectric plants with a nameplate capacity of 5 MW or less.

Pursuant to 30 V.S.A. § 8005a(p)(3)(B), the Public Service Board ("Board") is required to establish the standard-offer price for existing hydroelectric plants at the lesser of \$0.08 per kWh (adjusted annually for inflation) or the sum of five elements identified in the statute. In a February 7, 2013, Order, pursuant to Section 8005a(p)(3)(B), we determined the methodologies for calculating each of the five statutory pricing elements, and established the standard-offer prices (which were below the statutory maximum).

Pursuant to Section 8005a(p)(4)(A), starting in 2014, the Board is required to annually recalculate and adjust the energy and capacity elements of the standard-offer prices for application to all executed contracts. In addition, pursuant to Section 8005a(p)(4)(B)(ii), the

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).

Board may annually adjust the other three price elements for inclusion in future executed contracts.

In this Order, pursuant to Section 8005a(p)(4)(A), we adjust the energy and capacity elements of the price for application to all executed contracts for existing hydroelectric plants. In addition, pursuant to Section 8005a(p)(4)(B)(ii), we adjust the environmental attributes element of the price for inclusion in future executed contracts. The price elements for avoided line losses and value of the long-term contract remain unchanged from the February 7, 2013, Order.

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 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:

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.

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:
 - (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

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.

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."

B. Procedural History

On February 7, 2013, the Board issued an Order establishing 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 was based upon the methodologies for calculating each of the statutory pricing elements set out in the February 7, 2013, Order.

The February 7, 2013, Order required that on or before November 15, 2013, interested parties shall file recommendations with regard to the statutory criteria, pursuant to Section 8005a(p)(3)(B), for adjusting a standard-offer price for existing hydroelectric plants.

On November 15, 2013, the City of Burlington Electric Department ("BED") and the Vermont Independent Power Producers Association ("VIPPA") filed comments and recommendations on the statutory criteria for calculating a standard-offer price for existing hydroelectric plants.

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.

III. PARTIES 2014 RECOMMENDATIONS

BED and VIPPA filed recommendations for adjusting the five statutory pricing elements, pursuant to Section 8005a(p)(4)(A) and Section 8005a(p)(4)(B)(ii). VIPPA contends that the methodology in the February 7, 2013, Order should remain the same, except the REC value for LIHI-certified plants. Specific comments on four of the elements are summarized below.

Value of Plant's Capacity

BED recommends that the capacity price element be calculated based on the Forward Capacity Market ("FCM") prorated clearing price for the appropriate capacity period, and not the FCM clearing price. When excess capacity clears the annual Forward Capacity Auction ("FCA"), a prorated clearing price is calculated to reflect the excess supply. This prorated clearing price is the payment rate received by a generator clearing the FCA.

With regard to the capacity price for hydroelectric units that are treated as load reducers by ISO-NE, BED recommends the use of the net regional clearing price ("NRCP"), rather than the FCM clearing price with a 15 percent adder.⁸

Value of Avoided Line Losses

BED contends that the 3 percent value for avoided line losses for one transformation (from 115 kV to interconnection voltage) appears to be high. BED indicates that, for 2012, the non-pool transmission facility ("non-PTF") losses as a percentage of total losses across the Vermont Electric Power Company, Inc. ("VELCO"), transmission system are approximately 0.33 percent.⁹ BED further states that it does not have sufficient information on the derivation of the 3 and 5 percent avoided line loss values to offer a specific alternative value.

8. The NRCP is the rate charged to participants with a capacity load obligation in the ISO-NE regional market. The NRCP represents a blended rate for the monthly cost of procuring capacity supply obligations within each capacity zone through the FCA and reconfiguration auctions. There are four capacity zones in New England and Vermont resides in the rest-of-pool zone.

9. Line losses across the VELCO transmission include both non-PTF and PTF losses. Approximately 95 percent of VELCO's transmission assets are PTF.

Value of Environmental Attributes

VIPPA recommends that the REC value for LIHI-certified plants with 20-year contracts be increased from 2.5 cents per kWh to 2.6 cents per kWh in order to recognize the increase in the alternative compliance payment ("ACP") adopted by the Massachusetts Department of Energy Resources for Class II renewable generation.¹⁰

With regard to REC values for LIHI-certified plants, BED contends that the value appears high given that no 10- to 20-year market exists for sellers of such attributes and that recent forecasts of the market value of such attributes show the value falling sharply as energy prices rise over time. BED suggests that the value of LIHI-certified RECs be reduced by 20 percent for 3- to 5-year contracts and by a greater amount (as much as 60 percent) when considering 10- and 20-year contracts.

Value of 10- or 20-Year Contract

With regard to the 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, BED recommends that adder values be reconsidered given that the contract pricing is indexed to the actual wholesale market energy prices and inflation. BED suggests that the recent changes in the consumer price index be compared to the current rate of change in natural gas prices to establish any long-term contract value adder. BED also recommends that the long-term adder distinguish between LIHI and non-LIHI resources given the uncertainty of determining long-term REC prices for LIHI-certified plants.

IV. DISCUSSION

In a February 7, 2013, Order, pursuant to Section 8005a(p)(3)(B), we determined the methodologies for calculating each of the five statutory pricing elements, and established the standard-offer prices (which were below the statutory maximum of \$0.08 per kWh). The five

10. Any Retail Electricity Supplier that is required to comply with the Massachusetts Renewable Energy Portfolio Standard ("RPS") and Alternative Energy Portfolio Standard ("APS") regulations may, if necessary, discharge some or all of its obligations by making an ACP. Each year the ACP must be adjusted in accordance with the previous year's Consumer Price Index.

elements are: (1) the two-year rolling average of the ISO-NE Vermont zone hourly locational marginal price ("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.

Pursuant to the Board's obligation under Section 8005a(p)(4)(A), we set the 2014 energy price element for all hydroelectric units at 4.57 cents per kWh based upon the average two-year rolling average of the ISO-NE Vermont zone hourly real-time LMP for calendar years 2012 and 2013.¹¹ The energy price element is calculated with the same methodology used in our February 7, 2013, Order.

In the February 7, 2013, Order, we determined that the capacity price element for each hydroelectric unit shall be calculated by multiplying the ISO-NE capacity rating by the FCM clearing price for the appropriate period and dividing that revenue value by the kWh the plant generates.¹² BED's recommendation of the use of the prorated clearing price is consistent with the methodology used in the February 7, 2013, Order to calculate the capacity price element.¹³ Therefore, we clarify that the FCM clearing price used to calculate the capacity price element is the payment rate received by generators in the FCA. In FCAs with excess capacity, this value represents the prorated clearing price and in FCAs with no excess capacity this value represents the FCM clearing price. Accordingly, the average FCM clearing price used in determining the 2014 capacity price element shall be \$2.44 per kW-month based upon the two-year average payment rate for FCA 2012-2013 results and 2013-2014 results.¹⁴

11. ISO-NE LMP values are found at http://www.iso-ne.com/markets/hstdata/zn1_info/hourly/index.html.

12. An existing hydroelectric unit 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. 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.

13. The average FCM clearing price of \$2.84 per kW-month identified in the February 7, 2013, Order represents a two-year average of the prorated clearing price for FCA 2011-2012 results and 2012-2013 results.

14. FCA results are found at: http://www.iso-ne.com/markets/othrmkts_data/fcm/cal_results/index.html.

In the February 7, 2013, Order, we determined that for units that serve as 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. BED recommends the use of the NRCP, rather than the FCM clearing price with a 15 percent adder, because the NRCP represents the rate that Vermont distribution utilities are charged for capacity on a monthly basis, and thus reflects the value the unit is reducing the utility's capacity reserve requirement.¹⁵ At this time, BED has not demonstrated that the use of the NRCP is appropriate. Therefore, for this Order, we require that the 15 percent adder to the capacity revenue value continue to be used for 2014 contracts for units that serve as load reducers. Nonetheless, we find that the use of the NRCP warrants further investigation. Therefore, we are requesting that comments be filed before the next annual adjustment for the energy and capacity price elements that address the use of the NRCP rather than the FCM clearing price with a 15 percent adder.

Pursuant to Section 8005a(p)(4)(B)(i), the price elements of avoided line losses, environmental attributes, and the value of a long-term contract 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 unit becomes LIHI-certified or loses such certification. Pursuant to Section 8005a(p)(4)(B)(ii), the Board annually may adjust the three elements for inclusion in future executed contracts.

In the February 7, 2013, Order, we determined that the value for avoided line losses shall be calculated as either 3 or 5 percent 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 percent. If there is an additional transformation (from sub-transmission voltage to interconnection voltage), then the losses are assumed to be 5 percent. BED suggests that these values may be high, but provides no alternative values for consideration. We conclude that these values continue to represent reasonable assumptions about transmission and distribution losses and make no adjustments to the values for inclusion in future contracts. If BED has further

15. The average monthly NRCP for the 2012-2013 period is \$3.00 per kW-month.

evidence that the line loss figures are too high, it should present it during the next annual comment period.

In the February 7, 2013, Order, we determined that 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. VIPPA recommends that the value for LIHI-certified plants entering a 20-year contract be adjusted to \$26 per MWh to reflect the increase in ACP adopted by Massachusetts for Class II renewable generation. BED contends that the values should be reduced significantly over a 10- and 20-year contract to reflect recent market forecasts of these attributes, but provides no actual data to support its recommendations.

We conclude that the value for LIHI-certified plants entering a 20-year contract shall be adjusted to \$26 per MWh to reflect the increase in ACP for Class II renewable generation. The REC value of \$26 per MWh represents a small discount on the likely value of LIHI-certified RECs in the Massachusetts market. As we concluded in the February 7, 2013, Order, 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.

In the February 7, 2013, Order, we determined that 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. BED suggests that these adders should be reconsidered, but provides no specific alternative values for consideration. As we concluded in the February 7, 2013, Order, 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. In the absence of specific alternatives, we find no reason to change our previous rulings and, therefore, make no adjustments to adders for inclusion in future contracts.

The 2014 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.

2014 Price Elements for Existing Hydroelectric Plants				
	10-Year Contract LIHI certified	10-Year Contract	20-Year Contract LIHI certified	20-Year Contract
Energy	4.57 cents/kWh	4.57 cents/kWh	4.57 cents/kWh	4.57 cents/kWh
Capacity	TBD	TBD	TBD	TBD
Avoided Line Losses	3% or 5%	3% or 5%	3% or 5%	3% or 5%
Environmental Attributes	2.3 cents/kWh	0.1 cents/kWh	2.6 cents/kWh	0.1 cents/kWh
Contract Adder Value	5%	5%	10%	10%
<p>Note: The capacity price element for each hydroelectric unit shall be calculated by multiplying the ISO-NE capacity rating by the FCM payment price and dividing that revenue value by the kWh the plant generates. The capacity rating for an ISO-SOG is the FCM-qualified winter and summer capacity rating. The capacity rating for a load-reducer is its generation at the time of the ISO-NE peak for the previous two years. The FCM payment price for use in 2014 contracts is \$2.44 per kW-month. For load reducers a 15 percent adder shall be made to the capacity revenue value.</p>				

Pursuant to Section 8005a(p)(3)(A), the statutory cap of \$0.08 per kWh is required to be adjusted for inflation annually using the CPI. The CPI rose 1.5 percent in 2013.¹⁶ For 2014, the statutory cap is adjusted to \$0.081 per kWh.

Finally, as discussed above, Section 8005a(p)(4) requires that the Board annually adjust the energy and capacity values determined in this Order. Accordingly, we require that interested parties file, by November 15, 2014, 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. Interested parties are also requested to address the use of NRCP in determining the capacity price element for units that serve as load reducers. In addition, interested parties

16. The 2013 CPI can be found at: <http://www.bls.gov/cpi/cpid1312.pdf>.

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, pursuant to Section 8005a(p)(4)(A), we adjust the energy and capacity elements of the standard-offer price for application to all executed contracts for existing hydroelectric plants. In addition, pursuant to Section 8005a(p)(4)(B)(ii), we adjust the environmental attributes element of the price for inclusion in future executed contracts. The standard-offer price elements for avoided line losses and value of the long-term contract remain unchanged from the February 7, 2013, Order.

Accordingly, we establish that the standard-offer price for existing hydroelectric plants shall be the lesser of \$0.081 per kWh, or the sum of five elements identified 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 existing hydroelectric plants under 30 V.S.A. § 8005a(p) shall be as determined herein.
2. On or before November 15, 2014, interested parties shall file recommendations with regard to the statutory criteria under 30 V.S.A. § 8005a(p)(3)(B) for adjusting the standard-offer price for existing hydroelectric plants.

Dated at Montpelier, Vermont, this 20th day of February, 2014.

<u>s/James Volz</u>)	
)	PUBLIC SERVICE
)	
<u>s/John D. Burke</u>)	BOARD
)	
)	OF VERMONT
<u>s/Margaret Cheney</u>)	

OFFICE OF THE CLERK

FILED: February 20, 2014

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.