STATE OF VERMONT PUBLIC UTILITY COMMISSION

Case No. 24-0248-INV

In re: biennial update of the net-metering program

Order entered: 05/30/2024

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I. <u>Introduction</u>

Every two years, the Vermont Public Utility Commission ("Commission") is required to assess the incentives offered to new net-metering systems and whether they should be adjusted upward or downward. The result of today's reassessment of net-metering incentives is that overall net-metering compensation for *new* systems will decrease by \$0.00743 per kWh—less than three-fourths of a cent—compared to systems applied for today. Most *existing* systems, however, will see their compensation increase by approximately 7.33% because of the increase in the base value of a net-metering credit that is part of this order.

The purpose of the Commission's biennial assessment of net-metering incentives is to ensure that the pace of net-metering deployment is consistent with Vermont's policy objectives and to ensure that the net-metering program is not having an undue adverse impact on ratepayers. Considerations for this assessment include the changing cost of installing net-metering systems,

the pace of past net-metering deployment, and the impact of net-metering on ratepayers. This proceeding is also the mechanism by which the Commission updates the base value of net-metering bill credits (the "statewide blended residential rate") to reflect increases in retail electric rates during the past two years.

In today's Order, the Commission adopts the recommendation of the Department of Public Service ("Department") to adjust the incentives available to future net-metering systems. Based on our review of the information presented in this proceeding, we have determined to make the following adjustments:

- (1) The statewide blended residential rate, which is the base value of the bill credit offered to all applicable net-metering systems, both existing and proposed, is increased to \$0.18398/kWh (an increase of \$0.01257).
- (2) The renewable energy credit ("REC") adjustor for all categories of net-metering systems is maintained at the current rate.
- (3) The siting adjustor for all categories of new net-metering systems is reduced by \$0.02 per kWh.

As a result, the net effect of today's decision is that overall net-metering compensation (lower incentives plus the higher blended residential rate) for new systems whose applications are received on and after August 1, 2024, will decrease by \$0.00743 per kWh—less than three-fourths of a cent—compared to systems applied for today. Most existing systems, however, will see their compensation increase by approximately 7.33% because of the rise in the statewide blended residential rate. Without the decreases to incentives for new systems announced in this order, the cost of new net-metered power would have increased, shifting even more costs to ratepayers who do not net-meter and further increasing statewide electric rates.

The Commission's goal in this proceeding is to continue to facilitate the rapid transition of Vermont's electricity supply to renewable energy and to support Vermont's greenhouse gas emission reduction requirements. Our review is directed by the net-metering program's enabling legislation, which expressly requires the Commission to establish and maintain a net-metering program that advances Vermont's legislative goals and total targets for renewable energy and

greenhouse gas reductions.¹ The analysis underlying this order is informed by Vermont's Global Warming Solutions Act ("GWSA") and the Vermont Climate Action Plan, which call for Vermont to ultimately "achieve net zero emissions by 2050 across all sectors."² We have also given careful consideration to the broader policy objectives included in the 2022 Vermont Comprehensive Energy Plan ("CEP") and the firm renewable energy targets established through Vermont's Renewable Energy Standard ("RES").

The RES sets baseline, compulsory renewable energy targets for Vermont's electric distribution utilities. The Legislature has passed changes to the RES that would significantly increase the amount of renewable energy required, including energy from in-state sources.³ As of the date of this order, it is not known whether H. 289 will become law and it would be speculative to base today's decision on pending legislation.⁴ The arguments raised by commenters in this proceeding about the RES and climate change miss the point of today's decision, which is that net-metering is not the only way to meet Vermont's renewable energy and climate requirements and it is not the least-cost way to do so. The potential changes to the RES, if enacted, would reinforce our determination that Vermont must focus on the least-cost sources of new renewable energy to meet its renewable energy requirements in order to avoid unnecessary price increases for consumers.

To date, robust participation in the net-metering program has directly benefitted thousands of participating Vermonters and has been a primary mechanism for meeting Vermont's electric distribution utilities' RES targets. However, with respect to achieving those RES targets and Vermont's broader greenhouse gas reduction requirements, the Commission is mindful of the deliberate policy guidance included in the recently adopted CEP, which

¹ 30 V.S.A. § 8010(c)(1)(A).

² 10 V.S.A. § 592(b)(4).

³ 2023 Vt. H.B. 289 (2024 Adj. Sess.). Although the decisions set out in this Order are not expressly based on the revised mandates that would take effect if H. 289 becomes law, we note that H.289 as approved by the Legislature also removes the existing statutory mandate that we "ensure that all customers who want to participate in net-metering have the opportunity to do so." If H. 289 does become law, we would expect interested parties to provide comments in future biennial net-metering proceedings about whether and how this statutory revision would affect our analysis of rate setting for the net-metering program.

⁴ See Paige v. State, No. 2020-280, 2021 WL 2534554, at *3 (Vt. Apr. 9, 2021) (unpub. mem.), https://www.vermontjudiciary.org/sites/default/files/documents/eo20-280_0.pdf (stating that it would be speculative to consider pending legislation in determining whether the Secretary of State acted in conformity with the law applicable when the events giving rise to the case occurred).

encourages "a decision-making process that can set benchmarks for understanding when a policy is no longer cost-effective and other options can more affordably achieve the desired outcome" and states that "[p]olicy must be nimble in the face of change." Likewise, the Commission remains focused on the General Assembly's legislative mandate to "balance[], over time, the pace of deployment and cost of the [net-metering] program with the program's impact on rates." These statutory directives make clear that the net-metering program and its associated incentives are not intended to be static, and that the program's benefits to participating customers must be carefully considered in conjunction with its costs to all other Vermonters over time. Accordingly, our analysis and decision-making reflect the inherently dynamic costs and benefits of the net-metering program, which continue to evolve as the program matures.

As the Commission emphasized in past biennial update proceedings, the net-metering program is just one of several ways to develop solar and other types of local renewable energy to meet the RES requirements. ⁷ However, net-metering has played the most prominent role in the expansion of Vermont's in-state renewable energy portfolio despite being the highest-cost source of new renewable capacity in Vermont. ⁸ As was the case two years ago, Vermont's electric distribution utilities currently have an adequate supply of Tier II resources to meet Vermont's RES for the next several years. ⁹ These resources include more cost-effective sources of solar and other types of local renewable power available to meet the RES requirements.

The data and information filed by the commenters in this proceeding demonstrate that although there has been a decrease in applications over the past two years, there continues to be strong participation in the net-metering program even after the Commission reduced net-metering compensation rates in both previous biennial review proceedings. The commenters' filings also show that net-metering continues to be the largest and one of the highest-cost sources

⁵ CEP at 12, available at https://publicservice.vermont.gov/content/2022-plan.

⁶ 10 V.S.A. §§ 8010(c)(1)(E) and (F).

⁷ See In re: biennial update of the net-metering program, Case No. 20-0097-INV, Order of 11/12/20 at 2-3.

⁸ According to the CEP, in 2020 the total name-plate capacity of installed net-metering systems was about 31% of Vermont's peak load. CEP at 248. However, as discussed in more detail in Section V below, Vermont's daily peak has shifted to a period later in the day when solar generation is limited or no longer producing, which in turn reduces solar generation's contribution to capacity needed to meet daily peak events.

⁹ Tier II is a requirement that each utility acquire a certain portion of its power supply from small, in-state renewable energy sources.

of new renewable capacity in Vermont.¹⁰ Net-metering has been instrumental in the robust expansion and development of in-state renewable energy generation in Vermont, which is a distinct policy achievement. The Commission, however, remains focused on its statutory mandate to balance net-metering deployment with the cost of the program, and the Commission remains concerned about the overall cost of the net-metering program and its corresponding impact on non-participating Vermonters, particularly those Vermonters who are highly energy-burdened. This concern is not abstract. As noted above, the increased blended residential rate approved as part of this Order will result in an approximately 7.33% increase to the compensation rate for most existing net-metering systems—costs that will ultimately be passed on to ratepayers who do not participate in the net-metering program.

In past biennial update proceedings, the Commission has found the amount of distributed renewable energy in Vermont has grown significantly over the last several years while the cost of other sources of in-state solar has decreased. This trend has been borne out in the Commission's previous biennial update orders. Indeed, in its first biennial review of the netmetering program in 2018, the Commission found that:

Financial incentives for net-metered solar, however, have remained high, making it the most expensive of Vermont's renewable energy programs. Solar net-metering systems receive up to 18.9 cents per kilowatt-hour (kWh) compared to solar prices under the State's standard-offer program of 10-13 cents and roughly similar prices for power purchase agreements and utility-built systems.¹¹

Since that time, the price in long-term contracts for in-state solar developments has fallen further to 8-9 cents per kWh. ¹² In this proceeding, REV has argued that the costs of solar equipment are no longer declining and that the cost to customers of developing solar facilities has increased due to rising interest rates. These arguments, however, appear to conflict with the forecast of solar

¹⁰ See Department's April 1, 2024, Comments at 7 ("Net-metering has been, and continues to be, the highest-cost program to deploy renewable energy in Vermont.").

¹¹ In re: biennial update of the net-metering program, Case No. 18-0086-INV, Order of 5/01/18 at 2.

¹² Investigation to review the 2022 implementation of the standard-offer program, Case No. 21-4085-INV, Order of 6/28/22 at 2.

prices that REV provided to the Legislature¹³ while advocating for greater in-state renewable energy purchase requirements.¹⁴

As RES compliance obligations increase and GWSA mandates begin to take effect in the near-term, electric rates will have a fundamental effect on the relative success of policies and programs directed at greenhouse gas emission reductions through beneficial electrification in the transportation and heating sectors. Although net-metering will continue to play an important role in promoting in-state renewable generation, the Commission is concerned that over-reliance on net-metered systems for renewable generation could have the unintended, counterproductive effect of diminishing investment in more cost-effective means of reducing Vermont's greenhouse gas emissions, such as electric vehicles and cold-climate heat pumps. Vermonters have a number of ways to take individual action to address climate change – including installing weatherization measures and heat pumps or switching to hybrid and fully electric vehicles. Given that only 2.2% of Vermont's 2020 greenhouse gas emissions came from the electric sector 15 and 87% of Vermont's electric power supply mix already consists of renewable or noncarbon electricity, ¹⁶ net-metering is one of the least effective actions that Vermonters can take to lower the state's greenhouse gas emissions. Vermont's energy policy should allow customers to self-generate electricity in a manner that is not paramount to or otherwise detrimental to the efficacy of other programs that promote similar policy outcomes at a lower cost.

¹³ RENEWABLE ENERGY VERMONT, UPDATING VERMONT'S RENEWABLE ENERGY STANDARD, H. Comm. On Env't & Energy, Adj. Sess., at 8 (Jan. 11, 2024) *available at* https://legislature.vermont.gov/committee/document/2024/19/Date/1-11-2024#documents-section.

¹⁴ We recognize that REV's advocacy in this proceeding is focused on the perspective of net-metering customers and not utility-scale facilities. However, there is a notable discrepancy between citing reduced solar installation costs as a basis for increasing statewide renewable energy mandates in one setting and then presenting seemingly opposite factual assertions to argue that above-market rates are necessary to meet those stricter energy mandates.

¹⁵ 2023 Vt. Agency of Natural Res., Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990 – 2020, at 8, *available at*:

https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/ Vermont Greenhouse Gas Emissions Inventory Update 1990-2020 Final.pdf.

¹⁶ 2023 VT. DEP'T OF PUB. SERV., ANNUAL ENERGY REPORT: A SUMMARY OF PROGRESS MADE TOWARD THE GOALS OF VERMONT'S COMPREHENSIVE ENERGY PLAN – APPENDIX C: A REPORT ON VERMONT NET-METERING PROGRAM, at 40, available at

 $[\]underline{https://publicservice.vermont.gov/sites/dps/files/documents/2023\%20Vermont\%20Annual\%20Energy\%20Report_0.}\\ pdf.).$

For these reasons and based on our detailed review of the information presented in this proceeding, the Commission has determined that the changes to net-metering compensation announced in today's Order are justified.

II. PROCEDURAL HISTORY

On or before March 1, 2024, the Vermont electric distribution utilities (collectively the "distribution utilities") filed the information and data on the net-metering program required by Commission Rule 5.128(D).¹⁷

On April 1, 2024, the Department filed proposed updates to the items specified in Rule 5.128(A)(1)-(4) and reasons for its proposal.

Comments on the Department's recommendations were required to be filed by no later than May 1, 2024. The Commission received approximately 200 comments from individual members of the public. The Commission also received comments from Vermont Electric Cooperative, Inc. ("VEC"); Washington Electric Cooperative, Inc. ("WEC"); All Earth Renewables; and Renewable Energy Vermont ("REV").

On May 14, 2024, the Department filed reply comments. 18

On the same date, AllEarth Renewables objected to the Department's reply comments on the basis that the filing was outside the schedule provided by Rule 5.128.

On May 22, 2024, REV filed additional comments on behalf of a group of individual members of the Legislature.¹⁹

No other filings were received.

¹⁷ Vermont Electric Cooperative, Inc. and the Village of Hyde Park Electric Department filed their data on March 7 and 13, 2024, respectively.

¹⁸ In previous biennial update proceedings, the Commission has requested that the Department include an appropriate motion with any filings made outside of the adopted schedule. *In Re: Biennial Update of the Net-Metering Program*, Case No. 22-0334-INV, Order of 6/18/22 at 6. Here, the Department did not include a motion requesting leave to make an out-of-time filing. Therefore, this filing has not been considered and AllEarth Renewable's motion to strike is granted.

¹⁹ This filing was out of time under the schedule required by Commission Rule 5.128. The issues raised in REV's filing are addressed on page 32-33 of this Order.

III. BACKGROUND AND LEGAL FRAMEWORK

Net-metering²⁰ "means measuring the difference between the electricity supplied to a customer and the electricity fed back by the customer's net-metering system during the customer's billing period."²¹ In 1998, the Vermont General Assembly enacted a net-metering law requiring electric utilities to permit customers to generate their own power using a small-scale renewable energy system with a capacity of up to 15 kW. Larger systems of up to 100 kW were allowed on farms. Any power generated by a net-metering system could be fed back to the utility, running the customer's electric meter backwards if generation exceeded load at any given time. The cumulative capacity of the program was limited to 1% of a utility's peak capacity.

Amendments to the statute in 1999, 2002, and 2008 increased the allowed cumulative capacity of net-metering systems in a utility's service territory and increased the allowable size of systems. Beginning in 2002, the Legislature authorized "group net-metering," in which the excess generation from a net-metering system could be shared among multiple customers or accounts, but this service was restricted to farmers. By 2008, all customers could participate in group net-metering, the maximum plant capacity was 250 kW, and the ceiling on the total installed capacity was 2% of peak load.

In 2011, the General Assembly increased the allowed capacity of net-metering systems to 500 kW, created a registration process for small solar systems, increased the allowed cumulative net-metering capacity in a utility service territory to 4% of that utility's peak capacity, and created an incentive payment for customers using solar systems. Customers receiving this incentive payment are credited up to 20 cents per kWh for power generated by their solar system for ten years after their system began operating.

Since the inception of the net-metering program, the cost of installing solar systems decreased dramatically. The confluence of declining costs, the expansion of the net-metering program, and increased incentives resulted in the rapid growth of the amount of net-metering

²⁰ The term "net-metering" can generally refer to a number of different billing arrangements between a customergenerator and a utility. There are a wide variety of ways to implement net-metering, and no two jurisdictions' implementations of net-metering is exactly alike. In Vermont, the meaning and implementation of net-metering have evolved significantly over time. For purposes of this Order, the term "net-metering" specifically refers to the billing arrangement authorized in 30 V.S.A. §§ 8002(15) and 8010 and as implemented through Commission Rule 5.100.

²¹ 30 V.S.A. § 8002(15).

installed in Vermont. Figure 1 shows that the annual amount of capacity of interconnected netmetering systems has increased substantially since 2009.

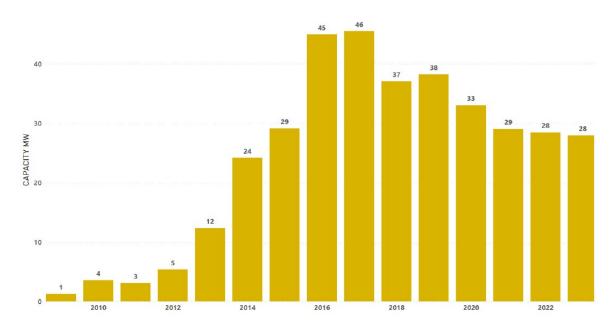


Figure 1.²² Annual Solar Net-Metering Interconnections²³

In 2014, the General Assembly enacted Act 99, which increased the program's cumulative capacity cap to 15% of each utility's peak capacity. The trends described in the preceding paragraph accelerated, and this capacity was rapidly subscribed. After reaching its own 15% capacity cap in 2015, GMP continued to accept small net-metering systems and sought approval to accept a limited number of additional large projects up to 150 kW in capacity, which was granted.²⁴ VEC closed its net-metering program to projects over 15 kW.²⁵

²² Department's April 1, 2024, Comments at 37.

²³ There is a lag between when an application is filed and when a system is interconnected, so systems that apply in one year may not be interconnected for a year or longer in some cases. Also, some applied-for systems are never installed because the applicant decides to withdraw the application due to interconnection or other issues. The number and capacity of applications that are denied a certificate of public good by the Commission is small.

²⁴ Petition of Green Mountain Power Corp. for Approval to Offer Customers Net-Metering Above the Statutory Cap Pursuant to 30 V.S.A. § 219a(h)(1)(a), Docket 8652, Order of 6/24/16.

²⁵ Application of Fish Hatchery Solar, LLC, Case No. 16-0004-NMP, Order of 5/5/16 at 1.

Act 99 also repealed the solar incentive payment and directed the Commission to establish a successor net-metering program to go into effect in 2017. Pursuant to State law, the Commission was required to create a net-metering program that:

- (A) advances the goals and total renewables targets of this chapter and the goals of 10 V.S.A. § 578 (greenhouse gas reduction) and is consistent with the criteria of subsection 248(b) of this title;
- (B) achieves a level of deployment that is consistent with the recommendations of the Electrical Energy and Comprehensive Energy Plans under sections 202 and 202b of this title, unless the Commission determines that this level is inconsistent with the goals and targets identified in subdivision (1)(A) of this subsection (c). Under this subdivision (B), the Commission shall consider the Plans most recently issued at the time the Commission adopts or amends the rules;
- (C) to the extent feasible, ensures that net-metering does not shift costs included in each retail electricity provider's revenue requirement between net-metering customers and other customers;
- (D) accounts for all costs and benefits of net-metering, including the potential for net-metering to contribute toward relieving supply constraints in the transmission and distribution systems and to reduce consumption of fossil fuels for heating and transportation;
- (E) ensures that all customers who want to participate in net-metering have the opportunity to do so;
- (F) balances, over time, the pace of deployment and cost of the program with the program's impact on rates;
- (G) accounts for changes over time in the cost of technology; and
- (H) allows a customer to retain ownership of the environmental attributes of energy generated by the customer's net-metering system and of any associated tradeable renewable energy credits or to transfer those attributes and credits to the interconnecting retail provider, and:
 - (i) if the customer retains the attributes, reduces the value of the credit provided under this section for electricity generated by the customer's net-metering system by an appropriate amount; and
 - (ii) if the customer transfers the attributes to the interconnecting provider, requires the provider to retain them for application toward compliance with sections 8004 and 8005 of this title.

On July 1, 2017, the Commission's revised net-metering rule took effect. In adopting the rule, the Commission found that net-metered power was more expensive than comparable alternative sources of renewable energy.²⁶ The Commission also found that the previous net-metering program was not necessarily effective at supporting Vermont's renewable energy goals because net-metered generators were electing to keep the renewable energy credits ("RECs") generated by their systems. A portion of these RECs were sold out of state, which meant that Vermont could not count the energy generated by those systems toward its renewable energy or greenhouse gas reduction goals.²⁷

Accordingly, the new rule was intended to calibrate the incentive payments in a manner that balanced the interests of ratepayers, net-metering customers, and the businesses that install net-metering systems. Despite the dramatic reduction in the cost of installing solar net-metering systems since the program began, the rule made only modest adjustments to net-metering compensation. The Commission created an incentive for new net-metering customers to transfer their RECs to their utility to be retired in furtherance of Vermont's renewable energy goals. In addition, the Commission designed the rule to create incentives for net-metering systems to be installed on previously disturbed terrain, on rooftops, and on sites preferred by municipalities.

The primary mechanism for achieving this balance was the use of "REC adjustors" and "siting adjustors." There are two REC adjustor values: (1) a "positive" REC adjustor for customers who transfer RECs to their utility, and (2) a "negative" adjustor for customers who retain RECs. This feature of the rule implements 30 V.S.A. § 8010(c)(1)(H)(i), which requires the Commission to reduce the value of a net-metering credit by an "appropriate amount" when a customer elects to retain ownership of RECs. In adopting the initial REC adjustor values, the Commission chose a 10-year positive adjustor of \$0.03/kWh for customers who transfer RECs to their utility and a negative adjustor of -\$0.03/kWh for customers who retain ownership of RECs. The difference between these two values (\$0.06) was based on the statutory alternative compliance price for Tier II RECs under the RES. The Commission chose to have positive and negative adjustors (instead of, for example, only a positive adjustor of \$0.06) to ensure that the

 $^{^{26}}$ Vt. Pub. Util. Comm'n, Report to the Vermont General Assembly on the Net-Metering Program Pursuant to Act 99 of 2014 ("Act 99 Report") (2017) at 5.

²⁷ *Id*. at 10.

²⁸ Commission Rule 5.127(B)(1)-(3).

overall incentive available to net-metering customers was appropriate.²⁹ That difference was subsequently reduced to \$0.04 to better align with the value of RECs that can be used for RES Tier II compliance.³⁰

The REC adjustors serve purposes beyond reflecting the appropriate value of a REC. First, the REC adjustors allow the Commission to appropriately balance the costs and benefits of net-metering. Second, the Commission can also use the REC adjustors to moderate the pace of development to ensure that rate impacts from the net-metering program are not unreasonable. Therefore, in this proceeding the Commission must consider whether the difference between the positive and negative REC adjustor values remains appropriate. Additionally, the Commission reviews how any changes to the REC adjustors will affect overall net-metering customer incentives, considering the costs and benefits of net-metering and the pace of net-metering development.

Turning to siting adjustors, the Commission's rules define four "categories" of net-metering systems. Category I net-metering systems are residential systems with capacities of 15 kW or less. Category II is comprised of medium-sized facilities (>15 kW to 150 kW) that are located on "preferred sites." Category III is for large net-metering systems (>150 kW to 500 kW) located on preferred sites. Finally, Category IV includes medium-sized facilities that are not located on preferred sites. Each of these categories is subject to a siting adjustor that is intended to reflect whether the project is on a preferred site and the lower cost of development enjoyed by larger projects due to economies of scale.

Accordingly, under the initial siting adjustor values, small and medium-sized projects located on preferred sites (Categories I and II) received the most favorable treatment, each being eligible to receive an additional \$0.01/kWh as an incentive to encourage these types of systems. Large systems over 150 kW (Category III) must be located on preferred sites to be eligible to participate in the net-metering program. These systems can be built at an economy of scale more like that of commercial generation systems. Therefore, while they are located on preferred sites, they were subject to a negative adjustor of -\$0.01/kWh. The Commission selected this adjustor value so that the overall compensation received by large net-metering systems was closer to

²⁹ Act 99 Report at 36.

³⁰ In re: biennial update of the net-metering program, Case No. 18-0086-INV, Order of 5/1/18 at 47.

competitively priced renewable energy, such as utility-negotiated contracts or the standard-offer program.³¹ Finally, medium-sized systems that are not located on a preferred site (Category IV) may net-meter but were subject to a negative adjustor of -\$0.03. This lower credit reflected the fact that these projects have some economy of scale and are located on non-preferred sites, such as greenfields, often far from the load they serve.

The overall purpose of the adjustors is to encourage the beneficial siting of net-metering systems and to provide a mechanism for the Commission to better tailor net-metering compensation to reflect the cost of the technology.³² An ancillary benefit of the siting adjustor is that it provides another tool for the Commission to ensure that the overall compensation of net-metering systems is appropriate.

The 2017 incentives resulted in net-metering compensation that still exceeded the cost of other sources of renewable energy, and therefore had the potential to cause additional upward rate pressure.³³ At the same time, however, the Commission received substantial public input that suggested that abrupt decreases in the amount of incentives could harm businesses that install and market net-metering systems. The Commission "recognize[d] that the net-metering program provides benefits to the state through increased economic development and jobs, but these benefits must be balanced against the costs of offering the program."³⁴ These costs include the potential for higher electric rates for all Vermont businesses. Accordingly, the Commission created a mechanism to reevaluate the initial REC and siting incentive amounts to achieve the goals of Section 8010(c)(1)(A)-(H) as conditions changed.

Commission Rule 5.128 requires the Commission to conduct a biennial update in 2018 and every two years thereafter to update the following: (1) REC adjustors, (2) siting adjustors, (3) the statewide blended residential rate, and (4) the eligibility criteria applicable to Categories I, II, III, and IV net-metering systems. The Commission must consider the following factors when updating the REC adjustors:

³¹ See Investigation into programmatic adjustments to the standard-offer program, Docket No. 8817, Order of 6/20/17 (summarizing solar proposals submitted in 2017 RFP process with prices ranging from \$0.089/kWh to \$0.125/kWh); see also Act 99 Report at 36-37.

³² Act 99 Report at 36-37.

³³ *Id*. at 37.

³⁴ *Id.* at 39.

(1) the pace of renewable energy deployment necessary to be consistent with the Renewable Energy Standard program, the Comprehensive Energy Plan, and any other relevant State program;

- (2) the total amount of renewable energy capacity commissioned in Vermont in the most recent two years;
- (3) the disposition of RECs generated by net-metering systems commissioned in the past two years; and
- (4) any other information deemed appropriate by the Commission.³⁵

The Commission must consider the following factors when updating the siting adjustors:

- (1) the number and capacity of net-metering systems receiving certificates of public good ("CPGs") in the most recent two years;
- (2) the extent to which the current siting adjustors are affecting siting decisions;
- (3) whether changes to the qualifying criteria of the categories are necessary;
- (4) the overall pace of net-metering deployment; and
- (5) any other information deemed appropriate by the Commission.³⁶

The Commission must consider the above-listed factors and set any revised adjustor values "to ensure that net-metering deployment occurs at a reasonable pace and in furtherance of State energy goals."³⁷

In 2018, the Commission conducted its first biennial update proceeding. After considering the substantial input of commenters, including net-metering customers, solar installation companies, electric utilities, and State agencies, the Commission decided to gradually scale back net-metering compensation. The positive REC adjustor was reduced by one cent in 2018 and again in 2019. The siting adjustor for Category III systems was also reduced by one cent. These reductions were partly offset by an increase in the blended residential rate. The cumulative effect of the first biennial update proceeding was that the compensation available to new net-metering customers was only modestly less in the first year and then dropped an additional cent the next year. The following table summarizes the historical progression of net-

³⁵ Commission Rule 5.128(B)(1)-(4).

³⁶ Commission Rule 5.128(C)(1)-(5).

³⁷ Commission Rule 5.128(G).

metering compensation, assuming customers transferred their RECs to their utility and that the utility used the blended residential rate. ³⁸

Table 1. Summary of net-metering compensation by vintage (\$0.00/kWh)

		Category of Net-Metering System					
Program	CPG	I	II	III	IV		
_	Application	15 kW or	>15 kW up to	>150 kW up to	>15 kW up to		
	Date	less	150 kW on a	500 kW on a	150 kW not on		
			preferred site	preferred site	a preferred site		
NM 1.0	before	Customers receive overall compensation of approximately					
	1/1/2017	\$0.22/kWh or \$0.25/kWh and retained ownership of RECs.					
NM 2.0	1/1/2017 -	\$0.196	\$0.196	\$0.176	\$0.156		
	6/30/2018						
NM 2.1	7/1/2018 -	\$0.191	\$0.191	\$0.161	\$0.151		
	6/30/2019						
NM 2.2	7/1/2019 —	\$0.181	\$0.181	\$0.151	\$0.141		
	1/30/2021						
NM 2.3	2/1/2021 -	\$0.171	\$0.171	\$0.141	\$0.131		
	8/31/2021						
NM 2.4	9/1/2021 -	\$0.161	\$0.161	\$0.131	\$0.114		
	8/31/2022						
NM 2.5	NM 2.5 9/1/2022 -		\$0.151	\$0.121	\$0.111		
	present						

In 2020, the Commission conducted its second biennial update proceeding. As a result of the emergence of the COVID-19 pandemic in early 2020, and at the request of affected parties, the Commission temporarily stayed the biennial review and did not issue its final order until November 12, 2020.³⁹ As with the first biennial review, the Commission considered recommendations from the Department, ANR, distribution utilities, project developers, other interested parties, and members of the public and ultimately determined to make additional reductions to the net-metering compensation rates in a two-step process. The Commission reduced the siting adjustors for all categories of net-metering systems by one cent per kWh for new systems that filed applications on and after February 2, 2021, which was followed by

³⁸ NM 2.0 refers to the revised net-metering program. It was implemented by Commission order from January 1, 2017, through June 30, 2017, and by an approved final rule starting on July 1, 2017. NM 2.1 and NM 2.2 refer to the updates made to the NM 2.0 adjustors in the 2018 biennial update (Case No. 18-0086-INV). NM 2.3 and NM 2.4 refer to the updates made to the NM 2.2 adjustors in the 2020 biennial update (Case No. 20-0097-INV).

³⁹ In re: biennial update of the net-metering program, Case No. 20-0097-INV, Order of 11/12/20.

another one-cent per kWh decrease for systems that applied on or after September 1, 2021. The Commission also decreased the REC adjustor for all systems by one cent. As was the case with the 2018 update proceeding, the Commission also approved an increase of approximately one cent to the blended residential rate—which, as in today's order, significantly offset the decreases in the adjustors.

In 2022, the Commission conducted its third biennial update. The Commission found that net-metering continued to cost more than other sources of comparable renewable energy. The Commission reduced the siting adjustors for all categories of systems by one cent per kWh for new systems that filed applications on and after September 1, 2022. At the same time, the Commission approved an increase of approximately three-fourths of a cent to the blended residential rate, which again offset the decreases in the adjustors.

In the following sections of this order, the Commission reviews the comments submitted in this proceeding (Section IV) and then considers the factors specified in Rule 5.128 and responds to the issues raised by commenters (Section V).

IV. SUMMARY OF COMMENTS

Department of Public Service

The Department recommends increasing the "statewide blended residential rate" to \$0.18398/kWh, which is an increase of \$0.01257/kWh, and proposes to reduce the renewable energy credit ("REC") adjustor or the siting adjustor by \$0.02 per kWh for all categories of netmetering systems. In the alternative, the Department recommends phasing in the changes to the REC and siting adjustors with a \$.015/kWh reduction in 2024 and the remaining \$.005/kWh reduction in 2025. The Department notes that when the increase to the blended rate is offset by its proposed REC adjustor decrease, the result is a net total downward shift of \$0.00743/kWh.

The Department's position is focused on the cost of net-metering in relation to other alternatives for achieving Vermont's renewable energy goals. The Department states that "(b)ased on data collected from each utility, the cost of net-metering in 2021 was more than \$49 million higher than the market value of the products provided, resulting in an inequitable cost-

shift from participating net-metering customers to nonparticipating customers."⁴⁰ According to the Department, "the deployment of net-metering systems in 2022 and 2023 continued to exceed the requirements of the [Renewable Energy Standard] at a greater cost than other Tier II alternatives."⁴¹ The Department argues that increasing electric rates will discourage customers from adopting beneficial electric technologies, and therefore will be counterproductive to achieving Vermont's greenhouse gas reduction targets.

The Department argues that the pace of net-metering interconnections has remained relatively steady in recent years despite regular downward adjustments to the siting and REC adjustors. According to the Department, approximately 28 MW of net-metering systems of various vintages were interconnected in both 2022 and 2023. The capacity of net-metering applications was 37 MW in 2022 and 26 MW in 2023. The Department states that 2023's decrease in applications may be caused by several factors, including applications being accelerated in 2022 to avoid reductions in incentives and a shrinking number of developable sites.

The Department contends that the price of installing solar has decreased significantly over the past decade and will continue to decrease, though at a slower pace than in the past. The Department argues that the compensation paid to net-metering resources has not seen a corresponding reduction in magnitude over time. The Department points to the "passage of the Inflation Reduction Act that resurrects and expands federal tax credits for renewable energy deployment" and "the gradual easing of supply chain, inflationary, and workforce challenges wrought by the COVID 19 pandemic" as relevant factors in its recommendation.⁴²

The Department recommends that the Commission adopt siting adjustors that are based on a net-metering system's impacts on the grid. For example, systems installed on a saturated distribution circuit, or in an export-constrained area of the transmission system, would receive a

⁴⁰ Department's April 1, 2024, Comments at 7 (internal quotes removed) (*quoting* 2023 Vt. Dep't OF Pub. Serv., Annual Energy Report: A summary of progress made toward the goals of Vermont's Comprehensive Energy Plan – Appendix C: A Report on Vermont Net-Metering Program, at C-10, p. 112, *available at*

 $[\]underline{https://publicservice.vermont.gov/sites/dps/files/documents/2023\%20Vermont\%20Annual\%20Energy\%20Report_0.}\\ \underline{pdf.}).$

⁴¹ *Id*. at 9.

⁴² *Id*. at 3.

lower adjustor unless paired with storage or otherwise able to time-shift production to hours of higher load and lower generation on that circuit. The Department does not recommend significant changes to the eligibility criteria for the net-metering categories.

VEC and WEC

VEC and WEC jointly filed comments generally supporting the Department's recommendations. VEC and WEC agree with the Department's proposed calculation for the updated blended residential rate. They also state that the Department's "recommendation to reduce total compensation by two cents per kilowatt-hour will not bring the cost in line with the value [of net-metered power], which VEC estimates to be about eight cents per kilowatt-hour." WEC and VEC, however, support the Department's proposed two-cent reduction for the siting adjustors.

AllEarth Renewables

AllEarth recommends that the Commission reject the Department's proposed two-cent reduction in the siting adjustor and instead re-set the siting adjustor to zero cents. In support of this recommendation, AllEarth asserts that continued deployment of new net-metering projects will be necessary to mitigate the impacts of climate change and to satisfy the obligations set out in the GWSA and the RES. AllEarth also states that net-metering projects can be more beneficial for meeting the GWSA and RES obligations in a timely manner because larger renewable energy projects often experience delays and permitting challenges. AllEarth also states that, compared to large solar facilities, net-metering facilities have advantages that include locational diversity, less concentrated grid impacts, and opportunities for community solar.

AllEarth argues that the Commission should consider the potential impacts of H. 289, the bill pending before the Legislature that would significantly amend the RES by increasing the distribution utilities' renewable energy supply obligations, in deciding whether to adjust netmetering credits. AllEarth recognizes that H. 289 has not been enacted as law, but AllEarth asserts that reducing net-metering credits by two cents for the two-year term covered by this

⁴³ VEC and WEC Comments at 1.

biennial update order will reduce the pace of net-metering applications and consequently compromise the ability of utilities to meet the mandates of the RES if it is amended.

AllEarth also asserts that reducing compensation for new net-metering systems will preclude meaningful access to net-metering opportunities for ratepayers of Vermont's smaller municipal utilities. AllEarth states that the rate of net-metering deployment has been lower in many municipal utility service territories, including Swanton Village Inc. Electric Department, Village of Orleans Electric Department, the Town of Northfield Electric Department, the Village of Ludlow Electric Light Department, the Village of Enosburg Falls Water and Light Department, the Village of Jacksonville Electric Department, and the Village of Johnson Water and Light Department, and that reducing net-metering compensation will result in a continuation of this disparity.

In terms of the system costs of new net-metering facilities, AllEarth asserts that recent revisions to the Commission's net-metering rules include an option for utilities to file tariffs that include locational adjustor fees for new-metering facilities in congested areas. AllEarth, therefore, argues that existing Commission rules already allow for the implementation of pricing mechanisms to protect against overdevelopment on strained circuits and mitigate the need to implement costly transmission and distribution network upgrades to accommodate net-metering projects.

Finally, AllEarth argues that new solar development is facing financial headwinds that the Department did not factor in its recommendations. Specifically, it points to general inflationary pressures and increasing labor and permitting costs. It also references a petition that was recently filed with the United States Department of Commerce seeking the imposition of "anti-dumping" duties as high as 271% against four countries that would affect the price of solar panels.

Renewable Energy Vermont

REV opposes the Department's proposed two-cent decrease to the siting adjustor.

REV's comments address many of the same points raised by AllEarth, including promoting access to the net-metering program and ensuring that net-metering plays a necessary role in

satisfying RES Tier II obligations. REV also recommends that the Commission factor the proposed mandates included in H. 289.

REV challenges the Department's assertions regarding the value of new net-metering projects. REV argues that the Department did not adequately consider or assess various financial benefits of new net-metering projects and overstated the potential cost-shift from new net-metering development. Specifically, REV cites a recent study conducted by the New Hampshire Department of Energy that concluded that the value of residential and commercial solar was on the order of 13 to 17 cents/kWh through 2035. REV also asserts that the Department's analysis did not factor in various ratepayer benefits of net-metering, including the reduction of various transmission, distribution, capacity, and energy costs. It also challenges that the Department did not sufficiently consider the historic peak-shaving benefits that have been provided by net-metering systems when evaluating the cost of the net-metering program as a whole. With respect to the cost-shift argument, REV asserts that a two-cent adjustor decrease for all new net-metering projects developed during the two-year term covered by this biennial update order will save "23 thousand[th]s of a cent/kWh or less than \$2/year for a household with a 700 kWh/month usage." REV further argues that any cost increase from new net-metering projects would be more than wholly offset by other ancillary financial benefits provided by those projects.

REV also disputes the Department's contention that the installation cost of new solar facilities continues to decrease. REV presents data to assert that, although equipment costs have gone down, the overall cost of new net-metering installations has largely remained flat between 2017 and 2024 because higher interest rates and increased financing costs have offset the reduced costs of equipment. REV argues that the flat installation cost coupled with decreasing incentives has resulted in a notable drop in application rates in recent years. It also presents data to argue that applications for new net-metering facilities dropped by 62% (in terms of MW of capacity) since their peak in 2017.

In conclusion, REV argues that the Department "mischaracterizes the current downward trend in net metering applications and interconnections and fails to consider the impact of proposed changes to the RES on the amount of Tier II renewable energy that is likely to be

⁴⁴ REV Comments at 7.

required over the next several years" and that "[r]educing the viability of net metering at the same time that the requirements for Tier II RECs are increasing significantly would be illadvised." REV opposes the proposed two-cent adjustor decrease, but recommends that if the Commission adopts the Department's recommendation, then the decrease should be phased in over a two-year period.

General Public Comments

The Commission acknowledges the approximately 200 public comments filed in this proceeding. Most of these comments were general in nature and addressed the need to mitigate the impacts of climate change and support the economic benefits associated with developing solar in Vermont.

V. REC ADJUSTOR FACTORS

In this section, the Commission discusses each of the factors that the Commission must consider in determining the appropriate value of the REC adjustors. Additionally, the Commission responds to the comments and filings that are relevant to the Commission's consideration of these factors.

(1) The pace of renewable energy deployment necessary to be consistent with the Renewable Energy Standard, the Comprehensive Energy Plan, and any other relevant State program

Under this factor, the Commission must consider what pace of renewable deployment is necessary to be consistent with the CEP and the RES. What follows is a brief overview of the CEP and the RES, followed by a discussion of the pace of renewable energy deployment that will be necessary to be consistent with them. We also address the GWSA and its interplay with the CEP and RES. Finally, we discuss what role net-metering should play in meeting the applicable goals and requirements of these interrelated programs.

In discussing these authorities, we have primarily considered the requirements of law as it currently exists. REV and AllEarth point to potential changes to the RES contained in H. 289 as

⁴⁵ REV Comments at 14.

a reason to increase financial support for net-metering. It is unclear whether H. 289 will become law and therefore it would be speculative to base this decision on this pending legislation. More fundamentally, it is important to emphasize that net-metering is only one of several ways to deploy renewable energy consistent with the CEP and RES. As discussed further below, REV and AllEarth have not demonstrated that increasing net-metering compensation would be a necessary or appropriate response to H. 289 becoming law.

The Department is required by statute to adopt a Comprehensive Energy Plan at least every six years. The CEP is a 20-year plan that must contain an analysis of "the use, cost, supply, and environmental effects of all forms of energy resources used within Vermont." The CEP must include recommendations for how the plan can be implemented by the State and local governments and private actors. A fundamental purpose of the CEP is to implement Vermont's general policy to "meet its energy service needs in a manner that is adequate, reliable, secure, and sustainable; that ensures affordability and encourages the State's economic vitality, the efficient use of energy resources, and cost-effective demand-side management; and that is environmentally sound." Accordingly, the CEP is meant to guide how to best "identify and evaluate . . . resources that will meet Vermont's energy service needs in accordance with the principles of least-cost integrated planning, including efficiency, conservation, and load management alternatives, wise use of renewable resources, and environmentally sound energy supply."

The most recent CEP was adopted in January 2022.⁴⁹ The CEP establishes an ambitious goal of sourcing 90% of Vermont's energy from renewable resources by 2050.⁵⁰ It also explores various high-level strategies for satisfying the statewide greenhouse gas reduction requirements included in the GWSA, which calls for a 26% reduction from 2005 levels by 2025; a 40% reduction from 1990 levels by 2030; and an 80% reduction from 1990 levels by 2050.⁵¹ The CEP also includes a series of sector-specific energy goals, including: (1) for the transportation

⁴⁶ 30 V.S.A. § 202b(a)(1).

⁴⁷ 30 V.S.A. § 202a(1).

⁴⁸ 30 V.S.A. § 202a(2); *id.* § 202b(a).

⁴⁹ The CEP, along with documents related to its development and previous iterations, can be viewed online at: https://publicservice.vermont.gov/publications-resources/publications/energy_plan.

⁵⁰ CEP at 10.

⁵¹ *Id*. at 11.

sector, meeting 10% of energy needs from renewable energy by 2025, and 45% by 2040; (2) for the thermal sector, meeting 30% of energy needs from renewable energy by 2025, and 70% by 2042; and (3) in the electric sector, meeting 100% of energy needs from carbon-free resources by 2032, with at least 75% from renewable energy.⁵² The CEP examines a wide range of energy topics, including electric supply, heating, energy efficiency, and transportation. It also makes recommendations about specific steps that can be taken in each of these sectors to ultimately achieve Vermont's renewable energy and greenhouse gas emissions goals, though the CEP acknowledges that "[t]hese targets will not be easy to reach, particularly in the transportation and thermal sectors."⁵³ The CEP also recognizes that "the burdens and benefits of energy policy in Vermont have not been equitably distributed across the state or its citizens" and includes a series of strategies to "consider both the historical distribution of impacts and those impacts that will occur with energy policy action."⁵⁴

With respect to electric supply, the CEP recognizes that the consideration of future supply acquisitions will be directed by the compulsory obligations of the RES.⁵⁵ Under the RES, a utility "shall not sell or otherwise provide or offer to sell or provide electricity in the State of Vermont without ownership of sufficient energy produced by renewable energy plants or sufficient tradeable renewable energy credits from plants whose energy is capable of delivery in New England."⁵⁶ The RES establishes three categories of compliance requirements, which are commonly referred to as "Tiers." Tier I is a total renewable energy requirement. Starting in 2017, each utility must obtain a quantity of renewable energy credits ("RECs") that equals at least 55% of the utility's portfolio, climbing 4% every three years to 75% in 2032.⁵⁷ Tier II is a carve-out of Tier I that requires utilities to obtain a quantity of RECs from new distributed renewable generators equal to 1% of retail electric sales in 2017, rising 0.6% each year to 10% in 2032.⁵⁸ Net-metering systems qualify as Tier II resources, and under State law, utilities must

⁵² *Id.* at 11.

⁵³ *Id.* at 11.

⁵⁴ *Id.* at 11.

⁵⁵ *Id.* at 239-42

⁵⁶ 30 V.S.A. § 8004(a).

⁵⁷ 30 V.S.A. § 8005(a)(1)(B).

⁵⁸ 30 V.S.A. § 8005(a)(2)(C). Tier II includes renewable energy systems that are 5 MW or smaller and are directly connected to the sub-transmission or distribution system of a Vermont retail electricity provider.

retire RECs received from net-metering systems toward compliance with the RES. Finally, Tier III of the RES relates to what are known as "energy transformation projects." The CEP describes the RES as a policy that "provide[s] general guidance by requiring that utilities procure resources of a certain type, while leaving utilities to determine the best way to procure these resources." ⁵⁹

The CEP recognizes that although the RES sets immediate, compulsory renewable energy targets, electric power supply decisions must now also be viewed in the context of the broader greenhouse gas emission reduction requirements set out in the GWSA. For greenhouse gas emissions from the electric sector, the CEP highlights that Vermont's electric mix in 2020 was 69.5% renewable and 94% carbon-free, with three Vermont utilities providing 100% renewable energy. 60 In 2020, the electric sector contributed 2.2% of Vermont's greenhouse gas emissions. 61 The CEP, however, recognizes that the GWSA's greenhouse gas reduction requirements will increase electric demand and require utilities to continue acquiring additional renewable resources in the future. The CEP states that the thermal and transportation sectors "will rely heavily on electrification opportunities to shift away from [greenhouse gas]-emitting fossil fuels" and "it will prove critical to ensure that Vermont utilities are supplying low-carbon and renewable electricity resources for maximum emissions reductions."62 However, the CEP stresses that modifying State energy policy to address the GWSA requirements and increased demand for low-carbon and renewable electricity must be done "in a cost-effective and equitable manner."63 The CEP further emphasizes that "it is essential to keep electricity affordable to make progress in decarbonizing the emissions-heavy thermal and transportation sectors."64

The CEP also discusses distributed generation and net-metering extensively, within the context of both RES and GWSA obligations. With respect to the RES, the Department estimates that 25 to 30 MW of new distributed generation will be needed annually to comply with Tier II

⁵⁹ CEP at 246.

⁶⁰ *Id.* at 255.

 $^{^{61}}$ 2023 Vt. Agency of Natural Res., Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990-2020, at 8, available at:

https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/ Vermont Greenhouse Gas Emissions Inventory Update 1990-2020 Final.pdf.

⁶² CEP at 255.

⁶³ *Id.* at 256.

⁶⁴ Id. at 258.

of the RES. The CEP notes that as a result of rapid growth in recent years, the net-metering program alone has consistently exceeded this 25 to 30 MW annual need.⁶⁵ However, the CEP further notes that the rapid expansion of the net-metering program has also resulted in a reduction in the overall value of new systems. The CEP states that:

The fact that solar output no longer coincides with the most expensive hours for utilities to purchase energy, capacity, and transmission to serve customers, combined with alternative mechanisms through which utilities can purchase distributed solar at significantly lower costs than the current net-metering rates, means there is now a cost shift; non-net-metered customers are subsidizing those customers who have the means to net-meter.⁶⁶

According to the CEP, as of 2019, "Vermonters paid more than \$40 million more for net-metering than if this solar generation had been procured through bilateral contracts between solar developers and utilities." The CEP maintains that current compensation for net-metering programs "continues to significantly exceed the wholesale price and market-based Class I REC prices combined." The CEP's recommendations with respect to the RES and complementary renewable energy programs include "modification of the net-metering program to bring program costs into better alignment with benefits to allow for more well-sited, cost-effective, and equitable distributed generation to be added to Vermont's portfolio." ⁶⁹

The Commission has been tasked with moving toward a carbon-free energy future, as outlined in the CEP, RES, and GWSA—all of which expressly mandate that we consider the cost impact on ratepayers in developing energy policy. In 1999, net-metering was the first in-state program to be made available for small, new renewable resources, and it now accounts for the largest portion of solar power in Vermont.⁷⁰ However, utilities are able to contract directly with renewable generation resources, including solar, at significantly lower prices than net-metering. Thus, the question presented in this proceeding is not what economic incentives the Commission

⁶⁵ *Id.* at 261.

⁶⁶ *Id.* at 247.

⁶⁷ *Id.* at 247. The overall cost of net-metering and its impact on electric rates was also discussed by the Commission at length in a previous GMP rate case. *Investigation into Green Mountain Power Corporation's tariff filing requesting an overall rate increase in the amount of 4.98% to take effect January 1, 2018, Case No. 17-3112-INV, Order of 12/21/17 at 8-10.*

⁶⁸ CEP at 247.

⁶⁹ *Id.* at 270.

⁷⁰ According to the CEP, as of November 2021, there was approximately 285 MW of solar capacity installed through the net-metering program, with slightly less than 450 MW of total installed solar capacity in Vermont. *Id.* at 244-47.

should set to promote the maximum amount of net-metering, but rather what incentives are necessary to meet the CEP and RES renewable requirements, with consideration given to the GWSA's overall emission-reduction requirements, while protecting the interests of ratepayers.

With this framework in mind, we turn to REV's and AllEarth's arguments that additional net-metering resources will be necessary to meet potential increases to the RES requirements and anticipated load growth. We find this argument unpersuasive because the Department has demonstrated that there will be adequate distributed energy resources available to meet the requirements of Tier II as they currently exist for the next two years. In the event that H. 289 becomes law, the Commission will evaluate the utilities' progress towards meeting the requirements of the RES in future biennial update proceedings, as well as during proceedings to review utilities' least-cost integrated resource plans.

Even if the Commission were to consider the requirements of H. 289 at this time, REV has not demonstrated a need to increase the pace of net-metering deployment in the next two years to meet H. 289's requirements. REV overstates the amount of new resources that will need to be built in that timeframe. For example, REV's estimate does not account for the fact that H. 289 would make a significant number of existing hydroelectric facilities eligible as Tier II resources. Thus, existing hydroelectric resources are already available to cover some portion of H. 289's expanded Tier II requirements. REV's estimate also does not account for the fact that some Vermont utilities have already acquired significantly more RECs from solar facilities than is required by current law and are selling those RECs to reduce rates for customers. If H. 289 becomes law, these utilities will likely begin retiring those RECs, which will reduce their need for new additional resources. Finally, REV's analysis shows that H. 289 would not have a significant impact on the amount of resources required in 2025 as compared to present obligations. REV's analysis shows a greater need for new Tier II resources beginning in 2026, which is when the Commission is scheduled to have another biennial update proceeding.

⁷¹ Department's April 1, 2024, Comments at 6-7.

⁷² REV Comments at 13.

⁷³ See Department's April 1, 2024, Comments at 7 (noting that the pace of past net-metering deployment alone has exceeded what is required by Tier II).

⁷⁴ See REV Comments at 13 (estimating that 33.6 MW of new facilities would be necessary to meet increased Tier II obligations in 2025).

Therefore, even if we were to accept REV's estimates, we do not find a need to stimulate the development of additional net-metering facilities during the next two years.

REV and AllEarth acknowledge that other sources of renewable energy besides netmetering are available to meet the RES but assert that "these larger-scale projects take longer to permit and build than most net metering projects and, especially in the period covered by this Biennial Update would be difficult to scale sufficiently to meet update[d] RES targets."⁷⁵ However, as discussed above, it will be at least two years before RES requirements will begin to increase substantially, and the utilities have existing resources to address RES compliance in the near term. There is adequate time for utilities to acquire more cost-effective Tier II resources than net-metering if a supply gap occurs after 2026.

We conclude that to balance the costs and benefits of net-metering, it is appropriate to reduce the difference between the cost of new net-metered power and other Tier II renewable resources. This small adjustment may have the effect of slowing the pace of new net-metering systems while utilities pursue less costly sources of renewable generation (such as bilateral contracts or utility-sponsored projects). The utilities must procure a set amount of renewable energy, and the record in this proceeding shows that the utilities can meet this requirement with the current pace of renewable energy deployment. Therefore, a modest reduction in compensation for new net-metering systems is consistent with the CEP's instruction that utilities must design their Tier II portfolios in a cost-effective manner.

(2) Total renewable energy capacity commissioned in Vermont in the most recent two years

The amount of renewable energy capacity commissioned in Vermont in 2022 and 2023 is summarized in the following table.

⁷⁵ REV Comments at 13.

Table 2. Amount of renewable energy capacity commissioned in 2022 and 2023 (MW)⁷⁶

	2022	2023
Net-Metering	28.5.0 MW	28.6 MW
Standard Offer	4.3 MW	4.4 MW
Utility-Owned and PPAs	0 MW	5 MW
Total	32.8 MW	38 MW

These figures show the amount of renewable energy resources commissioned in Vermont in the past two years. It is worth noting that the amount of net-metering capacity commissioned in the past two years exceeded the capacity and pace of all other sources combined.⁷⁷ The pace of net-metering development in each of the years during the period between 2016 and 2023 alone has been consistent with the pace necessary to meet the utilities' entire Tier II obligations (25 to 30 MW per year). A net-metering-heavy renewable energy portfolio mix is not optimal given the fact that net-metering is the most expensive of the resources shown above.⁷⁸

In addition to the amount of renewable energy capacity commissioned, there are several other potentially relevant data sources for evaluating the net-metering program, which are depicted in the following charts and graphs. These include the number and capacity of net-metering CPG applications filed, interconnection applications filed, and systems interconnected.⁷⁹

⁷⁶ Department's April 1, 2024, Comments at 34.

⁷⁷ Pursuant to 30 V.S.A. § 8002, "commissioned" means "the first time a plant is put into operation following initial construction or modernization if the costs of modernization are at least 50 percent of the costs that would be required to build a new plant including all buildings and structures technically required for the new plant's operation."

⁷⁸ For example, the most recent standard-offer request for proposals resulted in bids for solar developers in the "price competitive block" ranging between \$0.0818/kWh and \$0.1195/kWh, with VEPPI recommending contracts for two 2.2 MW facilities that bid at \$0.0818/kWh and \$0.0819 kWh. *Investigation to review the 2022 implementation of the standard-offer program*, Case No. 21-2048-INV, VEPP Inc. Recommendation filed May 13, 2022.

⁷⁹ The annual capacity of CPG systems interconnected can be seen in Figure 1 on page 8 above.

Figure 2. Capacity of Annual Solar Net-Metering CPG Applications⁸⁰

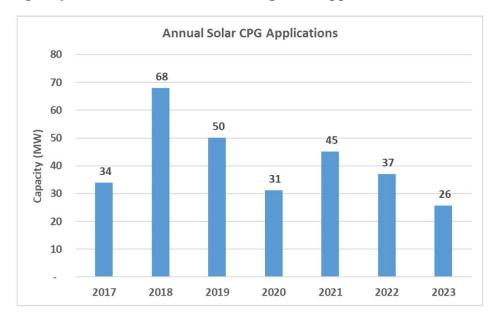


Figure 3. Capacity of Net-Metering Applications by Month (systems larger than 15 kW)⁸¹

⁸⁰ Department's April 1, 2024, Comments at 39.

⁸¹ All data concerning net-metering applications included in this figure were retrieved from ePUC.

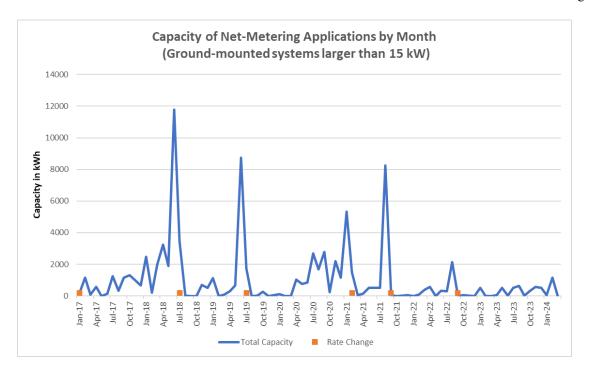


Figure 4. Number of Net-Metering Applications by Month (systems larger than 15 kW)⁸²

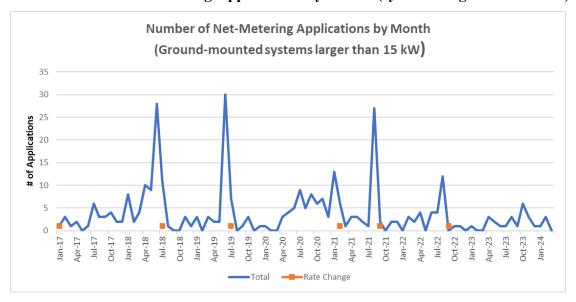


Figure 2 above, which aggregates the capacity of all CPG applications filed with the Commission by calendar years 2017-2024, shows a moderate decrease during 2020 that was followed by a rebound in 2021 to a level that was largely consistent with pre-pandemic levels.

⁸² All data concerning net-metering applications included in this figure were retrieved from ePUC.

However, as noted by REV and AllEarth, after 2021, there has been a decrease in the number and capacity of net-metering systems. This decrease has been driven in part by a decrease in applications for large net-metering facilities. Figures 3 and 4, which are limited to ground-mounted systems with a capacity greater than 15 kW, depict application data by month with the dates of adjustor changes noted. These figures show a historic trend of applications spiking significantly in advance of a reduction to the net-metering adjustors, which is followed by a gradual increase of applications leading up to the next credit adjustment. This pattern was not as pronounced in 2022 as in past years. Overall, these data indicate that the net-metering program continues to have strong participation, though it has decreased from the peak of development activity in 2018.

As we have previously stated, "the incentive system for net-metering is not failing if net-metering applications, CPGs, or total capacity commissioned do not increase as rapidly in the next year as [they] did in previous years." One purpose of these biennial update proceedings is to find the proper balance between the pace of net-metering and the cost to ratepayers. The current pace of applications has remained robust after each reduction in net-metering compensation. The Commission remains concerned about the cost of net-metering resources as compared to other Tier II resources.

(3) The disposition of RECs generated by net-metering systems commissioned in the past two years

The disposition of RECs generated by net-metering systems is summarized below. The results are sorted by the successive iterations of incentive levels. Net-metering 1.0 did not differentiate compensation based on REC disposition. As a result, most net-metering systems retained ownership of their RECs, with many sold out of state instead of being transferred to their Vermont utility to be retired—and thus could not be counted towards State renewable energy requirements.

⁸³ In re: biennial update of the net-metering program, Case No. 18-0086-INV, Order of 5/1/18 at 39.

Table 3. Net-Metering Deployment (MW) REC Dispositions.84

REC DISPOSITION	NM 1.0	NM 2.0	NM 2.1	NM 2.2	NM 2.3	NM 2.4	NM 2.5	Total
─ RETAINED	0.19					0.67	0.22	1.08
2022	0.19					0.02		0.20
2023						0.65	0.22	0.87
☐ TRANSFERRED	0.00	2.02	0.00	8.40	8.23	24.24	13.12	56.02
2022	0.00	0.52	0.00	5.96	5.96	14.99	0.82	28.25
2023		1.50	0.00	2.44	2.27	9.25	12.30	27.76
Total	0.19	2.02	0.00	8.40	8.23	24.91	13.35	57.09

This table shows that the current REC adjustor differential of \$0.04 has remained effective at encouraging net-metering customers to transfer their RECs to their utility to be retired, in furtherance of State renewable energy requirements.

(4) Any other information deemed appropriate by the Commission

The Commission received substantial comments raising issues relevant to the Commission's determination of the appropriate REC adjustor and net-metering compensation generally, including: (1) the importance of addressing climate change, (2) the value of new solar generation resources, (3) the cost of installing solar, and (4) equity considerations related to the net-metering program. We address each of these issues in turn.

The Importance of Addressing Climate Change

REV, AllEarth, a group of individual members of the Legislature, and many of the public comments focus on the acute need to address climate change as a reason for maintaining or even increasing the incentives for net-metering. Regulatory action to address climate change is crucial. However, maintaining net-metering at high levels of compensation does not further the greenhouse gas reductions that Vermont needs to achieve. Electrification of the transportation

⁸⁴ Department's April 1, 2024, Comments at 43.

and thermal sectors will be more critical to reaching Vermont's GWSA requirements, and Vermonters must be able to afford to transition to electric vehicles and heat pumps. Vermont's electric power supply must continue to be low carbon, but it also must be affordable. For this reason, high-priced net-metering can be counter-productive to addressing climate change. As the Commission has previously stated, "net-metering has only a minor impact on greenhouse gas emissions, because . . . Vermont's electric supply is already largely carbon-free and under the RES framework excess net-metering generation displaces the acquisition of other lower-cost, renewable sources.

The Commission will continue to ensure that Vermont utilities strictly adhere to their renewable energy and greenhouse gas mandates.

The Value of Solar

REV argues that the Department's estimated value of net-metering generation fails to account for twelve sources of value. REV also argues that the Department failed to account for the value of historic peak shaving (*i.e.*, peak shaving achieved by already installed behind-themeter solar). REV cites a study conducted in New Hampshire that found that solar generation provided up to 16 cents per kWh of value in 2021.

The Commission has considered similar arguments from REV in past biennial updates and found these arguments unpersuasive. REV cites several forms of market price suppression attributable to behind-the-meter generation (also known as Demand Reduction Induced Price Effects or "DRIPE"). The Commission has determined that price suppression is uncertain and "represents a redistribution of value between different economic entities and does not represent a separate net benefit." Therefore, the Commission has concluded that "it is not clear that the estimated price-suppressive effects of existing solar in New England is indicative of the potential benefit that new net-metering systems would bring to customers, particularly when other, less expensive options exist for supplying solar power to Vermont."

⁸⁵ In Re: Biennial Update of the Net-Metering Program, Case No. 22-0334-INV, Order of 6/17/22 at 29.

⁸⁶ In Re: Biennial Update of the Net-Metering Program, Case No. 20-0097-INV, Order of 11/12/20 at 34 (citing Investigation to update screening values for use by the Energy Efficiency Utilities when the perform cost effectiveness screening of energy efficiency measures, Case No. 19-0397-PET, Order of 7/6/20 at 41.

⁸⁷ Id.

The Commission finds the Department's analysis of the value of solar more persuasive than REV's. Contrary to REV's assertion, the Department did consider the values of reductions to transmission costs and persuasively argued that these values will continue to decrease as Vermont's solar penetration increases due to system peaks shifting after sundown. Similarly, the Department considered reductions in line losses, but also noted that net-metering can *increase* line losses depending on where it is deployed. More fundamentally, REV has not demonstrated that net-metering systems provide more benefits than other kinds of in-state renewable energy. Therefore, the Commission remains focused on bringing the cost of net-metered energy in line with more competitively priced sources of renewable energy so that ratepayers do not pay more than is necessary to meet Vermont's renewable energy requirements.

REC Adjustor Conclusion

The Commission agrees with the Department and with the utilities that a two-cent reduction in net-metering compensation for new net-metering systems, which will largely be offset by the increase to the statewide blended residential rate, is justified.

The current negative REC adjustor represents the amount by which the Commission determines it is appropriate to reduce the net-metering credit for customers who retain their RECs. ⁹⁰ As we noted in the 2020 biennial update, it is potentially confusing to have a negative value apply when customers transfer their RECs to their utilities. Accordingly, both current REC adjustors (positive and negative) will be maintained at \$0.00/kWh and negative \$0.04/kWh, respectively. The reduction in net-metering incentives will instead be accomplished using the siting adjustors, as discussed below.

VI. SITING ADJUSTOR FACTORS

(1) The number and capacity of net-metering systems receiving certificates of public good ("CPGs") in the most recent two years

⁸⁸ Department's April 1, 2024, Comments at 18, 24.

⁸⁹ *Id*. at 18

⁹⁰ 30 V.S.A. § 8010(c)(1)(H)(i).

The following table summarizes the Commission's records with respect to the number and capacity of net-metering systems that received a CPG. 91

Table 4. Annual Number and Capacity of Systems Receiving CPGs in 2022 and 202392
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	2022 CPGs	2022 Capacity (kW)	2023 CPGs	2023 Capacity (kW)
0-15 kW	2,744	22,044	2,203	16,816
>15 - 150 kW	190	7,133	139	3,928
>150 – 500 kW	19	5,136	9	4,500
Cumulative	2,953	33,980	2,351	25,244

When considering these data, it is also important to acknowledge that there is a lag between when an application is filed and when it is approved. For example, a number of CPG applications filed in 2023 were not approved until 2024. Therefore, these figures are more backward-looking. It is also important to remember that some number of these systems will not be constructed despite receiving a CPG. The capacity of systems receiving CPGs in 2022 and 2023 was over 25,000 kW, which is consistent with the total amount of Tier II resources needed. 93

For the same reasons discussed above related to REC adjustors, the Commission finds that the current pace of net-metering deployment, coupled with other sources of Tier II RECs, is more than adequate to meet the State's renewable energy requirements. It is not consistent with Vermont's energy policy to have net-metering systems displace more cost-effective Tier II resources. Accordingly, it is appropriate to reduce compensation for new net-metering systems to ensure that the program does not cause an undue cost-shift between customers who net-meter and those who do not. As we have stated in past biennial update proceedings, the Commission expects that through gradual adjustments—for example, through future biennial updates or

⁹¹ The number of CPG applications received is different from the number of CPGs issued because a portion of CPG applications are withdrawn before a decision is made on whether to issue a CPG.

⁹² All data concerning net-metering CPGs were retrieved from ePUC. The data included in this table are based on the year an application was initially filed. The table includes total capacity of all applications by size that were filed in 2022 or 2023 and ultimately received a CPG. Capacity for applications that were withdrawn, denied, or remain pending before the Commission was excluded.

⁹³ Supra at 23.

rulemaking—net-metering compensation for new systems will become more competitive with other Tier II resources.

(2) The extent to which the current siting adjustors are affecting siting decisions

Based on our review of the Commission's records for CPG applications filed in 2022 and 2023, it appears that the siting adjustors continue to function as intended. There remains strong participation in the smaller-scale, residential-sized systems that generally must be collocated adjacent to their load. In contrast, the Commission has received very few applications for systems not located on preferred sites. Indeed, the Commission received only a few applications for Category IV net-metering systems (which includes facilities between 15 kW and 150 kW that are not on preferred sites) during 2022 or 2023. Based on these data, the siting adjustors are accomplishing the goal of steering development to better locations.

As we discussed in the 2020 biennial review proceeding, "siting adjustors should be designed to encourage well-sited projects and not be designed to make construction on a specific type of preferred site cost-effective for the developer." The Commission concludes that the siting adjustors are successfully driving development towards less environmentally sensitive sites. The Commission recently finished a rulemaking that revised the definitions of preferred sites, and the Commission expects that these changes will further improve the performance of the siting adjustors going forward.⁹⁵

The Department suggests that siting adjustors could be modified to account for a project's impacts on the grid. Specifically, the Department states that a project sited on a "saturated" distribution circuit or within an export-constrained area of the transmission system could receive a lower adjustor unless it is paired with storage or is otherwise able to time-shift its production output.⁹⁶ The Department notes that the Commission has recently modified the netmetering rule to allow utilities to charge location adjustor fees, and the Department expects these fees to be proposed and adopted by utilities. But without any guarantee that such fees will be

⁹⁴ In re: biennial update of the net-metering program, Case No. 20-0097-INV, Order of 11/12/20 at 39 (internal quotations omitted).

⁹⁵ Proposed changes to PUC Rule 5.100, Case No. 19-0855-RULE, Order of 1/18/24.

⁹⁶ Department's April 1, 2024, Comments at 50-51.

proposed, the Department advocates that the Commission modify adjustors based on grid impacts in the interim.

The Department raises a potentially legitimate concern because new net-metered systems installed within constrained areas will provide less system value than new systems installed on relatively unsaturated circuits. Indeed, systems installed in saturated areas may actually increase overall system costs. Under the current net-metering rule, utilities may propose locational adjustor fees in constrained areas of the grid. ⁹⁷ Given that the locational adjustor fee is a reasonably available measure to minimize ratepayer costs, we expect that utilities will utilize this mechanism to discourage net-metering projects in constrained areas that would require costly grid upgrades or exacerbate the curtailment of existing renewable resources.

(3) Whether changes to the qualifying criteria of the categories are necessary

Pursuant to Commission Rule 5.128(A), the Commission may make changes to the eligibility criteria for Category I, II, III, and IV net-metering systems. ⁹⁸ No participants recommended any changes to eligibility for Category I, II, III, and IV net-metering systems, and we therefore do not make any changes to the eligibility criteria.

(4) The overall pace of net-metering deployment

As discussed in Sections V (1) and VI (1), above, the overall pace of net-metering has slowed since its peak in 2018. The Commission views this as an appropriate adjustment given the high price of net-metered power compared to other renewable energy sources. The reduction in the pace of net-metering deployment will eventually push the utilities to either develop or contract with less-expensive sources of new renewable energy to meet their statutory renewable energy requirements. Despite REV's and AllEarth's assertions to the contrary, we determine that the utilities have adequate resources to meet any statutory requirements in the next two

⁹⁷ Commission Rule 5.136.

⁹⁸ Eligibility criteria include, for example, that ground-mounted Category I systems must have a capacity of 15 kW or less.

years. 99 Therefore, we find it is appropriate to continue to reduce the difference between the cost of net-metered power and the cost of other sources of new renewable energy.

(5) Any other information deemed appropriate by the Commission

AllEarth states that Section 2 of H. 289 would substantially limit offsite net-metering for CPG applications filed after the end of 2024. According to AllEarth, H. 289 contains no replacement program for offsite net-metering, which would be the subject of a legislative study and potential future legislation. For these reasons, AllEarth recommends increasing the siting adjustors to zero. AllEarth's proposal would significantly increase the cost of net-metering systems, which would create upward pressure on rates and harm low-income ratepayers. The Commission does not agree with AllEarth's proposal. Our discussion of other relevant factors in Section V, above, applies equally here and supports our overall conclusion that net-metering compensation is creating a cost shift and driving a level of net-metering deployment that is outpacing and displacing more cost-effective solar resources.

Siting Adjustor Conclusion

Having considered the factors discussed above, the Commission determines that it is appropriate to reduce the siting adjustor applicable to all categories of new net-metering systems. This will better align the cost of net-metering and the value that new net-metering systems provide, while slightly narrowing the gap between the cost of new net-metering and the cost of other sources of distributed renewable energy. This change for new systems will be offset by the increase in the statewide blended residential rate and therefore nets to less than three-fourths of a cent.

VII. DETERMINATION OF THE STATEWIDE BLENDED RESIDENTIAL RATE

The Department recommended that the statewide blended residential rate be recalculated because of rate increases by several utilities in the intervening years. Commission Rule 5.103

⁹⁹ Supra at 25.

states that the blended residential rate for an electric company is either its general residential service rate or, for companies that use inclining block rates, is calculated "by adding together all of the revenues to the company during the most recent calendar year from kWh sold . . . and dividing the sum by the total kWh sold by the company . . . during the same year." The rule further defines the statewide blended residential rate as a "weighted average of all electric company blended residential retail rates." Each utility filed a calculation of its blended residential rate on March 1, 2024. The Department provided worksheets showing its calculation of the statewide blended residential rate consistent with the methodology required by the rule on April 1, 2024. The Department recommended an increase of \$0.01257/kWh, for a new statewide blended residential rate of \$0.18398/kWh. No commenter has objected to the Department's recommendation, and we find the Department's calculation consistent with the requirements of Rule 5.103. Therefore, it is adopted. This change will offset some of the changes made to the siting adjustors for new net-metering systems. It will replace the existing blended residential rate for all—both existing and new—net-metering customers, increasing the overall cost of the netmetering program and increasing the compensation received by most existing net-metering participants by approximately 7.33%.

Table 5, below, illustrates the cumulative effect of the changes described in this Order. The figures in this table illustrate the experience of a net-metering customer located in the service territory of a distribution utility that applies the statewide blended residential rate. Actual experiences may vary if the retail rates offered by a customer's utility are less than the blended residential rate. The figures are also based on the customer choosing to transfer RECs to the utility. The timing of these changes is discussed in more detail in the next section of this Order.

¹⁰⁰ Rule 5.103.

Table 5. Summary of Changes to Net-Metering Compensation for New Facilities 101

Category	Current	August 1, 2024 - July 31, 2026
Category I (up to 15 kW)	\$0.15141/kWh	\$0.14398
Category II (>15 to 150 kW on preferred site)	\$0.15141/kWh	\$0.14398
Category III (>150 to 500 kW on preferred site)	\$0.12141/kWh	\$0.11398
Category IV (>15 to 150 kW on non-preferred site)	\$0.11141/kWh	\$0.10398

As a result of our determination of the statewide blended residential rate, many existing systems will see their compensation for each kWh produced increase by 7.33%.

VIII. TIMING OF THE CHANGES ANNOUNCED IN THIS ORDER

Rule 5.128 specifies timeframes for the adoption of tariffs that would implement the changes announced in a biennial update. The Commission directs the electric distribution utilities to file tariffs no later than June 15, 2024, to take effect on August 1, 2024. That means that a complete CPG application must be filed on or before July 31, 2024, to qualify for the net-metering incentives that are available today.

¹⁰¹ This assumes that the customer's utility uses the statewide blended residential rate; some utilities' rates will differ if their residential rate is less than the statewide blended residential rate.

¹⁰² These compliance tariffs should reflect only the changes directed in today's order. Any other changes to a company's net-metering tariff should be filed in a separate tariff proceeding.

IX. ORDER

IT IS HEREBY ORDERED, ADJUDGED, AND DECREED by the Vermont Public Utility Commission ("Commission") that:

- 1. The statewide blended residential rate will be \$0.18398/kWh, effective August 1, 2024.
- 2. The renewable energy credit ("REC") adjustor applicable to customers who elect to transfer RECs to their utility shall remain \$0.00 kWh for the period beginning August 1, 2024.
- 3. The REC adjustor applicable to customers who elect to retain RECs shall remain at negative \$0.04 kWh for the period beginning August 1, 2024.
- 4. The siting adjustor for Category I net-metering systems shall be negative \$0.04/kWh for the period beginning August 1, 2024.
- 5. The siting adjustor for Category II net-metering systems shall be negative \$0.04/kWh for the period beginning August 1, 2024.
- 6. The siting adjustor for Category III net-metering systems shall be negative \$0.07/kWh for the period beginning August 1, 2024.
- 7. The siting adjustor for Category IV net-metering systems shall be negative \$0.08/kWh for the period beginning August 1, 2024.
- 8. The REC and siting adjustors ordered in Paragraphs 2 through 7 above shall be applicable to all new net-metering systems for which a complete certificate of public good application is filed with the Commission for the period beginning August 1, 2024, unless otherwise ordered by the Commission.
- 9. The Commission makes no changes to the eligibility criteria for Category I, II, III, and IV net-metering systems.

Dated at Montpelier, Vermont, this 30th day of May	2024
Gf y ctf 'O eP co ctc)	PUBLIC UTILITY
Margaret Cheney	COMMISSION
J. Riley Allen	OF VERMONT

OFFICE OF THE CLERK

Filed: May 30, 2024

Attest: Tolk Millian

Clerk of the Commission

Notice to Readers: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Commission (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: puc.clerk@vermont.gov)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Commission within 30 days. Appeal will not stay the effect of this Order, absent further order by this Commission or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Commission within 28 days of the date of this decision and Order.

PUC Case No. 24-0248-INV - SERVICE LIST

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