STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 15-E-0751 – In the Matter of the Value of Distributed Energy Resources

WHITEPAPER REGARDING HIGH-CAPACITY-FACTOR RESOURCES

August 13, 2019

Introduction and Background

Through the Value of Distributed Energy Resources (VDER) proceeding, the Public Service Commission (Commission) has directed the transition of compensation for distributed generators (DG) from previous methods with limited accuracy and granularity, like net metering, to the Value Stack, which provides compensation based on the actual, calculable values that the generator output provides to the electric system. The Value Stack applies to resource types that had been eligible for net metering, including solar photovoltaic (PV), farm waste, wind, micro-hydroelectric, fuel cell, and micro-combined heat and power generation systems, as well as certain additional resources.[1] Where a resource receiving Value Stack compensation is participating in Community Distributed Generation (CDG), offtakers receiving compensation for that project's generation, often called subscribers, may receive, in addition to the Value Stack, a Market Transition Credit (MTC) or Community Credit (CC), based on the project's vintage and service territory and the offtaker's service class.[2]

On May 10, 2019, the Joint Utilities[3] filed a Petition Seeking Clarification of the Treatment of High-Capacity-Factor Resources Eligible for Community Distributed Generation (JU Petition) expressing concern that the application of the MTC and CC to offtakers of certain high-capacity-factor resources, particularly fuel cells, could result in excessive cost shifts inconsistent with Commission decisions and guidance. The JU Petition explains that this issue has become particularly relevant in light of a number of prospective fuel cell CDG projects entering the interconnection queue in Con Edison's territory.

The Value Stack also includes an element reflecting the Environmental Value of the generation. The Environmental Value applies to resources eligible to participate in the Clean Energy Standard (CES)[4] and compensates those resources for their Renewable Energy

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1 Initial eligibility rules were established in the VDER Transition Order. Case 15-E-0751, Value of Distributed Energy Resources, Order on Net Energy Metering Transition, Phase One of Value of Distributed Energy Resources, and Related Matters (issued March 9, 2017) (VDER Transition Order). Eligibility was extended to certain additional resources in the Eligibility Expansion Order. Case 15-E-0751, supra, Order on Value Stack Eligibility Expansion and Other Matters (issued September 12, 2018) (Eligibility Expansion Order).

2 The MTC applies to mass market subscribers of CDG projects in Tranches 1-4 in all electric utility territories. Case 15-E-0751, supra, VDER Transition Order. The CC applies to all subscribers of CDG projects in the CC Tranche in the Consolidated Edison Company of New York, Inc. (Con Edison), New York State Electric & Gas Corporation (NYSEG), Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), and Rochester Gas and Electric Corporation (RG&E) utility territories. Case 15-E-0751, supra, Order Regarding Value Stack Compensation (issued April 18, 2019) (VDER Compensation Order).

3 Central Hudson Gas & Electric Corporation, Con Edison, NYSEG, National Grid, Orange and Rockland Utilities, Inc., and RG&E.

4 Case 15-E-0302, Clean Energy Standard, Order Adopting a Clean Energy Standard (issued August 1, 2016). Eligibility rules appear in Appendix A.

Certificates (RECs); in return, the interconnecting utility receives those RECs and uses them for its compliance with the CES.[5] The current CES eligibility rules include fuel cells, including fuel cells that use natural gas to generate electricity.[6]

On July 18, 2019, Governor Cuomo signed the Climate Leadership and Community Protection Act (the CLCPA). Among other provisions, the CLCPA added Section 66-p to the Public Service Law (PSL), which requires the Commission to establish a program to require that 70% or more of electricity consumed in New York come from renewable energy systems in 2030 and 100% of electricity consumed in New York is zero emissions by 2040. It defines "renewable energy systems" as "systems that generate electricity or thermal energy through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity."

Staff Recommendations

Based on these recent developments, Staff recommends modifications to the treatment of certain high-capacity-factor resources in the VDER Value Stack framework. Specifically, as more fully described below, Staff recommends that: (a) any resource that qualifies[7] after August 13, 2019 should only be eligible for the Environmental Value if it meets the definition of "renewable energy systems" in PSL §66-p; (b) any high-capacity-factor resource that qualifies after August 13, 2019 should receive a CC, if otherwise eligible, adjusted based on the ratio of an average solar capacity factor to that resource's estimated average capacity factor; (c) high-capacity-factor resources that qualified on or before August 13, 2019 should receive an Environmental Value and MTC or CC, if otherwise eligible, based on the applicable values at time of qualification, with no adjustment; and (d) for any high-capacity-factor resources that receive an unadjusted MTC or CC, the interconnecting utility should reduce available MWs in the applicable Tranche by the capacity of each resource multiplied by the ratio of that resource's estimated average capacity factor to an average solar capacity factor. In advance of Commission consideration, Staff requests stakeholder comments on these recommendations by October 28, 2019.

MTC and CC Eligibility

The MTC and CC are transitional mechanisms intended to support development of renewable and distributed generation resources and achievement of State clean energy goals

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5 Case 15-E-0751, supra, VDER Transition Order.

6 Case 15-E-0302, supra, Order Adopting a Clean Energy Standard, Appendix A.

7 Consistent with the VDER Transition Order and subsequent orders, a project qualifies when it meets the standard for placement in a Tranche; that is, when it has a payment made for 25% of its interconnection costs or has its Standard Interconnection Contract executed if no such payment is required. A project that was eligible for another compensation mechanism, such as net metering, that is eligible to opt into Value Stack compensation qualifies if and when it opts in.

while maintaining an annual net revenue impact of less than 2% in order to limit the potential cost shift to nonparticipating ratepayers. The annual net revenue impact of the MTC and the CC was calculated by multiplying the assigned dollar per kWh value for each Tranche by the number of anticipated average kWh generated per year by projects in that Tranche once it reaches full capacity. This anticipated average kWh figure was based on solar PV capacity factors, multiplied by the size of the Tranche in MWs and by the 8760 hours in a year to arrive at the average annual generation in that Tranche.

As a result, if a resource with a higher capacity factor than solar PV is placed in a Tranche and receives the full MTC or CC for that Tranche for all of its generation, the potential net revenue impact associated with that Tranche will increase. The Commission specifically considered this issue in the context of projects that pair solar PV (or another eligible resource) and storage and determined that injections from those projects would only be eligible for the MTC or CC where it can be demonstrated that those injections originate from the eligible resource, rather than from grid power used to charge the storage resource.

Allowing high-capacity-factor resources to receive an unadjusted MTC or CC and only applying their base capacity to the Tranche would result in net revenue impacts well above the 2% targets. On the other hand, allowing high-capacity-factor resources to receive an unadjusted MTC or CC and applying their capacity to the Tranche with an adjustment based on their load factor as compared to the solar PV load factor could result in Tranches being closed much more quickly than intended with less generation built, and with some Tranches dominated by those resources. For example, fuel cells have a capacity factor more than six times greater than solar PV. If all fuel cells currently in Con Edison's interconnection queue were built and received an unadjusted CC, but the CC Tranche was reduced by their capacity multiplied by six, almost the entire CC Tranche would be filled by those fuel cells.

For these reasons, Staff recommends that high-capacity-factor resources that qualify in the future receive an adjusted CC, based on the CC they would otherwise be eligible for adjusted based on the ratio of an average solar PV capacity factor to that resource's estimated average capacity factor. Based on the data provided in Appendix E of the VDER Compensation Order, the average annual PV capacity factor for the state is approximately 14%. The table below is Staff's recommended MTC/CC adjustment factor by technology, based on anticipated average capacity factors.

	Average Capacity Factor	Adjustment Factor for CC
Solar PV	0.14	1.00
Wind[8]	0.23	0.61
Small Hydro	0.50	0.28
Fuel Cells	0.87	0.16

[8] Consistent with the VDER Transition Order, new wind resources remain eligible for net metering until the statutory cap in PSL §66-l is reached. Therefore, this adjustment would

Environmental Value Eligibility

The elements of the Value Stack, including Environmental Value, reflect actual, calculable cost reductions for the interconnecting utility based on the injection of electricity. Because the CES requires utilities to purchase RECs from eligible generators, the interconnecting utility offsets CES compliance costs when it purchases RECs from an eligible VDER participant. For that reason, projects only receive the Environmental Value if they are eligible resources under CES rules. However, the PSL §66-p requirements differ from CES rules. Significantly, the PSL §66-p definition of renewable energy systems excludes certain resources currently eligible under CES rules, including fuel cells using natural gas. Those resources therefore do not contribute to the achievement of the CLCPA goals, which for each relevant period are the same as or higher than CES goals. As the Commission develops the policies needed to fully implement the CLCPA and achieve its goals, it will be necessary to ensure that clean energy requirements applied to utilities match the requirements of the CLCPA. Therefore, resources that do not meet those requirements will not be able to offset utility compliance costs.

In addition, fuel cells using natural gas for generation often have greenhouse gas emissions similar to average greenhouse gas emissions of New York's grid, which means that generation by fuel cells that replaces use of the grid may have a minimal or no impact on net greenhouse gas emissions. This is particularly true where the waste heat from the generator is not employed to heat buildings or for another useful purpose. Furthermore, as New York's grid becomes cleaner as the result of the CES and CLCPA, these resources are likely to have greater carbon emissions than the grid average. Therefore, in addition to not clearly reflecting utility savings, continuing to provide the Environmental Value to fuel cells using natural gas and other non-eligible technologies would not reflect the actual environmental benefits, or lack thereof.

For those reasons, Staff recommends that resources that qualify in the future receive no Environmental Value if they do not meet the definition of renewable energy systems in PSL §66-p. High-capacity-factor resources that do meet the definition of renewable energy systems in PSL §66-p, such as fuel cells powered without any fossil fuels, should continue to be eligible for the Environmental Value as consistent with current VDER policy.

Existing Projects

Throughout the process of developing, implementing, and refining VDER, the Commission has taken steps to protect developers with projects in advanced stages of development, as those projects were developed based on good faith reliance on existing policies. Specifically, the Commission has generally allowed projects that qualified prior to notice of a potential policy change to receive compensation under earlier policies, subject in some cases to a capacity limit to manage potential impact on nonparticipating ratepayers. Staff recommends the same approach be taken in this case, as developers of fuel cells and other high-capacity-factor resources are likely to have expended significant effort and funds based on estimated revenues including an unadjusted MTC or CC and an Environmental Value. While arguably those

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only apply for resources that opt into the Value Stack or that are built after the statutory cap is reached.

developers were on notice of potential changes when the JU Petition was filed, Staff recommends that the date of this Whitepaper's publication instead be used as the cutoff date, since the JU Petition did not substantially address the Environmental Value issue.

For that reason, Staff recommends that any project that qualified[9] on or before August 13, 2019 and is otherwise eligible receive an unadjusted MTC or CC and an Environmental Value at the level applicable at the time of the project's qualification and for the 25-year period set at that time. To avoid excessive net revenue impacts, Staff recommends that utilities apply the capacity of any such resources to the applicable Tranches with an adjustment based on their load factor as compared to the solar PV load factor. Given the limited number of qualified high-capacity-factor projects, this will not meaningfully impair the development of solar PV and other renewable energy systems. Staff recommends that any project qualifying after August 13, 2019 receive compensation based on the policies proposed above.

Conclusion

The changes proposed in this Whitepaper will support achievement of state goals and avoid excessive net revenue impacts and compensation inappropriately divorced from actual value. Staff requests stakeholder comment on the recommendations in this Whitepaper by October 28, 2019.

[9] As noted above, a project qualifies when it has a payment made for 25% of its interconnection costs or has its Standard Interconnection Contract executed if no such payment is required; a project that was eligible for another compensation mechanism, such as net metering, that is eligible to opt into Value Stack compensation qualifies if and when it opts in.