STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE VALUE OF DISTIRBUTED ENERGY RESOURCES	**Case 15-E-0751**

PETITION

David Gahl
Director of State Affairs, Northeast
Solar Energy Industries Association
1425 K Street, NW
Suite 1000
Washington, D.C. 20005
dgahl@seia.org
On behalf of the Clean Energy Parties

Date: October 16, 2018

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

PETITION OF THE CLEAN ENERGY PARTIES FOR A DECLARATORY RULING REGARDING THE ENVIRONMENTAL VALUE OF THE PHASE ONE VDER TARIFF	**15-E-0751**

PETITION

Pursuant to Part 8 of the Rules and Regulations of the Public Service Commission (the "Commission"), 16 NYCRR Part 8,[1] the Solar Energy Industries Association ("SEIA"), New York Solar Energy Industries Association ("NYSEIA"), Coalition for Community Solar Access ("CCSA"), Alliance for Clean Energy New York, Inc. ("ACE-NY"), Vote Solar, the National Resources Defense Council ("NRDC"), and the Pace Energy and Climate Center (collectively, the "Clean Energy Parties") hereby petition the Commission for declaratory relief clarifying how the environmental value ("E-value") in the Value of Distributed Energy Resources tariff ("VDER") should be calculated pursuant to the Commission's prior orders. Specifically, the Clean Energy Parties request an order directing Department of Public Service Staff ("Staff") to correct certain discrete, technical inaccuracies in the VDER Phase One E-value calculation, and to recalculate the E-value of the VDER Value Stack as follows:

1. The Social Cost of Carbon ("SCC") should be calculated based on avoided damages during the full 25-year term of the VDER tariff, net of the expected RGGI allowance

[1] Under 16 CRR-NY 8.1, "[d]eclaratory rulings may be issued with respect to: (1) the applicability to any person, property, or state of facts of any rule or statute enforceable by the commission or the validity of any such rule; (2) whether any action by the commission should be taken pursuant to a rule . . . (b) A declaratory ruling may also be issued whenever the commission determines it is warranted by the public interest."

values, and should not arbitrarily exclude avoided SCC damages in the last five years of the tariff (years 21-25).

2. The annual per-kWh E-values should be simply averaged, without any additional discount rate applied, to get to a single, levelized E-value per kWh based on SCC.
3. The recalculated E-Value should apply to all projects making 25 percent interconnection payments or executing Standardized Interconnection Agreements from January 1, 2018 until (i) a subsequent change in the net SCC or the CES Tier 1 REC procurement price or (ii) the implementation of the Phase 2 VDER tariff. Until the Phase 2 VDER Tariff is implemented, the E-Value should be recalculated when either the net SCC or the CES Tier 1 REC procurement price changes.

This petition is limited in scope and does not cover other substantive issues that are more appropriately addressed through the VDER Phase 2 Working Group process, including the inclusion of local pollutants in the E-value, shaping the E-value, appropriate discount rates and assumptions regarding catastrophic damages for the SCC, and environmental justice concerns.

However, it is important for the Commission to set a clear precedent for when and how the E-value should be calculated going forward. A declaratory ruling that provides technical guidance for the Phase 1 Value Stack can prevent errors or inaccuracies in Phase 2. Failure to make corrections at the outset could lead to more significant discrepancies as VDER continues to develop.

The CEP and its members have direct organizational and financial interests in the outcome of this petition. Specifically, current and future investments in DERs by member companies represented by SEIA, NYSEIA, CCSA, and ACE-NY will be directly affected by the

Commission's decision in this petition. In addition, NRDC and the Pace Energy and Climate Center's missions include the promotion of policies in New York that will encourage clean energy that reduces pollution (including carbon pollution). Vote Solar is a non-profit grassroots organization working to fight climate change by making solar a mainstream energy resource across the United States. The organizations' missions will be affected by the outcome of this petition.

INTRODUCTION AND BACKGROUND

In its March 9, 2017 VDER Phase One Order, the Commission directed that the E-value be based on the higher of the latest Clean Energy Standard ("CES") Tier 1 Renewable Energy Credit ("REC") procurement price published by the New York State Energy Research and Development Authority ("NYSERDA), or the SCC net of the expected Regional Greenhouse Gas Initiative ("RGGI") allowance values.[2] The Commission determined that the NYSERDA weighted average price of $24.24 per MWh was higher than the SCC as of March 2017, and thus would set the price for the E-value. In a footnote, the Commission stated, "As this [REC value] is higher than the net SCC, this is the value that would be used here until a subsequent solicitation is conducted and price published."[3] This footnote did not address the possibility that the net SCC, if updated on January 1, 2018, would be higher than the then $24.24 REC value. The March 9 Order did not specify a timeline for calculating or updating the E-Value calculation, or the specific methodology for determining the SCC-based E-Value.

In a subsequent VDER Implementation Order,[4] issued in September 2017, the Commission made clear that the E-value, established by the then-higher REC price, would be set and fixed at

[2] *See* N.Y. Public Service Commission, *Order on Net Energy Metering, Phase One of Value of Distributed Energy Resources, and Related Matters*, at 15-16, 106-107 (Mar. 9, 2017) ("VDER Phase One Order").

[3] *Id.* at 106, n. 42.

[4] *See* N.Y. Public Service Commission, *Order on Phase One Value of Distributed Energy Resources Implementation Proposals, Cost Mitigation Issues, and Related Matters* (Sept. 14, 2017) ("VDER Implementation Order").

the time a developer made its 25 percent interconnection payment, required under the Standard Interconnection Rules or, where no payment is required, signed an interconnection agreement. As Staff has rightly observed, the VDER Implementation Order "modified only the point in a project's development at which the Environmental Value is set, not the calculation of the Environmental Value."[5]

The SCC is defined as the present value of the future damages caused by an incremental emission of one more ton of carbon dioxide.[6] In other proceedings, the Commission has adopted the United States Interagency Working Group ("IWG") values of the SCC, which were developed by the Environmental Protection Agency in extensive coordination with other agencies, and represent the "best available estimate."[7] The IWG's estimate sets an annual social cost in 2007 dollars of emitting one metric ton of carbon-equivalent greenhouse gases. These costs are set out in a table that show a rising cost for every calendar year for four different discount rate assumptions (*e.g.*, for a 3% discount rate, $40/m-ton in 2018, $41/m-ton in 2019, etc.).[8] Thus, under this framework, the SCC increases every calendar year on January 1.

On January 1, 2018, the SCC was not recalculated to see if it would be higher than the last published REC auction price. On March 9, 2018, NYSERDA announced the results of its latest

---

[5] *See* Staff Letter, *Re: Case 15-E-0751 – Value of Distributed Energy Resources, Updated Environmental Value* (Mar. 28, 2018).

[6] *See, e.g.*, *Zero Zone, Inc. v. U.S. Dep't of Energy*, Case No. 14-2147 (7th Cir. Aug. 8, 2016) (noting the U.S. Department of Energy "employed 'an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year,' known as the Social Cost of Carbon").

[7] *See* N.Y. Public Service Commission, *Order Establishing a Clean Energy Standard*, at 134 (Aug. 1, 2016). This petition does not address the myriad ways in which IWG SCC values using a 3% discount rate underestimate the true social cost of carbon. The IWG did not establish one set of values, but rather presented different ranges of values based on different discount rates (2.5%, 3%, and 5%) and different assumptions with respect to catastrophic damages. These issues, along with flaws in the underlying DICE, PAGE, and FUND models upon which the IWG estimates are based, are more appropriately addressed in the VDER Phase 2 tariff.

[8] *See* N.Y. Public Service Commission, *Order Establishing a Clean Energy Standard*, Appx. E, at 11 (Aug. 1, 2016) (Table 1) ("USIWG Annual Estimates of Social Cost of Carbon (SCC) Adjusted for Inflation and Converted to Nominal Dollars per Short Ton").

auction. Staff then recalculated the SCC net of RGGI value, and according to these calculations, the result was $27.41/MWh, a higher value than the weighted average CES Tier 1 REC auction price of $21.71/MWh. Staff then directed that any project making its 25% interconnection payment, or executing a Standardized Interconnection Contract, on or after March 9, would receive the new net SCC-set E-value of $27.41/MWh, fixed for the 25-year period of Value Stack compensation.[9] These calculations were contained in a spreadsheet attached to Staff's letter, attached to this petition as Exhibit A. Staff further noted that going forward it would recalculate the SCC net of RGGI and provide an updated E-value for new projects when NYSERDA announces a new Tier 1 REC procurement price. Importantly, this Staff letter represented the first time that the crucial details regarding Staff's assumptions for calculating the Environmental value from the SCC were made available to all stakeholders.

Staff's SCC value was calculated using only the avoided costs for the first twenty years of the VDER tariff (2018 to 2037), rather than the full 25 years of the tariff. The sum of these twenty $/MWh figures was then discounted to a net present value based on the utility's average weighted cost of capital, as if projects were receiving E-value compensation through a single, lump-sum payment in Year 1. The record contains no explanation for why the SCC was calculated in this way.

SEIA and several companies raised concerns about this SCC methodology with staff shortly after the March 9 letter was released. Although Staff has acknowledged these concerns verbally, the issues have yet to be addressed in any forum. To date, the E-value continues to be set by this arbitrarily low SCC calculation. The effect on project values in the near-term is

[9] PSC Staff Letter, *Re: Case 15-E-0751 – Value of Distributed Energy Resources, Updated Environmental Value* (March 13, 2018) (Case No. 15-E-0751) (attached spreadsheet).

considerable, and if corrected, would raise the E-Value for projects making initial interconnection payments in 2018 from the current $27.24/MWh to $32.19/MWh. A spreadsheet illustrating how the E-value should be calculated is attached as Exhibit B. Exhibit B also corrects for a small additional error in Staff's original calculation related to the data used for RGGI forecasts.[10]

In light of the increasingly urgent need to correct the errors outlined below and to set expectations for future updates to the E-Value, CEP respectfully request the Commission issue a declaratory order clarifying the appropriate methodology for calculating the E-Value for projects on the Phase 1 VDER Tariff.

ARGUMENT

1. Staff Should Calculate the Phase One E-Value Based on 25 years of Avoided SCC

Avoided societal damages associated with avoided carbon emissions should be calculated based on the full 25-year term of the tariff. However, Staff's current approach calculates E-Value based on years 1-20 only, effectively treating the value of avoided environmental damages as zero in years 21-25. Distributed energy resources ("DERs") on the VDER tariff will continue to avoid carbon damages after year 20. Not counting avoided carbon pollution after year 20 of the tariff arbitrarily reduces DER compensation and lacks any support in Commission's prior VDER orders.

The Clean Energy Parties respectfully request that Staff's calculations for 2018 and future years be updated to incorporate the last five years of avoided SCC (years 21-25), net of the expected RGGI allowance values.

---

[10] Staff's spreadsheet calculations apparently inadvertently omitted a forecast for RGGI prices for 2031 of $13.51/ton. *See* the "Emissions" Tab for https://www.rggi.org/sites/default/files/Uploads/Program-Review/9-25-2017/Draft_IPM_Results_Model_Rule.xlsx. *and* Exhibit A. The Clean Energy Parties' recalculation of the E-Value (Exhibit B) includes this 2031 RGGI forecasted value and makes corresponding adjustments to the formulas for post-2029 years RGGI prices for future years. Including the Year 2031 RGGI forecast results in a slightly lower E-value than would otherwise be the case.

2. Staff's Calculations Should Not Double-Discount the Phase One E-Value

Staff's current approach, as outlined in the March 9 letter and accompanying spreadsheet, incorrectly discounts E-value by taking the Net Present Value (NPV) of future damages based on a discount rate calculated from the utilities' average Weighted Cost of Capital from the 2016 BCA Handbooks (0.06945).[11] However, SCC values already represent the NPV of future damages that are discounted to the relevant SCC year.[12] In other words, each yearly value represents the NPV of all future avoided costs associated with not emitting a ton of CO2-equivalent in the given year.

NPV analysis is used by investors to set the value of future cash flows equal to the value of a single payment in the current year. The NPV approach currently being used by Staff thus answers the question of what an appropriate year-one payment would be to compensate DERs for 25 years of cash flows associated with avoided environmental damages. In other words,

[11] We note that this discount rate is out of date. The applicable weighted costs of capital for Con Edison, Central Hudson, NYSEG, RG&E, and National Grid as published in the July 2018 BCAs are 6.8%, 6.44%, 6.81%, 7.48%, and 6.53%, respectively. With the exception of NYSEG, these rates are lower than the rates published in the utilities' 2016 BCAs (6.91%, 6.62%, 6.68%, 7.55%, and 6.85%, respectively), which Staff incorporated into their SCC calculation. O&R's applicable rate is correct (7.06%). Using older, higher working costs of capital results in a higher average discount rate and a lower calculated E-Value for DERs. *See* Con Edison Benefit Cost Analysis Handbook, v. 2.0 (July 31, 2018), pg. 62 (Appx. A, Table A-1); Central Hudson Gas & Electric Benefit-Cost Analysis Handbook, v. 2.0 (July 31, 2018), pg. 74 (Appx. A, Table A-1); New York State Electric & Gas Corporation & Rochester Gas and Electric Corporation Benefit Cost Analysis Handbook (July 26, 2018), pg. 92 (Sec. 9.1); Orange & Rockland, 2018 Distributed Service Implementation Plan (July 31, 2018), pg. 343 (Appendix E: Benefit-Cost Analysis Handbook (July 31, 2018)); Niagara Mohawk Power Corporation d/b/a National Grid, Benefit-Cost Analysis Handbook Version 2.0 (July 31, 2018) (Appx. A, Table A-1).

[12] As explained by the EPA, "The timing of the emission release (or reduction) is key to estimation of the SC-CO2, which is based on a present value calculation. The integrated assessment models first estimate damages occurring after the emission release and into the future, often as far out as the year 2300. *The models then discount the value of those damages over the entire time span back to present value to arrive at the SC-CO2*. For example, the SC-CO2 for the year 2020 represents the *present value* of climate change damages that occur between the years 2020 and 2300 (assuming 2300 is the final year of the model run); these damages are associated with the release of one ton of carbon dioxide in the year 2020." EPA Fact Sheet Social Cost of Carbon, pg. 1 (December 2016) (emphasis added), *available at* https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf.

Staff's calculation estimates the value that an investor or ratepayer would be willing to pay today in exchange for receiving cash flows from E-value payments over the life of the VDER tariff.

This calculation would be appropriate if the VDER tariff provided for DERs to be compensated in a lump sum for all future avoided environmental damages in the first year of the VDER Tariff. However, the *E-value is not paid to DERs in year 1*—it is paid out over the 25-year term, as the DER produces energy. In other words, the utility or ratepayer investment in E-Value is not made or paid out all at once in a lump sum—it is provided through credits issued over 25 years. Because E-Value is not entirely credited in year 1, but is credited over time, an NPV analysis is not appropriate for determining a levelized avoided carbon cost. Rather, taking the NPV of future expected E-Value avoided costs amounts to double-discounting of SCC values, resulting in a significant undercompensation of DERs for the environmental benefits they will provide in future years.

Importantly, Staff's NPV approach to calculating the E-Value is inconsistent with the approach the Commission has adopted for calculating Zero-Emission Credits (ZECs) based on the SCC for nuclear plants under the Clean Energy Standard Order. Under that program, the Commission uses the *average* SCC value to calculate the per-kWh value of ZECs, without applying any additional NPV analysis or discount rate.[13]

[13] The ZEC calculation is covered in Appendix E to the Clean Energy Standard Order. To calculate the SCC portion for the two-year ZEC tranches, the Appendix E averages the Interagency Working Group values - it does not apply an additional discount rate. For example, for Tranche 2, the SCC is calculated by taking the average of the April 2019 - March 2021 Interagency Working Group on Social Cost of Carbon estimates from July 2015. *See Order Establishing a Clean Energy Standard*, *supra* note 7, Appx. E at 5, para. 13. *See also Order Establishing a Clean Energy Standard*, *supra* note 7 at 50-51 ("For the contract period of Tranche 1, Staff proposes that the price of the ZEC would be based upon the *average* April 2017 through March 2019 projected SCC . . . . For the contract periods of Tranche 2 through Tranche 6, the ZEC prices would be calculated pursuant to a formula, as follows: upstate ZEC Price = Social Cost of Carbon (*average* for each Tranche) - Baseline RGGI Effect (fixed at $10.41/short ton) – Amount by which sum of Zone A Forecast Energy Price and ROS Forecast Capacity Price exceeds $39/MWh.") (emphasis added).

For these reasons, the Clean Energy Parties respectfully request that the Commission order Staff to recalculate the E-value based on the simple average of 25-year SCC values to determine a single, levelized E-Value per kWh. No additional discount rate or NPV analysis based on utility working cost of capital or otherwise should be applied.[14]

3. Staff should apply the corrected E-Value to all projects making interconnection payments from January 1, 2018 until (i) a subsequent change in the net SCC or the CES Tier 1 REC procurement price or (ii) the implementation of the Phase 2 VDER tariff.

In the VDER Phase One Order, the PSC directed that the E-value be based on the higher of the latest CES Tier 1 REC procurement price published by NYSERDA, or the SCC net of the expected RGGI allowance values.[15] Because the SCC value changes each calendar year, Staff should recalculate the E-Value every year on January 1 to ensure that the E-Value calculation meets this requirement of the Phase 1 Tariff. Each January, the updated SCC value should be compared to the most recent average price for the NYSERDA CES Tier 1 REC auction at that time (typically, the previous year's REC auction); the SCC value should then be compared to any updates to the Tier 1 REC price later in the calendar year, following any subsequent NYSERDA REC auction.

For the avoidance of doubt, if an auction occurs once a year, the SCC-based E-Value should be compared twice—once on January 1st (to the previous year's auction price) and once in the middle of the year after the new REC auction prices, if any, have been announced.

From January 1, 2018 to the present, the net SCC, even with the above-mentioned inaccuracies, was determined to be equal to $27.24/MWh. This value is higher than the most

[14] If the Commission declines to grant this relief, it should, at a minimum, direct Staff to update the weighted average cost of capital with the current values as published in the most recent BCA Handbooks. *See supra* note 11.

[15] *See* VDER Phase One Order, at 15-16.

recent CES Tier 1 REC auction price of $21.71/MWh, as published by NYSERDA, as well as the *previous* auction price (which was calculated to be $24.24/MWh). Therefore, all projects making interconnection payments during the time period when the 2018 SCC E-Value exceeded the then-applicable REC auction price should be compensated at that correct, higher net SCC-set rate of at least $27.24/MWh (or the updated rate that would apply if the Commission grants this Petition). Importantly, this relief would include projects that made their 25% interconnection payments in the first three months of 2018, before Staff published the 2018 E-Value for the first time. The Clean Energy Parties note that the calculation and comparison of the CES Tier 1 REC auction prices and the SCC-based E-Value is not an onerous task.

For this reason, the Clean Energy Parties respectfully request that the new, corrected E-Value of $32.19/MWh be applied to all projects that made or will make their 25 percent interconnection payments (or that executed or will execute a Standardized Interconnection Contract if no such payment is required), from January 1, 2018 until (i) a subsequent change in the net SCC or the CES Tier 1 REC procurement price, or (ii) the implementation of the Phase 2 VDER tariff.[16]

CONCLUSION

To conclude, the Clean Energy Parties respectfully request the following declaratory relief and any other relief the Commission determines is warranted by the public interest:

1. The average Social Cost of Carbon ("SCC") should be calculated based on avoided damages during the full 25-year term of the VDER tariff, net of the expected RGGI

[16] For any projects qualifying for the corrected 2018 E-Value that have already begun to receive VDER credits, the updated, corrected E-Value should be applied retroactively through the one-time issuance of additional VDER credits by the utilities.

allowance values, and should not arbitrarily exclude avoided SCC damages in the last five years of the tariff (years 21-25).

2. The annual per-kWh E-values should be simply averaged, without any additional discount rate applied, to get to a single, levelized E-value per kWh based on the SCC.
3. The recalculated E-Value should apply—retroactively if need be—to all projects making 25 percent interconnection payments or executing Standardized Interconnection Agreements from January 1, 2018 until (i) a subsequent change in the net SCC or the CES Tier 1 REC procurement price or (ii) the implementation of the Phase 2 VDER tariff. Until the Phase 2 VDER Tariff is implemented, the E-Value should be recalculated when either the net SCC or the CES Tier 1 REC procurement price changes.

Dated: October 16, 2018

Respectfully submitted,

___/s/_____
David Gahl
Director of State Affairs, Northeast
Solar Energy Industries Association