

**STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION**

**IN RE: 2023 RENEWABLE ENERGY GROWTH PROGRAM:
CLASSES, CEILING PRICES, AND CAPACITY :
TARGETS AND 2023 RENEWABLE ENERGY : DOCKET NO. 22-39-REG
GROWTH PROGRAM – TARIFFS AND SOLICITATION :
AND ENROLLMENT PROCESS RULES :**

**COMMISSION’S SECOND SET OF DATA REQUESTS
DIRECTED TO OFFICE OF ENERGY RESOURCES
(Issued January 4, 2023)**

- 2-1. Referencing the response to PUC 1-1,
- a. Please explain how SEA measured the incremental impact of the prevailing wage requirement without knowing what the assumed labor costs were prior to the passage of the new law?

SEA issued a data request to stakeholders soliciting estimates of the incremental impact of the prevailing wage requirement for each technology considered under the RE Growth program. SEA received two estimates of the incremental impact from solar stakeholders which were within \$5/kW from each other.

- b. Please explain how SEA is able to ensure the reasonableness of the responses to the surveys if there was not an assumed amount of labor costs already established in prior ceiling prices?

For each stakeholder that provided estimates of the incremental impact of the prevailing wage requirements, SEA requested the calculations and assumptions used to derive the \$/kW impacts, which were provided and validated by SEA. Separately, SEA benchmarked these quotes with solar cost and labor rate data provided by the National Renewable Energy Laboratory (NREL) as compared to Rhode Island prevailing wages (as provided by the Department of Labor and Training), which confirmed that the cost quotes provided by stakeholder quotes were reasonable. As such, SEA adopted an average of the stakeholder-supplied quotes in its analysis (\$57.50/kW).

- 2-2. Please provide the definition of “over-subscription” and “under-subscription” OER will use to determine whether capacity should be reallocated between classes, and specifically indicate whether the definition is statutory.

Rhode Island Energy coordinated their responses with OER on data request 2-2 and 2-3. OER supports Rhode Island Energy’s responses that were submitted in their respective REG data requests.

2-3. Is there an economic or market-design reason that supports OER's definition above?

Please see response to 2-2.

2-4. Please provide the definition of Energy Communities SEA used in considering inclusion of IRA provisions in the ceiling price development.

It was not necessary for SEA to utilize the definition of "energy communities" described in 26 U.S.C. § 45(b)(11)(B) in the development of the ceiling prices, because SEA utilized an assumed 30% Investment Tax Credit (ITC) value, and did not include the 10% bonus credit for "energy communities". SEA did not include this bonus value because:

- **Most REG projects are not known to be located on brownfields (nor are they expected to be the dominant installation type in the program moving forward), or in other areas described in the definition of an "energy community"; and**
- **The regulations to implement this section have not (as of this writing) been finalized by U.S. Department of the Treasury and Internal Revenue Service (IRS).**

2-5. Please provide the definition of Low-Income Community SEA used in considering inclusion of IRA provisions in the ceiling price development.

It was not necessary for SEA to utilize the definition of "low-income communities" described in 26 U.S.C. § 45D(e) in development of the ceiling prices, because SEA utilized an assumed 30% Investment Tax Credit (ITC) value, and did not include the potential 10% bonus credit for projects sited in "low-income communities". SEA did not include this bonus value because:

- **The overall program is limited to 1.8 GW nationally per year, and no capacity allocation mechanism has been specified to date (and as such, the 20% bonus value under the credit cannot be reasonably be considered applicable to a "typical" project in Rhode Island during the 2023 program year); and**
- **The regulations to implement this section have not (as of this writing) been finalized by U.S. Department of the Treasury and Internal Revenue Service (IRS).**

2-6. Please provide the definition of Low-Income Benefits SEA used in considering inclusion of IRA provisions in the ceiling price development.

It was not necessary for SEA to utilize the definition of "low-income economic benefits" described in 26 U.S.C. § 48(e)(2)(C) in development of the ceiling prices, because SEA utilized an assumed 30% Investment Tax Credit (ITC) value, and did not include the 20% bonus credit for projects conveying "low-income economic benefits". SEA did not include this bonus value because:

- The overall program is limited to 1.8 GW nationally per year, and no capacity allocation mechanism has been proposed or finalized to date (and as such, the 20% bonus value under the credit cannot be reasonably be considered applicable to a “typical” project in Rhode Island during the 2023 program year); and
- The regulations to implement this section have not (as of this writing) been finalized by U.S. Department of the Treasury and Internal Revenue Service (IRS).

2-7. For systems that have load-sited customers (such as rooftop systems) does SEA review the sales materials developers use to enroll customers in the program and compare the financial analysis and associated risks presented to the customer with the risks SEA assumes in the CREST models?

No, it is not part of SEA’s contracted scope with OER and the DG Board to solicit or review the sales materials that developers use to enroll customers in the program.

2-8. Referencing Page 29 of the testimony,
 a. What are the alternatives to using NREL’s most conservative year-over-year Annual Technology Baseline?

The NREL ATB annually recalculates its three different trajectories for capital costs by resource: Conservative, Moderate, and Advanced. Each are based on a linear extrapolation between 2020 and 2030 bottom-up resource capital costs under more and less conservative technology R&D and cost scenarios. More information on the NREL ATB approach to forecasting future technology prices over the long term can be found at the following link:

<https://atb.nrel.gov/electricity/2022/technologies>

Other high-quality commercial forecasts from independent analysts such as Wood Mackenzie or Bloomberg New Energy Finance (BNEF) are available on a fee basis (as discussed on p. 8 of SEA Schedule 3), and snippets from such forecasts are occasionally released to the public. However, SEA only uses the NREL ATB to develop year-on-year rates of change since they are publicly-available resources, and are thus not subject to confidentiality agreements for their use.

b. Were there less conservative options?

See answer to subpart a.

c. If so, what impact would that difference make, directionally, and why was that option not used?

The year-on-year change values associated with the Moderate and Conservative Scenarios, matched to the proposed REG classes, can be found on p. 8 of SEA Schedule 3. Due to the pervasive cost pressure still being experienced by the industry, ongoing supply chain and other uncertainties, and the under-procurements that occurred in the first two Open Enrollments relative to the capacity allocations, SEA determined that utilizing the 2022 to 2023 Moderate or Advanced Scenario rates of change (the latter of which substantially exceeded ~4%) could not reasonably reflect expected market dynamics.

As we state on the same page of SEA Schedule 3, during the process, stakeholders indicated (as has also been confirmed by independent analysts) that their costs have continued to rise throughout the middle and latter portions of 2022. Thus, we concluded that assuming the approximately 4%/year decrease associated with the Moderate Scenario for each case was unlikely to be supported by 2023 market conditions.

2-9. Referencing the testimony on Page 32, beginning at line 31, what statistical reasoning supports averaging a 25th percentile and average installed costs for medium and commercial scale projects?

SEA respectfully offers a correction to the claim made in the question – specifically, as discussed on page 7 of SEA Schedule 3, the ceiling price for the Medium and Commercial classes are based on the average of the median and 25th percentile, rather than the average of the average and the 25th percentile.

Since the initial DG Standard Contracts and REG analyses, SEA’s work has relied upon a relatively simple and transparent descriptive statistics-based analysis of various state databases and Open Enrollment bids, in which our team calculates the average, 25th, 50th (median) and 75th percentile reported (and revealed, where known) capital cost values for various bin sizes that correspond to the proposed renewable energy classes. The purpose of this analysis is to characterize various measures of central tendency, as well as the dispersion or spread of the data. SEA then takes these measures, and utilizes its expert judgment, knowledge of regional markets, as well as participation in recent Open Enrollments or ongoing uptake of Small Solar projects) to determine which of these measures should be used to establish the specific (and appropriate) capital cost (\$/kW_{DC}) input for each class.

Typically, other state governments SEA has worked with in developing incentive values have supported utilizing either 25th percentile values or an average of median and 25th percentile values in order to ensure that they are incentivizing projects that are lower than median reported or revealed capital costs.

As described in our testimony, these conditions of relatively sharp and uninterrupted long-term cost decline are no longer present in the market, and may only re-emerge slowly following the re-shoring of supply chains. Thus, SEA selected these specific values (rather than simply the 25th percentile value) because they appeared to match with our evolving understanding of project costs in this segment of the market, as well to adjust for under-procurements relative to their targets in the first two Open Enrollments of 2022.

2-10. Referencing the testimony on Page 32, beginning at line 31, what statistical reasoning supports averaging the median and average installed costs for large scale projects?

See the answer to 2-9 for a description of our approach, as well as the in-depth description of our approach to this question on pages 5-8 of SEA Schedule 3, and in several places throughout our direct testimony. In short, we selected these central tendency values based

on our evolving understanding of project costs in this segment of the market, as well to adjust for under-procurements in the first two Open Enrollments of 2022.

2-11. Referencing your responses to 2-9 and 2-10, what statistical reasoning supports using one methodology for medium and commercial projects, and another for large projects? Please note this question is seeking to understand how SEA's decisions were not arbitrary.

As noted in the reply to 2-10, the reasons why SEA adopted this methodology are discussed in robust detail on pages 5-8 of SEA Schedule 3, and in several places throughout our direct testimony. As discussed in detail in both of those places, the main reason why these approaches were adopted specific to each class related to the differential results between the procurement results in those classes.

2-12. Referencing the testimony on page 34, beginning at line 30, the witnesses describe the reasoning behind lowering the debt-to-equity ratio (i.e., higher equity, lower debt). The response describes an assumed cash flow requirement of 1.25 times the project's debt service payments. The response then explains that with this limit, assuming a constant cash flow, when interest rates increase, more cash flow goes to paying debt and therefore less is available to pay down principal, and thus, equity investment must increase to make up the difference caused by smaller debt (hitting the debt limit).

Why is it reasonable to assume, within the design of the RE Growth ceiling price development, that equity must increase, rather than allowing debt ratio to stay steady and allow the resulting cash flow to increase to a value that overcomes the debt limit?

It is reasonable to assume equity must increase because projects unable to meet minimum debt service coverage amounts will only be offered the amount of debt that corresponds with minimum coverage ratios required by the debt provider. In such a situation (which occurs when interest rates rise), equity (either tax or sponsor) is required to cover the difference, or else the cost of the project cannot be financed by investors. If this occurs, it would be impossible for the project to close its financing, because there would be insufficient capital to develop and construct the project.

2-13. Regarding the testimony on Page 35, lines 1 through 15,
a. Please provide the comments and evidence SEA reviewed in making its recommendation on the tax equity portion of the capital stack or make reference to where this can be found in the documents already provided.

The tax equity market is one of the most (if not the most) concentrated and opaque of all of the markets affecting renewable energy projects. Deals in this market are facilitated by a very limited set of global-scale financial institutions (such as JPMorganChase, Bank of America, US Bank, and a few others) that are known to represent groups of corporate taxpayers with large tax appetites. Very few details of such transactions are released to the general public, or even on a confidential basis.

However, the main facilitators of these transactions and the law firm Norton Rose Fulbright gather in the first quarter of each year for the firm's Cost of Capital webinar to reveal a

carefully selected set of key terms of such deals. SEA has relied on the information in Norton Rose's Cost of Capital webinar for many years. SEA used the February 28, 2022 Cost of Capital webinar hosted by Norton Rose Fulbright. A transcript of the event can be found at the following link:

<https://www.projectfinance.law/publications/2022/february/cost-of-capital-2022-outlook/>

- b. Please explain what evidence, specifically, SEA would use in future years to reverse its decision, as described beginning at line 13 (i.e., please explain how SEA will determine "...if it were demonstrated...").

Regarding the question of the cap on total tax equity, the following is a verbatim selection from an exchange between Keith Martin of Norton Rose Fulbright and Jack Cargas of Bank of America:

MR. MARTIN: Last year, you both said that tax equity is roughly 35% of the capital stack for the typical solar project, plus or minus 5%, and it is 65% for the typical wind project, plus or minus 10%. Have those percentages changed since last year?

MR. CARGAS: No. The capital stack percentages could change if some of the "Build Back Better" provisions are enacted (underlined emphasis added).

SEA can confirm that it will reconsider this assumption, along with all the other financing assumptions it carefully considers each year, during the 2024 ceiling price development cycle. As in past years, this process will involve review of transcripts of conversations such as this, as well as other data that is obtainable from market participants involved in financing REG-eligible projects.

2-14. Regarding the testimony on Page 36 beginning at line 1, please provided SEA's basis for why SEA "believe[s] it is too early to assume this across the board..." (emphasis added).

In general, SEA has avoided assuming the use of bonus depreciation in prior years, and prior to the passage of the IRA, except in the cases where a project has lost, or is expected to lose, eligibility for the ITC or ITC in Lieu of the PTC (ILoPTC) as a result of a legislative sunset. In these cases, SEA also moved to assume (as a result of feedback from market participants) that only half the value of bonus depreciation should be reflected in the prices, given that not every investor elects to utilize bonus depreciation. This is because tax equity participants have made a practice in prior years to avoid taking bonus depreciation in order to spread their tax equity across a larger number of projects (something that has been discussed in multiple prior years of our filings before this Commission).

Following the passage of the IRA, however, SEA agrees with the contention that, pending final regulations, it will, at some point during 2023, be possible to transfer a tax credit, and thus allow certain taxpayers with sufficient tax liability (and appropriately-aligned tax planning-related preferences) to claim both bonus depreciation and the full value of the ITC or ILoPTC.

That said, SEA notes that, in the absence of either draft or final rules from Treasury or the IRS regarding transferability of the credits (for which the timing or effective date is unknown), it is difficult to predict what the minimum requirements for transferability will be, and thus (in our view) it would require significant speculation to estimate even a vaguely representative set of financial terms on which such transferability could be offered for the 2023 program year.

Furthermore, even if SEA had this information, we still cannot (yet) reasonably predict the types of investors or market participants that would avail themselves of these provisions, whether they would be active in financing projects in the Northeast region, or whether they would aim to claim both the credit value and the full value of bonus depreciation. In our view, such information can only be reasonably obtained and carefully considered once the market has had a chance to react to these rules, and (in SEA's view) any new recommendations should only be developed via a process such as the one that takes place far closer to the beginning and middle of the ceiling price development cycle, rather than the very end.

2-15. Regarding the testimony on Page 36 beginning at line 6, given the “placed-in-service regime” of bonus depreciation, does SEA expect projects that bid into previous program years will be eligible to employ this bonus depreciation treatment? What vintage program years does SEA believe will be eligible, based on the information SEA has today?

Investors in projects that bid into previous program years are technically eligible to claim bonus depreciation in the year it is placed in service. However, as discussed in the response to 2-14, it is our understanding based on discussions with many market participants over many years that tax equity investors have been typically unwilling to claim both the value of the credit and the full value of bonus depreciation on the same project, choosing to spread their tax liability amongst a larger range of projects. As such, the ceiling prices have not assumed claiming both bonus depreciation and the ITC or ILoPTC.

However, if such investors were to potentially elect to claim bonus depreciation after the fact in the year the project is placed in service, they could do so for all projects eligible for bonus depreciation in the years in which (and at the percentages which) it can be claimed, which are described in 26 U.S.C. § 168(k)(6)(A). However, SEA is not aware of this happening to date.

2-16. Regarding the response to 1-5, please provide any records (written comments, recordings, meeting minutes, etc.) of the comments stakeholders made regarding the “post-tariff” treatment of RE Growth facilities in net metering or make reference to the records in the materials that have already been filed.

Comments received in response to SEA’s data request and survey, which discussed the post-tariff treatment of RE Grown facilities were included in *SEA Schedule 2 – SEA Second Stakeholder Meeting Presentation*. A summary of stakeholder comments received in response to the first draft of ceiling prices, which includes stakeholder arguments relating to the need to reconfigure RE Growth facilities in order to receive net metering revenue post-tariff are included in *SEA Schedule 3 - SEA Third Stakeholder Meeting Presentation*. Ecogy Energy’s comments in response to the first draft of ceiling prices, which include arguments relating to the need to reconfigure RE Growth facilities in order to receive net metering revenue post-tariff are included in *SEA Schedule 19 - Ecogy Energy First Draft Comments*.

Responses to all questions (save 2-2 and 2-3) prepared by Jim Kennerly and Toby Armstrong, Sustainable Energy Advantage.