

Ecogy Energy

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VIA EMAIL

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Jim Kennerly, SEA, jkennerly@seadvantage.com

Karen Bradbury, Rhode Island Office of Energy Resources (OER),

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RE: Evaluation of Rhode Island Distributed Generation Policies Stakeholder Workshop #4: Proposed Benefit-Cost Analysis Categories, Assumptions, and Inputs

Dear Cal Brown, Jim Kennerly, and Karen Bradbury,

Ecogy Energy, based in Newport, RI and founded in 2010, is an experienced developer, financier, and owner-operator of distributed generation projects across the U.S. and Caribbean. In the Renewable Energy Growth Program (REG Program) program, Ecogy has 7 operational rooftop projects and other projects in the pipeline that are in various stages throughout the development cycle such as interconnection, permitting, and construction.

Ecogy's focus and niche is on the <1 MW arena, particularly on systems sited on rooftops, parking lots, and brownfields. Ecogy believes that with sound planning, proper development, and fair incentives for these types of projects, the State, its residents, and the clean energy industry as a whole will ultimately be more successful. Ecogy firmly believes that by focusing on such projects constructed in and on the built environment, the development community can preserve precious and limited natural resources while directing the benefits of local solar to small businesses, property owners, nonprofits, low-income individuals, and other organizations that need them most.

Please accept the comments below as Ecogy Energy's response regarding the Evaluation of Rhode Island Distributed Generation Policies Stakeholder Workshop #4: Proposed Benefit-Cost Analysis Categories, Assumptions, and Inputs.

Legislative Position: HB 5853/SB 684

Although the Sub A version of SB 684 includes four additional years of 300 MW/year beyond what is contemplated above, the modeling in this analysis is keyed to the gap in 2033. Therefore, the final amount of incremental capacity will be based on the amount of projects qualified/procured between 2030-2033 that can reach commercial operation by the end of 2033.

Ecogy understands that on 03/29/2023, the Committee proposed Substitute A and recommended it be held for further study. The Sub A version of SB 684 is generally not supported by the development community due to limitations on community remote-net metering and net metering systems. Sub A undermines the support and compromise made in the original bill. Therefore, legislators should move forward with the original version that had support, excluding Sub A and OER should not support the Sub A version of the bill.

Part II: Proposed Methodology, Inputs and Assumptions for DG Project Economic Analysis

Installed costs (excluding interconnection) assumed to decline in all cases through 2033 based on an average of the NREL Annual Technology Baseline (ATB) 2022 Moderate and Conservative cases (~3%/yr)

Costs are increasing over time and have not decreased since 2020, therefore it is difficult to support the assumption that there will be a ~3%/year assumed decline in all cases through 2033 - especially with the current state of inflation and continued supply chain constraints at all project sizes. Assuming a decline is disingenuous to the macro and microeconomics in the market.

Additionally, based on experience with labor requirements, the requirement of paying prevailing wage for ITC projects greater than 1 MW AC will lead to contractor pricing trending upward, regardless of if it is required or not.

One price that might decline is the cost of inverters which has generally seen year over year decreases.

Annual degradation assumed at 1% for ≤ 25 kWAC projects, 0.8% for 25 kW to 1 MWAC projects, and 0.5% for ≥ 5 MWAC projects

Recent (April 2022) NREL data shows that for all projects, SEA should assume a value of 0.63% for annual degradation which is the market percentage. Putting a higher annual degradation value of 0.8% means less value into the project.¹

“Base” Inputs

Based on Ecogy’s historical experience developing and bringing projects to commercial operation in Rhode Island, Total Capital Cost (\$/kW) for Medium Solar at \$2,485, Commercial Solar I at \$2,352, and Commercial Solar II at \$2,218 is low and does not reflect the market. The Siting-based Adjustors for rooftop capital costs is showing no difference in costs from the base greenfield project. While our team did not have the bandwidth to formally compile typical project cost documentation/ quotes because of the 1-week deadline from stakeholder workshop #4 given on Friday, April 7th, anecdotally these values should be increased ~46% (~\$3,648 per kW) for Medium Solar Projects.

On slide 16, carport projects have an increased value of +\$840/kW from a greenfield project for Total Capital Cost (\$/kW). In Ecogy’s experience, racking costs alone may be higher than this value. Our team can follow up in Stakeholder session #5 with a redacted quote for a carport project.

Additionally, one of the largest costs to solar projects in Rhode Island is associated with construction labor. Rhode Island is a union state, therefore, Ecogy is seeing costs 10-30% higher than neighboring states. As stated in Ecogy’s comments for OER Stakeholder Workshop #3 submitted 4-6-23, Rhode Island’s Master electrician labor rule significantly increases labor costs.²

Given increasing project delays (which make it impossible to claim bonus depreciation under existing Tax Cuts and Jobs Act of 2017 provisions phasing out bonus depreciation for projects placed in service no later than the end of 2026) we assume projects can only monetize 5-year MACRS depreciation (and cannot monetize bonus depreciation)

Not all developers use 5-year MACRS and may instead use 12-year MACRS depreciation. Particularly, developers that will own and operate the system for the life of the asset which

¹ Jordan, DC, Anderson, K, Perry, K, et al. Photovoltaic fleet degradation insights. *Prog Photovolt Res Appl.* 2022; 30(10): 1166- 1175. doi:[10.1002/pip.3566](https://doi.org/10.1002/pip.3566)

² Department of Labor and Training and Office of Energy Resources – Questions and Answers on Solar Installations

increases those developers' costs to capital in the near term. By using a blanket 5-years MACRS depreciation you may inadvertently cause harm to owner-operator developers.

Debt shares held constant over analysis term, and sized to meet an average debt service coverage ratio (DSCR) of 1.25

While a Debt service coverage ratio (DSCR) is assumed at an average of 1.25 on slide 19, Ecogy is seeing the DSCR at least 1.35.

Post-tariff revenue to be assumed

- *Discounted net metering compensation for REG projects (by statute); and*
- *ISO-NE wholesale energy + RECs for net metering and virtual net metering projects*

Under the Post Tariff Revenue Assumption, Ecogy would have to remove our system at year 20, reroof the property and then reinstall the system to receive revenue. SEA must consider that reinstalling the solar system after a reroof requires essentially half of the total project cost that the owner-operator will have to internalize in addition to the actual reroof cost. If SEA models a longer term with a post tariff market price, it MUST account for a full system removal and reinstallation which is a significant cost (estimating roughly \$0.30/W). If SEA does not model this in, they are giving an unfair advantage to ground-mount systems that do not have this issue and are thereby greatly encouraging ground-mount systems on Greenfields in a state that has had significant pushback and most recently intense support for better land-use. Additionally, Ecogy believes that reconfiguration costs need to be researched and included in post-tariff revenue assumptions as they can cause significant financial unviability to projects in the program. A REG program site lease is to rent a rooftop for a front of the meter ("FTM") project for 20 years, not to design systems for an extended term with behind the meter ("BTM") implications. As stated in previous comments, Ecogy strongly believes there needs to be guidance and clarification regarding net metering for future planning because at present, it is something Ecogy does not see as being economically feasible.

Storage Cost Assumptions

"Storage capital and operating cost inputs are provided in the table below, based on SEA internal research and stakeholder feedback from prior engagements."

"All installed capital cost values are for a facility closing finance in 2022, and will be scaled to reflected expected cost declines for future years based on SEA's internal research."

Ecogy is concerned that SEA's sampling size for energy storage data may be too small and would like some transparency into where data sets for costs are being derived from. Costs should be reflective of neighboring states, across markets, and based on varying sizes reflected on slide 20. For example, NY-Sun has a database that provides information on such costs.³ A sharp climb lies ahead due to constrained supply chains, increasing demand for batteries, and growing prices for the lithium - instead of cost declines.⁴

Storage operating cost inputs see a significant drop in \$/ kWh from Large Solar to Comm'l Solar II, on slide 20 - which may be too significant. For example, Tesla Megapacks range from 350kW to 1 MW and the \$ / kWh is generally the same. Is SEA attributing some of the proposed increased costs to interconnection and utility service upgrade costs to battery capacity? Or other factor(s)?

Is SEA differentiating between AC versus DC coupled storage systems in the analysis? For AC coupled storage systems, interconnection, construction, and other deployment costs are significantly higher than DC coupled systems.

Cost – Utility Administration and Remuneration

Utility Administration Cost

- *Administrative expenses for REG are available in annual Renewable Energy Growth Program Factor Filing*
- *Estimated costs for Program Year ending 3/31/2023 were \$1.18 million*
- *SEA will work with RIE to establish estimates for administration costs for other evaluated programs and to understand if any modeled program designs would be likely to have incremental administrative costs*

The estimated costs for REG Program Year ending 3/31/2023 of \$1.18 million is a significant figure, considering the size of the state of Rhode Island with relatively low MW allocations, standardization, and approved projects. How does this figure compare to other programs in the state?

We thank you for careful consideration of these comments and appreciate your support of the clean energy industry in the Ocean State.

Warmest regards,

/s

³ <https://data.ny.gov/Energy-Environment/Retail-and-Bulk-Energy-Storage-Incentive-Programs-/ugya-enpy>

⁴ <https://www.utilitydive.com/news/new-york-battery-storage-costs-rise-interconnection-queue-12-gw/621954/>



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