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January 21, 2021

SENT VIA ELECTRONIC MAIL ONLY [Luly.Massaro@puc.ri.gov]:

Luly E. Massaro
Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, Rhode Island 02888

RE: Renewable Energy Growth Program for Year 2021 [Docket 5088]

Dear Ms. Massaro:

Enclosed for filing on behalf of the Office of Energy Resources ("OER") is a PDF copy of OER's Responses to the Commission's First Set of Data Requests [Docket No. 5088].

If there are any questions, please feel free to contact me.

Sincerely,

Albert J. Vitali III, Esq.

AJV/njr

Enclosure

c. Docket List: 5088

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

IN RE: THE RHODE ISLAND DISTRIBUTED	:	
GENERATION BOARD'S RECOMMENDATIONS	:	
FOR THE 2021 RENEWABLE ENERGY	:	DOCKET NO. 5088
GROWTH PROGRAM YEAR 2021	:	

THE OFFICE OF ENERGY RESOURCES' RESPONSES TO THE COMMISSION'S FIRST SET OF DATA REQUESTS

DISTRIBUTED-GENERATION BOARD
& OFFICE OF ENERGY RESOURCES

JANUARY 21, 2021

Carport Adder

2-1. Referring to the testimony of Ms. Daniel at page 66 (questions 20 through 22), is SEA able to explain why there is such a significant difference between the interconnection costs of a carport project and the interconnection costs for other solar projects? What are the features and/or locational characteristics associated with a carport project that result in lower interconnection costs?

We are unaware of the specific details of the projects included in the dataset that drive the differences on a project-by-project basis. We collaborated with National Grid to identify reduced interconnection costs as a benefit category to consider, representing avoided Power System costs. We requested and analyzed data provided by National Grid to verify if carport projects had reduced interconnection costs relative to other projects, and to estimate the magnitude of the resulting avoided Power System costs. Based on previous conversations and collaboration with National Grid, we understand a major driver in the difference in interconnection costs between carport projects and non-carport solar projects is proximity to load, and that projects sited closer to load have a lower cost to interconnect. We refer to National Grid's response to the Commission's Second Set of Data Requests to National Grid, question 2-16, for more specific information on the differences in characteristics between carport and non-carport solar projects that drive different interconnection costs.

2-2. Referring to the testimony of Ms. Daniel at pages 63 and 64, does the value of benefits associated with avoiding projects that will be located on greenspace depend upon the assumption that a carport project displaces a solar project that would have been built on greenspace?

a. If so, please elaborate on whether that assumption is reasonable, including data (if any) that supports the assumption that when a carport project is built it necessarily means that a project will not be built on greenspace.

b. **If it is uncertain whether the building of a carport necessarily means that a solar project will not be built on greenspace, was this uncertainty accounted for when evaluating the benefits and costs of carports? If so, please explain.**

To estimate the quantified costs and benefits of the Carport Adder, our analysis estimates outcomes under the Carport Adder relative to an alternative scenario of the program without the Adder. We therefore estimate the likely mix of projects participating in the REG program absent the Adder and analyze the impacts of carport projects relative to that baseline mix. Both the Large Solar and Commercial Solar classes have been competitive in recent years (fully subscribed or close to fully subscribed, and not all projects that bid were selected). We therefore assume that the selection of a carport project would displace one or more projects of the same capacity that would have been selected in the alternative scenario without the Carport Adder.

For the Large Solar class, we estimate that absent the Adder, selected REG projects would be ground-mounted projects sited on greenfields.[1] This is a reasonable assumption because all Large Solar projects awarded between 2018-2020 have been ground-mounted projects – only one Large rooftop project applied, and it was not selected. The majority (eight of thirteen) of the ground-mounted projects awarded are located on land zoned as residential (including farmland) or agricultural, strongly suggesting they are projects sited on parcels that have undergone little to no prior disturbance. Further, as National Grid selects the most cost-competitive projects in its open enrollments, the least cost projects of any category have the highest chances of being selected. Absent an adder, the least cost projects in the Large Solar category are greenfield ground-mounted projects.

In the Commercial Solar class, our analysis recognizes that the mix of selected projects in recent years includes both rooftop and ground-mounted projects. Therefore, our analysis discounts the total quantified value of land use benefits to account for the possibility that a carport project could displace a rooftop project, and therefore not generate the land use benefits as quantified in the analysis. We multiply the total value of the quantified benefits associated with avoided greenspace development by the percent of ground-mounted projects historically selected in REG open enrollments (57%), as provided by National Grid data.

2-3. Referring to the testimony of Daniel at pages 63 and 64, does the value of benefits associated with avoiding reductions in property value depend upon the assumption that a carport project displaces a solar project that would have been built in a residential area that impacts property values?

a. If so, please elaborate on whether that assumption is reasonable, including data (if any) that supports the assumption that when a carport project is built it necessarily means that a project will not be built in an area that lowers property values.

b. **If it is uncertain whether the building of a carport necessarily means that a solar project will not be built in an area that lowers property values, was this uncertainty accounted for when evaluating the benefits and costs of carports? If so, please explain.**

To estimate the stream of benefits related to avoided property value loss, the analysis assumes that a carport selected under the REG program would displace a greenfield project that impacts residential property values. As noted in the response to Data Request 2-2 above, we weight the total quantified value of avoided property value loss in the Commercial class by the historic proportion of selected projects that are ground mounted to account for the probability that a Commercial Solar carport project displaces a rooftop project.

[1] We use the term greenfield to refer to sites that are either undisturbed or have had minimal modifications, which may include farmland, former farmland, or land zoned for residential, commercial, or industrial development that does not have construction or physical improvements.

The study that the analysis utilizes[2] to estimate property value impacts does have limitations in its findings and applicability to the REG Carport Adder pilot program, as identified in Ms. Daniel's testimony at pages 67-68 and KD Schedule 1, page 14. Given these limitations, we utilized a range of possible quantified benefits in the analysis. We assume that the study findings of decreased property values (reflecting a greenfield project built in a suburban area) set the upper bound of that range.

We apply a discount to the quantified benefit of avoided property value loss in the low end of the benefit range to account for instances where a displaced non-carport project may not result in the same magnitude of property value loss, due to its location in a rural or urban area rather than a suburban location, or due to other factors such as visual and vegetative buffers, setbacks, or smaller project size. In the Large Solar class, we discount the magnitude of property value impact by 50% for the low benefit estimate. For the Commercial Solar class low benefit estimate, we discount both the magnitude of the property value and the number of properties by 50%, reflecting the additional uncertainty of property impacts of projects sized less than 1 MW.

Quality Assurance

2-4. Self-installers and new installers who have not installed a Renewable Energy Growth Small Scale project prior to the 2019 Program Year have been required to complete a mandatory training webinar prior to submitting an interconnection application.

a. How many self-installers have completed the training since 2019 to date?
b. How many new installers completed the training since 2019 to date?
c. Are there any results regarding the effectiveness of the training yet? If so, please describe.

(Note, this question was originally posed to National Grid as PUC 1-8.b).

31 self-installers have completed the mandatory training webinar and 38 new installers completed the training between April 2, 2019 through January 11, 2021. The 2019 REG Installation and Quality Assurance Report conducted by Cadmus was written after the training had been in effect for half of the program year. The average score quality improved from 2018 to 2019. On average the scores were 0.70 higher, which indicates that quality assurance recommendations adopted improved scores. Additionally, per a request from the DG Board, Cadmus attempted to get feedback from installers who completed the training. A survey was sent to 19 participants and only one company responded. Due to the lack to the sample size, it was impossible to draw any conclusions of the effectiveness of the training from the developer's perspective. [3]

[2] Vasundhara Gaur and Corey Lang. "Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island" University of Rhode Island Cooperative Extension (2020). Available at: http://works.bepress.com/corey_lang/33/

[3] http://www.energy.ri.gov/documents/renewable/Study%20of%20REG%20Installation%20Quality%20Round_3-Final%20Report.pdf (page 39).

OER, with approval from the DG Board, decided to not conduct inspections of REG systems during the 2020 program year. By July 1, 2020, only 37 small scale projects had been installed out of 153 projects that had been awarded a certificate of eligibility. Given that there were not enough projects for a statistically significant sample size during the summer of 2020, when inspections typically occur, OER recommended to the DG that the 2020 Quality Assurance inspections and report be postponed to 2021. OER also recognized that challenges installers were facing due to COVID likely caused the delay in marketing, contracting and installing solar systems during the summer of 2020. As a result, no conclusions from 2020 regarding the effectiveness of the training may be drawn. However, the 2021 report will draw conclusions from both 2019 and 2020 as the effectiveness of the training.