



**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS**

**Department of Administration**

DIVISION OF LEGAL SERVICES

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February 12, 2020

**SENT VIA FIRST CLASS MAIL AND ELECTRONIC MAIL:**

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

**RE: Docket No. 4983: The Office of Energy Resources (OER) response to Commission's Record Request directed to the Office of Energy Resources.**

Dear Ms. Massaro:

Enclosed for filing on behalf of the Rhode Island Office of Energy Resources ["OER"] is an original and ten (10) copies of the responses to the *Commission's Record Request directed to the Office of Energy Resources (Issued February 5, 2020)*.

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Daniel W. Majcher

DWM/njr

Enclosure

c. Docket 4983 Service List

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
PUBLIC UTILITIES COMMISSION**

**IN RE: 2020 RENEWABLE ENERGY GROWTH – :  
CLASSES, CEILING PRICES AND CAPACITY :  
TARGETS AND 2020 RENEWABLE ENERGY : DOCKET NO. 4983  
GROWTH PROGRAM – TARIFFS AND SOLICITATION :  
AND ENROLLMENT PROCESS RULES :**

**COMMISSION’S RECORD REQUEST  
(Issued February 5, 2020)**

**Responses due February 12, 2020**

**What type of information would SEA need to decide if a ceiling price adder should also be competitively bid in the future?**

SEA’s answer depends on whether the Carport adder would be competitively determined with or without a “Ceiling Price” for the adder. If there is no Ceiling Price for the Carport Adder, National Grid could simply require two-stage bidding, in which developers would submit a ¢/kWh value for the non-Carport portion of the Commercial or Large project, and then follow up with an additional bid for the Carport value, which National Grid would notionally decide to select or reject.

However, if SEA were to be asked to set a “Ceiling Price” for the adder against which projects can bid, the three pieces of information that SEA would need to utilize to determine the incremental cost of a Carport would be the following:

- The total project costs associated with winning Carport projects (or total project costs for selected/qualified Carports in other states);
- The total project costs for all Commercial and Large projects ultimately selected (including those for which the developer does not utilize a carport structure); and
- The percentage degree to which the capacity factor should be de-rated when developing a Carport adder “Ceiling Price” (since Carports often do not have optimal tilts, given their function as a shading device for cars underneath them).

Response prepared by Jim Kennerly, SEA

**Please list the inputs to the CREST model. For each input, please indicate if there is a reason to believe the assumed value would be different depending on whether the installation was a carport or ground mount solar. For each area where there may be a difference, please also indicate what the difference would be (greater or lesser for the carport). Please add a row to indicate whether the carport proxy would be different and whether it would be larger or smaller.**

See attached excel spreadsheet.

Spreadsheet prepared by Jim Kennerly, SEA

**Applicants are required to include total project cost in the application. National Grid has been providing OER with a spreadsheet of total project costs. Please review the spreadsheets to determine if the total project cost field appears to have resulted in reasonable numbers (for example, very low costs, one developer using the same project cost for all of its projects, etc.). Please provide the number of projects and the number of flagged costs, if any, along with the criteria used for flagging those costs.**

OER conducted an analysis of the total project cost field on the January 2020 Small Scale REG program spreadsheet submitted by National Grid on January 22, 2020. The spreadsheet was sorted to review the 2019 program year only as that was the first year of the total project cost data requirement. For the 2019 program year through January 22, 2020 there are:

<b>Number of not operational projects</b>	249
<b>Number of operational projects</b>	384
<b>Total number of projects</b>	633
<b>Number of removed projects</b>	15

The spreadsheet was additionally sorted to include only operational projects as change orders may still occur for non-operational projects. As such, the total project cost field was reviewed for the 384 operational projects.

Ten Projects from seven different installers did not have a total project cost entered. The commercial operation date (interconnection date) occurred over the course of the program year.

<b>Installer</b>	<b>Commercial Operation Date</b>
Real Goods Solar Inc	6/29/19
Palmetto Solar	8/2/19
Palmetto Solar	8/9/19
Solar Wolf Energy	8/17/19
Bright Planet Solar	7/2/19

Newport Electric Construction	12/4/19
Skyline Solar	12/9/19
Newport Electric Construction	12/14/19
Bright Planet Solar	12/5/19
Kairos Solar	12/17/19

There were seven projects with total project costs under \$10,000. Of these seven projects, three appear to be accurate based on the relatively small system sizes, ranging from 1.74kW to 3.00kW for three different installers. The remaining four projects do not appear to have the total project cost entered accurately. However, there is no consistency among installers or the erroneously entered cost to indicate malicious intent or an attempt to get around accurately reporting total project cost.

<b>System Size kW (AC)</b>	<b>Operational Date</b>	<b>Installer</b>	<b>Total Project Cost</b>
5.00	6/28/19	Bright Planet Solar	\$31
1.74	11/18/19	Newport Solar	\$7,970
3.00	8/15/19	Bright Planet Solar	\$9,120
2.03	11/5/19	Newport Electric Construction	\$8,489
6.00	12/14/19	Bright Planet Solar	\$576
10.40	12/9/19	Newport Electric Construction	\$225
5.00	12/12/19	Solar Spectrum	\$150

Response prepared by Shauna Beland, OER

Input Number	CREST Model Input	Unit	Likely Difference Between Modeled Carport projects and Current Model Inputs for Commercial/Large Solar?	Qualitative or Quantitative Difference
1	Generator Nameplate Capacity	kW	No	After further consideration following the public hearing, SEA believes it is unlikely that it would develop a different proxy system size for modeling a Carport project relative to the 500 kW and 2 MW project sizes in the Commercial and Large Solar classes, given that data from Carport projects submitted in the Open Enrollments (assuming the Adder was approved) would yield an average system size within the Commercial and Large size bins.
2	Year 1 Capacity Factor	%	Yes	Since the 2019 Ceiling Price process, SEA has learned from the industry (in other engagements) that Carport projects will often have a different tilt, and will often not be sited due south, and thus will have a different production profile than, a similarly-situated non-Carport project.
3	Annual Production Degradation	%	No	Carport projects are assumed to utilize the same modules, inverters and other (non-racking and mounting) balance-of-system hardware as non-Carport projects, and thus are not assumed to degrade at a different rate.
4	Project Useful Life	Years	No	Carport projects are not assumed to have a different useful life than non-Carport projects, given that they utilize the same modules, inverters and (non-racking and mounting) balance-of-system hardware as a non-Carport project.
5	Generation Equipment	\$/kW	Yes	See comment for Input #6
6	Interconnection	\$/kW	No	Will not be assumed to be different unless specifically shown to be different, except if such projects are assumed to have specific locational value (as discussed at public hearing). We note, however, that as modeled, this value would only affect the amount of interconnection cost excluded from the basis for calculating the benefits of the ITC, since interconnection costs are assumed to be accounted for in "Generation Equipment" above.

7	Year 1 Fixed O&M Expense	\$/kW-yr	No	Industry feedback during 2019 process did not contradict assessment that added Carport project costs are associated with capital costs of racking and mounting, as well as structural engineering costs associated with said racking and mounting (which are considered part of "Generation Equipment"). However, this could change if the evidence suggests this is no longer the case.
8	O&M Cost Inflation (Initial Period)	%	No	See comment for Input #7
9	Initial Period ends last day of:	Project Year (Number)	No	See comment for Input #7
10	O&M Cost Inflation, (After Initial Period)	%	No	See comment for Input #7
11	Year 1 Insurance	% of Total Cost	No	See comment for Input #7
12	Project Management Yr 1	\$/year	No	See comment for Input #7
13	Property Tax or PILOT	\$/kW	No	See comment for Input #7
14	Annual Property Tax Adjustment Factor	%	No	See comment for Input #7
15	Land Lease	\$/year	No	See comment for Input #7
16	Land Lease Escalation Factor	%	No	See comment for Input #7
17	Decommissioning Cost	\$/kW	No	See comment for Input #7
18	Bond Expenditure for Decommissioning Cost	% of Decomm. Cost	No	See comment for Input #7

19	% Share of Debt	% of hardware cost	No	As noted during the public hearing, our team does not assume that Carport projects have incrementally higher financing parameters (which, if present, would reflect a financier's perception of increased risk), since both Carport project and non-Carport projects would still have the same counterparty risk profile (with National Grid as the offtaker in both cases). In addition, we have not heard from the industry that financiers demand a premium for such projects.
20	Debt Term	Years	No	See comment for Input #19.
21	Interest Rate on Term Debt	%	No	See comment for Input #19.
22	Lender's Fee	% of Total Borrowing	No	See comment for Input #19.
23	Required Minimum Annual DSCR	Ratio	No	See comment for Input #19.
24	Required Average DSCR	Ratio	No	See comment for Input #19.
25	Share of Sponsor Equity	% of Total Equity Share	No	See comment for Input #19.
26	Sponsor Equity after tax IRR	%	No	See comment for Input #19.
27	Share of Tax Equity	% of Total Equity Share	No	See comment for Input #19.
28	Tax Equity After-Tax IRR	%	No	See comment for Input #19.
29	Target After-Tax Equity IRR	%	No	See comment for Input #19.
30	Federal Income Tax Rate	%	No	See comment for Input #19.
31	State Income Tax Rate	%	No	See comment for Input #19.
32	Payment Duration for Cost-Based Incentive	Years	No	See comment for Input #19.

33	Post-Contract Value of Energy, Capacity & RECs (Year 1 and After)	¢/kWh	No	See comment for Input #19.
34	ITC or Cash Grant Amount	%	No	Carport projects are not assumed to receive a different ITC value than non-Carport projects.
35	ITC Utilization Factor	%	No	Carport projects are assumed to utilize the ITC at 100% (same as non-Carport projects)
36	1 <sup>st</sup> Equipment Replacement Year	Project Year	No	Carport projects are assumed to replace the inverter at the same time as a non-Carport project.
37	1 <sup>st</sup> Equipment Replacement Cost	\$/kW	No	Carport projects are assumed to replace the inverter at the same time as a non-Carport project, and thus are assumed to replace it at the same cost as a non-Carport project.
38	Decommissioning Funded from Operations or Salvage Value?	Choice	Yes	While the 2020 Ceiling Prices for non-Carport projects assume that decommissioning would be funded from revenues generated through project operations, a Carport project could potentially have a more substantial salvage value than a non-Carport project, given the increased volume of steel used for racking and mounting in a Carport project.
39	(If Funded from Operations) Reserve Requirement	\$	No	See comment on Input #38.
40	Federal Bonus Depreciation?	Yes/No	No	Since tax equity investors are usually unable/unwilling to utilize 100% depreciation in addition to the ITC, this answer would not change based on whether the project is a Carport project or not.
41	% of Bonus Depreciation Applied in Year 1	%	No	See comment on Input #40.