

Rhode Island Distributed Generation Board
SURVEY TO INFORM 2020 CEILING PRICE DEVELOPMENT
DUE DATE: Friday June 26, 2020

Dear Renewable Energy Industry Participants:

The Rhode Island Office of Energy Resources and Distributed Generation Board seek your input into the development of ceiling prices for renewable energy projects under the Renewable Energy Growth (REG) Program for the 2021 Program Year. OER and the DG Board have an obligation to submit ceiling price recommendations to the RI Public Utilities Commission intended to support viable and cost-effective projects. Receiving current information from market participants is critical to developing robust, accurate, and defensible ceiling price recommendations.

Given the unprecedented environment due to COVID-19, as well as the natural evolution of market conditions and the experience with the DG Standard Contracts (SC) and REG programs to date, the DG Board and OER seek your feedback on several topics related to Ceiling Price development for the 2021 Program Year (beginning April 1, 2021). OER requests descriptive explanations and source materials to complement the quantitative data provided in response to the Data Request.

For the 2021 Program Year, OER and the DG Board plan to propose expanding the Small Solar I category from 1-10 kW-DC into 1-15 kW-DC and reducing the Small Solar II category from 10-25 kW-DC to 15-25 kW-DC. OER is proposing this change to stakeholders in response to a request from National Grid, which aims to align the maximum system size for Small Solar I projects with the maximum size of project eligible for the "simplified" process in National Grid's Rhode Island interconnection tariff.

Feel free to respond to as many of the following questions as you are able. Please be specific with your comments, recommendations and sources. Use as much room as you need. You may also save your responses and come back to complete the survey at a later time if you are interrupted.

This survey is your primary opportunity to provide written comments and recommendations, as well as evidence to substantiate your comments and recommendations. Additional opportunities will also exist for both written comments and participation in public meetings. In general, the absence of a response to any of these questions will be treated as support for the current policy design.

As has been the case in prior years, the 2021 Ceiling Prices must ultimately be approved by the Rhode Island Public Utilities Commission (PUC) after thorough review and comment by the Commissioners, Commission staff and the Division of Public Utilities and Carriers, Rhode Island's official advocate for electric ratepayers. In anticipation of this review, we note that it is highly unlikely that we would incorporate suggested changes to the recommended Ceiling Prices that are not supported by substantial and credible evidence, or could be inconsistent with state laws, rules and tariffs governing the REG Program already approved by the General Assembly and/or the PUC. While we welcome the opportunity to receive and vet all stakeholder feedback, our flexibility in incorporating said stakeholder feedback is not absolute.

All Survey responses are voluntary and will be kept confidential in accordance with the State's Access

to Public Record Act. Any information provided in response to this Survey will not be identified in relation to, or attributed to, an individual respondent in any public presentation or public document.

If you have any questions about how to complete this survey, please contact Kate Daniel at kdaniel@seadvantage.com or (508) 665-5863 or Jim Kennerly at jkennerly@seadvantage.com or (508) 665-5862.

Respondent Information

* 1. Please provide your name and contact information:

Name

Company

Email Address

Phone Number

2. How do you expect COVID to impact projects proposed in 2021? Please describe in detail and substantiate with documentation to Jim Kennerly at jkennerly@seadvantage.com and Kate Daniel at kdaniel@seadvantage.com.

3. As noted above, OER and the DG Board plan to expand the Small Solar I category to 1-15 kW (previously 1-10 kW) and adjust Small Solar II to 15-25 kW (previously 15-25 kW). Do you agree or disagree with the change in Small Solar categories?

Strongly Disagree

Agree

Disagree

Strongly Agree

Neutral

Please describe in detail why.

4. What types of projects are you involved with? You may add multiple responses.

Small Solar (1-25 kW)

Medium Solar (25-250 kW)

Commercial and Large Solar (250-5,000 kW)

Non-Solar (Wind, Hydroelectric, Anaerobic Digesters)

Small Solar Financing Inputs

5. The table below contains the 2020 Ceiling Price analysis financing assumptions for Small Solar projects.

Which, if any, of these inputs should be changed? Note in comments if the input should be updated across all solar categories, or specifically for a certain range of project sizes or types.

NOTE #1: The after-tax equity IRRs shown above reflect a levered value (i.e., the project's net return after paying its debt obligations), in order to ensure fidelity with the inputs to the Cost of Renewable Energy Spreadsheet Tool (CREST) model used to calculate the Ceiling Prices.

NOTE #2: These values are subject to change based on further evidence, research, analysis and stakeholder feedback.

% Debt

Lender's Fee

Debt Term

Target After-Tax Equity IRR

Interest Rate on Term Debt

For the inputs you selected, please note which project categories should be updated.

6. As mentioned in the preamble to this survey, OER and the DG Board currently plan to propose redefining the Small Solar I category from 1-10 kW to 1-15 kW, and the Small Solar II category from 10-25 kW to 15-25 kW. For the purposes of determining financing inputs:

What portion of projects sized 10-15 kW are residential?

What portion are Commercial and Industrial?

7. In your experience, what is the market share (% of total) in Rhode Island of customers financing a 1-15 kW system purchase with:

Home equity loans/lines of credit

Specially-designed solar loans

Cash

Other debt (please specify)

8. What is the typical duration (in years) of home equity loans in Rhode Island for systems 1-15 kW?

9. What is the typical duration (in years) of solar loans in Rhode Island for systems 1-15 kW?

10. What are the typical interest rates (in percentage terms) for home equity loans in Rhode Island for systems 1-15 kW?

11. What are typical interest rates for solar loans in Rhode Island for systems 1-15 kW?

12. What are the total fees (expressed as a percentage of the total loan amount) typically charged by the lender to a solar PV system 1-15 kW?

13. Are lender fees usually accounted for separately from the loan principal, or are they rolled into the principal itself?

14. What percentage of projects from 15-25 kW are:

Purchased 100% with cash

Financed 100% with debt

A mix of cash and debt

15. For customers utilizing a mix of cash and debt, what percentage split between the two is typical?

16. What kind of debt do 15-25 kW projects usually utilize? What are typical durations, interest rates, and fees associated with this debt?

Type of debt:

Typical Duration:

Typical Interest Rates:

Fees:

17. Do you specifically target customers in National Grid's A-60 rate class (i.e. low-to-moderate income) in your marketing? Why or why not?

18. Does your company also develop projects 250 kW or larger?

Yes

No

Location, Status and Permitting of Projects in REG Program Pipeline for 2020 Program Year and Beyond

19. **For Carport Projects:** Please describe the most common types of locations that projects your company plans to submit to the Renewable Energy Growth (REG) program are hosted on:

- Residential lots
- Commercial lots
- Parking Lots
- Industrial lots (non-Landfill/Brownfield)
- Brownfields
- Landfills
- Not Applicable
- Other (please specify)

20. **For Non-Carport Projects:** Please describe the most common types of locations that projects your company plans to submit to the Renewable Energy Growth (REG) program are hosted on:

- Residential lots
- Commercial lots
- Parking Lots
- Industrial lots (non-Landfill/Brownfield)
- Brownfields
- Landfills
- Not Applicable
- Other (please specify)

21. The questions following this one (21-28) are based on your response to this question. Approximate answers are acceptable and helpful. You may also enter 0 for any categories you do not plan to be active in.

Please characterize the amount of capacity (in MW-DC) associated with projects you have submitted (or plan to submit) into the Renewable Energy Growth (REG) program in 2020 or thereafter associated with the following types. All Survey responses will be kept confidential in accordance with the State's Access to Public Record Act:

Carport Solar -

Commercial (251-999 kW-DC)

Non-Carport Solar -

Commercial (251-999 kW-DC)

Carport Solar - Large

(1,000-5,000 kW-DC)

Non-Carport Solar - Large

(1,000-5,000 kW-DC)

22. **For Non-Carport Projects:** Please characterize the percentage (%) of capacity (in MW-DC) described in the question above that you plan to submit during the 2020 Program Year and/or the 2021 Program Year associated with the following types and sizes. The totals must add to 100%.

Commercial (251-999 kW-DC) in 2020 Program Year

Commercial (251-999 kW-DC) in 2021 Program Year

Large (1,000-5,000 kW-DC) in 2020 Program Year

Large (1,000-5,000 kW-DC) in 2021 Program Year

23. **For Carport Projects:** Please characterize the percentage (%) of capacity (in MW-DC) described in the question above that you plan to submit during the 2020 Program Year and/or the 2021 Program Year associated with the following types and sizes. The totals must add to 100%.

Commercial (251-999 kW-DC) in 2020 Program Year

Commercial (251-999 kW-DC) in 2021 Program Year

Large (1,000-5,000 kW-DC) in 2020 Program Year

Large (1,000-5,000 kW-DC) in 2021 Program Year

24. Please characterize the percentage (%) of **Non-Carport Solar** capacity (in MW-DC) described in the question at the top of this section associated with projects you have submitted (or plan to submit) into the Renewable Energy Growth (REG) program in 2020 or thereafter that are under development in areas you would characterize as rural, suburban, or urban. The totals must add to 100%.

Commercial (251-999 kW-DC) in Rural Areas

Commercial (251-999 kW-DC) in Suburban Areas

Commercial (251-999 kW-DC) in Urban Areas

Large (1,000-5,000 kW-DC) in Rural Areas

Large (1,000-5,000 kW-DC) in Suburban Areas

Large (1,000-5,000 kW-DC) in Urban Areas

25. Please characterize the percentage (%) of **Carport Solar** capacity (in MW-DC) described in the question at the top of this section associated with projects you have submitted (or plan to submit) into the Renewable Energy Growth (REG) program in 2020 or thereafter that are under development in areas you would characterize as rural, suburban, or urban. The totals must add to 100%.

Commercial (251-999 kW-DC) in Rural Areas

Commercial (251-999 kW-DC) in Suburban Areas

Commercial (251-999 kW-DC) in Urban Areas

Large (1,000-5,000 kW-DC) in Rural Areas

Large (1,000-5,000 kW-DC) in Suburban Areas

Large (1,000-5,000 kW-DC) in Urban Areas

26. Please characterize the percentage (%) of **Non-Carport Solar** capacity (in MW-DC) described in the question at the top of this section associated with projects you have submitted (or plan to submit) into the Renewable Energy Growth (REG) program in 2020 or thereafter that are under development in. The totals must add to 100%.

Commercial (251-999 kW-DC) in Kent County

Commercial (251-999 kW-DC) in Washington County

Commercial (251-999 kW-DC) in Providence County

Commercial (251-999 kW-DC) in Bristol County

Commercial (251-999 kW-DC) in Newport County

Large (1,000-5,000 kW-DC) in Kent County

Large (1,000-5,000 kW-DC) in Washington County

Large (1,000-5,000 kW-DC) in Providence County

Large (1,000-5,000 kW-DC) in Bristol County

Large (1,000-5,000 kW-DC) in Newport County

27. Please characterize the percentage (%) of **Carport Solar** capacity (in MW-DC) described in the question at the top of this section associated with projects you have submitted (or plan to submit) into the Renewable Energy Growth (REG) program in 2020 or thereafter that are under development in. The totals must add to 100%.

Commercial (251-999 kW-DC) in Kent County

Commercial (251-999 kW-DC) in Washington County

Commercial (251-999 kW-DC) in Providence County

Commercial (251-999 kW-DC) in Bristol County

Commercial (251-999 kW-DC) in Newport County

Large (1,000-5,000 kW-DC) in Kent County

Large (1,000-5,000 kW-DC) in Washington County

Large (1,000-5,000 kW-DC) in Providence County

Large (1,000-5,000 kW-DC) in Bristol County

Large (1,000-5,000 kW-DC) in Newport County

28. Please characterize the percentage (%) of **Non-Carport Solar** capacity (in MW-DC) described in the question at the top of this section associated with projects you have submitted (or plan to submit) into the Renewable Energy Growth (REG) program in 2020 or thereafter that are under development and subject to the following non-ministerial permitting review types (note that the total must add to 100%):

Commercial (251-999 kW-DC) under Special Use Permit

Commercial (251-999 kW-DC) under Development/Site Plan Review

Commercial (251-999 kW-DC) under Master Plan Review

Large (1,000-5,000 kW-DC) under Special Use Permit

Large (1,000-5,000 kW-DC) under Development/Site Plan Review

Large (1,000-5,000 kW-DC) under Master Plan Review

29. Please characterize the percentage (%) of **Carport Solar** capacity (in MW-DC) described in the question at the top of this section associated with projects you have submitted (or plan to submit) into the Renewable Energy Growth (REG) program in 2020 or thereafter that are under development and subject to the following non-ministerial permitting reviews (note that the total must add to 100%):

Commercial (251-999 kW-DC) under Special Use Permit

Commercial (251-999 kW-DC) under Development/Site Plan Review

Commercial (251-999 kW-DC) under Master Plan Review

Large (1,000-5,000 kW-DC) under Special Use Permit

Large (1,000-5,000 kW-DC) under Development/Site Plan Review

Large (1,000-5,000 kW-DC) under Master Plan Review

30. Please indicate the amount of time (in months, or partial months) it takes to permit a typical Renewable Energy Growth (REG) project of the following types and sizes:

Commercial (251-999 kW-
DC) Carport Solar

Commercial (251-999 kW-
DC) Non-Carport Solar

Large (1,000-5,000 kW-
DC) Carport Solar

Large (1,000-5,000 kW-
DC) Non-Carport Solar

31. Please describe any differences you have observed in non-ministerial permitting reviews in Rhode Island based on the type of lot the project is sited in.

32. Please indicate the amount of time (in months, or partial months) it takes for a typical Renewable Energy Growth (REG) project of the following types and sizes to complete the relevant distribution and/or transmission interconnection processes:

Commercial (251-999 kW-
DC) Carport Solar

Commercial (251-999 kW-
DC) Non-Carport Solar

Large (1,000-5,000 kW-
DC) Carport Solar

Large (1,000-5,000 kW-
DC) Non-Carport Solar

33. If your company is currently developing a Carport Solar project in Rhode Island, please indicate the current use of the site (as zoned by the local municipality) that you plan to develop a Carport Solar project on (e.g., a shopping center, a grocery or other "big box" retail store, or housing complex).

34. Is your company currently developing, constructing or operating a Community Remote Distributed Generation project under the REG program?

Yes

No

REG Project Offtake

35. Do you specifically target customers in National Grid's A-60 rate class (i.e. low-to-moderate income) in your marketing? Why or why not?

36. Do you plan to solicit residential offtakers for your projects? Please explain why or why not.

Feedback on Solar Cost and Production Modeling Inputs

Copied below are the solar cost and production modeling inputs used in the approved 2020 Ceiling Prices calculations for Solar projects. Please reference the table as you answer the questions below.

37. In past years of the REG Ceiling Price analysis, the Total Installed Capital Cost estimates have been based on quartiles and averages obtained from databases of projects participating in state programs in MA, CT, NY, and quotes from EnergySage. However, MA now only publishes data associated with completed projects, which only allows for use of such data for projects less than or equal to 25 kW. Is there any reason for the consulting team not to use the rest of these data sources in Program Year 2021?

If so, please provide documentary data and evidence to substantiate your claim to Jim Kennerly at jkennerly@seadvantage.com and Kate Daniel at kdaniel@seadvantage.com.

38. Which, if any, of these inputs should be changed? Note in comments if the input should be updated across all solar categories, or specifically for a certain range of project sizes or types. In addition, please provide any documentary data and evidence to substantiate your claim to Jim Kennerly at jkennerly@seadvantage.com and Kate Daniel at kdaniel@seadvantage.com.

- | | |
|--|--|
| <input type="checkbox"/> Nameplate Capacity (e.g., typical sized project modeled for the category) | <input type="checkbox"/> O&M Inflation |
| <input type="checkbox"/> Capacity Factor | <input type="checkbox"/> Insurance |
| <input type="checkbox"/> Annual Degradation | <input type="checkbox"/> Project Management |
| <input type="checkbox"/> Interconnection Costs | <input type="checkbox"/> Site Lease |
| <input type="checkbox"/> Year-Over-Year Capital Cost Declines | <input type="checkbox"/> Decommissioning Costs |
| <input type="checkbox"/> Fixed O&M | |

For the inputs you selected, please note which project categories should be updated.

39. What project cost inputs do you expect COVID to impact? Do you expect costs to increase or decrease and if so, by how much? Substantiate each with documentation to substantiate your claim to Jim Kennerly at jkennerly@seadvantage.com and Kate Daniel at kdaniel@seadvantage.com.

	Decrease >20%	Decrease 10-20%	Decrease 0-10%	No Change	Increase 0-10%	Increase 10-20%	Increase more than 20%
Installed Costs	<input type="radio"/>						
Interconnection	<input type="radio"/>						
O&M Costs	<input type="radio"/>						
Insurance	<input type="radio"/>						
Project Management	<input type="radio"/>						
Site Lease	<input type="radio"/>						
Decommissioning Costs	<input type="radio"/>						

40. The table at the top of this section presents the Capacity Factors assumed in the 2020 Ceiling Price Analysis (14.00% for systems up to 1 MW, 15.30% for large solar systems 1 MW-5 MW). Do you agree or disagree with these assumed capacity factors?

- Strongly agree
 Disagree
 Agree
 Strongly disagree
 Neutral

If you disagree, please provide the capacity factor by corresponding system size that you would suggest instead.

41. When sizing the inverter for projects you submit into the REG program, what DC-AC ratio range do you typically employ?

Small Solar I (1-15 kW)	<div style="border: 1px solid black; height: 26px;"></div>
Small Solar II (15-25 kW)	<div style="border: 1px solid black; height: 26px;"></div>
Medium Solar (25-250 kW)	<div style="border: 1px solid black; height: 26px;"></div>
Commercial Solar (250-999 kW)	<div style="border: 1px solid black; height: 26px;"></div>
Large Solar (1-5 MW)	<div style="border: 1px solid black; height: 26px;"></div>

Preferred Siting/Disturbed Lands

42. Has your firm developed and submitted projects sited on landfills, brownfields, rock quarries, commercial rooftops, parking lots or other previously developed or disturbed parcels in recent Open Enrollments?

- Yes (Submitted)
- No (Not Attempted or Submitted)
- Unsure

43. (If Yes) Were these projects selected?

- Yes (Selected)
- No (Not Selected)
- Unsure

44. (If No, Not Attempted or Submitted) Please explain the main reasons why your firm has not attempted to develop and/or submit such a project to the Renewable Energy Growth (REG) program.

45. (If Yes, Selected) Please indicate which type of previously developed or disturbed parcel the project is (or will be) sited on, the size of the project, and the Renewable Energy Class (e.g. Small, Medium, Commercial or Large Solar, Wind, Hydro or Anaerobic Digesters, or their predecessor Classes) in which the project was selected by National Grid.

46. (If No, Not Selected) Please describe your understanding of why the project was not selected.

Energy Storage

47. Has your firm developed a renewable energy project (either through REG or any other program) that is co-located with customer load?

Yes

No

48. (If Yes) Have any of the customers with load co-located with such a project utilizing electric energy storage?

Yes

No

49. (If Customer Expressed Interest in Energy Storage) Please explain the types of goals (and/or value streams) that either your company (or your potential customer) has expressed the most interested in utilizing electric energy storage to realize.

50. (If Customer Expressed Interest in Energy Storage) For the 2020 program year, the program rules now clarify that electric energy storage systems are permitted to be paired with REG projects. For a customer considering electric energy storage paired with a renewable energy project, would you encourage your customer to consider the REG program as a means to achieve their goals and desired value streams?

Consumer Protection

51. For the first time during the REG program 2020 program year, participation in the program now requires filling out a Solar Consumer Protection Disclosure Form. Has the new requirement impacted your participation in the REG program? If so, please describe how.

52. Is your company involved in non-solar projects (e.g. hydroelectric, wind, or anaerobic digestion)?

Yes

No

Feedback on Non-Solar Cost and Production Modeling Inputs

Copied below are the non-solar cost and production modeling inputs used in the approved 2020 Ceiling Prices calculations for Wind, Hydroelectric, and Anaerobic Digestion projects. Please reference the table as you answer the questions below.

53. Which, if any, of these inputs should be changed? Note in comments if the input should be updates across all solar categories, or specifically for a certain range of project sizes or types. For the inputs you selected, please note which project categories should be updated.

- | | |
|---|--|
| <input type="checkbox"/> Nameplate Capacity (e.g., typical sized project modeled for the category) | <input type="checkbox"/> O&M Inflation |
| <input type="checkbox"/> Capacity Factor | <input type="checkbox"/> Insurance |
| <input type="checkbox"/> Annual Degradation | <input type="checkbox"/> Project Management |
| <input type="checkbox"/> Interconnection Costs | <input type="checkbox"/> Site Lease |
| <input type="checkbox"/> Year-Over-Year Capital Cost Declines | <input type="checkbox"/> Decommissioning Costs |
| <input type="checkbox"/> Fixed O&M | |
| <input type="checkbox"/> For the inputs you selected, please note which project categories should be updated. | |

54. Non-solar capacity factors: The table above presents the Capacity Factors assumed in the 2020 Ceiling Price Analysis (21% for wind, 55% for hydro, and 92% for AD – as a stand-in for availability factor). Do you agree or disagree with these assumed capacity factors?

- | | |
|--|---|
| <input type="radio"/> Strongly agree | <input type="radio"/> Disagree |
| <input type="radio"/> Agree | <input type="radio"/> Strongly disagree |
| <input type="radio"/> Neither agree nor disagree | |

If you disagree, please provide the capacity factor and corresponding technology that you would suggest instead.

55. Non-Solar COVID Impacts: What project cost inputs do you expect COVID to impact? In what direction, and by what magnitude? Substantiate each with documentation to substantiate your claim to Jim Kennerly at jkennerly@seadvantage.com and Kate Daniel at kdaniel@seadvantage.com.

	Decrease >20%	Decrease 10-20%	Decrease 0-10%	No Change	Increase 0-10%	Increase 10-20%	Increase more than 20%
Installed Costs	<input type="radio"/>						
Interconnection	<input type="radio"/>						
O&M Costs	<input type="radio"/>						
Insurance	<input type="radio"/>						
Project Management	<input type="radio"/>						
Site Lease	<input type="radio"/>						
Decommissioning Costs	<input type="radio"/>						

56. Is your company currently developing, constructing or operating a Community Remote Distributed Generation project under the REG program?

- Yes
- No

REG Project Offtake

57. Do you specifically target customers in National Grid's A-60 rate class (i.e. low-to-moderate income) in your marketing? Why or why not?

58. Do you plan to solicit residential offtakers for your projects? Please explain why or why not.

Preferred Siting/Disturbed Lands

59. Has your firm developed and submitted projects sited on landfills, brownfields, rock quarries, commercial rooftops, parking lots or other previously developed or disturbed parcels in recent Open Enrollments?

- Yes (Submitted)
- No (Not Attempted or Submitted)
- Unsure

60. (If Yes) Were these projects selected?

- Yes (Selected)
- No (Not Selected)
- Unsure

61. (If No, Not Attempted or Submitted) Please explain the main reasons why your firm has not attempted to develop and/or submit such a project to the Renewable Energy Growth (REG) program.

62. (If Yes, Selected) Please indicate which type of previously developed or disturbed parcel the project is (or will be) sited on, the size of the project, and the Renewable Energy Class (e.g. Small, Medium, Commercial or Large Solar, Wind, Hydro or Anaerobic Digesters, or their predecessor Classes) in which the project was selected by National Grid.

63. (If No, Not Selected) Please describe your understanding of why the project was not selected.

Energy Storage

64. Has your firm developed a renewable energy project (either through REG or any other program) that is co-located with customer load?

Yes

No

65. (If Yes) Have any of the customers with load co-located with such a project utilizing electric energy storage?

Yes

No

66. (If Customer Expressed Interest in Energy Storage) Please explain the types of goals (and/or value streams) that either your company (or your potential customer) has expressed the most interested in utilizing electric energy storage to realize.

67. (If Customer Expressed Interest in Energy Storage) For the 2020 program year, the program rules now clarify that electric energy storage systems are permitted to be paired with REG projects. For a customer considering electric energy storage paired with a renewable energy project, would you encourage your customer to consider the REG program as a means to achieve their goals and desired value streams?