

January 23, 2020

BY HAND DELIVERY AND ELECTRONIC MAIL

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

RE: Docket 4983 - 2020 Renewable Energy Growth Program Tariff and Rule Changes Responses to PUC Data Requests – Set 2

Dear Ms. Massaro:

On behalf of National Grid,¹ I have enclosed the Company's responses to the Public Utilities Commission's Second Set of Data Requests in the above-referenced docket.

Thank you for your attention to this matter. If you have any questions, please contact me at 781-907-2121.

Very truly yours,



Raquel J. Webster

Enclosures

cc: Docket 4983 Service List
Leo Wold, Esq.
Jon Hagopian, Esq.
John Bell, Division

¹ The Narragansett Electric Company d/b/a National Grid (National Grid or Company).

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.

Joanne M. Scanlon

January 23, 2020

Date

Docket No. 4983– Renewable Energy Growth Program for Year 2020
RI Distributed Generation Board and National Grid
Service List updated 11/8/2019

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The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4983
In Re: 2020 Renewable Energy Growth Program
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PUC 2-1

Request:

Referencing National Grid's response to PUC 1-5, please explain what a "banked credit" is and all tariff conditions that define and apply to banked credits for Standard, Shared Solar Facility, and Community Remote Distributed Generation (CRDG) customers.

Response:

A banked credit is a previously unallocated credit that remains on the host billing account. In the Community Remote Distributed Generation classes of the RE Growth program, these credits are called "unallocated generation" in the tariff. At the end of each billing cycle, these credits consist of the current billing period total generation plus any unallocated bill credits from prior months' generation, less the aggregate usage of all bill credit recipients applicable to the billing period. Banked credits are rolled forward and available for use by off-takers until the end of the program year, when they are cashed out per the terms in Section 8.d.4.ii. Standard projects and Shared Solar projects do not create banked credits or available generation, as the host is paid in full for all generation in each billing period.

PUC 2-2

Request:

Referencing National Grid's response to PUC 1-7, please explain how a budget billing customer's bill is settled when the bill credit value in a given month is greater than the budget billing total bill. If a payment credit is carried forward to the next month, please explain if this payment credit is carried forward independently from the comparison of bill credits to maximum monthly or annual bill credit allocations

Response:

If a budget bill customer receives a bill credit that is greater than the budget billing total bill, the credit is first applied to the budget amount due that month. The remaining credit remains on the customer account and is applied to the next month's budget billing monthly charge.

Example:

- Customer's monthly budget bill = \$100
- Credit transferred= \$150
- Balance due = -\$50
- Next month's budget bill amount due would be \$50 (\$100 budget bill amount less -\$50 balance due from prior month)

The payment credits are not factored into the calculation of the budget plan, they are simply payments applied to the budget. The customer's actual load is not reduced by payment credits.

At the anniversary month of a budget billing customer, the customer has two options if there is a carried forward credit.

Option 1 - "Roll-Over" means that any amount underbilled or overbilled will carry-over and be calculated into the next 12-month budget plan.

Option 2 - "Apply" means that any outstanding balance or credit remaining at the end of the 12-month period will be credited to the account or will be part of the balance due.

See below for examples of each option.

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Option 1 - Roll Over Example:

Year 2018	Budget Amount	Actual Bill Amount	Payments	Solar Credits Transferred	Total Balance Due	Total Billed	Total Actual	Total Amount Due After Paying this Bill
January (Anniversary)	\$100	\$75	\$0	(\$100)	\$0	\$100	\$75	(\$25)
February	\$100	\$50	\$25	(\$75)	\$0	\$200	\$125	(\$75)
March	\$100	\$50	\$50	(\$75)	(\$25)	\$300	\$175	(\$125)
April	\$100	\$75	\$25	(\$100)	(\$50)	\$400	\$250	(\$150)
May	\$100	\$100	\$0	(\$125)	(\$75)	\$500	\$350	(\$150)
June	\$100	\$150	\$25	(\$200)	(\$200)	\$600	\$500	(\$100)
July (New Budget Amount)	\$100	\$175	\$0	(\$300)	(\$400)	\$700	\$675	(\$25)
August	\$100	\$175	\$0	(\$300)	(\$600)	\$800	\$850	\$50
September	\$100	\$100	\$0	(\$200)	(\$700)	\$900	\$950	\$50
October	\$100	\$50	\$0	(\$50)	(\$650)	\$1,000	\$1,000	\$0
November	\$100	\$50	\$0	(\$50)	(\$600)	\$1,100	\$1,050	(\$50)
December	\$100	\$50	\$0	(\$50)	(\$550)	\$1,200	\$1,100	(\$100)

- Total Budget Billed = \$1,200
- Total Amount Actual = \$1,100
- Amount overbilled = \$-100
- Budget Starting January 2019 would be:
 - Total Amount Actual = \$1,100 + Total Amount Due After Paying this bill -\$100 = \$1,000
 - The new budget would be $\$1,000 \div 12 = \83.33 (round to \$83)
 - Even though the customer has a total balance due of -\$550, the budget is still changed to \$83
 - This is because the amount that is over-credited is not factored into the calculation of the budget plan and is considered a payment and not a reduction in the overall monthly bill.

Option 2 - Apply example:

- The customer can choose to apply the balance to the account at the anniversary month.
- In this case, they had a credit balance of -\$100
- The actual bill was \$1,100 for the year so the new budget would be
 - $\$1,100 \div 12 = \91.66 (round to \$92)
 - A credit balance would remain on the account to go towards future bills of $-\$550 + -\$100 = -\$650$

PUC 2-3

Request:

Referencing the prefiled direct testimony of Ian Springsteel (Springsteel testimony) at Line 10, Bates page 16, please explain what is meant by “the same incentive rate.” Does this mean the same incentive rate for the year in which the incremental facility is enrolled for that system size and class, or something else?

Response:

Per the referenced phrase in the question, “the same incentive rate” refers to the total incentive rate that the existing RE Growth project is currently enrolled at, per its year of enrollment. This means that when the account it is associated with changes, neither the tariff rate nor the remaining term of that tariff will change. There is no difference with a new RE Growth account being established as either a residential or non-residential system, as the rate is the same for each of the Small Solar Class projects.

PUC 2-4

Request:

Referencing is made to National Grid's response to PUC 1-12 and 1-13, particularly the section that explains, "This is not, per se a change or expansion of customer capabilities because the majority of residential customers are able to establish a separate service at their premise under a commercial rate class." Is National Grid's interpretation of its tariff, solicitation, and enrollment process rules that a residential customer currently can enroll in the REG program as a commercial customer? Why or why not? Please note that this question is not regarding incremental REG facilities, but rather is asking about an initial REG facility.

Response:

Under the Company's tariff provisions for electric service, there is no restriction on residential customers applying for and establishing an account under the Company's general service rate classes. If a residential customer seeks to establish a general service account, such as on rate C-06, they are allowed to do so. The rate they are placed on is determined by the estimated and actual load of the service required.

There is no current restriction on a customer at a residential location that seeks to establish a new service under a general service rate from opting to apply to RE Growth to connect a solar PV facility on that service under the Non-Residential RE Growth Tariff. This commercial activity could occur under any of several forms of organization (sole proprietorship, partnership, LLC, corporation, etc.) created by the customer. As such, the applicant would have the choice to size the system to load, under Option 2 of Section 8.c. of the tariff if there is an actual load being served, or without regard to load, under Option 1, and be directly paid for all of the output of the facility.

While this may appear to allow a residential customer to establish any size system they wish to, the customer is subject to other rules and restrictions that will in most cases constrain this ability. First, the customer would still be subject to local zoning and building ordinances. Second, the customer would be taxed on the full amount of the payment, as there would be no bill credits transferred from that value. Third, the customer would be constrained by the space available to them on their property, and by use restrictions that may exist on residential property. Finally, the customer would not enjoy the long-term hedge value of the bill credits, where the bill credit is valued at the full retail rate (the sum of all retail delivery service per-kWh charges plus the current residential Standard Offer Service Rate), per the tariff, which could be a value higher than the tariff level in some periods.

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PUC 2-5

Request:

Is National Grid's interpretation of its tariff, solicitation, and enrollment process rules that a residential customer enroll a commercial facility at their home and size that facility without consideration of the three-year on-site usage history? Why or why not? Please note that this question is not regarding incremental REG facilities, but rather is asking about an initial REG facility.

Response:

Please see the Company's response to PUC 2-4.

PUC 2-6

Request:

Is National Grid's interpretation of its tariff, solicitation, and enrollment process rules that a residential customer can simultaneously enroll separate net metering and REG facilities up to the three-year usage limit? Why or why not?

Response:

Yes, a residential customer can install separate solar PV systems that enroll in the RE Growth Provision and Net Metering provision at the same time. As stated in the testimony of Ian Springsteel, Line 21, Bates stamp 15, through Line 8, Bates stamp 16, the Company's billing system will not allow bill credits from both a residential RE Growth system and a Net Metered system to be reflected on the bill without a manual bill generation process. To best enable customers to expand their use of solar PV as they wish while receiving timely and accurate bills, and not incur additional costs associated with manual billing, the Company has proposed allowing a net metered system where there is an existing RE Growth system, or a new RE Growth system where a Net Metered system already exists, to be added at a capacity level that in total across both systems provides estimated energy annually that is equal to the three-year historical use of the customer, or other usage estimation per the tariff. However, under the analysis presented in PUC 2-4, there is not any existing or proposed language in the Residential or Non-Residential RE Growth Provisions that would restrict a customer with a Non-Residential system from sizing it however they are able, nor is there any reference to existing RE Growth facilities in the Net Metering Provision.

PUC 2-7

Request:

Referencing National Grid's response to PUC 1-17, given National Grid's proposed clarification on paired REG and energy storage systems (ESS) in the tariffs, are there any circumstances possible in which generation from the REG system or ESS during a power outage (or any other system disconnect) would be eligible for a full performance-based incentive (PBI) payment? Why or why not?

Response:

No. The RE Growth tariffs require that energy from the enrolled facility be measured by a Company-owned meter, and that this production amount is multiplied by the applicable Performance Based Incentive for that facility. In the circumstance of allowing output to be diverted to an ESS during periods of an outage or other disconnection, no energy can flow through the Company-owned generation meter as an emergency transfer switch would be required. According to the National Electric Code, this transfer switch is designed to electrically isolate any on-site emergency generation to prevent backflow to the electric distribution system for the safety of utility personnel as well as the general public.

PUC 2-8

Request:

Referencing National Grid's response to PUC 1-17, given National Grid's proposed clarification on paired REG and energy storage systems (ESS) in the tariffs, what entity would have title to any RECs generated during a power outage (or any other system disconnect)?

Response:

As described in PUC 2-7, no energy and, therefore, no REC production would be seen by the Company's revenue meter. In addition, in the situation described, it is the Company's view that such a REC associated with energy used on site would be retained by the customer. This would be a complex situation and resolution for the customer, however, as they would need an acceptable means of measuring that output for NEPOOL-GIS reporting purposes, would need to establish a NEPOOL-GIS account, and would need to report such output to the NEPOOL-GIS. It is more likely however, that typical short-term outages, or even a prolonged multi-day outage, would not result in output of a MWh or greater in any quarter, and thus would not be eligible to produce a REC, unless aggregated with other generation. In addition, an amendment to the Company's existing REC Assignment form would need to be executed to make such title clear and legal.

PUC 2-9

Request:

Does National Grid propose to collect an incentive payment on the Carport Incentive? If so, please revise National Grid's responses to OER provided in Schedule 1 of the prefiled direct testimony of Chris Kearns (Bates pages 25 to 26).

Response:

Yes, the Company plans to collect remuneration for the Carport Incentive. Following are the revised Company responses to OER provided in Schedule 1 of the prefiled direct testimony of Chris Kearns.

2020 REG Program - Large Solar Class Scenarios with the Carport Adder

Assumption – Using the average large solar ceiling price (11.18 cents) from the 1st competitive large solar enrollment solicitation of the 2019 REG Program Year as the awarded competitive price for 2020 large solar projects and then applying the 6-cent adder.

Scenarios

- If 2 MW (from the allocated 11 MW to the large solar class) were awarded to carport projects from the large solar class in the 2020 REG Enrollment period, what would the annual adder cost be for those 2 MW of projects when spread across the ratepayer classes over the 20-year tariff?

National Grid Answer -- Cost of Carport Adder - \$3,047,279

- If 4 MW (from the allocated 11 MW to the large solar class) were awarded to carport projects from the large solar class in the 2020 REG Enrollment period, what would the annual adder cost be for those 4 MW of projects when spread across the ratepayer classes over the 20-year tariff?

National Grid Answer -- Cost of Carport Adder - \$6,094,558

2020 REG Program - Commercial Solar Class Scenarios with the Carport Adder

Assumption – Using the average commercial solar ceiling price (17.12 cents) from the 1st competitive commercial solar enrollment solicitation of the 2019 REG Program Year as the awarded competitive price for 2020 commercial solar projects and then applying the 6-cent adder:

PUC 2-9, page 2

Scenarios

- If 1 MW (from the allocated 6.5 MW to the commercial solar class) were awarded to carport projects from the commercial solar class in the 2020 REG Enrollment period, what would the annual adder cost be for those 1 MW of projects when spread across the ratepayer classes over the 20-year tariff?

National Grid Answer -- Cost of Carport Adder - \$1,523,640

- If 3 MW (from the allocated 6.5 MW to the commercial solar class) were awarded to carport projects from the commercial solar class in the 2020 REG Enrollment period, what would the annual adder cost be for those 3 MW of projects when spread across the ratepayer classes over the 20-year tariff?

National Grid Answer -- Cost of Carport Adder - \$4,570,919

PUC 2-10

Request:

On Bates page 23 of the Springsteel testimony, the witness explains “The Company has reviewed [JK Schedule 6] and supports its conclusions as a fair analysis...”

- a. Does the Company support the analysis of “Likely Benefits (or Avoided Costs) to Power System?”
- b. If the response to part a is “no,” why not? If “yes,” please provide the Company’s definition of “closer to load” and “relatively distant from load.”

Response:

- a. Yes, the Company supports the brief qualitative statement under the heading “Likely Benefits (or Avoided Costs) to Power System.”
- b. The Company does not have a set definition of these terms as they are used by SEA in the description of benefits. However, the Company offers that there are at least two main ways to determine whether a distributed generation (DG) project is close to or distant from load. First, any project that is sited on the same or adjacent parcel as a building or other load customer site is physically close to load. When on the same parcel, at times such facilities can share the service connection to the Electric Power System (EPS), which reduces cost to the customer. Additionally, if the generation is produced such that it is coincident in time with the site or building load in question, there is less energy flowing onto the EPS, and thus less likelihood of needed upgrades to absorb and deliver that energy to other customers. If the generation is not coincident with the site load, upgrades could still be required. Second, if a DG project is connected on a feeder that is heavily loaded relative to the output of the facility in a way that is coincident in time with the output of the project, this would also be considered as “close to load,” as the energy from the project would help to serve other customers on the line, likely reducing thermal loading on the line during peak periods, and likely reducing the cost of additional upgrades, such as distribution feeder reconductoring, transformer upgrades, and transmission line upgrades. Other forms of interconnection upgrades would not be impacted by the location of a project in relation to load, such as fault current analysis and protection schemes, and islanding analysis and protection schemes. Projects that would be considered relatively distant from load would be large multi-MW solar or wind farms constructed in areas where minimal load exists today as the generation at any point in time far exceeds the minimal load in the area (e.g. projects in the central/western parts of the state).

PUC 2-11

Request:

Please provide a map of National Grid's electric territory in Rhode Island and indicate all the Commercial and Large solar REG projects with a Certificate of Eligibility. If possible, please include:

- a. municipality borders,
- b. the size of each facility in MW,
- c. whether the facility has or has not begun developing the project site,
- d. depending on responses provided in PUC 2-11, whether the facility is "closer to load" or "relatively distant from load,"
- e. whether preservation of the project site would provide the societal benefits described in the DG Board's analysis, and
- f. the zoning class of the project site.

Response:

Fifty-four Commercial and Large Solar REG projects with a Certificate of Eligibility are either in operation or pending. These 54 Projects are shown on the map below along with municipality borders, scaled to the size of each facility in MW(DC), and the location of each distribution substation. Facilities located on the same parcel as an existing load customer are defined as "close to load" in this analysis and are marked as green circles on the map. The alternative definition of "close to load" offered in the Company's response to PUC 2-10 is not analyzed in this response because that would require significantly more analysis than was feasible in the time allowed for these data requests.

As the Company does not currently collect zoning or site condition information on RE Growth projects, it is not possible to estimate if each facility is providing any societal benefits as discussed in the SEA analysis of Solar Carport costs and benefits at this time.

Attachment PUC 2-11 has additional requested details for each individual application except zoning information, which is not available.

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Legend

Attachment 1 2-11 V1

Closer to load (Building collocation)

- No
- Yes

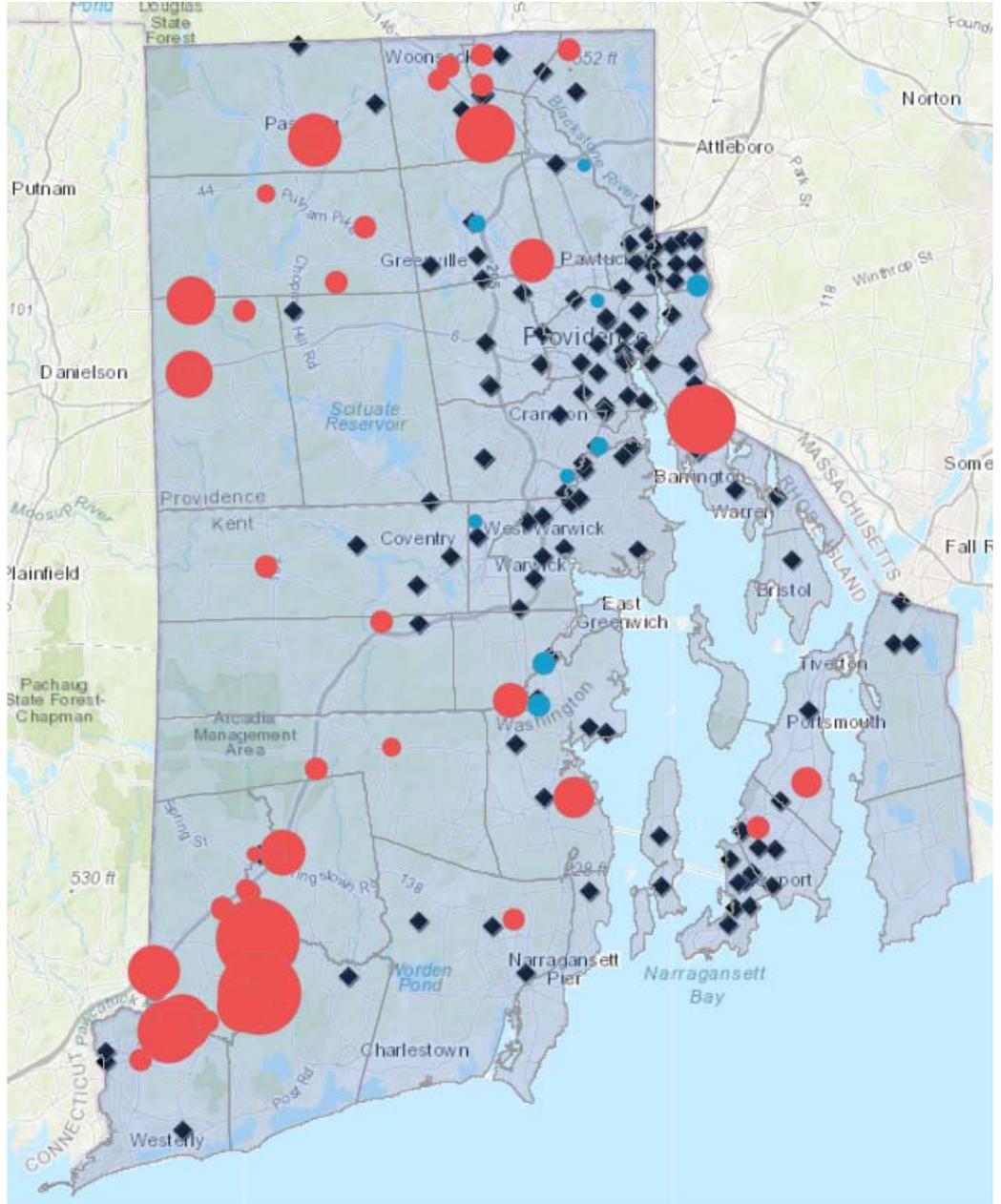
Nameplate Capacity (MW DC)

- > 5
- 4
- 2.5
- 1.5
- < 0.37

Electrical Service Territory - Towns



DA_Substation



Case Number	Feeder	Status	Program	Technology	Nameplate Capacity (MW DC)	Renewable Energy Class	Location of Array (if Solar)	Program Year	Interconnection Cost	Substation	Distance from Substation (miles)	Closer to load (Building collocation)	\$/kW Interconn. Cost
190396	53-107W53	Pending	RI REG	Solar	0.975	Commercial-Scale Solar	Rooftop	2019	\$ 147,775.54	Pawtucket SUBSTATION	3.06	Yes	\$ 151.56
177019	53-108W53	Pending	RI REG	Solar	0.999	Commercial-Scale Solar	Ground	2018	\$ 61,717.37	RIVERSIDE SUBSTATION	1.27	No	\$ 61.78
175570	53-112W43	Commercially Operational	RI REG	Solar	0.995	Commercial-Scale Solar	Ground	2016	\$ 46,664.42	STAPLES SUBSTATION	3.08	No	\$ 46.90
187476	53-126W41	Pending	RI REG	Solar	0.380	Commercial-Scale Solar	Rooftop	2019	\$ 36,168.25	WASHINGTON SUBSTATION	1.21	Yes	\$ 95.14
177969	53-127W42	Pending	RI REG	Solar	3.000	CRDG Large Solar	Ground	2017	\$ 466,180.00	NASONVILLE SUBSTATION	4.05	No	\$ 155.39
178413	53-127W42	Pending	RI REG	Solar	1.199	CRDG Large Solar	Ground	2018	\$ 184,855.00	NASONVILLE SUBSTATION	4.08	No	\$ 154.17
192283	53-2235	Pending	RI REG	Solar	0.692	Commercial-Scale Solar	Rooftop	2019	\$ 49,633.75	Sockanosset Substation	1.46	Yes	\$ 71.73
178455	53-23F1	Pending	RI REG	Solar	0.650	Commercial-Scale Solar	Rooftop	2018	\$ 825.00	FARNUM PIKE SUBSTATION	0.35	Yes	\$ 1.27
215039	53-23F1	Pending	RI REG	Solar	0.424	Commercial-Scale Solar	Rooftop	2019	\$ 825.00	CLARKSON STREET SUBSTATION	1.44	Yes	\$ 1.95
192818	53-23F6	Pending	RI REG	Solar	2.391	Large-Scale Solar	Ground	2019	\$ 469,564.88	FARNUM PIKE SUBSTATION	3.45	No	\$ 196.39
177633	53-28W1	Commercially Operational	RI REG	Solar	0.900	Commercial-Scale Solar	Ground	2015	\$ 72,150.71	WOONSOCKET SUBSTATION	2.53	No	\$ 80.17
177923	53-28W1	Pending	RI REG	Solar	0.998	Commercial-Scale Solar	Ground	2019	\$ 148,598.50	WOONSOCKET SUBSTATION	0.51	No	\$ 148.91
194706	53-28W3	Pending	RI REG	Solar	3.393	CRDG Large Solar	Ground	2019	\$ 510,369.00	WOONSOCKET SUBSTATION	4.09	No	\$ 150.42
175832	53-28W5	Commercially Operational	RI REG	Solar	0.999	Commercial-Scale Solar	Ground	2016	\$ 59,000.00	WOONSOCKET SUBSTATION	2.21	No	\$ 59.06
178657	53-27F6	Pending	RI REG	Solar	0.490	Commercial-Scale Solar	Rooftop	2019	\$ 3,410.02	PONTIAC SUBSTATION	1.02	Yes	\$ 6.96
176168	53-34F1	Commercially Operational	RI REG	Solar	2.594	Large-Scale Solar	Ground	2015	\$ 187,520.00	CHOPMIST SUBSTATION	6.52	No	\$ 72.29
177283	53-34F1	Pending	RI REG	Solar	0.950	Commercial-Scale Solar	Ground	2016	\$ 324,078.61	CHOPMIST SUBSTATION	6.51	No	\$ 341.14
178696	53-34F2	Pending	RI REG	Solar	0.723	CRDG Commercial Solar	Ground	2019	\$ 29,688.00	CHOPMIST SUBSTATION	6.35	No	\$ 41.06
176452	53-34F3	Commercially Operational	RI REG	Solar	0.996	Commercial-Scale Solar	Ground	2016	\$ 226,412.52	CHOPMIST SUBSTATION	2.91	No	\$ 227.32
176506	53-34F3	Pending	RI REG	Solar	2.700	Large-Scale Solar	Ground	2017	\$ 261,898.35	CHOPMIST SUBSTATION	4.97	No	\$ 97.00
176976	53-38F1	Commercially Operational	RI REG	Solar	0.998	Commercial-Scale Solar	Ground	2017	\$ 225,280.50	PUTNAM PIKE SUBSTATION	7.4	No	\$ 225.73
178196	53-38F1	Pending	RI REG	Solar	0.998	Commercial-Scale Solar	Ground	2019	\$ 1,784,245.00	PUTNAM PIKE SUBSTATION	5.48	No	\$ 1,788.00
178741	53-48F3	Commercially Operational	RI REG	Solar	4.050	Large-Scale Solar	Ground	2015	\$ 461,680.50	WAMPANOAG SUBSTATION	2.72	No	\$ 114.00
203835	56-150F4	Pending	RI REG	Solar	0.458	Commercial-Scale Solar	Rooftop	2019	\$ 113,182.38	New London Avenue Substation	1.75	Yes	\$ 247.12
177831	56-155F4	Pending	RI REG	Solar	3.310	Large-Scale Solar	Ground	2019	\$ 561,129.00	CHASE HILL SUBSTATION	0.26	No	\$ 169.53
185244	56-155F4	Pending	RI REG	Solar	0.990	Commercial-Scale Solar	Ground	2019	\$ 58,855.64	CHASE HILL SUBSTATION	2.51	No	\$ 59.45
193821	56-155F4	Pending	RI REG	Solar	3.670	Large-Scale Solar	Ground	2019	\$ 224,368.15	CHASE HILL SUBSTATION	1.38	No	\$ 61.14
176971	56-155F6	Commercially Operational	RI REG	Solar	1.570	Large-Scale Solar	Ground	2017	\$ 277,195.00	CHASE HILL SUBSTATION	2.76	No	\$ 176.56
177127	56-155F6	Pending	RI REG	Solar	0.997	CRDG Commercial Solar	Ground	2017	\$ 116,878.00	CHASE HILL SUBSTATION	1.7	No	\$ 117.23
178475	56-155F6	Pending	RI REG	Solar	0.499	Commercial-Scale Solar	Ground	2018	\$ 108,187.77	CHASE HILL SUBSTATION	1.85	No	\$ 216.81
178662	56-155F6	Pending	RI REG	Solar	2.930	Large-Scale Solar	Ground	2018	\$ 203,835.09	CHASE HILL SUBSTATION	2.7	No	\$ 69.60
174149	56-155F8	Commercially Operational	RI REG	Solar	0.499	Commercial-Scale Solar	Ground	2015	\$ 25,925.00	CHASE HILL SUBSTATION	9.59	No	\$ 51.95
177126	56-155F8	Pending	RI REG	Solar	0.997	CRDG Commercial Solar	Ground	2017	\$ 111,116.00	CHASE HILL SUBSTATION	8.22	No	\$ 111.45
178168	56-155F8	Pending	RI REG	Solar	0.997	CRDG Commercial Solar	Ground	2018	\$ 157,760.00	CHASE HILL SUBSTATION	8.12	No	\$ 158.23
177519	56-30F2	Pending	RI REG	Solar	0.750	Commercial-Scale Solar	Ground	2017	\$ 125,365.52	LAFAYETTE SUBSTATION	5.39	No	\$ 167.15
177394	56-37W42	Pending	RI REG	Solar	0.999	Commercial-Scale Solar	Ground	2018	\$ 48,989.24	JEPSON SUBSTATION	2.53	No	\$ 49.04
196145	56-37W43	Pending	RI REG	Solar	1.500	Large-Scale Solar	Ground	2019	\$ 139,102.03	JEPSON SUBSTATION	2.44	No	\$ 92.73
178528	56-46F1	Pending	RI REG	Solar	1.800	CRDG Large Solar	Ground	2018	\$ 695,619.00	OLD BAPTIST ROAD SUBSTATION	1.67	No	\$ 386.46
177586	56-46F4	Commercially Operational	RI REG	Solar	0.999	Commercial-Scale Solar	Rooftop	2016	\$ 300,642.00	OLD BAPTIST ROAD SUBSTATION	0.25	Yes	\$ 300.94
176596	56-54F1	Commercially Operational	RI REG	Solar	0.991	Commercial-Scale Solar	Ground	2016	\$ 107,032.00	COVENTRY SUBSTATION	4.72	No	\$ 108.00
177524	56-59F4	Pending	RI REG	Solar	0.945	Commercial-Scale Solar	Ground	2017	\$ 62,888.80	PEACEDALE SUBSTATION	2.03	No	\$ 66.34
178057	56-63F3	Pending	RI REG	Solar	0.997	CRDG Commercial Solar	Ground	2017	\$ 213,425.00	HOPKINS HILL SUBSTATION	2.17	No	\$ 214.07
176266	56-63F6	Commercially Operational	RI REG	Solar	0.999	Commercial-Scale Solar	Ground	2015	\$ 65,120.00	HOPKINS HILL SUBSTATION	9.55	No	\$ 65.19
177042	56-68F4	Commercially Operational	RI REG	Solar	2.500	Large-Scale Solar	Ground	2017	\$ 121,108.80	KENYON SUBSTATION	7.4	No	\$ 48.44
177128	56-68F4	Pending	RI REG	Solar	0.997	Commercial-Scale Solar	Ground	2017	\$ 141,746.30	KENYON SUBSTATION	7.54	No	\$ 142.17
176804	56-84T3	Commercially Operational	RI REG	Solar	0.999	Commercial-Scale Solar	Rooftop	2015	\$ 210,556.00	DAVISVILLE SUBSTATION	4.67	Yes	\$ 210.77
176304	56-85T1	Commercially Operational	RI REG	Solar	0.750	Commercial-Scale Solar	Ground	2015	\$ 92,722.00	WOOD RIVER SUBSTATION	2.45	No	\$ 123.63
177094	56-85T1	Pending	RI REG	Solar	5.000	Large-Scale Solar	Ground	2018	\$ 580,159.94	WOOD RIVER SUBSTATION	3.84	No	\$ 116.03
177269	56-85T1	Pending	RI REG	Solar	0.990	Commercial-Scale Solar	Ground	2017	\$ 63,583.05	WOOD RIVER SUBSTATION	3.24	No	\$ 64.23
185251	56-85T1	Pending	RI REG	Solar	0.999	Commercial-Scale Solar	Ground	2019	\$ 378,225.06	WOOD RIVER SUBSTATION	5.71	No	\$ 378.60
190140	56-85T1	Pending	RI REG	Solar	0.859	CRDG Commercial Solar	Ground	2019	\$ 648,545.00	WOOD RIVER SUBSTATION	5.83	No	\$ 755.00
177169	56-85T3	Pending	RI REG	Solar	5.000	Large-Scale Solar	Ground	2018	\$ 343,883.00	WOOD RIVER SUBSTATION	0.25	No	\$ 68.78
177170	56-85T3	Pending	RI REG	Solar	2.880	Large-Scale Solar	Ground	2017	\$ 475,520.12	WOOD RIVER SUBSTATION	1.33	No	\$ 165.11
177156	56-88F5	Pending	RI REG	Solar	2.200	Large-Scale Solar	Ground	2017	\$ 763,851.50	TOWER HILL SUBSTATION	1.61	No	\$ 347.21

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4983
In Re: 2020 Renewable Energy Growth Program
Responses to the Commission’s Second Set of Data Requests
Issued on January 7, 2020

PUC 2-12

Request:

Please provide the actual average, median, and total interconnection costs for the Commercial and Large Solar Classes by program year. Please separately provide the same including projects in queue that have interconnection costs estimates.

- a. If the response to PUC 1-10a is that the Company supports the DG Board’s analysis of “Likely Benefits (or Avoided Costs) to Power System,” please provide the same for projects that are defined as “closer to load.”
- b. Please provide the same for projects that are “relatively distant from load.”

Response:

Median and Average Total Interconnection Costs for Commercial and Large Solar RE Growth projects are shown in the table below. Median and average costs are calculated per kW interconnected. Total costs are calculated based on the total construction costs incurred by all customers in a given year.

		Renewable Energy Class	
		Commercial	Large
2015	Median (\$/kW)	\$80.17	\$93.14
	Average (\$/kW)	\$106.34	\$93.14
	Total (\$)	\$466,473.71	\$186.29
2016	Median (\$/kW)	\$167.66	-
	Average (\$/kW)	\$180.56	-
	Total (\$)	\$1,063,829.55	-
2017	Median (\$/kW)	\$129.70	\$160.25
	Average (\$/kW)	\$138.55	\$164.95
	Total (\$)	\$1,060,083.17	\$2,365,753.77
2018	Median (\$/kW)	\$61.78	\$116.03
	Average (\$/kW)	\$97.43	\$159.01
	Total (\$)	\$377,479.38	\$2,008,452.03
2019	Median (\$/kW)	\$122.03	\$150.42
	Average (\$/kW)	\$312.12	\$162.32
	Total (\$)	\$3,399,152.14	\$1,904,533.06

PUC 2-12, page 2

- a. Yes, the Company supports the DG Board’s analysis of “Likely Benefits (or Avoided Costs) to Power System” and the same cost breakdown of projects defined as “closer to load” is shown in the table below. Projects shown on the map included in the Company’s response to PUC 2-11 are counted as “close”, or in an area of high customer demand if they are on the same parcel as an existing load customer.

		Renewable Energy Class	
		Commercial	Large
2015	Median (\$/kW)	\$210.77	-
	Average (\$/kW)	\$210.77	-
	Total (\$)	\$210,556.00	-
2016	Median (\$/kW)	\$300.94	-
	Average (\$/kW)	\$300.94	-
	Total (\$)	\$300,642.00	-
2017	Median (\$/kW)	-	-
	Average (\$/kW)	-	-
	Total (\$)	-	-
2018	Median (\$/kW)	\$48.24	-
	Average (\$/kW)	\$48.24	-
	Total (\$)	\$31,355.00	-
2019	Median (\$/kW)	\$71.73	-
	Average (\$/kW)	\$95.74	-
	Total (\$)	\$350,994.94	-

- b. Median, average, and total costs of installation for projects mapped “relatively farther from the load” according to the Company’s response to PUC 2-11 are shown in the table below.

		Renewable Energy Class	
		Commercial	Large
2015	Median (\$/kW)	\$72.68	\$93.14
	Average (\$/kW)	\$80.23	\$93.14
	Total (\$)	\$255,917.71	\$649,200.50

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2016	Median (\$/kW)	\$108.00	-
	Average (\$/kW)	\$156.48	-
	Total (\$)	\$763,187.55	-
2017	Median (\$/kW)	\$129.70	\$160.25
	Average (\$/kW)	\$138.55	\$164.95
	Total (\$)	\$1,060,083.17	\$2,365,753.77
2018	Median(\$/kW)	\$110.01	\$116.03
	Average(\$/kW)	\$121.47	\$159.01
	Total	\$376,654.38	\$2,008,452.03
2019	Median(\$/kW)	\$263.76	\$150.42
	Average(\$/kW)	\$528.50	\$134.04
	Total	\$3,048,157.20	\$1,904,533.06

PUC 2-13

Request:

Please provide a link to the MA SMART tariff, terms, conditions and regulations. Please indicate the sections that apply to or create the carport adder.

Response:

Under the MA SMART program, all compensation rates and adders are set in the SMART Program regulation, 225 CMR 20.00. The regulation defines a Canopy Solar Tariff Generating Unit as: "A Solar Tariff Generation Unit with 100% of the nameplate capacity of the solar photovoltaic modules used for generating power installed on top of a parking surface, pedestrian walkway, or canal in a manner that maintains the function of the area beneath the canopy." The Solar Program Administrator reviews applications for compliance with the definitions required to claim an adder, such as the canopy adder, with oversight and final agreement from the Department of Energy Resources.

The entire regulation can be found at:

<https://www.mass.gov/doc/225-cmr-2000-solar-massachusetts-renewable-target-smart-program/download>