STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Rhode Island Division of
Public Utilities and Carriers
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February 27, 2015

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

In Re: R.I. Distributed Generation Board Report and Recommendation Regarding 2015 Renewable Energy Growth Classes, Ceiling Prices and Targets-Docket No. 4536-B

Dear Luly,

On December 23, 2014, the R.I. Distributed Generation Board filed its Report and Recommendations regarding 2015 Renewable Energy Growth Classes, Ceiling Prices and Targets pursuant to the mandates set-forth in R.I. Gen. Laws §39-26.6-4. The Division of Public Utilities and Carriers, (the "Division") submits the attached comments for consideration by the Commission in its review of the proposals of R.I. Distributed Generation Board in the above captioned docket.

I appreciate your anticipated cooperation in this matter.

Very truly yours,

Jon G. Hagopian
Senior Legal Counsel

cc: Thomas F. Ahern, Administrator
Stephen Scialabba, Chief Accountant

La Capra Associates

MEMORANDUM

To: Rhode Island Division of Public Utilities and Carriers

From: Carrie Gilbert and Al Pereira —La Capra Associates, Inc.

Re: Docket No. 4536-B Rhode Island Distributed Generation Report and Recommendation Regarding 2015 Renewable Energy Classes, Ceiling Prices and Targets

Date: February 27, 2015

In this memo, we summarize the results of our review of the ceiling prices filed by the Rhode Island Board ("Board") on December 23, 2014. This filing is the second report filed by the Board, as prior reports (2011, 2012, and 2013) were filed by the Rhode Island Office of Energy Resources ("OER"). This filing is also the first report in support of the Renewable Energy Growth ("REG") Program, which is replacing the Distributed Generation Standard Contracts Program ("DGSC") Program that expired on December 31, 2014. Attachment I to this memorandum contains a copy of Table II from the Board report that shows the revised ceiling prices. Attachment II shows the class allocation recommended for 2015. Overall, we believe that the 2015 prices and class allocations are reasonable. We discuss below the analyses and review that we performed to arrive at this conclusion.

There appear to be mistakes in both Table II and Table III of the December 23, 2014 Board report. In Table II, the ceiling price of small scale hydropower should be 20.10 instead of 21.10 cents per kWh. We have corrected this in Attachment I of this memo. In Table III of the Board Report, the 2015 ceiling prices of hydropower and anaerobic digester have been reversed. We have included a corrected Table III as Attachment III to this memo.

The Distributed Generation Standard Contracts Act ("the DGSC Act") required National Grid to enter into aggregate standard contracts for at least 40 MW nameplate of Distributed Generation ("DG") projects according to a four-year schedule.

- 5 MW in 2011 (one enrollment round)
- 15 MW in 2012 (three enrollment rounds)
- 10 MW in 2013 (three enrollment rounds)
- 10 MW in 2014 (three enrollment rounds)

The Rhode Island General Assembly enacted the REG Program (Section 26.6 of Title 39) in June 2014. The REG Program will replace the DGSC program and will cover the period from 2015 through 2019. The REG Program includes a number of structural changes from the DGSC program including:

- Shifting the procurement from a long-term contract based to a tariff based program;
- Allocating a minimum of 3 MW of the annual program capacity in 2015-2018 to the small solar class; and
- The ability to provide zonal incentives for identified reliability areas.

The REG Program has a target to install 160 MW of renewable energy according to a five year schedule:

- 25 MW in 2015;
- 40 MW in 2016;
- 40 MW in 2017;
- 40 MW in 2018; and
- Remainder to reach 160 MW target in 2019.

The Board's December filing indicated that through October 2014, prior to the third and final DGSC enrollment for 2014, NGRID has contracted with 37 projects totaling 29.15 MW of the 40 MW cumulative 2014 year-end target; only 3 of the projects were non-solar (two wind and one anaerobic digestion ("AD"). Any unused capacity from the DGSC Program will be added to the 2019 target of the REG program.

The number of renewable energy classes or categories has been increased in 2015 compared to the 2014 filing. Specifically additional solar classes have been added to include small solar and the capacity ranges on the medium, commercial, and large solar categories have shifted. The capacity ranges for the two wind categories are higher than last year and the anaerobic digester and hydropower categories have both split into two categories. This will be the third year that anaerobic digestion ("AD") technology is eligible, and the second year that hydro is eligible. Table 1 below compares the 2014 and 2015 classes.

2014	2015
No small solar class in 2014	Small Solar I (Host Owned) 1-10 kW DC
	Small Solar I (3rd party owned/financed) 1-10 kW DC
	Small Solar II 11-25 kW DC
Solar 50 – 200 kW DC	Medium Solar 26-250 kW DC
Solar 201 – 500 kW	Commercial Solar 251-999 kW DC
Solar 501 – 3000 kW	Large Solar 1000-5000 kW DC
Wind 50 – 999 kW	Wind I 1500-2999 kW AC
Wind 1000 – 1500 kW	Wind II 3000-5000 kW AC
Anaerobic Digester 50 - 1000 kW	Anaerobic Digester I 150-500 kW AC
	Anaerobic Digester II 501 -1000 kW AC
Hydro 50 – 1000 kW	Small Scale Hydropower I 10-250 kW AC
	Small Scale Hydropower II 251-1000 kW AC

Table 1. 2014 and 2015 Renewable Technology and Eligible Classes

There are many more classes in 2015 compared to 2014. New categories were required to accommodate the small solar program, and the split in the anaerobic digester and hydropower categories allows for more precision in developing ceiling prices. We believe the increase in number of categories to be reasonable where ceiling prices show large differentials, such as among the different classes of "small solar". For other resources, it is unclear why subclasses are recommended. The AD subclasses have identical prices. The difference between Wind I and Wind II class prices is very small (about 2%). Though the Board is not recommending specific allocations to these subclasses, having such similar prices may not be administratively efficient. It may be simpler to average the two prices and only have a single wind class of 1500 to 5000 kW.

Notwithstanding this finding concerning the number of subclasses, we find the MW allocation among the resource classes to be reasonable. Solar allocations form a large (about 75%) portion of the 25 MW—with 3 MW of that portion determined by statute—but that is the resource type that has featured the most interest (and is able to take advantage of federal tax credits). The remaining allocation of 25% to the other resources is reasonable as a means to promote resource diversity. We also agree with the allocation between fixed-price projects (8 MW) and competitively bid projects (17 MW).

Ceiling prices for 2015 were generally determined in the same manner—the CREST model was used and inputs were developed using stakeholder input and other research—as were the prices for the 2011 through 2014, but with updated assumptions for certain technologies.

The Production Tax Credit ("PTC") or Investment Tax Credit ("ITC"), a tax benefit for certain renewable energy technologies, was renewed in December 2014, but expired at the end of 2014 for non-solar technologies. As a result, two sets of ceiling prices were calculated for wind, anaerobic digestion, and hydro, with the recommendation that prices without the PTC/ITC be used; the prices shown in Attachment I exclude the PTC/ITC for these technologies. The ceiling prices for solar technologies were assumed to include the ITC. Although the PTC/ITC has been extended in the past, there is no guarantee (and possible lower chances than in previous years) that it will be extended again. Nevertheless, given the large impact that the PTC/ITC can have on the financial viability of a renewable energy project, this approach of having two sets of prices available is reasonable. In addition, we agree with the Board's recommendation on p. 6 of the December filing that any project that qualifies for the federal tax or bonus depreciation benefits before the December 31, 2014 expiration date of the PTC/ITC utilize the prices with the PTC/ITC (not shown in the table but shown in the testimony of Jason Gifford); these prices should also be used in the event that the PTC/ITC is reinstated at a later date (as occurred in 2013).

As with the 2014 prices, 2015 solar DG projects show a decrease compared to the prior year's prices; 2015 prices are between 10 and 29% lower than the 2014 prices, which is a higher decrease than found in 2014. Installed costs for the medium and commercial solar categories are fairly flat between 2014 and 2015 and the modeled capacity factors have decreased between 2014 and 2015. The drivers in the decrease in the ceiling price include for these categories include reduced operations and maintenance costs, reduced financing costs, and reduced interconnection costs. The large solar category has experienced a large decline between 2014 and 2015, which is behind the larger percentage decline for that category. We reviewed the data sources referenced in the Board's filing and believe that the solar capital costs used to determine the 2015 ceiling prices are reasonable. Furthermore, competitive bidding in the larger solar categories should catch cost reductions not captured by the ceiling prices.

By contrast, the ceiling prices for the non-solar technologies increased for all classes. The 2015 ceiling price for wind DG projects (for the 1.5-3 MW subclass) is 30% higher than the 2014 price, which was 18% higher than the 2013 price. There is a very small difference in ceiling price between the two wind classes. One large driver for the difference in wind ceiling prices between 2014 and 2015 is that the approved ceiling prices for 2014 included the PTC, while the 2015 prices do not. The other primary driver is the decrease in capacity factor from 2014 to 2015.

The ceiling prices for hydropower have increased by 12 to 19% due to the expiration of the PTC and the increase in the installed cost assumption. The ceiling price for anaerobic digestion has increased by about 11% from 2014 prices because of the PTC expiration and decrease in capacity factor from 2014. Development of these resource types has been quite limited in the past. There may be a number of reasons for this lack of development, including ceiling prices that are too low for development. Thus, we conclude that use of these higher prices is reasonable given our analysis of input changes and the results of past solicitation. We also acknowledge that these

resources are required to submit bids (up to the ceiling price), thus there will be pressure to submit market-competitive bids.

Attachment I

Summary of 2015 Proposed Ceiling Prices

Technology	Ceiling Prices (¢/kWh)
Small Solar I – Host Owned (15 Year Tariff)	41.35
Small Solar I – Host Owned (20 Year Tariff)	37.75
Small Solar I – Third Party Owned/Financed	32.95
Small Solar II	29.80
Medium Solar	24.40
Commercial Solar	20.95
Large Solar	16.70
Wind I	22.75
Wind II	22.35
Anaerobic Digestion I	20.60
Anaerobic Digestion II	20.60
Small Scale Hydropower I	21.35
Small Scale Hydropower II	20.10*

*The Board Report Table II incorrectly gave the ceiling price of Small Scale Hydropower II as 21.10. We have inserted the corrected value here.

Attachment II

Summary of 2015 Proposed Ceiling Prices

Technology & Eligible Class	kW Allocations
Small Solar I – Host Owned	3,000 kW* DC
Small Solar I – Third Party Owned/Financed	
Small Solar II	
Medium Solar	4,000 kW DC
Commercial Solar	5,500 kW DC
Large Solar	6,000 kW DC
Wind I	5,000 kW AC
Wind II	
Anaerobic Digestion I	1,500 kW AC
Anaerobic Digestion II	
Small Scale Hydropower I	
Small Scale Hydropower II	
Total	25,000 kW

*The REG Program statutorily requires that a minimum 3 MW of the annual capacity from the 2015, 2016, 2017 and 2018 REG programs be allocated for the small solar class.

Attachment III

Corrected Table III from the December 23, 2014 Board Report

2015 Renewable Energy Growth Program Recommended Ceiling Prices v. 2014 DGSC Approved Ceiling Prices (¢/kWh)				
2015 Technology Class	2015		2014	
	Size	Price (c/kWh)	Size	Price (c/kWh)
Small Solar I - Host -15 year tariff	1 - 10 kW DC	41.35		
Small Solar I - Host – 20 year tariff	1 - 10 kW DC	37.75		
Small Solar I - Third Party Owned/Financed	1 - 10 kW DC	32.95		
Small Solar II	10 - 25 kW DC	29.80		
Medium Solar	26 - 250 kW DC	24.40	50 - 200 kW	27.10
Commercial Solar	251 - 999 kW DC	20.95	201 - 500 kW	27.30
Large Solar	1 - 5 MW DC	16.70	501 - 3000 kW	23.50
Wind I*	1500 - 2999 kW AC	22.75	1.0 - 1.5 MW	17.50
Wind II*	3000 - 5000 kW AC	22.35		
Hydro I*	10 - 250 kW AC	21.35*	50 kW - 1.0 MW	17.90
Hydro II*	250 - 1000 MW AC	20.10*	50 kW - 1.0 MW	17.90
AD I*	150 - 500 kW AC	20.60*	50 kW - 1.0 MW	18.55
AD II*	501 - 1000 MW AC	20.60*	50 kW - 1.0 MW	18.55

*Corrected Values