

September 25, 2015

VIA HAND DELIVERY & ELECTRONIC MAIL

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

**RE: Docket 4568 – The Narragansett Electric Company d/b/a National Grid
Review of Electric Distribution Rate Design Pursuant to R.I. Gen. Laws § 39-26.6-24
Responses to WED Data Requests – Set 1**

Dear Ms. Massaro:

On behalf of National Grid¹, I enclose ten (10) copies of the Company's responses to the first set of data requests issued by Green Development, LLC d/b/a Wind Energy Development, LLC (WED) on September 4, 2015 in the above-referenced docket.

Thank you for your attention to this transmittal. If you have any questions concerning this filing, please contact me at 781-907-2153.

Very truly yours,



Celia B. O'Brien

Enclosures

cc: Docket 4568 Service List
Leo Wold, Esq.
Karen Lyons, Esq.
Steve Scialabba

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

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

September 25, 2015

Date

**Docket No. 4568 National Grid's Rate Design Pursuant to R.I. Gen. Laws Sec 39-26.6-24
Service List updated 9/21/15**

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WED 1-1

Request:

Please describe whether and how your proposal considered the benefits of distributed generation as required by R.I. Gen. Laws § 39-26.6-24(b)(1)?

Response:

Please see the Company's response to DIV 1-4. Please note that the benefits of distributed energy resources are only one of several factors enumerated in R.I. Gen. Laws § 39-26.6-24(b) that the PUC is required to "take into account and *balance*" (emphasis added) in establishing any new rates the PUC deems appropriate in this docket.

WED 1-2

Request:

Is R.I. Gen. Laws § 39-26.6-24(b) internally inconsistent in requiring the consideration of “equitable ratemaking principles regarding the allocation of the costs of the distribution system and cost causation principles” and the benefits of distributed generation (i.e., do current, industry- standard ratemaking principles on cost allocation and cost causation principles provide for the consideration of the benefits of distributed generation)? If so, how can that be resolved in the context of this docket?

Response:

No. There is no inconsistency between “equitable ratemaking principles regarding the allocation of the costs of the distribution system and cost causation principles” and the benefits of distributed generation (DG). Equity requires that all customers who benefit from the distribution grid share in the payment for the costs of the grid relative to the customer’s size. At the same time, customers can take steps to manage their use in such a way to reduce their bill either through responding to prices for service from the grid or responding to credits available for actions that will help to lower system costs. As an example, prior to restructuring, the Company offered rates for certain types of electricity use, such as water heating and storage cooling. Customers paid full rates for use of the distribution grid but could receive credits for certain actions—either controlled by the Company or controlled by the customer—that would reduce their bill. Currently, customers receive benefits from net metering or the performance-based incentive payments under the Renewable Energy Growth Program tariffs. However, as stated by the Company in its joint pre-filed direct testimony, this method of compensation is not equitable, nor sustainable, for many reasons.

The Company has field studies in place to assess the ability of solar DG to provide specific services to the grid under different operating conditions and with different types of customers. The Company’s efforts, along with other efforts undertaken in the industry, will inform the Company as to the potential value from these services and whether the cost to pay for the DG services will be less expensive over time than an alternative using distribution technology. Once the cost and benefits of DG are clearly understood, the Company will be able to move towards a pricing for services model to compensate DG that provides the services to the distribution grid when and where necessary. Until then, DG customers continue to receive compensation through the Net Metering or the Renewable Energy Growth Program tariffs, or other existing mechanisms for compensation of certain DG facilities, even without any determination that any benefits were created.

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WED 1-2, page 2

Thus, there is not an inconsistency that must be resolved since customers are treated fairly and equitably in each rate class and are still able to retain value for the assumed benefits provided to the grid from use of distributed generation.

Please also see the Company's response to DIV 1-4.

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WED 1-3

Request:

Is it possible to consider the benefits of distributed generation and meet the general assembly's legislative purposes for the distributed-generation growth program while proposing to design new rates for electric distribution in a revenue neutral context (i.e., one designed to produce the same amount of revenue as current rates are designed to generate)? If so, how? If not, how do you propose to proceed in this docket?

Response:

Please see the Company's response to WED 1-2.

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WED 1-4

Request:

On page 2, bullet 6 of the cover letter submitted with your proposal, what do you mean by the following statement: "In addition, the Company proposes that DG facilities no longer be allowed to net their station service usage against the amount of electricity generated by the DG facility, unless they are specifically enrolled in net metering"? Please identify where and how that is addressed in the specifics of the proposal.

Response:

The statement on page 2, bullet 6, of the Company's July 31, 2015 filing letter was meant for clarification for any DG projects not enrolled in net metering. The statement is intended to clarify that, when the generation is off-line, any on-site use is billed at the applicable commercial rate for the project. Other than including a similar statement on pages 12-13 of the Company's joint pre-filed direct testimony, the statement is not specifically identified in the Company's proposal in this proceeding, but was meant simply as a clarification.

WED 1-5

Request:

Page 17 of the testimony states “In the event the customer’s generator tripped off-line due to a failure within the generator system, the amount of electricity needed from the distribution system would increase very quickly since all of the customer’s energy requirements would now have to be met by the distribution utility, even for a short period of time. Therefore, the proper cost allocation and rate design must recognize the cost responsibility of the customer for the total of its electricity needs, including when the generator’s output exceeds the customer’s usage on-site, and when the generator is not operating at all.”

What is the basis of this assumption about the “proper cost allocation and rate design?” How is it consistent with the purposes of the statute, especially as set out in R.I. Gen. Laws § 39-26.6-24(b)(1) and (6)? How does the cost of providing reserve power relate to the peak shaving and energy security and other benefits discussed in the Study and the Plan? Given that balance, does the cost of providing reserve power warrant the allocation of more costs to DG customers?

Response:

At WED’s request, the Company’s response includes the following definitions for the terms “Study” and “Plan”: “Study” is “Economic Jobs and Environmental Impact Study – DG and REF Programs” commissioned by the RI Office of Energy Resources and issued on April 30, 2014; and “Plan” is the state energy plan by the RI Office of Energy Resources.

The discussion on page 17 of the Company’s joint pre-filed direct testimony is referring only to the proper allocation of the cost of the distribution system. When a generator trips off-line, it is necessary for the Company to provide the on-site load requirements of the customer instantaneously. Because generator outages may be unexpected and unpredictable, the Company must have adequate distribution system capacity available at all times to service the customer whenever the customer needs service from the distribution system, even when the customer’s generator is operational. Proper cost allocation and rate design principles require that customers who cause the need for capacity on the system be allocated their proportional share of the cost. In its testimony, the Company has explained that the benefits of diversity from load and/or generation is factored into the design of the distribution grid. Thus, customers get the benefit of their diversity with other customers through the cost of service and the allocated cost of service methodology, both of which take diversity of customer loads into account.

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In addition, as indicated in the “Study” on page 27, the integration costs associated with renewable energy are not trivial. These costs are properly allocated to, and should be recovered from, DG customers. The benefits provided by DG customers should be recognized as part of the compensation provided to projects, although, as also noted in the “Study”, the benefits to the distribution system in the form of avoided costs and increased reliability tend to be site specific and difficult to measure.

Please see the Company's response to WED 1-2 for a discussion of the consistency between equitable ratemaking principles regarding the allocation of the costs of the distribution system and cost causation principles and the benefits of distributed generation.

WED 1-6

Request:

On Page 19 of your testimony you state that “DG customers may contribute significantly less to support the distribution system as a result of their reduced kWh usage, thereby shifting the recovery of distribution system costs to all non-DG customers. Establishing the appropriate level of contribution toward these fixed costs by all customers – those with DG and those without DG – is essential to ensuring that the distribution system can be built, operated, and maintained in a manner that allows for DG interconnection in a safe and reliable manner to achieve the clean energy goals of the Act.”

What does safety and reliability have to do with the allocation of cost in this context? In reaching this conclusion have you also weighed the conclusions from the State Energy Plan regarding the importance of diversifying our electricity supply for energy security? Given that balance, do safety and reliability issues warrant the allocation of more costs to DG customers?

Response:

The safe and reliable distribution of electricity is fundamental to the Company's obligation to serve connecting customers in the State of Rhode Island. The system is built to be safe and reliable at a reasonable cost. Thus, the cost of service and resulting cost allocations are fundamental results from the Company's efforts to maintain the safety and reliability of the distribution system.

The Company recognizes the importance of diversifying our electric supply for energy security. However, critical to the ability to diversify energy supply is the existence of a distribution system that enables those resources to deliver the electricity they produce to the market. Therefore, renewable energy resources and a strong, resilient distribution grid are both necessary elements of diversity of supply.

A safe, reliable, and efficient distribution system is necessary to deliver electricity from generation sources to customers and to deliver electricity from generating customers to the market. Implicit in the statement on page 19 of the Company's joint pre-filed direct testimony is that the burden of contributing to cost recovery of the system cannot be borne solely, or even largely, by non-DG customers. All customers who derive benefit from the existence of the distribution system should share in the support of the system. To recognize the benefit associated with diversification of energy supply but not the costs would overstate the benefits provided by DG, and result in overcharging all other customers for those overstated benefits.

WED 1-7

Request:

On page 31 of your testimony, you state that “the distribution system is sized and constructed to accommodate the maximum demand on the system at a single point in time. Therefore, a customer’s maximum kWh usage during a 12-month period reflects the customer’s contribution to total system demand and, therefore, the customer’s cost responsibility.”

Is the level of demand on the system (and the consequent cost to customers) reduced at all by the introduction of efficiency and distributed generation? Is the cost to customers reduced accordingly? Is such benefit irrelevant in a revenue-neutral proceeding?

Response:

The level of demand on the distribution system may or may not be reduced by the introduction of distributed energy resources. In general, energy efficiency measures, once implemented, have the potential for a permanent reduction of the customer’s demand on the system (depending on customer’s use of the appliance), which may lead to future avoided system investment. However, not all implemented measures will necessarily result in reductions in system peak demands.

With regard to distributed generation, there are four points of concern. First, behind-the-meter generation does not change the customer’s use of electricity, unlike energy efficiency measures. This requires the system to be ready to accept the customer’s needs for delivery at any time the generation is unavailable. Second, as described in the EPRI Report¹, the grid must be ready to serve instantaneous loads and receive excess generation while managing impacts on the local grid while the generation is operational, unless the customer generation is operated to avoid these conditions. Third, the local grid may need to be upgraded if the amount of distributed generation cannot be handled by the existing capabilities of the grid. Fourth, any reduction in system peak demand depends upon the availability of the generation at the same time. For example, if the system peak demand occurs at 8 p.m., then a solar generation unit would not be an available resource to reduce load on the system at that time.

The benefit is irrelevant in a revenue-neutral proceeding because existing costs of the distribution grid will not be reduced. The grid has been constructed over time to meet certain

¹ Electric Power Research Institute (EPRI). The Integrated Grid: Realizing the Full Value of Central and Distributed Energy Resources (February 2014) (the EPRI Report).

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standards for efficiency of operation and to serve the current needs of customers for safe and reliable delivery of electricity. Any reduction seen in load will only affect the potential for future costs to be incurred, not change the current costs. A feeder of a certain size cannot be made smaller instantaneously and then expand to serve higher loads at other times. Distribution equipment has certain capabilities and is designed to remain in service for an extended period of time. Thus, any reduction of load will serve to extend the length of time existing facilities in service, barring any other changes such as new customers connecting to the grid or a need to upgrade to be able to handle the amount of distributed generation on the local grid.

WED 1-8

Request:

Page 40 of your testimony points out that “One of the legislative goals of the RE Growth Program is to encourage the growth of renewable DG. Therefore, any new rates proposed by the Company should not be designed to discourage implementation of DG.”

Explain how the proposed tiered customer charges and access fees encourage the growth of renewable DG.

Response:

The Company's Renewable Energy Growth Program approved by the PUC and implemented in June 2015 provides compensation to participants through Performance-Based Incentive payments and was designed to encourage the growth of renewable energy in Rhode Island. The rates proposed by the Company in this docket were designed to balance the criteria listed in R.I. Gen. Laws § 39-26.6-24(b) so that projects participating in the Renewable Energy Growth Program still have the opportunity to realize the significant benefits provided through the program, and all customers who utilize the distribution system contribute fairly to the support of the system.

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WED 1-9

Request:

On page 60 of your testimony you conclude that “proper cost allocation and cost recovery should recognize demand that results from either inflows or outflows of energy.”

Should proper cost allocation and cost recovery also recognize the benefits that result from inflows or outflows of energy?

Response:

Please see the Company's response to WED 1-2.

WED 1-10

Request:

On page 61 of your testimony you state that “The availability capacity factors for wind, anaerobic digestion, and hydro are still to be determined through further analytics and will be provided in a revised Access Service Agreement at a later date.”

Can you provide additional details on how and when this analysis will occur? Will it be consistent with the RI DG Boards methodology?

Response:

The Company will determine the availability capacity factors for wind, anaerobic digestion, and hydro by comparing the peak export of these technologies to the Company's peak in 2014 using the information from the existing projects' interval meters and the peak loads statewide. The Company expects to have interim results in early October.

The DG Board does not conduct a similar analysis as far as the Company is aware. The DG Board's analysis is to review the capacity factor of various technologies, not the availability capacity factor as described above. The analytics referred to on page 61 of the Company's joint pre-filed direct testimony were originally needed because the proper metering and billing platform to bill an Access Fee was not clearly understood when the filing was made.

WED 1-11

Request:

On page 61 of your testimony in answer to a question about how net metered customers are billed you reference that the “current method of billing stand-alone DG facilities does not provide adequate contribution towards recovery of the costs that the DG facilities use of the system causes the company to incur.”

In the context of a remote net-metered customer utilizing remote net metering from a stand-alone DG facility, aren't customers already paying for the “use of the system” at their other facilities? Since billing true up is done on a monetary basis rather than a kWh basis and customer facilities won't see a reduction in monthly kWh equal to the stand alone DG facilities generation wouldn't they actually be overcharged using the monthly kWh methodology outlined on page 31? Under this scenario wouldn't a stand-alone charge for generation combined with a charge for facility consumption result in double charging?

Response:

No, customers who receive net metering credits from remotely located generators are not already paying for use of the system and thus are not overcharged for distribution service. Generation that is remote from load does not reduce a customer's on-site demand in the same way that behind-the-meter generation does. Therefore, it is appropriate to assess charges to the load customer based upon the customer's use at the service location because that load reflects the cost to serve that customer. It is also appropriate to assess a charge to the stand-alone generator because it is necessary for the unit to utilize the distribution system to transport electricity produced by the unit into the market. The stand-alone generator is connected to the distribution grid and using the distribution grid just as a load customer is connected to and uses the distribution grid, and therefore the stand-alone generator should be charged for its use of the distribution grid. Since both customers use different areas of the grid, the proposed charges are fair for recovery of costs on the total grid. Charging both customers results in a reduction in the rate to be charged these customers, which reflects an appropriate reduction in bill due to the different accounts contributing towards the costs of the grid.

WED 1-12

Request:

In response to your testimony on pages 62-63 regarding the burden of ISO requirements, does your analysis supporting the proposal consider the cost DG developers incur to comply with ISO requirements and the benefits such compliance provides to the regional energy management system, including for the evaluation of transmission investments?

Response:

The Company's proposed rates are designed to recover costs related to the support of the distribution system from all customers—those with DG and those without DG—such that all customers fairly and equitably contribute to the operation, maintenance, and investment in the distribution system that is relied upon by all customers. The cost that DG developers incur to comply with ISO-NE requirements is unrelated to the cost of operating, maintaining, and investing in the distribution system that serves all customers who connect to the system.

As indicated in the Company's response to WED 1-2, the benefits associated with DG should be recognized and considered as part of the compensation provided to each distributed generation unit. All customers are required to pay a surcharge, in some cases for up to 20 years, on their monthly bill for payments provided to DG facilities in furtherance of state policy goals. Customers who pay this surcharge expect that what they pay today will be returned to them in the form of future benefits, such as lower distribution charges, cleaner air, etc.

It is important to appropriately value the expected benefits provided by DG facilities and compensate each DG unit accordingly. However, if we fail to recognize the costs that DG facilities impose on the system, and fail to recover those costs appropriately from DG facilities, then all other customers will be paying a higher cost for the benefits that they will receive in the future.

WED 1-13

Request:

Is “The Integrated Grid” the only secondary source you used to evaluate the costs and benefits of distributed generation? If not, please list any other resources you relied on. Are you aware of other resources that would inform this process (please include those that do not or might not support your position)?

Response:

National Grid is aware of many reports, papers, and articles published in the recent past on the subject of the cost and benefits of distributed generation. Listed below are several that provided background, information, and points of view that the Company took into consideration in developing its rate re-design proposal. National Grid agrees with some of the analyses, and does not agree with others, but all of this work was informative in the rate design process.

- “The Future of Solar Energy” – MIT Energy Initiative Report, Massachusetts Institute of Technology, February 2015
- “A Policy Framework for Designing Distributed Energy Tariffs” – Edison Electric Institute, Nov. 2013
- “Ratemaking, Solar Value and Solar Net Energy Metering: A Primer,” Solar Electric Power Association, Version 1.0
- “Rate Design for the Distribution Edge: Electricity Pricing for Distributed Resource Future,” Rocky Mountain Institute, August 2014
- “A Review of Solar PV Benefit & Cost Studies, 2nd Edition,” Rocky Mountain Institute, September 2013
- “Rethinking Standby & Fixed Cost Charges: Regulatory and Rate Design Pathways to Deeper Solar PV Cost Reductions,” NC Clean Energy Technology Center and Meister Consulting group, August 2014

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- “Valuation of Distributed Solar: A Qualitative View,” The Electricity Journal, Dec. 2014, Brown, Ashley and Jillian Bunyan.
- “Maine Distributed Solar Valuation Study,” Presented to the Maine Legislature, Joint Committee on Energy Utilities and Technology, March 1, 2015
- “The True Value of Solar,” ICF International White Paper, Fine, et al. 2014
- “The Report of the Net Metering and Solar Task Force,” Presented to the Massachusetts Legislature, Joint Committee on Technology, Utilities and Energy, April 2015
- “Comparative Generation Costs of Utility Scale and Residential Scale PV in Xcel Energy’s Colorado Service Territory,” Prepared for First Solar by the Brattle Group, July 2015