

March 11, 2014

VIA HAND DELIVERY & ELECTRONIC MAIL

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

RE: Docket 4277 - DG Enrollment Application and Enrollment Process Rules for 2014
Docket 4288 - Report and Recommendation Regarding Classes and Ceiling Prices for 2014
Responses to Record Requests

Dear Ms. Massaro:

Enclosed are National Grid's¹ responses to Record Requests issued at the Public Utilities Commission's evidentiary hearing on February 26, 2014 concerning the above-referenced proceedings.

Thank you for your attention to this matter. If you have any questions regarding this filing, please contact me at (401) 784-7667.

Very truly yours,



Thomas R. Teehan

Enclosures

cc: Docket 4277/4288 Service Lists
Steve Scialabba
Leo Wold, Esq.

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

Record Request 1

Request:

Please explain how the connection of distributed generation projects to the grid reduce the need for upgrades and increase resiliency, thereby lowering distribution rates.

Response:

The purpose of the Rhode Island Distributed Generation Standard Contracts Act, R.I.G.L. § 39-26.2-2 (the "Act") is, among other items mentioned, to "improve distribution system resilience and reliability; and reduce distribution system costs."

In general, Distributed Generation ("DG") resources do not enhance resiliency, which is defined as the ability of the grid to deliver power to customers during outage events or to avoid outages. Outages are generally caused by external forces, such as major storms that disrupt transmission-level service to a region, or inflict widespread damage to the distribution system. For safety considerations, DG resources are generally designed to trip off line during an outage event. Unless designed as an on-site resource that is integrated with a micro-grid or emergency power system that can be operated safely in island mode (i.e. fully disconnected from the distribution system and which self-regulates its voltage and frequency levels), solar, wind and other DG resources do not contribute to customer-level or system-level resiliency. To date, all the projects supported by the DG program are directly connected to the distribution system, and do not supply power to any on-site customer uses in combination with an emergency or micro-grid configuration.

Another consideration is the reliability of regional energy supply, and the stability and reliability of the bulk power system managed by the Independent System Operator – New England (ISO-NE). DG resources that contribute power during times of system peak demand will help to reduce the demand for additional generation capacity. Such DG resources will also reduce the amount of capacity needed to be secured in the Forward Capacity Market ("FCM"), thereby creating an avoided cost benefit. However, due to the variable nature of the DG resources, it is not clear how much system reserve resources will increase to compensate; any such increases will negate some of the benefits that may be realized in the FCM. Separately, as presently interconnected, there are concerns about the inability of DG resources to stay on line, or "ride through," during contingency events (under/over-frequency or voltage, as examples), which may increase instability on the distribution and transmission systems during a contingency event. This effect of DG and

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the impact on system planning is currently the subject of a working group process being led by ISO-NE. This issue has also been studied in other jurisdictions. This work will likely result in some modification of DG interconnection requirements and may add costs to both DG systems and to the bulk power system.

In terms of reducing the need for distribution system upgrades, DG resources can have a load reducing effect when located downstream of a system constraint on the distribution system, and the generation occurs concurrent with the peak load on that part of the distribution system. To the extent an upgrade is needed to accommodate growth in demand, DG resources may be able to help defer such upgrades for a time. Different technologies have different electric load carrying capacities ("ELCC"), which is the amount of their nameplate capacity that can be relied upon as a load reduction. For dispatchable resources, like anaerobic digester gas-fired generators, this can be near the actual AC nameplate. For intermittent resources, like solar photovoltaic installations, this can be assessed as the actual historical contribution of that system during the hours of peak demand. At present, however, no upgrades have been knowingly deferred due to the existence of or planned deployment of a DG generation facility supported by the DG Standard Contract program.

The Company is presently integrating location and performance data of DG facilities that have been developed into its network operations and planning processes. In addition, the Company is currently engaged in a study with Peregrine Energy Group to develop a methodology for assessing such contribution from existing and planned DG systems, first in a pilot focused on the System Reliability Procurement plan area. The study and the potential load-reduction pilot deployment project are funded by the Rhode Island Office of Energy Resources. It is the Company's intent to integrate this assessment methodology into distribution planning as the pilot and the DG program progress. Based on the location and ELCC of the resources assessed in the future, there may be possible deferral of some projects in favor of other projects that cannot be deferred.

Record Request 2

Request:

Please quantify any distribution cost reductions or non-monetary benefits that a) have accrued to date and b) the expected cumulative benefit that will accrue to ratepayers by the end of the distributed program when all projects are on-line.

Response:

Similar to the response to Record Request No. 1, there are no known deferrals that have resulted from the DG program to date, and no deferrals are presently anticipated. There are also no known resiliency benefits from any of the DG Standard Contract facilities currently or expected to be developed. There may be other non-monetary benefits from the development of DG resources in Rhode Island, such as reductions in pollution emissions from fossil-fuel fired generation facilities. The Rhode Island Office of Energy Resources and Commerce Rhode Island are presently engaged with a consultant to develop a comprehensive accounting of the economic and environmental benefits associated with the DG Standard Contracts program, and the Company would defer any assessment of those benefits to that significant effort now underway.

Record Request 3

Request:

Please explain whether distributed generation projects are available to deliver energy to customers during periods of system outages whether due to storms or other service interruption events. In your response, please differentiate the availability of distributed generation projects by technology.

Response:

Please see the response to Record Request No. 1.

Certificate of Service

I hereby certify that a copy of the cover letter and/or any materials accompanying this certificate was electronically transmitted to the individuals listed below. Copies of this filing are being hand delivered to the RI Public Utilities Commission and to the RI Division of Public Utilities and Carriers.



Joanne M. Scanlon

March 11, 2014

Date

Docket No. 4288 – Office of Energy Resources Filings: 1) Proposed Distributed Generation (DG) Standard Contract Act Classes and Ceiling Prices; and 2) Proposed DG Standard Contract; and

Docket No. 4277 – National Grid National Grid – Distributed Generation Enrollment Application & Enrollment Process Rules

Service Lists updated 2/28/14

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