

**The Narragansett Electric Co. d/b/a National Grid's Proposed
Power Sector Transformation (PST) Vision and Implementation Plan**

Docket 4780

Request for Information

Requesting Party: New Energy Rhode Island (NERI)
To: National Grid
Request No.: NERI-2
Date of Request: February 27, 2018
Response Due Date: March 20, 2018
Subject/Panel: 4600 Goals/Framework (Book 1, Chapter 2; Technical Conference 01/26/18; Pre-filed testimony; Work Papers)

1. Please reference Chapter 2, p. 35. Please explain why the “best-fit/least-cost assessment is the most practical approach to evaluating traditional utility infrastructure and core platform investments.”

Response can be found on Bates page(s) 1-2.

2. Please reference Chapter 2, p. 36. Please explain what is meant by the phrase “directly considered” in the following statement: “Where the benefits of DER deployment are being directly considered in the evaluation of project alternatives or other investments that integrate DERs into the power system, *a societal benefit-cost analysis* may be useful to evaluate the cost-effectiveness of certain grid investments in relation to the value potential from enabling customer DER integration and/or DER utilization.”

Response can be found on Bates page(s) 3.

3. Please reference Chapter 2, p. 36 to 37.
 - a. Did the Company solicit stakeholder engagement in developing the Rhode Island specific benefit cost assessment (BCA) methodology, including, but not limited to, stakeholders who participated in Docket 4600?
 - b. Why did the Company develop a new BCA methodology, rather than using the stakeholder developed Docket 4600 BCA Framework?

Response can be found on Bates page(s) 4-6.

4. Please reference the statement on Chapter, 2, p. 36, that, “Proposals relating to AMF deployment, beneficial electrification programs in transportation and heating, and investments in storage and solar have more quantifiable benefits that can be assessed through a detailed benefit-cost analysis. For these investments, the Company has developed a Rhode Island specific benefit-cost analysis (BCA) methodology consistent with the state’s Docket 4600 guidance. Further details on the Rhode Island methodology are provided in the

section that follows.”

- a. Does the Company consider the term “distributed energy resources” to include storage and solar? How does the Company define the term “distributed energy resources?”
- b. If yes, what standard, test, or criteria does the Company use to distinguish which DER projects or proposals should be evaluated under the Category 3 (the societal benefit-cost analysis) versus the Rhode Island specific BCA methodology?

Response can be found on Bates page(s) 7.

NERI 2-1

Request:

Please reference Chapter 2, p. 35. Please explain why the "best-fit/least-cost assessment is the most practical approach to evaluating traditional utility infrastructure and core platform investments."

Response:

Please see the Company's response to Division 2-3, included here as Attachment NERI 2-1, wherein the Company described the methodology used in the best-fit/least cost assessment and the Department of Energy (DOE) Modern Distribution Grid Report (Volume III)¹. As discussed in the DOE report, there is an identified need for a common framework for evaluating costs and benefits associated with grid modernization investments. Developing such a framework is complex due to the various uses of these investments and the different approaches that can be taken to implementation². Because traditional utility infrastructure and core platform investments generally support a broad range of current and future applications, it is difficult to quantify and/or monetize benefits as well as allocate relative costs to each application. Therefore, the most practical approach is to use the DOE's guidance on evaluating traditional utility infrastructure and core platform investments. DOE's guidance is as follows:

Categories 1 and 2: A best-fit/least-cost assessment is the most practical approach to evaluating traditional utility infrastructure and core platform investments. This includes investments in:

- Planning tools and models;
- Physical infrastructure (e.g., wires, transformers, switches, etc.);
- Advanced protection and controls;
- Sensing and situational awareness; and
- Operational communications.

(This response is identical to the Company's response to NERI 19-2 in Docket No. 4770)

¹ U.S. Department of Energy, Office of Electricity Delivery & Energy Reliability, Modern Distribution Grid, Decision Guide, Volume III, June 28, 2017. Available at: <http://doe-dsp.org/sample-page/modern-distribution-gridreport/>.

² See Modern Distribution Grid: A Decision Guide Volume III, p39, Section 3.4.1 Cost-Effectiveness Framework.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4780
Responses to Division's Second Set of Data Requests
Issued January 8, 2018

Division 2-3

Request:

Regarding the Grid Modernization investments described in Schedule PST-1, Chapter 3, except for the AMF initiative, please describe in detail the methodology that the Company used in the best-fit/least cost assessment.

Response:

As presented in the Department of Energy Modern Distribution Grid Report (Volume III, page 40)¹, the most practical approach to evaluating core platform investments involves the following best-fit/least cost methodology:

The first step is to assess the "fit" against the "need" as defined in a related grid architecture and design that satisfy the functional needs aligned to the pre-determined customer and policy objectives. This best-fit assessment is applied to certain grid technology solutions to narrow the potential options. Afterwards, the least-cost can be assessed through various means. Most typically, this determination is the result of a competitive procurement. It should be noted that states have varying approaches to least-cost, best-fit that may also alternatively be assessed as best combination of expected cost and risk.

The Company has proposed the projects in Chapter 3 to progress the Company's vision that aligns with the state-level policies and objectives identified in Chapter, 1 Section 4, and the Docket 4600 goals discussed in Chapter 2, Section 2 of the Power Sector Transformation Plan.

The Company uses several methods to identify appropriate solutions and considers their relative fitness to address the needs and objectives, including industry research, benchmarking, and equipment demonstrations and testing. Similarly, the Company uses several methods to procure and deliver selected solutions at the lowest reasonable cost, including competitive solicitations, standardization, and leveraging synergies when possible across projects and affiliated companies. The Company also employs a robust project governance process that ensures the scope, cost, and schedule of projects are reviewed and approved at the appropriate management levels prior to procurement or any project expenditure.

(This response is identical to the Company's response to Division 8-3 in Docket No. 4770.)

¹ U.S. Department of Energy, Office of Electricity Delivery & Energy Reliability, *Modern Distribution Grid, Decision Guide*, Volume III, June 28, 2017. Available at: <http://doe-dspx.org/sample-page/modern-distribution-grid-report/>.

NERI 2-2

Request:

Please reference Chapter 2, p. 36. Please explain what is meant by the phrase "directly considered" in the following statement: "Where the benefits of DER deployment are being directly considered in the evaluation of project alternatives or other investments that integrate DERs into the power system, a *societal benefit-cost analysis* may be useful to evaluate the cost-effectiveness of certain grid investments in relation to the value potential from enabling customer DER integration and/or DER utilization."

Response:

The Company is aiming to differentiate between projects that enable the integration of distributed energy resources (DER) and projects that utilize DER for distribution system benefit. It is difficult to quantify the benefits of DER enabling projects because the specific interconnection information regarding the time, location, type of DER, and use case for the DER is unknown. Therefore the Company has proposed a best-fit/least cost assessment for DER enabling projects. Conversely, where a DER is being "directly considered" (*i.e.*, with a specific use case, at a specific location, and for a specific period) to address a distribution system need, the costs and benefits can be quantified sufficiently to perform a detailed societal benefit-cost analysis.

(This response is identical to the Company's response to NERI 19-2 Docket No. 4770)

NERI 2-3

Request:

Please reference Chapter 2, p. 36 to 37.

- a. Did the Company solicit stakeholder engagement in developing the Rhode Island specific benefit cost assessment (BCA) methodology, including, but not limited to, stakeholders who participated in Docket 4600?
- b. Why did the Company develop a new BCA methodology, rather than using the stakeholder developed Docket 4600 BCA Framework?

Response:

- a. Yes. When developing the Rhode Island-specific benefits cost assessment (BCA), the Company solicited stakeholder engagement from the Division of Public Utilities and Carriers (Division) and the Division's consultant, Tim Woolf, Vice President of Synapse Energy Economics, Inc., to develop the BCA methodology applied in the Company's Power Sector Transformation (PST) Plan. The stakeholder input from Docket 4600 led to the development of the Rhode Island Docket 4600 Benefit-Cost Framework (the Framework), which the Company then used to develop the Rhode Island-specific test.
- b. The Company developed a Rhode Island-specific BCA methodology to evaluate many of the investments proposed in the PST Plan. This BCA methodology is based on the guidance provided in the Framework. Although the Docket 4600 Guidance Document¹ calls for the application of a quantitative cost-effectiveness test, it does not explicitly specify which type of cost-effectiveness test(s) should be used or the economic perspective(s) from which investments should be evaluated. The Docket 4600 Guidance Document states that "there is still significant work [sic] left to be done so that the Framework can be applied in a fully quantitative manner."² Furthermore, the Stakeholder Report³, sections of which the Public Utilities Commission (PUC) adopted in its Report and Order in Docket 4600, noted "the Framework is meant to be refined or modified over time as the PUC and parties to dockets gain experience in applying it."⁴ The PUC also held that, although the Framework should be relied upon, "it should not be the exclusive

¹ Public Utilities Commission's Guidance on Goals, Principles and Values for Matters Involving The Narragansett Electric Company d/b/a National Grid (October 27, 2017) (the Docket 4600 Guidance Document).

² Id. at 6.

³ Raab Associates, Ltd. with Paul Centolella & Associates and Tabors Caramanis Rudkevich (TCR), Docket 4600: Stakeholder Working Group Process, Report to the Rhode Island Public Utilities Commission (April 5, 2017) (the Stakeholder Report).

⁴ Report and Order, Docket No. 4600, at 9 (July 31, 2017).

measure of whether a specific proposal should be approved. Rather, the Framework should serve as a starting point in making a business case for a proposal.”⁵

The Company determined through analysis of the Docket 4600 Guidance Document, stakeholder input, and stated Rhode Island policy goals that the primary quantitative cost-effectiveness test to be included in the Company's business case for its PST investments is the societal cost test (SCT). Further, analysis of the Docket 4600 Guidance Document also suggests that inclusion of a quantitative test to present the monetary benefits and costs from a customer perspective is also appropriate. To present the monetary benefits and costs from a customer perspective, the Company relied on a rate impact measure. As provided in the Docket 4600 Guidance Document, benefits and costs included in Appendix 2.1 of the Docket 4600 Guidance Document that were not applicable to these cost tests or that are not quantifiable given currently available data and methods were included qualitatively in the overall business case.⁶

In addition, the Company relied on sources and methodologies that have been previously vetted with stakeholders in Rhode Island and other states to develop the input assumptions used in the BCA models:

- Wherever applicable and appropriate, the BCA methodologies and assumptions relied upon for each of the investments proposed in the Company's PST Plan are aligned with those used by the Company when modeling the cost effectiveness of its energy efficiency programs in Rhode Island. These assumptions and methodologies have been developed over several years with significant input from Rhode Island stakeholders.
- Second, avoided energy, capacity, RECs, and environmental compliance and externality cost values, as well as wholesale market price impact assumptions and general methodology for their application, were taken from the Avoided Energy Supply Costs (AESC) in New England: 2015 Report.⁷ The AESC study is sponsored and overseen by a group of New England electric and gas utilities, other efficiency program administrators, non-utility parties, and consultants, and is used by the Company and other utilities throughout New England to evaluate energy efficiency programs.

⁵ *Id.*, at 23.

⁶ Docket 4600 Guidance Document at 6.

⁷ The AESC 2015 Report was sponsored by a group of electric utilities, gas utilities, and other efficiency program administrators including National Grid (collectively, “program administrators”). The sponsors, along with non-utility parties and their consultants, formed an AESC 2015 Study Group to oversee design and execution of the report.

- Where applicable and appropriate, the Company also relied on assumptions and methodologies developed for similar projects previously proposed for its Massachusetts and New York operating companies and subjected to stakeholder engagement in those jurisdictions.

(This response is identical to the Company's response to NERI 19-3 in Docket No. 4770)

NERI 2-4

Request:

Please reference the statement on Chapter, 2, p. 36, that, "Proposals relating to AMF deployment, beneficial electrification programs in transportation and heating, and investments in storage and solar have more quantifiable benefits that can be assessed through a detailed benefit-cost analysis. For these investments, the Company has developed a Rhode Island specific benefit-cost analysis (BCA) methodology consistent with the state's Docket 4600 guidance. Further details on the Rhode Island methodology are provided in the section that follows."

- a. Does the Company consider the term "distributed energy resources" to include storage and solar? How does the Company define the term "distributed energy resources?"
- b. If yes, what standard, test, or criteria does the Company use to distinguish which DER projects or proposals should be evaluated under the Category 3 (the societal benefit-cost analysis) versus the Rhode Island specific BCA methodology?

Response:

- a. Yes, the Company considers the term "distributed energy resources" to include storage and solar. The Company accepts the generally agreed upon description of "distributed energy resources" to include electricity-producing resources or controllable loads that are directly connected to a local distribution system.
- b. Please see the Company's response to NERI 2-3, which discusses the development of the Rhode Island-specific benefits-cost analysis (BCA) methodology based on the guidance provided by the Rhode Island Docket 4600 Benefit-Cost Framework (the Framework). The Company developed this BCA framework for Rhode Island, which is societal in nature, but which also attempts to reflect other benefits that the stakeholders in Docket 4600 deemed important. Storage and solar will be evaluated under this Rhode Island-specific BCA methodology, similar to the Company's other proposals in its Power Sector Transformation Plan. The exception is the Grid Mod investments, which will be evaluated under the best-fit/least-cost assessment, as discussed in the Company's responses to NERI 2-1 and Division 2-3 in this docket.

(This response is identical to the Company's response to NERI 19-4 in Docket No. 4770)