

December 18, 2018

BY HAND DELIVERY AND ELECTRONIC MAIL

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

**RE: Docket 4889 - The Narragansett Electric Company, d/b/a National Grid
2019 System Reliability Procurement Report
Responses to Record Requests**

Dear Ms. Massaro:

I have enclosed eleven copies of National Grid's¹ responses to the record requests issued at the Rhode Island Public Utilities Commission's (PUC) evidentiary hearing on December 10, 2018 in the above-referenced docket

At the evidentiary hearing, the PUC granted National Grid's oral motion for confidential treatment of Record Request No. 4 subject to further review of the Company's response to Record Request No. 4. Through this letter, the Company withdraws its request for confidential treatment of Record Request No. 4 because the information included in the Company's response to Record Request No. 4 is not confidential.

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

Very truly yours,



Raquel Webster

Enclosures

cc: Dockets 4888/4889 Service Lists
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

December 18, 2018
Date

Docket No. 4888 - National Grid – 2019 Energy Efficiency Plan (EEP)
Docket No. 4889 - National Grid – 2019 System Reliability Procurement Report (SRP)
Service list updated 10/18/18

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Record Request No. 1

Request:

Please provide a link to the RFPs for the Narragansett 1 and Narragansett 2 studies. Include a reference to where the deferred values are included in the RFPs.

Response:

Please see Attachment RR-1(a) and Attachment RR-1(b) for copies of the South County East NWA Request for Proposals (RFP) Narragansett 1 and Narragansett 2, respectively.¹ The deferral values are highlighted in Section 5, page 8 of each RFP.

¹ There is no available, accessible link to the South County East Narragansett NWA RFPs because the NWA RFP documents are posted on the Ariba platform. Ariba is a membership-based vendor-only web application used by the National Grid Global Procurement team to ensure bidder privacy and provide an audit trail for all bids received. Therefore, National Grid has provided copies of the South County East Narragansett NWA RFPs as attachments to Record Request No. 1.

National Grid USA Service Company, Inc.

Request for Proposals (RFP)

Non-Wires Alternative Project to Provide Solutions for the
Distribution System in Narragansett, Rhode Island
(Feeder 42F1)

ISSUED: DECEMBER 13, 2018

SUBMISSION DEADLINE: FEBRUARY 11, 2019

nationalgrid

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1. Introduction

National Grid is a gas and electric investor-owned utility serving nearly 3.3 million electric and 3.5 million gas customers through its subsidiary companies in Massachusetts, New York, and Rhode Island.

National Grid is committed to providing safe, reliable, and affordable energy to all customers throughout our service territory. As a part of providing this service, National Grid is pursuing the potential implementation of Non-Wires Alternative (NWA) solutions in Rhode Island. Such implementation aligns with principles set forth by the RI PUC Title 39 § 39-1-27.7 – System Reliability and Least-Cost Procurement.

National Grid has been pursuing Non-Wires Alternative projects across its service territories for several years.

2. Definition of NWA

Non-Wires Alternative (NWA), sometimes referred to as Non-Wires Solution (NWS), is the inclusive term for any electrical grid investment that is intended to defer or remove the need for traditional equipment upgrades or construction, or “wires investment”, to distribution and/or transmission systems.

These NWA investments are required to be cost-effective compared to the traditional wires investment and are required to meet the specified electrical grid need.

An NWA can include any action, strategy, program, or technology that meets this definition and these requirements.

Some technologies and methodologies that can be applicable as an NWA investment include demand response, solar, energy storage, combined heat and power (CHP), microgrid, conservation or energy efficiency measure, and other distributed energy resources (DERs). NWA projects can include these and other investments individually or in combination to meet the specified need in a cost-effective manner.

3. Our Goal

This RFP seeks to identify technologies and/or methodologies that, if implemented, will provide an NWA solution for a geographical area that has an electrical grid need. This area and need are identified in Section 4 – Project Overview.

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This RFP is open to all NWA approaches. This RFP is meant to assess the best-fit technology type for this NWA project.

Any proposed NWA solutions will need to defer the traditional distribution asset starting in May 2024 and operating until at least 2030. Any NWA solutions that exceed this timeline will also be considered. Please note that National Grid is seeking solutions that currently exist to solve the stated need.

Proposed technologies and methodologies should have the capability to address the electrical grid need and increase grid reliability while being cost-effective in comparison to the traditional wires investment. Proposed technologies and methodologies should also be available when needed and respond immediately when called upon for the duration of NWA solution implementation.

To assist qualified bidders this document provides an overview of the project objectives, detailed business requirements and response submission information.

As outlined in the RFP Schedule section of this document, bidders will have the opportunity to submit questions that assist in creating a response for this initiative. Please see the RFP Timeline Schedule for dates associated with RFP milestones below.

4. Project Overview

Potential for Non-Wires Alternative Project in Narragansett, RI

4.1. Background

The Town of Narragansett is mostly supplied by (4) 12.47 kV distribution feeders. Two feeders (42F1 and 17F2) are projected to be loaded above summer normal ratings by 2021 and lack useful feeder ties to reduce loading below their ratings. Either more capacity must be added or load must be reduced in the town. Both a wires and a non-wires option was developed to address these projected overloads.

- **Wires Option:** Upgrade the Wakefield 17F2 feeder and modify the 17F3 feeder. This investment increases capacity and switching flexibility to relieve the heavily loaded facilities and resolves the projected overloads.
- **Non-Wires Option:** See Sections 4.1 and 4.2 below for Non-Wires requirements.

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4.2. Technical Requirements

Problem Statement						
Description	The Company is seeking to provide load relief for the Bonnet 42F1 feeder.					
Technical Information	Substation	Feeder	Operating Voltage	Summer Normal Rating (Amps)	Overloaded By	Load Reduction Needed (kW)
	Bonnet	42F1	12.47 kV	525	2024	2070

Solution Requirements	
Technical Requirements	Maintain feeder loading below 90% of summer normal rating over a ten-year period by proposing a NWA solution that reduces loading on the feeder by 2070kW through 2030.
In Service Date	2024
Maximum MWhr need	Based on historic data 23 MWhrs total over the course of a year by 2030.
Lifetime	10 years minimum
Call Response Time	24 hours
Days of the Week needed	Any days that the day-ahead ISO-NE load forecast applied to the Project Feeders indicates that loading will exceed 90% of the Feeder Summer normal rating. This could be both weekdays and weekends.
Time of Day	Any time of day.
Number of Time Called Per Year	A minimum of 5 days based on historic data In order to account for the potential of a heat wave, the project may be called for 5 or more days in a row during peak load times.
Minimum Period between Calls	24 hours

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Any DER location downstream of the target feeder getaways (where the feeder leaves the station) should solve the loading issue, pending a full interconnection study. See feeder maps above.

NOTE: Subject to changes in forecasted needs, solution pricing, as well as any other applicable costs and benefits, National Grid is targeting to procure demand response and/or generation/storage that could supply the substation(s) load in its entirety or a large portion of it. During normal operation, any excess power could be exported to the National Grid System. Depending on such factors as economics, portfolio fit, etc.

4.3. Technical Details

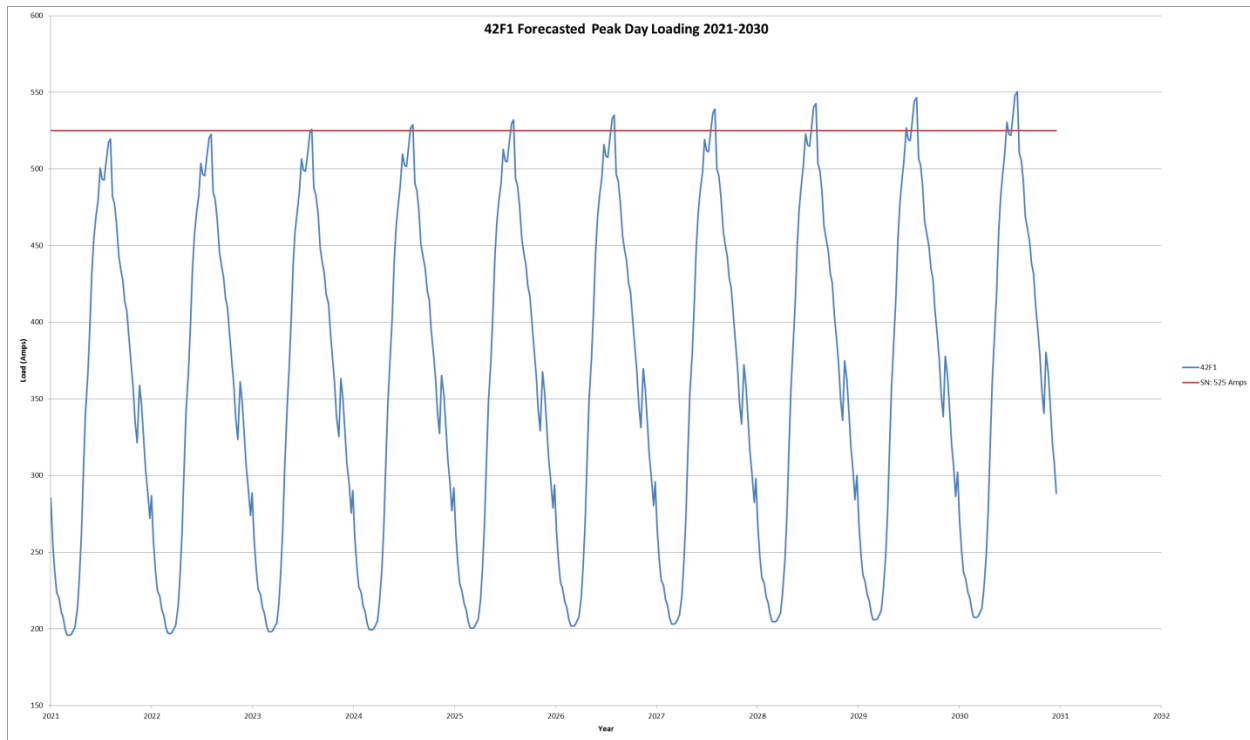
Substation	Feeder	Operating Voltage	Summer Normal Rating (Amps)	Overloaded By	Load Reduction Needed (kW)
Bonnet	42F1	12.47 kV	525	2024	2070

Substation	Feeder	Commercial Customers	Residential Customers	Total
Bonnet	42F1	184	2714	2898

4.3.1. Feeder Loading

Loading on the 42F1 and 17F2 feeders is predicted to be over 100% of their summer normal ratings and will be overloaded over the next ten years. All other facilities' loadings are within their normal equipment ratings. The rating of feeders is determined by the equipment with the most limiting element (that with the lowest normal summer rating). The load forecast utilizes a technique called weather normalization, a process that assumes future year peaks will occur given high loading condition (e.g., a June peak will occur on hot day, where the temperature in the 95th percentile of hottest years). The charts below show the projected load on the feeders using the peak day at the time of study and the loads are grown according to the forecasted analysis.

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4.4. Solution Timeline

National Grid requires that any proposed NWA solutions will need to defer the traditional distribution asset starting in May 2024.

National Grid requires that any proposed NWA solutions will need to defer the traditional distribution asset until at least 2030. Any NWA solutions that exceed this timeline will also be considered.

5. Project Cost

National Grid is seeking solutions that provide value to the customer and are cost-effective.

The NWA solution shall have a total cost not to exceed a Net Present Value (NPV) of **\$336,800**, based on traditional distribution asset deferral until at least 2030.

National Grid is open to considering shared capital costs or owning a non-generation solution or asset.

National Grid encourages vendors to participate in relevant external revenue streams to produce the most cost-effective solution.

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Pricing models to be considered shall be as follows:

- Capital Expenditure
- Annual service fee
- Energy Services Agreement for capacity delivered (i.e., dollars per kW)
- Any combination of the above

6. Instructions for Bidders

6.1. Response and Deliverables

This section describes the list of items and deliverables required from the bidder. Please provide detail in your response as to why the technology/solution your firm proposes is the best-fit for this NWA project. All items should be responded to in the context of the project listed in Section 4 – Project Overview.

Please provide a concise written response under 15 pages (excluding appendices) for ease of review. There will be sections to upload additional documents on the Ariba Platform.

Responses that do not provide the requested information below can be disqualified. Bidders must submit their responses in the following format.

- Executive Summary of Proposed Technology/Solution
- Financial Plan
 - Cost of Technology/Solution for the Specified Need
 - Cost comparison to other technologies/solutions
 - Bidder's Suggested Financial Plan
- Implementation of Technology/Solution
 - Technology/Solution Reliability, with Documentation on the Solution's Technical Reliability
 - Examples of Firm's Application of Technology/Solution
- Timeline for Technology/Solution Installation
- Bidder Qualifications (To be included as an Appendix)

Bidders must additionally provide the following as an Appendix/Attachment:

- List of Historical Project Permits
- Historical Safety Record
- List of Current Environmental Certifications
- List of Historical Project Environmental/Eco awards

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6.2. Submittal Requirements

Submittal requirements for this NWA RFP are as follows:

- Overall proposal document as detailed in Section 6.1.
- Pricing Model spreadsheet as provided in the Ariba platform.

6.3. Evaluation Criteria

This section describes the evaluation criteria that project bid responses will be screened with.

- Cost
- Scalability
- Load Reduction Capability
- Feasibility of Proposed Technology Type/Solution
- Risk of Proposed Technology Type/Solution Creating Negative System Impacts
- Environmental or “Green” Requirement

6.4. RFP Schedule

- RFP Launch: 12/7/2018
- Bidders Conference Call: 12/17/2018
- Last date to submit questions: 1/18/2019
- Responses Due: 2/11/2019

6.5. Rhode Island System Data Portal

National Grid has developed a new web-based tool called the Rhode Island System Data Portal that houses a collection of maps to help customers, contractors, and developers identify potential project sites and with project bidding and development. Each map provides the location and specific information for selected electric distribution lines and associated substations within the National Grid electric service area in Rhode Island.

The Rhode Island System Data Portal can be found at the following location:

<https://www.nationalgridus.com/Business-Partners/RI-System-Portal>

National Grid USA Service Company, Inc.

Request for Proposals (RFP)

Non-Wires Alternative Project to Provide Solutions for the
Distribution System in Narragansett, Rhode Island
(Feeder 17F2)

ISSUED: DECEMBER 13, 2018

SUBMISSION DEADLINE: FEBRUARY 11, 2019

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1. Introduction

National Grid is a gas and electric investor-owned utility serving nearly 3.3 million electric and 3.5 million gas customers through its subsidiary companies in Massachusetts, New York, and Rhode Island.

National Grid is committed to providing safe, reliable, and affordable energy to all customers throughout our service territory. As a part of providing this service, National Grid is pursuing the potential implementation of Non-Wires Alternative (NWA) solutions in Rhode Island. Such implementation aligns with principles set forth by the RI PUC Title 39 § 39-1-27.7 – System Reliability and Least-Cost Procurement.

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These NWA investments are required to be cost-effective compared to the traditional wires investment and are required to meet the specified electrical grid need.

An NWA can include any action, strategy, program, or technology that meets this definition and these requirements.

Some technologies and methodologies that can be applicable as an NWA investment include demand response, solar, energy storage, combined heat and power (CHP), microgrid, conservation or energy efficiency measure, and other distributed energy resources (DERs). NWA projects can include these and other investments individually or in combination to meet the specified need in a cost-effective manner.

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This RFP is open to all NWA approaches. This RFP is meant to assess the best-fit technology type for this NWA project.

Any proposed NWA solutions will need to defer the traditional distribution asset starting in May 2021 and operating until at least 2030. Any NWA solutions that exceed this timeline will also be considered. Please note that National Grid is seeking solutions that currently exist to solve the stated need.

Proposed technologies and methodologies should have the capability to address the electrical grid need and increase grid reliability while being cost-effective in comparison to the traditional wires investment. Proposed technologies and methodologies should also be available when needed and respond immediately when called upon for the duration of NWA solution implementation.

To assist qualified bidders this document provides an overview of the project objectives, detailed business requirements and response submission information.

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4. Project Overview

Potential for Non-Wires Alternative Project in Narragansett, RI

4.1. Background

The Town of Narragansett is mostly supplied by (4) 12.47 kV distribution feeders. Two feeders (42F1 and 17F2) are projected to be loaded above summer normal ratings by 2021 and lack useful feeder ties to reduce loading below their ratings. Either more capacity must be added or load must be reduced in the town. Both a wires and a non-wires option was developed to address these projected overloads.

- **Wires Option:** Upgrade the Wakefield 17F2 feeder and modify the 17F3 feeder. This investment increases capacity and switching flexibility to relieve the heavily loaded facilities and resolves the projected overloads.
- **Non-Wires Option:** See Sections 4.1 and 4.2 below for Non-Wires requirements.

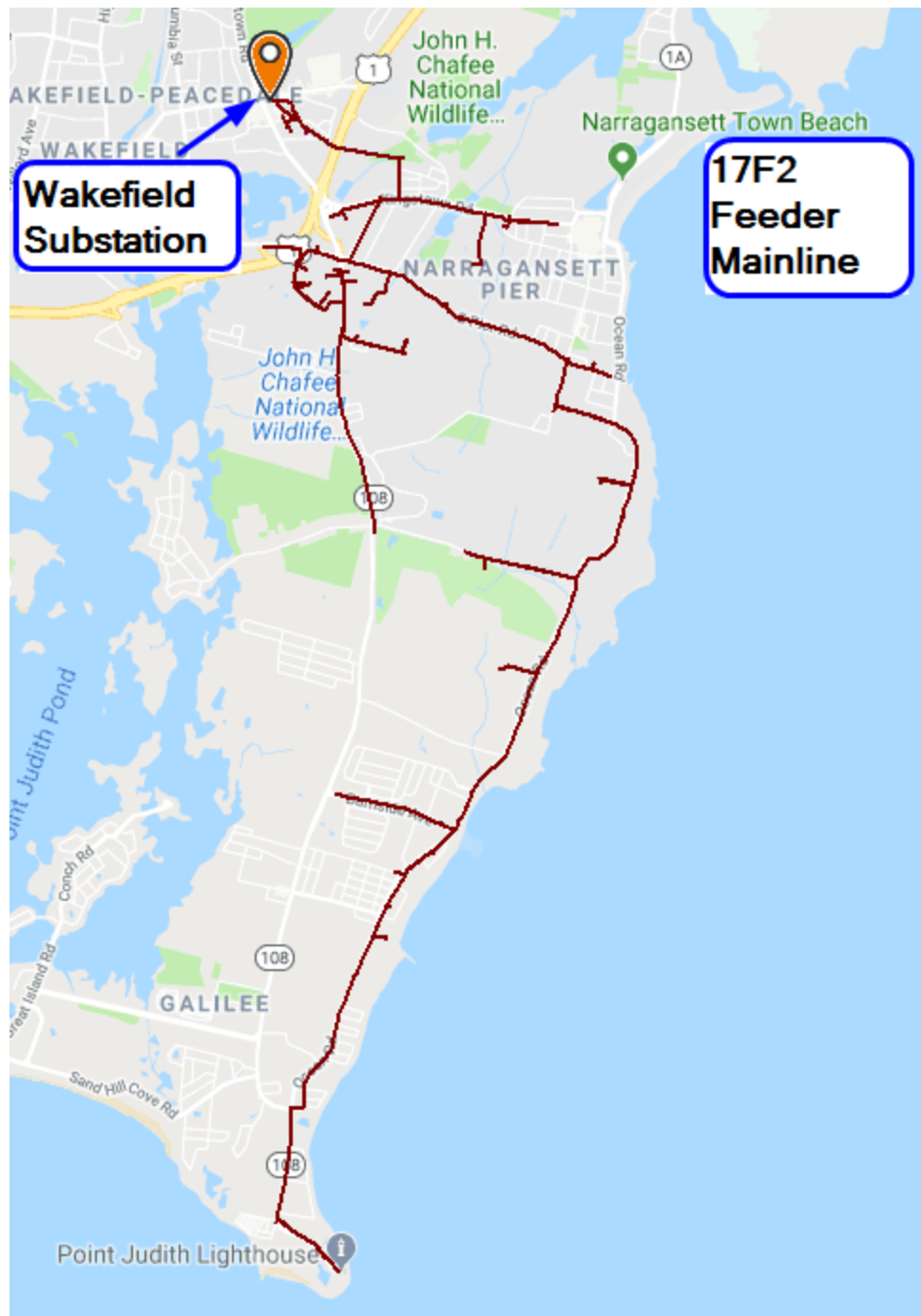
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4.2. Technical Requirements

Problem Statement						
Description	The Company is seeking to provide load relief for the Wakefield Substation 17F2 feeder.					
Technical Information	Substation	Feeder	Operating Voltage	Summer Normal Rating (Amps)	Overloaded By	Load Reduction Needed (kW)
	Wakefield	17F2	12.47 kV	510	2021	1,794

Solution Requirements	
Technical Requirements	Maintain feeder loading below 90% of summer normal rating over a ten-year period by proposing a NWA solution that reduces loading on the feeder by 1,794kW through 2030.
In Service Date	2021
Maximum MWhr need	Based on historic data 76 MWhrs total over the course of a year by 2030.
Lifetime	10 years minimum
Call Response Time	24 hours
Days of the Week needed	Any days that the day-ahead ISO-NE load forecast applied to the Project Feeders indicates that loading will exceed 90% of the Feeder Summer normal rating. This could be both weekdays and weekends.
Time of Day	Any time of day.
Number of Time Called Per Year	A minimum of 14 days based on historic data In order to account for the potential of a heat wave, the project may be called for 5 or more days in a row during peak load times.
Minimum Period between Calls	24 hours

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Any DER location downstream of the target feeder getaways (where the feeder leaves the station) should solve the loading issue, pending a full interconnection study. See feeder maps above.

NOTE: Subject to changes in forecasted needs, solution pricing, as well as any other applicable costs and benefits, National Grid is targeting to procure demand response and/or generation/storage that could supply the substation(s) load in its entirety or a large portion of it. During normal operation, any excess

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power could be exported to the National Grid System. Depending on such factors as economics, portfolio fit, etc.

4.3. Technical Details

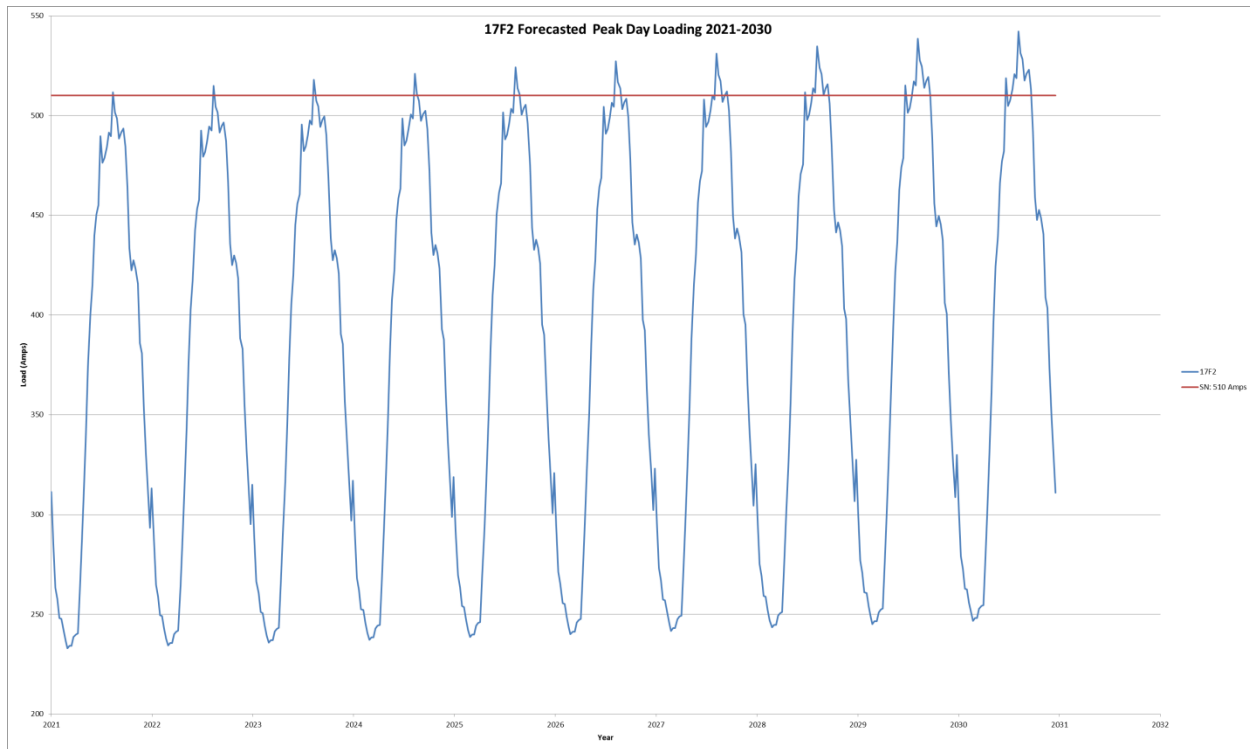
Substation	Feeder	Operating Voltage	Summer Normal Rating (Amps)	Overloaded By	Load Reduction Needed (kW)
Wakefield	17F2	12.47 kV	510	2021	1,794

Substation	Feeder	Commercial Customers	Residential Customers	Total
Wakefield	17F2	221	2679	2900

4.3.1. Feeder Loading

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4.4. Solution Timeline

National Grid requires that any proposed NWA solutions will need to defer the traditional distribution asset starting in May 2021.

National Grid requires that any proposed NWA solutions will need to defer the traditional distribution asset until at least 2030. Any NWA solutions that exceed this timeline will also be considered.

5. Project Cost

National Grid is seeking solutions that provide value to the customer and are cost-effective.

The NWA solution shall have a total cost not to exceed a Net Present Value (NPV) of **\$572,200**, based on traditional distribution asset deferral until at least 2030.

National Grid is open to considering shared capital costs or owning a non-generation solution or asset.

National Grid encourages vendors to participate in relevant external revenue streams to produce the most cost-effective solution.

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Pricing models to be considered shall be as follows:

- Capital Expenditure
- Annual service fee
- Energy Services Agreement for capacity delivered (i.e., dollars per kW)
- Any combination of the above

6. Instructions for Bidders

6.1. Response and Deliverables

This section describes the list of items and deliverables required from the bidder. Please provide detail in your response as to why the technology/solution your firm proposes is the best-fit for this NWA project. All items should be responded to in the context of the project listed in Section 4 – Project Overview.

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 - Technology/Solution Reliability, with Documentation on the Solution's Technical Reliability
 - Examples of Firm's Application of Technology/Solution
- Timeline for Technology/Solution Installation
- Bidder Qualifications (To be included as an Appendix)

Bidders must additionally provide the following as an Appendix/Attachment:

- List of Historical Project Permits
- Historical Safety Record
- List of Current Environmental Certifications
- List of Historical Project Environmental/Eco awards

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6.2. Submittal Requirements

Submittal requirements for this NWA RFP are as follows:

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6.3. Evaluation Criteria

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- Scalability
- Load Reduction Capability
- Feasibility of Proposed Technology Type/Solution
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- Environmental or “Green” Requirement

6.4. RFP Schedule

- RFP Launch: 12/7/2018
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- Last date to submit questions: 1/18/2019
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6.5. Rhode Island System Data Portal

National Grid has developed a new web-based tool called the Rhode Island System Data Portal that houses a collection of maps to help customers, contractors, and developers identify potential project sites and with project bidding and development. Each map provides the location and specific information for selected electric distribution lines and associated substations within the National Grid electric service area in Rhode Island.

The Rhode Island System Data Portal can be found at the following location:

<https://www.nationalgridus.com/Business-Partners/RI-System-Portal>

Record Request No. 2

Request:

What is the status of the impact study in Exeter?

Response:

The impact study in Exeter is near completion and is currently undergoing internal review. The Company expects to issue the impact study to the customer before December 21, 2018.

Record Request No. 3

Request:

- (a) How many full-time equivalent employees are on the project team for the South County East study and what is the basis for coming up with the value for consulting work?
- (b) Include an estimate of the number of hours for FTEs that will be charged for the South County East study work.

Response:

- (a) There are five (5) employees on the project team for the South County East NWA Projects. Their time (detailed in subpart (b) below) translates to 0.15 FTEs. The basis for coming up with the value of the possible consultant work is based on a similar amount of time needed for external support in the event that internal employees do not have the expertise needed for a full, thorough evaluation.
- (b) The estimated number of hours for employees that will charge their time for the RFP evaluation work of all three South County East NWA Projects is 300 hours (20 hours per employee per project).

Record Request No. 4

Request:

Provide the evaluation criteria for the bid responses to the NWA RFP.

Response:

The evaluation criteria for the bid responses to the South County East NWA RFPs are:

- Cost
- Scalability
- Load Reduction Capability
- Timeline to go-live for in-service date
- Environmental or "Green" Requirement
- Feasibility of Proposed Technology Type/Solution
- Risk of Proposed Technology Type/Solution Creating Negative System Impacts

Record Request No. 5

Request:

Has National Grid ever charged vendors for submitting bids? If so, when? Note that the Commission is seeking examples of when National Grid has charged vendors for submitting bids – not the specific RFPs.

Response:

National Grid has never charged vendors for submitting project bids as part of the Request for Proposals (RFP) process.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4889
In Re: 2019 System Reliability Procurement Report
Responses to Record Requests
Issued at the Commission's Evidentiary Hearing
On December 10, 2018

Record Request No. 6

Request:

If the South County East project does not go forward, when would the wires solution need to commence and go into service?

Response:

If the South County East non-wires alternative (NWA) projects do not go forward, the wires solutions would need to commence and go into service as follows:

Town	Substations	Circuits	Issues	Commence Mo/Yr (FY)	In-Service Mo/Yr (FY)
Narragansett	Wakefield	17F2	Normal and contingency loading	4/2020 (FY21)	6/2022 (FY23)
Narragansett	Bonnet	42F1	Normal loading	4/2021 (FY22)	6/2024 (FY25)
South Kingstown	Peacedale, Kenyon	59F3, 68F2	Normal loading	4/2020 (FY21)	6/2022 (FY23)

The start and in-service dates above are based on the original planning analysis. These circuits have not been reanalyzed based on the latest summer loading and forecast, which should be completed by February 2019. The circuits above were reviewed for existing and in-queue distributed generation and all circuits above have limited facilities.

National Grid will perform an internal review of processes for NWA projects and the SRP Report to determine how to better coordinate and align them with other projects and programs. This review will occur in the first half of the 2019 calendar year.

Record Request No. 7

Request:

Was an attrition rate applied to the kilowatts of peak load reduction achieved by the Customer Facing Enhancement Study?

Response:

An attrition rate was not specifically applied to the kilowatts of peak load reduction achieved by the Customer Facing Enhancement Study, but some level of attrition is factored into the device effectiveness assumption. For example, the Company's device effectiveness assumption of 0.55 kW per connected thermostat includes customers who opt-out or are otherwise unable or unwilling to participate each year. A Navigant report that summarizes the 2017 results of the Company's Rhode Island Residential ConnectedSolutions Program¹ shows the participating device effectiveness for ecobee thermostats (i.e., devices that actually participated in demand response events) was 0.69 kW/thermostat on average, which implies an average annual participation rate of 80% (i.e., 20% of customers opt-out or are otherwise unable or unwilling to participate). Although the Navigant report does not include specific information related to how many of the 2016 ConnectedSolutions participants continued to participate in 2017, the report does state that "[t]he overwhelming majority of 2016 participants continued to participate in the program in 2017."

However, if the Company assumes an additional annual attrition rate of 5% on top of the 80% participation rate already assumed, the Enhancement Study Pilot and Program benefit cost ratio (BCR) would be reduced from 2.91 to 2.50. One of the main goals of the Study is to increase customer retention, so the Company believes that an additional annual attrition rate assumption of 5% would represent a conservative case.

¹ Navigant Consulting, Inc., "2017 Residential Wi-Fi Thermostat DR Evaluation", Prepared for National Grid, Reference No.: 194701, March 30, 2018