

March 6, 2014

BY HAND DELIVERY & ELECTRONIC MAIL

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

RE: Docket 4473 - National Grid's Proposed FY 2015 Electric Infrastructure, Safety, and Reliability Plan
Responses to PUC Data Requests – Set 2 – Additional Attachment for PUC 2-8

Dear Ms. Massaro:

On February 25, 2014, National Grid¹ filed responses to the Public Utilities Commission's ("PUC") Second Set of Data Requests in the above-referenced matter. In PUC Data Request 2-8, the PUC requested, among other things, a copy of the Company's Request for Proposal ("RFP") for the Volt/Var Management Project. The Company inadvertently omitted the RFP from the responses it filed on February 25. Therefore, I have enclosed ten (10) copies of Attachment PUC 2-8-2 - the RFP that is responsive to PUC Data Request 2-8.

In its February 25 responses, the Company requested confidential treatment for the Statement of Work it included as Attachment 2-8. The Company is not requesting confidential treatment for the enclosed RFP.

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

Very truly yours,



Raquel J. Webster

Enclosures

cc: Docket 4473 Service List
Leo Wold, Esq.
Steve Scialabba, Division
Greg Booth, Division

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/or any materials accompanying this certificate were electronically transmitted to the individuals listed below.

Copies of this filing will be hand delivered to the RI Public Utilities Commission and to the RI Division of Public Utilities and Carriers.

March 6, 2014

Joanne M. Scanlon

Docket No. 4473 National Grid's FY 2015 Electric Infrastructure, Safety and Reliability Plan - Service List as of 01/07/14

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THE NARRAGANSETT ELECTRIC COMPANY VOLT VAR OPTIMIZATION DEMONSTRATION PROJECT

REQUEST FOR PROPOSAL SCOPE OF WORK

May 27, 2013

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1.0 INTRODUCTION

The Narragansett Electric Company, d/b/a National Grid ("National Grid" or the "Company") is pursuing a Volt Var Optimization (VVO) Demonstration Project in the state of Rhode Island. The goal of this RFP will be to select a vendor to supply the Company with centralized control functionality designed to optimize the operation of existing/new reactive resources and voltage regulation devices on seven distribution feeders selected for the demonstration project.

The benefits of distribution feeder reactive support and voltage regulation are well known and individual capacitor installation and voltage regulators can be justified for reasons of voltage improvements and/or capacity release. However, National Grid is in the process embarking on Volt/Var control systems and strategies using centralized control algorithms. The Company's goal is to use such a project for the following reasons.

- Determine the potential operational benefits from these systems as stated by the Vendors that would improve service to customers;
- Understand potential synergies with other rapidly developing uses of advanced technology on power distribution systems and/or areas where these technologies may work in opposition to one another;
- Understand how application of these systems could be integrated with existing guidelines to meet current objectives for Volt/Var infrastructure;
- Guide system planners on potential benefits from deployment including clear direction on justification of infrastructure development costs;
- Understand system performance when distribution system is out of normal configuration.

It is expected that the Vendor will go into detail on their expected results. EPRI report 'Design and Assessment of Volt-Var Optimization Systems', 1022004, will be used as a guide when reviewing each proposal and the Vendor should make every effort in referencing this report.

National Grid has identified two separate areas in the state of Rhode Island to demonstrate this advancing technology.

2.0 PROJECT OVERVIEW

The Vendor is required to provide a solution for Volt Var Optimization.

The Vendor will be required to provide *four major services* under this RFP related to their VVO solutions:

1. *Overall VVO Solution Project Management* – The management of your VVO solution including, to be confirmed in the vendor's response, database management; communications troubleshooting; software system installation; integration of data with National Grid systems; coordination with Company personnel; project management and tracking reports indicating the progress of the project. The Company anticipates that there will be associated infrastructure development (ex. capacitor installation, system reconfiguration, new circuit mainline, etc.) associated with this project that will require close coordination with the effort to implement a VVO solution. Overall program management will be the responsibility of Company resources. As such, vendor project management activities/responsibilities related to the VVO solution will be considered subordinate to those of the overall Project Manager.

2. *Engineering Consulting Services* – The Vendor will work with the Company's Advanced Engineering department and provide in depth engineering expertise on VVO. This is primarily considered to include engineering consulting services for the development of precise locations for feeder monitoring devices, settings, communications, and Company training (installation, operation

and maintenance). In response to this RFP, the vendor should provide details on additional engineering consulting services it would provide and deems essential to implementing their VVO solution.

3. *Equipment Solutions* – Please detail specific equipment and quantities required to implement your VVO solution on the selected demonstration project feeders. It is expected the Vendor will support National Grid personnel during the installation of all feeder monitors, metering and communication devices that are required for VVO. Field installation will also include support while integrating the VVO project into National Grid's EMS.

4. *Measure and Verification (M&V)* – The Vendor shall provide measurement and verification services to support the assessment of the energy savings and other benefits realized by implementing the VVO system. The Vendor will work with National Grid on establishing the criteria on what analytical data will be needed throughout this project.

Vendors are required to respond to all four major services (Project Management, Engineering Consulting Services, Equipment Solutions, and M&V) in their response to this Scope of Work. In addition, your written response to this RFP should describe how your solution addresses all aspects of our requirements. Your response should align with the Scope of Work (SOW, section 3) and describe how your proposed solution addresses the requirements in that section.

If a Vendor does not perform all of the four services listed above, they should partner or sub-contract for all these services and describe the arrangement, roles and responsibilities in their response to the RFP.

3.0 SCOPE OF WORK

National Grid has selected to perform this project at two separate geographic locations, Putnam Pike substation in northern RI and Tower Hill in southern RI. There are a total of seven 12.47kV distribution feeders, four (Tower Hill sub) receive supply voltage are regulation via a substation transformer equipped with a Load Tap Changer (LTC) and three (Putnam Pike sub) are equipped with individual phase feeder substation voltage regulators. Both of these distribution substations are supplied from 115kV transmission lines. Substation one-lines are provided as an attachment to this RFP. During an initial conceptual project evaluation, it has been identified that substation work needs to be conducted at Putnam Pike to gain supervisory control of the single phase regulators. It shall be assumed by the Vendor that this work will be completed in conjunction with the engineering of the VVO project.

In addition to the identified substation work, distribution line infrastructure development is required to address thermal, voltage and/or reactive performance issues that have been identified. In its evaluation of existing system performance the Company has modeled all seven 12.47kV distribution feeders using CYME distribution feeder analysis software. As with the substation work, it shall be assumed by the Vendor that this work will be done in conjunction with the engineering associated with VVO project. All distribution feeders have existing three phase capacitors installed at various locations. Three phase line regulators are also present on several of the feeders. Distribution characteristics are provided with this RFP as an attachment, along with proposed distribution work.

National Grid has also conducted an initial communications study for the two VVO demonstration locations and concluded that it will use two separate technologies. In northern RI, the Company will use a WiMAX radio system and, in southern RI, the Company will utilize Verizon 3G.

The Volt Var Optimization Demonstration Services provided by the Vendor shall include, but not be limited to the following:

3.1 Company Background, Personnel

This should include but not limited to the following; Vendor's company name, headquarters location, and company history. In addition to headquarters location, provide any field offices that exist and their locations. Please provide names of the projected team members that would be working with National Grid, with a brief description of their experience. If a Vendor is sub-contracting any function of the project out, provide the same information for the company who will be supplying that work.

3.2 Volt Var Experience

Provide relevant summary level experience of at least three VVO projects recently completed by your company. Information of most interest is; Client name/location with a contact (name, title, phone number and email), actual cost in relation to budget as a percentage, comments on project implementation schedule (proposed vs. actual), and lessons learned. In addition, provide details on project scope (number of substations, feeders, controlled equipment). Finally, any details that quantify the success of these past VVO projects would be beneficial.

3.3 VVO Approach and Control

3.3.1 VVO Approach

Vendor to describe their approach to Volt Var Optimization. When describing your technique it should be classified (with any explanation the vendor feels is essential) as one of the following categories: Traditional Standalone Controller, Rule Based, Model Based, and Heuristic.

1. Describe the advantages of your approach.
2. Describe the pros and cons of your approach's category and how it differs from the other categories.
3. Describe any unique qualities of your solution that are not covered in the first two questions.

3.3.2 Control

1. What, if any, capacitor bank parameter does your system integrate into the algorithm in relation to temperature, voltage override, etc.
2. Describe how your system will interact with capacitors, voltage regulators (line and substation, and LTC's).
3. List what devices (capacitor controls, regulator controls, etc.) your solution has integrated. This should include Manufacturer and Model.
4. Will your system limit, reduce, or increase equipment operations? Provide past analysis showing results.
5. Describe how your system operates during abnormal circuit conditions that are the result of either manual or automatic reconfiguration.
6. How will this system interact with National Grid's ABB EMS?

3.3.3 Monitoring

1. What type of voltage and current sensing does your company use to monitor distribution feeders?
2. What is the accuracy of this equipment?

3.4 Cost *This should be provided in a separate document *

Provide an itemized cost breakdown of all work associated with project. This breakdown should include but not be limited to engineering support services, project management, monitoring, measurement and verification, O&M, training, post project annual expenses, and material.

3.5 Project Schedule

Provide a project schedule showing all anticipated tasks associated with this VVO demonstration project. For purposes of developing this schedule, assume an overall implementation schedule of 18 months starting in August 2013.

3.6 Distributed Generation (DG)

The Vendor should indicate how their VVO solution has handled/interacted with distributed generation (DG) resources. This should include what type of generation, size, and operating voltage as well as the operating conditions of the distribution system (on peak, off peak, etc.). Provide any lessons learned associated with DG.

3.7 Measurement and Verification

Describe the methodology used to establish a baseline and to measure/estimate energy savings realized by implementation of the vendor's VVO solution. Please provide examples of recorded results along with the criteria used in obtaining these results.

3.8 Communications

National Grid is using two separate communication technologies for this VVO project, WiMAX and Verizon 3G. Describe how your solution interacts with these communication technologies. Provide any experiences that you have with these technologies.

3.9 Safety and Other Requirements

Vendor should adhere to National Grid safety standards and will be provided documentation as to these standards.

4.0 ATTACHMENTS

4.1 Holiday Schedule

New Year's Day	January 1
Martin Luther King's Birthday	January 21
President's Day	February 18
Memorial Day	May 27
Independence Day	July 4
Labor Day	September 2
Veteran's Day	November 11
Thanksgiving Day	November 28
Day after Thanksgiving	November 29
Christmas	December 25

4.2 RFP Schedule

Dates	Action
May 27	Release RFP
May 31	Vendor Acknowledges Intent to Bid
June 3 – June 14	Vendor Question and Answers Period
June 6 – June 7	Vendors 1 Hour Conference Call Q&A
June 21	RFP Closed - Vendor Submits Documents via Ariba
June 24 - July 8	Review Vendor Proposals
June 24 - July 8	Follow up Questions to Vendor (if required)
July 15- July 19	Final Selection of Vendor

4.3 Substation One-line

Document attachment found in Ariba

NATIONAL GRID VOLT VAR OPTIMIZATION DEMONSTRATION PROJECT

4.4 Feeder characteristics, One-lines

Document attachment found in Ariba

4.5 Proposed distribution feeder work

Document attachment found in Ariba

4.6 Technical Response

Vendors are required to submit a technical response addressing all aspects of this RFP. This response should be submitted through Ariba.

4.7 RFP Bid Price Sheets

Vendors are required to submit pricing separately from the technical response to this RFP. Vendor should use the VVO Pricing sheet found in Ariba. If the Vendor has exceptions to the pricing structure provided, it should be noted in the cost response to the RFP. If the Vendor has an alternative pricing which would be more favorable than the attached, it should be submitted in a similar format which would allow National Grid to evaluate against the other cost responses received.