

December 4, 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
Joint Pre-Filed Direct Testimony**

Dear Ms. Massaro:

On behalf of National Grid, I have enclosed eleven copies of the Joint Pre-filed Direct Testimony of Matthew Chase, Ryan Constable, Stephen Lasher, and Timothy Roughan in the above-referenced docket.

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

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 4, 2018
Date

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Docket No. 4889 - National Grid – 2019 System Reliability Procurement Report (SRP)
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**THE NARRAGANSETT ELECTRIC COMPANY
d/b/a NATIONAL GRID
RIPUC DOCKET NO. 4889
RE: 2019 SYSTEM RELIABILITY PROCUREMENT REPORT
WITNESSES: MATTHEW CHASE, RYAN CONSTABLE,
STEPHEN LASHER, AND TIMOTHY ROUGHAN
DECEMBER 4, 2018**

JOINT PRE-FILED DIRECT TESTIMONY

OF

MATTHEW CHASE, RYAN CONSTABLE,

STEPHEN LASHER, AND TIMOTHY ROUGHAN

THE NARRAGANSETT ELECTRIC COMPANY
d/b/a NATIONAL GRID
RIPUC DOCKET NO. 4889
RE: 2019 SYSTEM RELIABILITY PROCUREMENT REPORT
WITNESSES: MATTHEW CHASE, RYAN CONSTABLE,
STEPHEN LASHER, AND TIMOTHY ROUGHAN
DECEMBER 4, 2018

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1 **I. INTRODUCTION**

2 **Q. Mr. Chase, please state your name and business address.**

3 A. My name is Matthew Chase. My business address is 477 Dexter Street, Providence,
4 Rhode Island 02907.

5

6 **Q. Mr. Chase, by whom are you employed and in what position?**

7 A. I am employed by National Grid USA Service Company, Inc. (Service Company) as
8 Engineer, Customer Reliability Analytics and NWA Solutions. I am responsible for the
9 System Reliability Procurement (SRP) regulatory filing of The Narragansett Electric
10 Company d/b/a National Grid (the Company or National Grid). I am also responsible for
11 Non-Wires Alternative (NWA) projects in Rhode Island and Massachusetts.

12

13 **Q. Mr. Chase, please describe your educational background and professional experience.**

14 A. In 2014, I graduated from Worcester Polytechnic Institute with a Bachelor of Science Degree
15 in Electrical and Computer Engineering. After graduating from Worcester Polytechnic
16 Institute, I attended graduate school. In 2015, I was employed by Zachry Nuclear
17 Engineering as an Electrical Engineer I. From January 2015 to April 2016, I performed
18 various work involving design, construction, and implementation of electrical and nuclear
19 systems. I then joined National Grid USA in May 2016 as an Associate Engineer in
20 Advanced Grid Engineering of the Network Solutions group. In June 2017, I was promoted
21 to Engineer into the Non-Wires Alternative Offerings group in New Energy Solutions at

1 National Grid. From June 2017 to December 2017, I was a project engineer for NWA
2 projects in Rhode Island and Massachusetts. In January 2018, I began my current position,
3 which includes being lead program manager of the SRP Report.
4

5 **Q. Have you previously testified before the Rhode Island Public Utilities Commission**
6 **(PUC)?**

7 A. No, I have not.
8

9 **Q. Mr. Constable, please state your name and business address.**

10 A. My name is Ryan M. Constable. My business address is 40 Sylvan Road, Waltham,
11 Massachusetts 02451.
12

13 **Q. Mr. Constable, by whom are you employed and in what position?**

14 A. I am employed by the Service Company as Consulting Engineer in Grid Modernization
15 Solutions.
16

17 **Q. Mr. Constable, please describe your educational background and professional**
18 **experience.**

19 A. I received a Bachelor of Science in Electric Power Engineering from Rensselaer Polytechnic
20 Institute in Troy, New York in 1993 and a Certificate of Industrial Management and Power
21 Engineering from Worcester Polytechnic Institute in Worcester, Massachusetts in 2000. I am

1 a Registered Professional Engineer in Massachusetts, number 41632. I worked at National
2 Grid from 1994 to 2000 and 2010 to the present. I have held various positions of increasing
3 responsibility in the area of Distribution Planning. From 1994 to 1998, I was a Project
4 Engineer responsible for the design and maintenance of the electric infrastructure serving
5 commercial and residential customers in southeastern Massachusetts. During the period 1998
6 to 2000, I was a Planning Engineer conducting long-range electric system studies. From 2010
7 to 2011, I worked as a Principal Engineer in the Utility of the Future department developing
8 the Worcester Smart Energy Solution Pilot. In 2011, I became the Manager of Distribution
9 Planning and Asset Management – New England, directing a ten-person team to conduct
10 annual planning activities, perform long-range planning studies, and develop regulatory
11 filings. In 2017, I became the Acting Director of the department. In the period 2000 to 2010,
12 I worked for three independent transmission development companies, TransEnergie U.S.,
13 Cross Sound Cable Company, and Brookfield Renewable Power.

14
15 **Q. Have you previously testified before the PUC?**

16 A. Yes.

17
18 **Q. Mr. Lasher, please state your name and business address.**

19 A. My name is Stephen Lasher. My business address is 477 Dexter Street, Providence,
20 Rhode Island 02907.

21

1 **Q. Mr. Lasher, by whom are you employed and in what position?**

2 A. I am employed by the Service Company as a Principal Engineer in the Grid
3 Modernization Solutions Group under the US Electric Business Unit. The Grid
4 Modernization Solutions Group is responsible for supporting the Company's transition to
5 the Modern Grid through identification and evaluation of potential next opportunities,
6 technologies, or processes to provide measurable value. Such tasks will be done while
7 remaining focused on the Company's 2030 Vision and fundamental goals to provide a
8 safe, efficient, reliable, and sustainable system across all of National Grid USA.

9

10 **Q. Mr. Lasher, please describe your educational background and professional experience.**

11 A. I graduated from the University of Cincinnati with a Bachelor of Science Degree in Civil
12 and Environmental Engineering in 1997, and from the Massachusetts Institute of
13 Technology with a Master of Science Degree in Mechanical Engineering in 1999. From
14 1999 to 2010, I was employed by Arthur D. Little Inc. and later by TIAX LLC, both
15 Cambridge-based consulting and technology development companies, as a Consultant,
16 Program Manager, Group Manager, and Business Development Leader. My
17 responsibilities included the following: managing and leading technology assessment,
18 research, and development programs for emerging energy technologies; managing and
19 leading the Clean Energy and Fuels Group, which included a dozen engineers and
20 scientists; leading technical marketing in the transportation, building technology,
21 distributed generation, and portable power sectors; and acting as a government liaison and

1 advocated for clean energy policy and funding support with the U.S. Department of
2 Energy, U.S. Department of Defense, state agencies, and with members of Congress. From
3 2010 to 2012, I was employed by Satcon Technology Corporation, a Boston-based solar
4 inverter company, as their Director of Business Development for R&D and later as their
5 Director of Product Management for Central Inverters. My responsibilities included the
6 following: developing research, developing and demonstrating projects with government
7 and commercial partners including solar energy, smart grid, energy storage, electric
8 vehicle, and microgrid projects; managing the product lifecycle for existing central inverter
9 products; and leading new inverter product strategy and roadmap development. From 2012
10 to 2014, I was self-employed as a consultant to various small businesses in Massachusetts
11 and Rhode Island, where I provided technical and market insights for clients, drove new
12 product development programs, and helped capture new business and outside funding
13 opportunities for the development and commercialization of emerging energy technologies.
14 From 2014 to 2015, I was employed by eNow Inc., a Warwick-based manufacturer of solar
15 power solutions for the transportation sector, as their Vice President of Business
16 Development. My responsibilities included the following: managing technical, regulatory,
17 and marketing aspects of all products and services; growing partner relationships;
18 developing strategic plans; and leading new product development programs. From 2015 to
19 2016, I was employed by Sensata Technologies, Inc., an Attleboro-based supplier of
20 sensors and controls for a broad range of markets and applications, as their North
21 American Market Manager for Performance Sensors. My responsibilities included: leading

1 US team to accelerate business growth; developing strategic plans and product road maps;
2 and leading proposal and business case review for executive leadership approval. In April
3 2016, I joined National Grid USA as a Principal Engineer in the Advanced Grid
4 Engineering Group under the New Energy Solutions Business Unit. My responsibilities
5 have included the following: technical lead for Niagara Mohawk Power Corporation's
6 (NMPC) Reforming the Energy Vision (REV) Distributed System Platform (DSP)
7 Demonstration Project in Buffalo, New York; technical lead for National Grid's Non-
8 Wires Alternative (NWA) project deferral calculations; co-author of National Grid's Grid
9 Modernization Strategy Roadmap; business lead for the Narragansett Electric Company's
10 (NEC) Power Sector Transformation (PST) Grid Modernization Plan.

11
12 **Q. Have you previously testified before the PUC?**

13 A. No, I have not.

14
15 **Q. Mr. Roughan, please state your name and business address.**

16 A. My name is Timothy R. Roughan. My business address is 40 Sylvan Road, Waltham,
17 MA 02451.

18
19 **Q. Mr. Roughan, by whom are you employed and in what position?**

20 A. I am employed by the Service Company as the Director of Regulatory Strategy for Rhode
21 Island.

1 **Q. Mr. Roughan, please describe your educational background and professional**
2 **experience.**

3 A. I have a BSME from WPI and have worked at National Grid USA and its predecessor
4 companies since 1982 in a variety of roles. Recently, I have worked extensively on matters
5 relating to distributed generation and non-wires alternatives.

6
7 **Q. Have you previously testified before the PUC?**

8 A. Yes, I have testified before the PUC in several dockets, the most recent being
9 Docket 4770 and Docket 4780. I have also testified at previous SRP hearings since 2009.

10

11 **II. PURPOSE OF JOINT TESTIMONY**

12 **Q. What is the purpose of this joint testimony?**

13 A. The purpose of this joint testimony is to present the 2019 SRP Report, which the
14 Company developed as part of an iterative process with the Parties.¹² As is described in
15 the Report, implementation of the 2019 SRP Report will allow the Company to meet its
16 obligation to provide safe, reliable, and efficient electric service for customers at
17 reasonable cost.

¹ The 2019 SRP Report presented in this filing is the eighth annual plan submitted to the PUC pursuant to the provisions of R.I. Gen. Laws § 39-1-27.7.7.

² The Parties include the Rhode Island Division of Public Utilities and Carriers (Division), the Energy Efficiency and Resource Management Council (EERMC), Acadia Center, Green Energy Consumers Alliance (formerly People's Power & Light), The Energy Council of Rhode Island, the Rhode Island Office of Energy Resources, and National Grid.

1 **III. 2019 SYSTEM RELIABILITY PROCUREMENT REPORT**

2 **Q. How did the Company prepare the 2019 SRP Report for review by the PUC?**

3 A. The Company prepared the first draft of the 2019 SRP Report, which it submitted to the
4 Parties on August 13, 2018 for review. In preparing the 2019 SRP Report, the Company
5 had meetings and discussions with members of the Rhode Island Energy Efficiency
6 Collaborative (Collaborative).³ Meetings and discussion with Collaborative members
7 continued through three draft versions up until October 4, 2018 when the Energy
8 Efficiency and Resource Management Council (EERMC) voted on the 2019 SRP Report.
9 In this filing, the Company has proposed a funding request for CY 2019 totaling
10 \$329,800. This proposed SRP funding request includes a range of project work that is
11 required to maintain safe and reliable service and expand the Company's capability to do
12 so. The project work that is included in the 2019 SRP Report is specifically designed to
13 meet system performance objectives and/or customer service requirements, which the
14 Company must address as part of its public service obligation. In the Report, the
15 Company has provided a detailed explanation of the categories of investment it plans to
16 undertake, the factors motivating the nature and amount of investment to be completed,
17 and the specific projects that will be undertaken in Rhode Island.

18
³ Members of the Collaborative presently include the Company, the Division, the OER, TEC-RI, Green Energy Consumers Alliance, Acadia Center, several EERMC members, and representatives from the EERMC's Consulting Team.

1 **Q. How does the 2019 SRP Report align with the Docket 4600 goals for the electric**
2 **distribution system?**

3 A. In Table 1 of Section 5 of the 2019 SRP Report, the Company has detailed how the
4 Report either advances, detracts, or remains neutral on achieving Docket 4600 goals for
5 the electric distribution system.

6
7 **Q. How does the 2019 SRP Report coordinate with Power Sector Transformation**
8 **(PST)?**

9 A. The 2019 SRP Report coordinates with the following PST Phase One Report goals: (1)
10 Control the long-term costs of the electric system; (2) give customers more energy
11 choices and information; and (3) build a flexible grid to integrate more clean energy
12 generation. The 2019 SRP Report coordinates with these goals through NWA
13 opportunities. SRP has the potential to control the long-term costs of the electric system
14 by proactively searching for potential NWA opportunities to be implemented on the
15 electric distribution grid instead of the traditional wires option at lower costs to
16 customers. NWA opportunities are natively cost-effective, and several different types of
17 environmentally-responsible technologies and solution may be implemented as an NWA
18 solution. SRP provides customers with more energy choices and information through
19 programs such as NWA participation opportunities. SRP is designed to build a flexible
20 grid to integrate more clean energy generation through NWA opportunities, initiation of

1 the Rhode Island System Data Portal, and engagement with third-party solution
2 providers.

3
4 The 2019 SRP Report also coordinates with the following PST Phase One Report
5 recommendations: (1) Synchronize filings related to Distributed System Planning; (2)
6 Improve forecasting; (3) Establish customer and third-party data access plans; and (4)
7 Compensate locational value. SRP has synchronized with Distribution System Planning
8 and the ISR filing to a certain extent, in that potential NWA opportunities are screened
9 for as part of DSP and that SRP takes into account the annual electric peak load
10 forecasting. The 2019 SRP Report currently includes information on forecasted electric
11 load growth for the main purpose of identifying and coordinating with potential NWA
12 opportunities. SRP establishes customer and third-party data access through the Rhode
13 Island System Data Portal. The 2019 SRP Report presents the Company's research and
14 findings on locational incentive analysis for Rhode Island and details the Company's
15 commitment to stakeholder engagement and discussion regarding locational incentives in
16 Rhode Island.

17
18 Please see Section 4 of the 2019 SRP Report for more detail regarding SRP's
19 coordination with PST.

1 **Q. What is the Company's coordination between SRP and other required Company**
2 **filings in Rhode Island?**

3 A. The Company is working to bring the SRP Report in line with the other state filings the
4 Company submits to ensure a cohesive and comprehensive plan framework and
5 implementation. The Company has coordinated with the Energy Efficiency (EE) Plan to
6 ensure that efforts are not being duplicated. The Company continues further coordination
7 between SRP and other required Company filings such as the Infrastructure, Safety, and
8 Reliability Plan (ISR Plan), and the Renewable Energy Growth (RE Growth) Program.

9
10 In addition, the Company recognizes the desire to more fully implement the entire NWA
11 and locational incentive effort with the work proposed in a particular year's ISR Plan
12 filing. To assist with this effort, the Company will host quarterly NWA/Locational
13 Incentive meetings to provide further transparency to the Rhode Island Division of Public
14 Utilities and Carriers (Division) and the Rhode Island Office of Energy Resources
15 (OER).

16
17 **Q. Please explain how the 2019 SRP Report is structured.**

18 A. The 2019 SRP Report, includes the System Reliability Procurement funding request for
19 CY 2019. The 2019 SRP Report itemizes the recommended work activities by
20 project/program and provides budgets for O&M expenses for the respective SRP projects
21 and programs. After the end of the calendar year, the Company trues up the SRP

1 Report's projected expense levels used for establishing the revenue requirement to actual
2 or allowed investment and expenditures on a cumulative basis and reconciles the revenue
3 requirement associated with the actual investment and expenditures to the revenue billed
4 from the rate adjustments implemented at the beginning of each calendar year.
5

6 **Q. Please describe the categories of work activities that are included in the 2019 SRP**
7 **Report to address service reliability.**

8 A. The Company's overall objective in preparing the 2019 SRP Report is to arrive at a
9 budget plan that is the optimal balance in terms of making the investments necessary to
10 improve the performance of the electrical distribution system, thereby, resulting in
11 maintaining the overall reliability of the system, while also ensuring a cost-effective use
12 of available resources. Therefore, the 2019 SRP Report includes the investment needed
13 to: meet state and federal regulatory requirements applicable to the electric system;
14 address load growth/migration; maintain reliable service; sustain asset viability through
15 targeted investments driven primarily by condition; and engage in efforts that support this
16 work.
17

18 **Q. Please summarize the categories of System Reliability Procurement spending**
19 **covered by the 2019 SRP Report.**

20 A. The proposed 2019 SRP Report addresses the following budget categories for CY 2019,
21 or the twelve-month calendar year ending December 31, 2019: spending on the

1 Marketing & Engagement Plan for the Rhode Island System Data Portal; the Customer-
2 Facing Program Enhancement Study; and for the evaluation process of the Requests for
3 Proposals (RFPs) for the three South County East NWA Projects.

4
5 **Q. Please review the CY 2019 SRP Funding Request.**

6 A. The funding request of the 2019 SRP Report is associated with three key work categories:
7 (1) the Marketing & Engagement Plan; (2) the Customer-Facing Program Enhancement
8 Study; and (3) the South County East NWA RFP Evaluation. The table below
9 summarizes the proposed spending for each of these key work categories for CY 2019.

10
11 **Summary of 2019 SRP Funding Request**

SRP Section	SRP Initiative	Cost
6.2	Marketing & Engagement Plan	\$124,800
11.4	Customer-Facing Program Enhancement Study	\$175,000
10.3	South County East RFP Evaluation	\$30,000
	Total	\$329,800

12 As shown in the table above, the Company proposes a total of \$329,800 for the funding
13 request for SRP projects and programs.

14 The Marketing & Engagement Plan has \$124,800 allocated in the funding request for the
15 Company to perform marketing and raise awareness with third-party solution providers
16 and the public about the Rhode Island System Data Portal.

17

1 The Customer-Facing Program Enhancement Study has \$175,000 allocated in the
2 funding request for the Company to perform market research, evaluate and test novel
3 approaches on incentivizing customer behavior in a way that can be used to address
4 electrical distribution-level constraints.

5
6 The South County East RFP Evaluation has \$30,000 allocated in the funding request for
7 the Company to perform evaluations on project bid responses for the three South County
8 East NWA Projects.

9
10 **Q. Is the Company able to provide a list and detail of the specific projects that will be**
11 **undertaken in each of the work categories of the 2019 SRP Report?**

12 A. Yes. In the 2019 SRP Report, the Company has provided detail on the specific projects
13 within each work category that would be undertaken in CY 2019 as part of the 2019 SRP
14 Report. The Company and the Parties have reviewed these planned projects and the
15 overall spending levels and have reached consensus regarding the appropriate investment
16 levels for CY 2019.

17
18 **IV. CONSIDERATION OF NWA'S IN SYSTEM PLANNING**

19 **Q. Please provide a concise summary of the NWA screening process.**

20 A. The NWA screening process uses the following criteria to identify possible solutions to
21 reduce, avoid or defer the T&D wires solution over an identified time period:

- 1 a. The need is not based on asset condition;
- 2 b. The wires solution, based on engineering judgment, will likely cost more than \$1
- 3 million;
- 4 c. If load reductions are necessary, then they are expected to be less than 20 percent of
- 5 the relevant peak load in the area of the defined need;
- 6 d. Start of wires alternative construction is at least 36 months in the future; and
- 7 e. At its discretion the utility may consider and, if appropriate, propose a project that
- 8 does not pass one or more of these criteria if it has reason to believe that a viable
- 9 NWA solution exists, assuming the benefits of doing so justify the costs.

10 The last screening criterion is used in cases where an NWA may not defer the entire T&D

11 project, but could defer part of the overall scope of the project. This is referred to as

12 “partial” or “hybrid” NWA.

13

14 **Q. Why are past Area Studies being re-evaluated for potential NWA opportunities**

15 **again?**

16 A. The Company recognizes that NWA technology costs change over time, and projects that

17 might not have been viable at the time of study might become viable if technology costs

18 decrease over time. Additionally, the load relief need is still present for the town of

19 Providence and for the East Bay area.

20

1 **Q. What is the Company’s proposed work on the Rhode Island System Data Portal in**
2 **2019?**

3 A. The Company proposes further enhancement of the Portal by completing the following
4 actions:

- 5 • Identify locations where electric vehicle (EV) level 3 charging stations can
6 potentially be implemented or installed, without negatively affecting the health or
7 rating of an electric grid feeder. Level 3 charging stations are units that are rated
8 at approximately 300 kW. Action to be complete by September 30, 2019.
- 9 • Identify areas where large non-EV public transportation fleets are located in order
10 to forecast where potential fleet conversion of non-EV to EV may occur. Action
11 to be complete by July 1, 2019.
- 12 • Include redacted area studies in the Portal by December 31, 2019.

13

14 The Company also commits to having a discussion with the Parties regarding an “Open
15 RFP” situation, which would entail posting previously-identified potential NWA
16 opportunities that were determined to be non-economic or not cost-effective.

17

1 **Q. How will the Company be compensated for the proposed work on the Rhode Island**
2 **System Data Portal in 2019?**

3 A. The Company has not included any Portal work in the 2019 SRP Funding Request.
4 Instead, the Company, in agreement with the Parties, has set two of the Portal proposed
5 work items as separate action-based incentive items. The Company intends to complete
6 this proposed work and therefore earn compensation through the SRP Incentive
7 Mechanism.

8

9 **V. TIVERTON-LITTLE COMPTON NWA PROJECT**

10 **Q. Please provide a concise background of the Tiverton-Little Compton NWA Project.**

11 A. The purpose of the Tiverton-Little Compton NWA Project (TLC NWA Project) was to
12 provide load relief in the same geographical footprint as the Tiverton NWA Pilot.

13

14 The Little Compton Battery Storage (LCBS) Project started as an RFP solicitation for an
15 integrated NWA solution, which was previously approved within the 2017 SRP Report in
16 Docket 4655 as part of the Tiverton Pilot. The Company completed the RFP in early
17 2017, resulting in a battery storage project as the winning bid. The Company then
18 proposed the LCBS Project in the 2018 SRP Report to resolve the need in the Tiverton-
19 Little Compton area, which was subsequently approved in Docket 4756. However,
20 during the process of implementation, the LCBS Project was delayed and experienced
21 project scope creep; the LCBS Project was not installed for the summers of 2017 or 2018.

1 In light of these delays, the Company decided to reissue the RFP for this potential NWA
2 opportunity in the original filing of the 2019 SRP Report on October 15, 2018. The
3 Company correspondingly reframed the LCBS Project as the “Tiverton-Little Compton
4 NWA Project.” This was done in consideration of reissuing the RFP and to maintain a
5 technology agnostic characteristic for third-party solution providers for the RFP process.

6
7 Following the October filing, National Grid’s internal forecasting group issued the 2019
8 Electric Peak Forecast in early November 2018. National Grid has recently re-evaluated
9 the loading concern in early December of 2018, which is the basis of the NWA project
10 and concluded that the loading concern has been mitigated through natural distributed
11 generation development. Working collaboratively with the Division, the OER, and the
12 other stakeholders, the Company recognizes that the NWA process in general is still
13 relatively new to all stakeholders and requires continuous review. The Company does
14 plan to work on lessons learned with stakeholders to review the process utilized in both
15 the Tiverton/Little Compton area and the rest of state to better capture the way this sort
16 of ‘natural distributed generation’ affects the Company’s load forecasting methodology
17 through its on-going NWA discussions and quarterly meetings. At this time, National
18 Grid proposes to remove the Tiverton Little Compton NWA RFP from the 2019 SRP.

19

1 **Q. Please provide additional details on why the TLC NWA Project should be removed**
2 **from the SRP Report.**

3 A. Since the 2017 analysis that informed the 2018 SRP Report, distributed generation has
4 naturally occurred in the area at approximately 900 kilowatts. Also, in-queue distributed
5 generation currently totals over 6,000 kilowatts. Lastly, the most recent 2019 Electric
6 Peak Forecast shows negative growth rates for this area. The existing distributed
7 generation and current forecast lead to projected loading on the 33F4 circuit of 98% or
8 less. The in-queue distributed generation may reduce this further depending on hour of
9 the future peak. As a result of these three factors, the original loading driver for the
10 NWA project has reduced such that there is no planning criteria issue.

2017 Analysis – Basis of 2018 SRP Report

Substation	Feeder	Projected Load					
		2019		2025		2030	
		Amps	%SN	Amps	%SN	Amps	%SN
TIVERTON	33F3	428	89%	435	91%	446	93%
TIVERTON	33F4	508	111%	517	113%	529	116%

%SN = Percent Summer Normal Rating

13
14
15
16
17
18

2019 Analysis – Current

Substation	Feeder	Projected Load					
		2019		2025		2030	
		Amps	%SN	Amps	%SN	Amps	%SN
TIVERTON	33F3	359	75%	348	73%	342	71%
TIVERTON	33F4	446	98%	433	95%	425	93%

%SN = Percent Summer Normal Rating

Q. Please provide additional detail on the in-service and in-queue distributed generation that has developed in this area since the original analysis.

A. The following tables shows the in-service and in-queue distributed generation that has developed over 2017 and 2018 for the area of concern (33F3 and 33F4 circuit area).

Substation	Feeder	Interconnected since 2017 kW	Proposed Since 2017 kW
TIVERTON	33F3	570	2520
TIVERTON	33F4	340	14100
TOTAL		910	16620

For this unique analysis, National Grid removed a 10,000-kilowatt proposal on the 33F4. This was done to remove possible debate on interconnection feasibility with no impact on the conclusion.

1 **VI. SOUTH COUNTY EAST NWA PROJECTS**

2 **Q. What is the Company's proposal for the South County East NWA Projects?**

3 A. The Company's proposal for the 2019 calendar year is to identify technologies and/or
4 methodologies through the RFP bid process that, when implemented, will provide an
5 NWA solution for the specific South County East project area.

6
7 **Q. What is the Company's proposed funding plan for the South County East NWA
8 Projects?**

9 A. The Company proposes \$30,000 for the South County East NWA Projects in calendar
10 year 2019. This accounts for approximately \$10,000 for each of the three project RFP
11 evaluations. This corresponds with the Company's plan and proposal for the South
12 County East NWA Projects for calendar year 2019.

13
14 **VII. CUSTOMER-FACING PROGRAM ENHANCEMENT STUDY**

15 **Q. What is the purpose of the Customer-Facing Program Enhancement Study?**

16 A. The purpose of the proposed Customer-Facing Program Enhancement Study
17 (Enhancement Study) is to evaluate and test customer-side opportunities beyond energy
18 efficiency that are cost effective and provide the path to lower supply and delivery costs
19 to customers in Rhode Island. The specific approach taken by the Enhancement Study is
20 to develop a long-term, peak load reduction program for Rhode Island that will employ
21 low-cost and easy-to-deploy methods to address distribution-level constraints. The

1 Company plans to integrate learnings from the Enhancement Study in future NEC
2 programs and projects that engage customers in Rhode Island, because, although the
3 Enhancement Study will focus on addressing distribution-level constraints, it is
4 anticipated that the results of the Enhancement Study will be able to be used more
5 broadly to improve the efficiency and cost-effectiveness of other types of customer-
6 facing programs (e.g., Energy Efficiency, Residential Energy Storage, Electric Vehicle
7 Charging).

8
9 **Q. What does the Company intend to achieve with the Customer-Facing Program**
10 **Enhancement Study?**

11 A. The objective of the Enhancement Study is to evaluate and test novel approaches to
12 incentivize customer behavior that can be used to address electrical distribution-level
13 constraints and improve environmental, economic, and grid performance outcomes from
14 residential and small commercial (R&SC) customer-facing programs.

15
16 **Q. What is the Company's goal in Phase 1 of the Enhancement Study? When does**
17 **Phase 1 occur?**

18 A. The goal of Phase 1 is to develop a *R&SC Customer Peak Load Reduction Program*
19 *Enhancement Plan* (Program Plan) for the state. A vendor(s) with behavioral science and
20 customer research expertise will perform a thorough literature review and use the lessons
21 learned from other customer peak load reduction programs, direct assessments, and

1 Rhode Island customer demographics, to develop novel customer engagement approaches
2 based on behavioral economic and other behavioral science principles that are designed
3 to increase customer enrollment, participation, and retention for R&SC customer classes.
4 Novel approaches could include economic and non-economic motivations for behavior,
5 based on accepted models of human behavior and social marketing. This may include
6 approaches such as behavioral nudges, social recognition and peer leadership, and
7 programs to increase perceived efficacy and behavioral control. Phase 1 occurs from
8 January 1, 2019 until December 31, 2019.

9
10 **Q. Is the Customer-Facing Program Enhancement Study cost-effective? Please**
11 **provide clear detail with respect to the different phases of the Enhancement Study.**

12 A. The Enhancement Study is primarily research, development and demonstration during
13 Phases 1 through 3. Therefore, there will be very few benefits over the initial
14 Enhancement Study period compared to project costs. In the ten years following Phase 3
15 (2023 through 2032), however, the Company plans to integrate learnings from the
16 Enhancement Study in future programs and projects that engage customers in Rhode
17 Island. Therefore, a BCA calculation was performed for the initial four-year
18 Enhancement Study period (2019-2022) plus an additional 10-year period (2023-2032)
19 over which time it is assumed a future Rhode Island peak load reduction enhancement
20 program (Enhancement Program) will be deployed in other locations to address
21 additional distribution-level constraints. The total benefits and costs associated with both

1 the proposed Study and the future Program summed over the assumed 14-year period
2 results in a Net Present Value (NPV) based BCR of 1.54. This means that the estimated
3 benefits exceed the estimated costs over the 14-year period by 54%.

4
5 **Q. How does the Customer-Facing Program Enhancement Study apply to System**
6 **Reliability Procurement and the goals of Docket 4600?**

7 A. The purpose of the Enhancement Study and the System Reliability Procurement (SRP)
8 are identical, i.e., identify customer-side opportunities beyond energy efficiency that are
9 cost effective and provide the path to lower supply and delivery costs to customers in
10 Rhode Island. The Enhancement Study addresses barriers related to a specific SRP
11 resource - i.e., demand response via on-demand usage reduction - designed to provide
12 local system reliability benefits.

13
14 The Enhancement Study supports the goals of Docket 4600. Specifically, the Study
15 intends to:

- 16 • Provide for safe, clean, and affordable energy to customers in the long term by
17 developing and executing an optimized customer-side demand response program.
- 18 • Strengthen the Rhode Island economy by engaging customers to help defer
19 investments in traditional wires solutions;

- 1 • Address the challenge of climate change and help facilitate customer investment in
2 their facilities using behavioral economics to encourage customers to participate in
3 demand response events and reduce their energy use throughout the year using
4 connected customer devices or other means; and
- 5 • Align Company, customer, and policy objectives and interests by developing and
6 executing customer-facing programs that benefit the distribution grid, Rhode Island
7 customers, and the Environment.

8
9 **VIII. RHODE ISLAND LOCATIONAL INCENTIVES**

10 **Q. Please provide a concise background of the Rhode Island Locational Incentives.**

11 A. The Company's locational incentive research and analysis was conducted in 2017 under
12 the option the Company has to offer a locational incentive pursuant to the RE Growth
13 Program with stakeholder engagement from the Division and OER. The analysis
14 followed a three-phase approach: 1) expedited method for screening feeders and peak
15 analysis; 2) three approaches to understanding potential avoided cost benefits and 3) solar
16 contribution to load reduction.

17
18 The second step encompassed three different approaches to estimate potential benefits
19 from load relief, both broadly and at specific locations: 1) system-wide avoided
20 transmission and distribution cost; 2) feeder specific deferral value of distribution system
21 upgrades as measured by the avoided revenue requirement NPV, multiplied by the

1 probability of a spot load developing necessitating an upgrade; 3) time-value deferral
2 NPV, similar to what has been used for the Tiverton Pilot area. Further details of the
3 analysis are described in Section 12.1.1 through Section 12.1.3 of the 2019 SRP Report
4 filed with the PUC on October 15, 2018.

5
6 The analysis concluded that due to the lack of specific NWA opportunities, a successful
7 history of offering multiple paths to solution providers by which to install DG in the state,
8 and no load growth in the Rhode Island service territory, that no locational incentives
9 should be proposed in the 2018 RE Growth filing.

10
11 The analysis culminated with the Company presenting on the analysis and the results to
12 the Rhode Island Division and OER on September 12, 2017. A copy of the presentation
13 was provided as Appendix 5 in the 2019 SRP Report filed with the PUC on October 15,
14 2018.

15
16 **Q. What is the Company's summary proposal for the Rhode Island Locational**
17 **Incentives?**

18 A. Under Rhode Island General Laws Chapter 39-26.6 - The Renewable Energy Growth
19 Program, the Company proposes to further the work from the 2017 calendar year effort,
20 as detailed in Section 12.1 of the 2019 SRP Report filed with the PUC on October 15,
21 2018, by using the deferral value for specific NWA locations at South County East to

1 provide a financial incentive for bidders to respond to when the NWA RFPs are issued
2 late in 2018 as per the 2018 SRP Report. The Company elected to conduct the work for
3 locational incentives within the SRP work plan rather than the RE Growth Program work
4 plan to have a mechanism to pay for load relief from the NWA RFPs the Company issues
5 within the SRP Plan. The Company is not proposing to provide locational incentives in
6 the RE Growth Program at this time.

7
8 To provide value back to customers, the Company initially suggests that the incentive
9 uses no more than 60% of the deferral value on an annualized basis over the term of the
10 deferral need, then estimating the number of kilowatt-hours needed in a location (load
11 relief needed in kilowatts multiplied by the estimated hours the load relief is needed over
12 the term of the deferral need) and calculating a per-kWh credit to be paid based on
13 performance of the winning bidder's project or program.

14
15 The percent suggested as the deferral value was selected as a starting point to determine
16 whether a bidder to an NWA RFP would find this value to be sufficient. It is important
17 not to over-pay initially for NWA solutions for fear of setting future payment
18 expectations. There are two main reasons the Company suggests using this 60% of the
19 deferral value as a locational incentive for the RFPs: 1) for any non-wires alternative
20 (NWA) to be net beneficial to customers, the Company cannot spend the same amount of
21 money as it would on a traditional utility solution; and 2) the Company has yet to see that

1 an NWA solution actually will defer a traditional utility solution, and therefore, there is a
2 risk premium to employing NWAs.

3
4 The specific details of this calculation are ongoing as they are part of the larger project to
5 issue new RFPs for the South County East NWA projects which will not be released until
6 later in calendar year 2018. The Company commits to continue stakeholder engagement
7 and discussion regarding locational incentives in Rhode Island. With this input, the
8 Company would determine the proper avenue for proposing such an incentive and
9 appropriately file for approval to pay these incentives showing the projects the Company
10 expects to fund with the incentives.

11
12 **Q. What is the current status of Distributed Generation (DG) growth in Rhode Island?**

13 A. As presented at the Rhode Island Quarterly DG Interconnection Meeting in July 2018 and
14 as illustrated in the tables below, interconnection trends for both DG applications
15 received and for DG interconnected have trended upwards year-over-year since 2011, in
16 terms of the number of applications and megawatts.⁴ This trend is applicable to both
17 complex and simple projects.⁵

⁴ The numbers for 2018 have not been finalized since the full 2018 calendar year has not yet completed.

⁵ A simple project is considered any distribution project that is under 10 kW for 1-phase lines or 25 kW for 3-phase lines, while a complex project is over this threshold.

1

Rhode Island Complex Interconnection Application Trends

	Received Applications, Complex		Interconnected Applications, Complex	
	MW	Apps	MW	Apps
2011	25.0	27	1.0	8
2012	36.0	60	7.2	12
2013	23.0	53	13.3	19
2014	23.2	47	17.8	22
2015	58.9	102	3.3	27
2016	134.2	139	21.1	52
2017	297.3	149	23.8	55
2018	349.9	161	5.5	27
Total	947.6	738	93.0	222

2

3

Rhode Island Simplified Interconnection Application Trends

	Received Applications, Simple		Interconnected Applications, Simple	
	MW	Apps	MW	Apps
2011	0.2	30	0.2	21
2012	0.2	41	0.3	45
2013	0.3	77	0.2	51
2014	0.6	127	0.4	77
2015	3.2	599	1.9	329
2016	10.1	1,724	8.1	1,351
2017	12.6	2,237	10.8	1,832
2018	7.7	1,313	4.4	774
Total	34.8	6,148	26.4	4,480

4

5 **Q. What is the current status of electric peak load in Rhode Island?**

6 A. Although the Locational Incentive analysis was performed in the summer of 2017, the
7 current Rhode Island 2018 Electric Peak (MW) Forecast for the long-term (2018-2032),⁶
8 provided in Appendix 1 of the 2019 SRP Report filed with the PUC on October 15, 2018,

⁶ Gredder, Joseph F, and Pedram Jahangiri. "Rhode Island 2018 Electric Peak (MW) Forecast; Long-Term: 2018 to 2032." *Rhode Island System Data Portal*, National Grid, 10 Jan. 2018, http://ngrid-ftp.s3.amazonaws.com/RI SysDataPortal/Docs/RI_Forecast_PEAK_2018_Report_rev1_Jan2018.pdf.

1 continues to support the conclusion that the Rhode Island service territory is not
2 experiencing load growth. As explained on pages four and five of the Rhode Island 2018
3 Electric Peak (MW) Forecast, the service territory is experiencing negative growth of -
4 0.1% annually over the next fifteen years.

5
6 Additionally, the Company presented at the Rhode Island Quarterly DG Interconnection
7 Meeting in July 2018 that, by the end of 2018, the Company forecasts that Rhode Island's
8 electric load will be reduced by 1.2% from historical load levels. This reduction is based
9 on an assumption of solar DG having a 21% annual average capacity factor and
10 forecasted 25 MW of solar. By the end of 2019, the Company forecasts that Rhode
11 Island's electric load will be reduced an incremental 0.4%, assuming 21% annual average
12 capacity factor and forecasted 32 MW of solar.

13
14 **Q. What does the Company expect the future of Locational Incentives in Rhode Island**
15 **to be?**

16 A. In the Company's last general rate case in consolidated Docket Nos. 4770/4780, the PUC
17 approved an Amended Settlement Agreement (Settlement Agreement), which reflected
18 modifications approved by the PUC at its August 3, 2018 Open Meeting. Included in the
19 Settlement Agreement is the approval of an electric transportation initiative in Rhode
20 Island. Additionally, the PUC's decision in this proceeding provides that the utility must
21 include opportunities for EVs in distribution level planning. While factors such as

1 advances in energy efficiency, distributed solar, and behind-the-meter storage decrease
2 utility load, the electrification of transportation and heat are expected to reverse that
3 trend. The expected increase in DC Fast Charging that results from the Power Sector
4 Transformation electric transportation initiative and Rhode Island's Zero Emission
5 Vehicle (ZEV) Draft Plan goals for growing EV adoption more than 40-fold by 2025 will
6 have to be managed with appropriate electrical service and distributed generation and
7 storage resources to effectively prevent system overloading and to avoid utility peak
8 demand charges. The Company does see an opportunity in the future to offer locational
9 incentives in locations where load on the electric distribution system is increasing due to
10 the growth of electric vehicle supply equipment (EVSE) and electric heat.

11
12 **IX. SRP INCENTIVE MECHANISM PROPOSAL**

13 **Q. What is the SRP Incentive Mechanism?**

14 A. The SRP Incentive Mechanism is a system that incentivizes the Company to complete
15 actions or implement distributed energy resources (DERs) that would otherwise have a
16 higher risk factor, such as NWA solutions in comparison to traditional wires solutions, or
17 does not have cost recovery associated with the action.

18
19 **Q. What are the Action-Based SRP Incentives for 2019? What is the reason for these
20 incentive items?**

21 A. The Action-Based SRP Incentives for calendar year 2019 are listed in the table below.

1

Summary of Action-Based SRP Incentives

Section	Action	Date	% of 2019 SRP Budget
Rhode Island System Data Portal	Identify areas where large non-EV public transportation fleets are located	July 1, 2019	2%
Rhode Island System Data Portal	Identify locations where EV level 3 charging stations can potentially be implemented or installed	September 30, 2019	2%
South County East NWA Projects	Awarded and completion of first vendor milestone for all 3 projects	December 31, 2019	2%

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These incentive items will encourage the Company to perform further work on the Rhode Island System Data Portal, as detailed by the first two incentive action items, and to make significant progress on the South County East NWA Projects. Additionally, the Rhode Island System Data Portal does not have cost recovery in the 2019 SRP Report for performing this further work because the Company, in agreement with the Parties, reasons that the Action-Based Incentive is an appropriate mechanism for compensation for this work. The South County East NWA Projects have an action-based incentive to encourage the Company to implement NWA solutions because NWA solutions are recognized as having a higher risk factor than traditional wires solutions.

1 **Q. When will the Company propose the incentive earnings for a specific year's action-**
2 **based incentive item?**

3 A. The Company will propose the incentive earnings for a specific year's action-based
4 incentive items in the SRP Report that covers the calendar year two years after when the
5 specific action-based incentive items were first proposed. For example, the action-based
6 incentive items for calendar year 2018 will have their incentive earnings proposed in the
7 2020 SRP Report. This will allow for full calendar year assessment for action-based
8 incentive items.

9
10 **Q. What is the Savings-Based SRP Incentive?**

11 A. The Savings-Based SRP Incentive is the part of the SRP Incentive Mechanism that
12 encompasses incentives for the Company to install DERs as a result of SRP initiatives.
13 The Company will be obligated to demonstrate that DERs were installed as a result of the
14 SRP initiatives. This demonstration would require: 1) an affidavit from the DER provider
15 that Company marketing influenced their decision to site, and 2) confirmation that the
16 DER was installed in the current year of the SRP plan (i.e., calendar year 2019). For the
17 Company to earn savings-based incentives on them, the DERs must be deemed cost-
18 effective according to the Rhode Island cost-effectiveness framework established in the
19 PUC's Docket 4600-A Guidance Document.

20

21

1 X. CONCLUSION

2 Q. In your opinion does the 2019 SRP Report fulfill the requirements established in
3 relation to the safety and reliability of the Company's electric distribution system in
4 Rhode Island?

5 A. Yes. The 2019 SRP Report is designed to establish the NWA and SRP-related activities
6 in Rhode Island that are necessary to meet the needs of Rhode Island customers and
7 maintain the overall safety and reliability of the Company's electric distribution system.
8 The Company believes that the proposed 2019 SRP Report accomplishes these
9 objectives. As such, the PUC's approval of the proposed 2019 SRP Report is essential
10 for the Company to continue maintaining a safe and reliable electric distribution system
11 for its Rhode Island customers.

12

13 Q. Does this conclude this testimony?

14 A. Yes, it does.