

SYSTEM RELIABILITY PROCUREMENT
2020 YEAR-END REPORT

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Table of Terms

Term	Definition
3V0	Ground Fault (or Zero Sequence) Overvoltage
AESC	Avoided Energy Supply Components
AMF	Advanced Metering Functionality
Approximate Value	The estimated net present value of deferring the wires investment for the required timeframe.
BCA	Benefit-Cost Analysis
BCR	Benefit-Cost Ratio
BTM	Behind-the-Meter
Capex	Capital expenditure
CEM	Customer Energy Management
CHP	Combined Heat and Power
CO ₂	Carbon Dioxide
CRM	Cost Recovery Mechanism
CSA	Construction Service Agreement
C-Team	(EERMC) Consultant Team
DER	Distributed Energy Resource
DG	Distributed Generation
Division	Division of Public Utilities and Carriers
DPAM	Distribution Planning and Asset Management
DR	Demand Response
DRIPE	Demand Reduction Induced Price Effect(s)
DSP	Distribution System Planning
EE	Energy Efficiency
EE Plan	Energy Efficiency Program Plan
EEP	Energy Efficiency Program
EERMC	Energy Efficiency and Resource Management Council
EPC	Engineering, Procurement, and Construction
EPS	Electric Power System
ESA	Energy Service Agreement
ESS	Energy Storage System
EV	Electric Vehicle
FERC	Federal Energy Regulatory Commission
Framework	Rhode Island Docket 4600 Benefit-Cost Framework
FTE	Full-Time Employee/Equivalent
FTM	Front-of-the-Meter
GHG	Greenhouse gas
GMP	Grid Modernization Plan
ISO	Independent Systems Operator

Term	Definition
ISO-NE	ISO New England Inc.
ISR	Infrastructure, Safety and Reliability Plan
kW	Kilowatt
kWh	Kilowatt-hour
LCP	Least-Cost Procurement
MW	Megawatt
MWh	Megawatt-hour
NECEC	Northeast Clean Energy Council
NERC	North American Energy Reliability Corporation
NOAA	National Oceanic and Atmospheric Administration
NO _x	Nitrogen Oxides
NPA	Non-Pipeline Alternatives
NPV	Net Present Value
NWA	Non-Wires Alternative
O&M	Operations and Maintenance
OER	Office of Energy Resources
Opex	Operational expenditure
PIM	Performance Incentive Mechanism
Portal	Rhode Island System Data Portal
PST	Power Sector Transformation
PUC	Public Utilities Commission
PV	Photovoltaic
RD&D	Research, Design, and Development
REC	Renewable Energy Credits
REG	Renewable Energy Growth
RFP	Request for Proposals
RGGI	Regional Greenhouse Gas Initiative
RI NWA BCA Model	Rhode Island Non-Wires Alternative Benefit-Cost Analysis Model
RI NWA BCA Model TRM	Rhode Island Non-Wires Alternative Benefit-Cost Analysis Technical Reference Manual
RI Test	Rhode Island Benefit-Cost Test
RNG	Renewable Natural Gas
RPS	Renewable Portfolio Standards
SME	Subject Matter Expert
SO ₂	Sulfur Dioxide
SRP	System Reliability Procurement
T&D	Transmission and Distribution
TWG	Technical Working Group
VVO	Volt-VAR Optimization

2020 SYSTEM RELIABILITY PROCUREMENT YEAR-END REPORT

1. Executive Summary

The purpose of System Reliability Procurement (SRP) is to identify targeted alternative solutions, through customer-side and grid-side opportunities, for the electric and gas distribution systems that are cost-effective, reliable, prudent and environmentally responsible and provide the path to lower supply and delivery costs to customers in Rhode Island.

The role of National Grid¹ with respect to SRP is to identify potential Non-Wires Alternative (NWA) and Non-Pipeline Alternative (NPA) opportunities, to source viable alternative solutions that address system needs and defer, reduce, or remove the need for distribution wires and pipes investments, and to support projects and programs that enable such activity.

The Company summarizes the rulings requested of the Rhode Island Public Utilities Commission (PUC) in the table below. Note that no funding requests are associated with these proposals because SRP Year-End Reports are purposed for programmatic proposals only and not financial investment proposals.

Table 1: Summary of Requested Rulings for SRP

SRP Section	SRP Initiative/Proposal	Requested Ruling
4	RI NWA BCA Model	The Company requests approval of the proposed revisions to the RI NWA Benefit-Cost Analysis (BCA) Model and the proposed corresponding revisions to the RI NWA BCA Model Technical Reference Manual (TRM) for calendar years 2021 through 2023.
6.1	NWA Screening Criteria	The Company requests approval of the two proposed revisions to the NWA screening criteria for Rhode Island as detailed in Table 4 for calendar years 2021 through 2023.
7.3	NPA Screening Criteria	The Company requests approval of the proposed NPA Screening Criteria for Rhode Island as detailed in Table 5 for calendar years 2021 through 2023.

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

The commitments included in the 2020 SRP Report of Docket No. 4980² are summarized in the following table with year-over-year progress indicated in the rightmost column. These commitments do not require additional, incremental SRP funding because they are actions covered by the work of full-time employees (FTEs).

Table 2: Summary of 2020 SRP Commitments

SRP Commitment	Status
The Company commits to performing background research on NPAs and exploring how NPAs align with Company policy and the Least Cost Procurement Standards (LCP Standards) for the next update in the Three-Year Plan review. The Company commits to engaging with stakeholders to discuss and understand opportunities and challenges regarding NPAs.	Complete, filed NPA Program plan in 2021-2023 SRP Three-Year Plan ³
The Company plans to continue analyzing its current NWA screening and development processes to determine how NWAs might be best considered as both complete and partial solutions.	Ongoing, dynamic process
As part of the Company’s reevaluation process, it was determined that the Company should pursue third-party solutions for these previously identified NWA opportunities from the East Bay Study. The Company will commit to developing an NWA Request for Proposals (RFP) for the East Bay opportunity.	Complete. Bristol 51 NWA RFP released 6/2/2020.
The Company commits to the following actions with the intent of increasing the viability of the South County East NWA Projects: <ul style="list-style-type: none"> 1. Analyze whether there are additional benefit streams available that can be combined with NWAs to create more cost-effective solutions. 2. Refine the parameters of the need to capture additional benefits, if applicable. 3. Assess the option of a Company-sourced proposal, where the Company formulates a proposal with specific parameters to be fulfilled by the market, which would be used to compare against third party solutions. 	Complete. Company produced the RI NWA BCA Model, which is now in use. Company assessed internally-sourced targeted EE/DR.

² “Docket No. 4980.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, The Narragansett Electric Company d/b/a National Grid, 15 Oct. 2019, www.ripuc.ri.gov/eventsactions/docket/4980page.html.

³ “Docket No. 5080.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, The Narragansett Electric Company d/b/a National Grid, 20 Nov. 2020, www.ripuc.ri.gov/eventsactions/docket/5080page.html.

SRP Commitment	Status
The Company commits to investigating viable alternate solution pathways for the Bonnet 42F1 (formerly titled “Narragansett 42F1”) and South Kingstown NWA opportunities.	Complete. South Kingstown NWA RFP released 11/23/2020, Bonnet 42F1 NWA RFP released 12/29/2020.
Begin coordination work with the Company’s proposed Grid Modernization Plan (GMP) regarding inclusion of hourly (8,760 hours) data in addition to peak load data once the Grid Modernization Plan with this update is approved for funding.	SRP to align with GMP
The Company recognizes that improved synchronization between SRP and Power Sector Transformation (PST), the Energy Efficiency Program Plan (EE Plan), the Infrastructure, Safety and Reliability Plan, the Grid Modernization Plan (GMP), and the Advanced Metering Functionality (AMF) Business Case is necessary and intends to improve coordination between these filings.	Ongoing, perpetual commitment
Therefore, the Company commits to continued stakeholder engagement and continued participation in enhanced discussions regarding SRP, NWA, and related policy and programs with stakeholders.	Ongoing, perpetual commitment
The Company also commits to continue its efforts to actively avoid double-counting shareholder incentives in SRP programs and projects.	Ongoing, perpetual commitment
The Company intends to implement robust stakeholder engagement and discussion on the electric forecasting process.	Ongoing, perpetual commitment
The Company will commit to development and implementation of a data governance plan in coordination with the work on the AMF and GMP filings and will continue stakeholder engagement and discussion.	SRP to align with GMP

SRP Commitment	Status
<p>The Company commits to stakeholder engagement and discussion regarding locational incentives through in Rhode Island by July 31, 2020 through the SRP Technical Working Group (TWG) meetings and other relevant sessions, and to determine whether the current methodology should be modified.</p>	<p>Complete. Company hosted stakeholder discussion on locational incentives in the SRP TWGs on 4/15/2020, 5/20/2020, and 7/15/2020. The Company filed its findings in the 2021-2023 SRP Three-Year Plan.</p>

Note that the ongoing, perpetual commitments in the table above are ones that the Company has so far aligned and delivered on and intends to continue to achieve.

The proposals and information the Company presents in this SRP Plan advance Power Sector Transformation (PST)⁴ goals, align with Docket 4600⁵ principles, are coordinated with the Company’s other programs and filings, and adhere to Least-Cost Procurement (LCP) law⁶.

⁴ “Power Sector Transformation Initiative.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, State of Rhode Island Office of the Governor Gina M. Raimondo, 8 Nov. 2017, www.ripuc.ri.gov/utilityinfo/electric/PST_home.html.

⁵ “Docket No. 4600 and Docket No. 4600-A.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, Rhode Island Public Utilities Commission, 2 Nov. 2018, www.ripuc.ri.gov/eventsactions/docket/4600page.html.

⁶ “39-1-27.7. System Reliability and Least-Cost Procurement.” *TITLE 39 Public Utilities and Carriers*, State of Rhode Island General Assembly, <http://webserver.rilin.state.ri.us/Statutes/title39/39-1/39-1-27.7.HTM>.

2. Introduction

The Company is pleased to submit this 2020 System Reliability Procurement Year-End Report (Report) to the PUC. This Report has been developed by National Grid through an iterative process with the SRP Technical Working Group (the SRP TWG).⁷⁸

This Report summarizes the work the Company has performed in the SRP Program for calendar year 2020.

National Grid respectfully submits this Report and seeks approval of its integral proposals in accordance with the guidelines set forth in Section 4 of the LCP Standards.

⁷ Members of the SRP TWG presently include the Company, Acadia Center, the Division, Green Energy Consumers Alliance, OER, NECEC, several EERMC members, and representatives from the EERMC's Consultant Team (EERMC C-Team).

⁸ "The Collaborative." *RI Energy Efficiency & Resource Management Council*, RI Energy Efficiency & Resource Management Council, <https://rieermc.ri.gov/thecollaborative/>.

3. Regulatory Basis for System Reliability Procurement

This Report is submitted in accordance with the regulatory basis detailed in the 2021-2023 SRP Three-Year Plan⁹ and Section 4.4.B of the Rhode Island PUC’s revised “Least-Cost Procurement Standards,” which the PUC approved and adopted pursuant to Order No. 23890 in Docket No. 5015 (LCP Standards).¹⁰

⁹ “Docket No. 5080.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, The Narragansett Electric Company d/b/a National Grid, 20 Nov. 2020, www.ripuc.ri.gov/eventsactions/docket/5080page.html.

¹⁰ “Least Cost Procurement Standards.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, Energy Efficiency and Resource Management Council, 21 Aug. 2020, http://www.ripuc.ri.gov/eventsactions/docket/5015_LCP_Standards_05_28_2020_8.21.2020%20Clean%20Copy%20FINAL.pdf.

4. SRP Budget Spend

This section details the calendar year spend for the SRP programs.

Table 3. SRP Budget Spend for CY 2020

Initiative/Program	Program Detail	Budget Filed	Budget Spend
NWA	No specific NWA projects have been identified for proposal in CY 2020.	\$0	\$0
NPA	No specific NPA projects have been identified for proposal in CY 2020.	\$0	\$0
Rhode Island System Data Portal (Portal)	The Portal is an interactive online mapping tool developed by the Company. The Portal provides specific information for select electric distribution feeders and associated substations within the Company’s electric service area in Rhode Island. The SRP Program handles new enhancements to the Portal.	\$0	\$0
SRP Market Engagement	SRP Market Engagement aims to raise awareness and perform outreach and engagement for the Rhode Island System Data Portal as needed, for NWA-related activities not covered by FTE work, and with third-party solution providers.	\$69,370	\$20,512
SRP Incentive Mechanism, 2018 Action-Based Earnings	Earnings for actions achieved by the Company during CY 2018 as part of the SRP Incentive Mechanism. Incentive actions are detailed in Section 5 of the 2020 SRP Report in Docket 4980. ¹¹	\$11,865	\$11,865
Total		\$81,235	\$32,377

Budget spend was lower than anticipated for SRP Market Engagement in CY 2020 mainly due to coordinating program components in response to the COVID-19 pandemic. The corresponding program modifications are detailed in Section 9.

¹¹ “Docket No. 4980.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, The Narragansett Electric Company d/b/a National Grid, 15 Oct. 2019, www.ripuc.ri.gov/eventsactions/docket/4980page.html.

5. RI NWA BCA Model

This section details the RI NWA BCA Model that the Company utilizes to assess cost-effectiveness of NWA projects.

The Company proposes the following major changes to the RI NWA BCA Model, with corresponding text updates in the RI NWA BCA Model Technical Reference Manual (TRM).

1. Input source data, as found in the blue tabs, has been updated to reflect the Avoided Energy Supply Components (AESC) 2021 Report¹² and the 2019 ISO New England Electric Generator Air Emissions Report¹³ published datasets.
2. Natural Gas Genset and Diesel Genset technology options added to the “System Type” selector dropdown of the “Inputs-Proposals” tab. Associated technology source data and formulas added.
3. Utility Cost Test (UCT) BCA and net benefits calculations and output cells added to the “Proposals Comparison” tab.

These changes were made to allow for enhanced functionality in the RI NWA BCA Model. With regard to the genset change, National Grid has historically received NWA bid proposals that include genset assets. In order to accurately evaluate the bids submitted by third-parties, the Company added genset-relevant benefit-cost data and inputs.

Please see Appendix 4 for the updated RI NWA BCA Model.

Please see Appendix 5 for the updated clean TRM and Appendix 6 for the updated redline TRM. The TRM describes the components of and changes to the RI NWA BCA Model in detail.

The Company requests approval of the proposed revisions to the RI NWA BCA Model and the proposed corresponding revisions to the RI NWA BCA Model TRM for calendar years 2021 through 2023.

¹² “AESC 2021 Materials.” *Synapse Energy Economics, Inc.*, Synapse Energy Economics, Inc., Resource Insight, Les Deman Consulting, North Side Energy, Sustainable Energy Advantage, 15 Mar. 2021, www.synapse-energy.com/project/aesc-2021-materials.

¹³ “2019 ISO New England Electric Generator Air Emissions Report.” *ISO New England*, ISO New England Inc., Mar. 2021, www.iso-ne.com/static-assets/documents/2021/03/2019_air_emissions_report.pdf.

6. NWAs in System Planning

This section details the NWA Screening Criteria and the summary of the annual screening results analysis for the Company’s Non-Wires Alternative program in Rhode Island.

6.1 Screening Criteria for NWA

The screening criteria for potential NWA opportunities are as follows:

Table 4: Screening Criteria for NWA Opportunities

Criteria Type	Criteria Requirement
Project Type Suitability	Project types include Load Relief and Reliability. ¹⁴ The need is not based on Asset Condition. Other types have minimal suitability and will be reviewed as suitability changes due to State or Federal policy or technological changes.
Timeline Suitability	Start date of solution implementation is at least 24 months in the future.
Cost Suitability	Cost of wires option is greater than \$1M.
Load Level Suitability	If load reduction is necessary, then it will be less than 20% of the total load in the area of the defined need.

Additionally, by the Company’s discretion, National Grid may pursue a project that does not pass one or more of these criteria if there is reason to believe that a viable NWA solution exists, assuming the benefits of doing so justify the costs.

The only changes to the NWA Screening Criteria from the 2021-2023 SRP Three-Year Plan are reflected in the table above and include:

1. The revision of the timeline suitability criterion language from “start date of system need” to “start date of solution implementation” to accurately align with how the Company assesses potential NWA opportunities, and
2. The separation of the load reduction content into its own criterion for clearer presentation of screening logic. Note that the language for the Load Level Suitability criterion has not been changed, only that it has been separated from the Project Type Suitability criterion.

The “start date of solution implementation” indicates the date the wires solution would otherwise need to be installed and operating. This historically has been how distribution planning screens

¹⁴ For definition of reliability, see “Docket 3628: Proposed Service Quality Plan.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, Rhode Island Public Utilities Commission, 2004, www.ripuc.ri.gov/eventsactions/docket/3628page.html.

potential opportunities, so this language change indeed more accurately reflects the actual process. “Start date of solution implementation” also allows the NWA option to be directly compared, time-wise, with the wires option as both the non-wires and wires options would reference the same need date.

These screening criteria are applied by the electric distribution planning team to all electric system needs that arise through planning analysis and system assessment. Such screening criteria is utilized during initial system assessment.

The Company requests approval of the two proposed revisions to the NWA screening criteria for Rhode Island as detailed in Table 4 for calendar years 2021 through 2023.

6.2 Analysis of System Needs

Detail on system needs that meet the screening criteria and that the Company has determined may produce a potentially viable NWA opportunity are summarized in the table in Appendix 3 and detailed in the sections below as follows:

6.2.1 Bonnet 42F1

The Bonnet 42F1 NWA opportunity, formerly called Narragansett 42F1 NWA, intends to provide load relief in the Town of Narragansett by deferring or removing the need for feeder line work and reconfiguration on the Bonnet 42F1 feeder. The Bonnet 42F1 system need was identified as part of the South County East Area Study.

The Town of Narragansett is mostly supplied by (4) 12.47 kV distribution feeders. Feeder 42F1 is projected to be loaded above summer normal ratings by 2023 and lacks useful feeder ties to reduce loading below their ratings. Either more capacity must be added or load must be reduced in the town. The distribution system need can be addressed through SRP by implementation of an NWA solution that provides load reduction capability.

The Company expects that the Bonnet 42F1 NWA timeframe will span twelve years from 2023 to 2034, which is the maximum amount of time based on the current peak load forecast that the substation and feeder upgrade can be deferred with this solution. There is the potential for a partial or continued NWA solution following 2034 with the Bonnet 42F1 NWA; however, this option has not been assessed at this time.

The Company issued an RFP for the Bonnet 42F1 NWA opportunity on December 29, 2020 and received third-party bid proposals on April 6, 2021. The Company commenced bid evaluation on April 6, 2021 which is ongoing.

If an NWA solution option is identified that passes all Company NWA evaluation criteria and meets all LCP criteria, then the Company may proceed to propose the NWA investment in an SRP Investment Proposal filing.

6.2.2 Bristol 51

The Bristol 51 NWA opportunity intends to provide load relief and address MWh violations in the Town of Bristol by deferring or removing the need for feeder line work and reconfiguration on the Bristol 51F1, 51F2, and 51F3 feeders. The Bristol 51 system need was identified as part of the East Bay Area Study.

The Town of Bristol is mostly supplied by (3) 12.47 kV distribution feeders. Loading on the 51F1, 51F2, and 51F3 feeders is predicted to be over 100% of their summer normal ratings and will be overloaded in the next ten years. Either more capacity must be added or load must be reduced in the town. The distribution system need can be addressed through SRP by implementation of an NWA solution that provides load reduction capability.

The Company issued an RFP for the Bristol 51 NWA opportunity on June 2, 2020 and received third-party bid proposals on August 11, 2020. The Company received one bid proposal. Through extensive evaluation, the Company determined that the submitted bid did not pass the NWA evaluation criteria.

The Company will proceed with the wires option for the Bristol 51 system need.

6.2.3 South Kingstown

The South Kingstown NWA opportunity intends to provide load relief in the Town of South Kingstown by deferring or removing the need for feeder line work and reconfiguration on the Peacedale 59F3 and Kenyon 68F2 feeders. The South Kingstown system need was identified as part of the South County East Area Study.

The western section of the Town of South Kingstown is supplied mostly by (3) 12.47 kV distribution feeders. Feeders 59F3 and 68F2 are projected to be loaded above summer normal ratings and lack useful feeder ties to reduce loading below their ratings. Either new feeder ties must be constructed or load must be reduced in the western half of the town. The distribution system need can be addressed through SRP by implementation of an NWA solution that provides load reduction capability.

The Company expects that the South Kingstown NWA timeframe will span thirteen years from 2022 to 2034, which is the maximum amount of time based on the current peak load forecast that the substation and feeder upgrade can be deferred with this solution. There is the potential for a partial or continued NWA solution following 2034 with the South Kingstown NWA; however, this option has not been assessed at this time.

The Company issued an RFP for the South Kingstown NWA opportunity on November 23, 2020 and received third-party bid proposals on February 22, 2021. The Company commenced bid evaluation on April 6, 2021 which is currently in progress.

If an NWA solution option is identified that passes all Company NWA evaluation criteria and meets all LCP criteria, then the Company may proceed to propose the NWA investment in an SRP Investment Proposal filing.

7. NPAs in System Planning

This section details the Company's Non-Pipeline Alternatives program in Rhode Island.

The Company proposed to develop the NPA program, process, and its integration with gas system planning over calendar years 2021 through 2023 in its 2021-2023 SRP Three-Year Plan. Status and progress updates on NPA program development are provided as detailed below.

Particularly with respect to progress to date from 2020, and Q1 2021, the Company has developed the NPA definition, the NPA screening criteria, and the NPA evaluation process.

7.1 Program Development Approach

In developing the NPA Program, the Company is leveraging the NWA Program as a baseline. The NWA Program has been developed and improved upon over the past twelve years. The Company strives for continuous improvement through internal and external feedback and has streamlined processes using supporting documentation.

Prior to development of the NPA Program, knowledge-sharing discussions were held with the NWA team. These conversations will continue throughout the development of the NPA Program.

The Company recognizes that while there is opportunity for transferrable components of the program, there are fundamental differences between the gas and electric business units that would prompt divergent, unique, and tailored approaches. At this stage, internal working groups have been established to assess what changes would be needed to reflect and align with gas business requirements and standards. Within these discussions, peer utility reviews have been conducted to incorporate best practices from proposed NPA Programs.

This close internal coordination between the NWA and NPA teams and the external stakeholder input through the SRP TWG has been critical to delivering robust and effective NPA Screening Criteria and NPA Evaluation Process.

7.2 Definition of NPA

The Company proposes the following definition for NPAs.

NPA Definition: Non-Pipeline Alternatives is the inclusive term for any targeted investment or activity that is intended to defer, reduce, or remove the need to construct or upgrade components of a natural gas system, or "pipeline investment."

NPA Requirements: These NPA investments are required to be cost-effective and are required to meet the specified gas system need.

An NPA can include any action, strategy, program, or technology that meets this definition and these requirements. The Company is currently engaged in ongoing discussions with stakeholders about potential solution types in consideration of NPA solutions, proposals, and investment decisions.

Some technologies and methodologies that can be applicable as an NPA investment include demand-side measures, such as demand response, conservation or energy efficiency, and electrification, and supply-side measures, such as renewable natural gas (RNG). This is not intended to be an exhaustive list of possible demand-side and supply-side solutions. NPA projects can include these and other investments individually or in combination to meet the specified need in a cost-effective manner.

7.3 Screening Criteria for NPA

The Company proposes the following screening criteria for NPAs.

Table 5: Screening Criteria for NPA Opportunities

Criteria Type	Small Project	Large Project
Timeline Suitability	The start date of solution implementation is at least 24 months but less than 60 months in the future.	The start date of solution implementation is at least 36 months but less than 60 months in the future.
Cost Suitability	The cost of the pipes option is greater than \$0.5M but less or equal to \$2M.	The cost of the pipes option is greater than \$2M.
Reliability of the Gas System	The pipes investment has negligible or no effect on critical reliability of the local or broader gas system. This will be determined through gas system modeling and will be determined based on engineering judgement.	

The projects that meet the screening criteria will be prioritized in consideration of capacity-constrained locations. Capacity-constrained refers to areas of the gas network where the system is challenged to access natural gas when and where it is needed in sufficient quantities to meet customers' peak demand, as described in the Aquidneck Island Long-Term Gas Capacity Study.¹⁵ These capacity-constrained areas serve to greater benefit from the implementation of an NPA in their potential to reduce usage or increase supply during timeframes of peak demand. The Company will prioritize NPA-eligible proposed projects that are in or affect these regions or sections of the gas network.

¹⁵ *Aquidneck Island Long-Term Gas Capacity Study*, The Narragansett Electric Company d/b/a National Grid, Sept. 2020, www.nationalgridus.com/media/pdfs/other/aquidneckislandlong-termgascapacitystudy.pdf.

Additionally, by the Company's discretion, National Grid may propose to pursue a project that does not pass one or more of these criteria if there is reason to believe that a viable NPA opportunity exists, assuming the benefits of doing so justify the costs.

Timeline suitability considers the timeframe between when a proposed pipes investment is identified and the required in-service date.

Cost suitability is determined by the estimated cost of the proposed pipes investment. The Company set the initial floor price at \$0.5M based on the consideration that any system need with a pipes option value less than \$0.5M would not produce an economically viable NPA opportunity and that the market does not find such NPA opportunities to be fiscally prudent for their goals and policies. The Company will regularly evaluate whether the initial floor price is appropriate based on market feedback.

The large and small project types are based on the development and implementation timeframe and the projected cost needed for proposed pipes investments and considers the overall NPA Program process to source, construct, and implement an NPA in lieu of the proposed pipes investment.

Reliability of the gas system reflects the importance of continued safe and reliable operation. System modeling is utilized to assess immediate, local, and system-wide reliability impacts to the gas network and will be leveraged to identify the proposed pipes investments that have negligible to no effect on the critical reliability. When referring to the local and broader gas system, the Company is referring to each as follows. The local gas system is the adjacent pipes or infrastructure that directly connect to the segment of pipe or infrastructure that is being considered for an NPA. The broader gas system refers to the Company's holistic gas system beyond the direct connections to the segment that is being considered for an NPA. This broad view considers the effect of eliminating components of the system, such as creation of capacity constraints, etc. Investments identified to have negligible to no effect on reliability would be eligible for NPA consideration.

These screening criteria are applied by the Gas Asset and Design Engineering team to gas system needs that arise through planning analysis and system assessment. Such screening criteria is utilized during initial system assessment.

The Company requests approval of the proposed NPA Screening Criteria for Rhode Island as detailed in Table 5 for calendar years 2021 through 2023.

7.4 Evaluation Process for NPA

Following receipt of all bid proposals from an NPA opportunity, National Grid proceeds directly into the evaluation stage of the NPA process. This evaluation and review of submitted bid proposals is comprised of five rounds of evaluation, with each round based on a high-level

screening, detailed technical review, detailed economic review, customer acceptance, and final round selections, as detailed in the table and figure below. All bid proposals are evaluated in parallel through these five rounds.

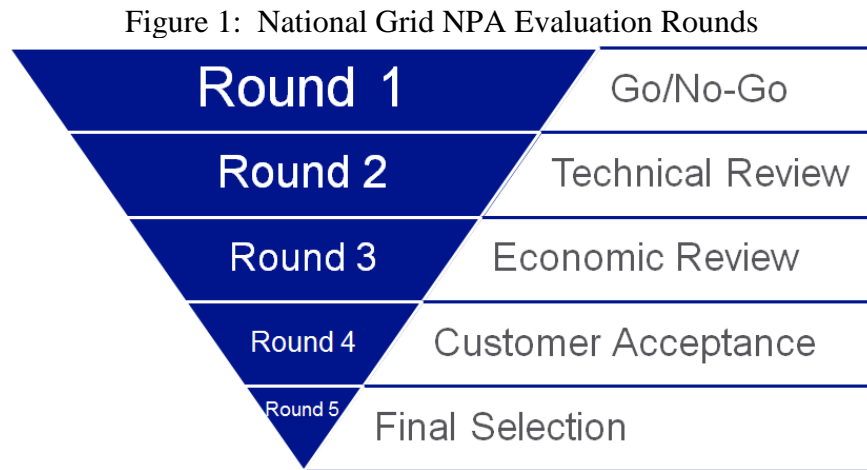


Table 6: National Grid NPA Evaluation Rounds Descriptions

Round	Evaluation Focus
Round 1	Go/No-Go: Preliminary BCA, bidder qualifications, technology type and maturity, schedule, engineering
Round 2	Detailed Technical Review: engineering, controls, communications and operations, permitting, schedule and milestones
Round 3	Detailed Economic Review: full BCA, credit rating assessment, financing structure, payment structure, additional included costs and incentives
Round 4	Customer Acceptance: Customer input from those who would be adopting alternatives dependent upon technology
Round 5	Final Review of Shortlisted Bidders, winning bidder selection as applicable, contract negotiation

The “preliminary BCA”, as indicated in Round 1 in the table above, is to determine if the cost-effectiveness of the proposal is feasible. It involves the initial proposed solution cost and applicable benefits based on technology. The “full BCA”, as indicated in Round 3 in the table above, include the more complex factors, such as interconnection cost and any contract negotiation changes, and other factors that require deeper research to determine.

Customer Acceptance will play a critical role in the success of implementing an NPA. NPA considers this customer acceptance determination as a separate round. The Company will assess the likelihood of adoption of an NPA solution with learnings from the continued development of the NPA program.

Leveraging the knowledge and lessons learned gained through the Company's NWA Program and NWA evaluation process, the Company has referenced the NWA evaluation categories in order to develop the NPA evaluation process. These evaluation categories will be applied to every NPA bid proposal for any solution approach or technology type that National Grid receives. This includes proposals sourced from third-party solution providers or from an internal National Grid team.

Partial NPA opportunities are also assessed as an option. Partial NPAs are solutions that address part of a specified system need with the rest of the system need addressed by a pipes option. A partial NPA effectively reduces the scope of infrastructure projects.

The factors that will be considered within NPA evaluation include reliability, functionality, existing market conditions for the proposed technologies, societal and environmental impact, cost-effectiveness, safety and risk, flexibility, ability to meet the specific system need, bidder's experience, and the ability for a solution proposal to pass the BCA. The NPA bid proposal that scores highest in total across all categories and meets the minimum criteria requirements (cost-effective, meets the technical need, and does not detrimentally impact the customer) is selected as the winning bid, as applicable. Additionally, in Rhode Island, the cost and cost-effectiveness are compared between the NPA option and the pipes option, in alignment with LCP 1.3.H. The NPA evaluation categories are detailed and described in Table 7 below.

Table 7: National Grid USA Evaluation Categories for NPA Proposals

Category	Description
Proposal Content & Presentation	Information requested has been provided by the bidder and is sufficiently comprehensive and well presented to allow for evaluation.
Bidder's Experience	The experience of the Bidder, any Engineering, Procurement and Construction (EPC) contractor, prime subcontractors and, if applicable, O&M operator or other entity responsible for the development, construction, or operation of the proposed solution.
Environmental	The Bidder's Proposal shall address impacts including but not limited to acoustic, aesthetic, air and greenhouse gas (GHG) emissions, water, and soil impacts, and permitting and zoning considerations. This includes greenhouse gas abatement and considers a proposal's ability to produce an outcome that reduces the amount of greenhouse gas emissions that would otherwise be produced from the pipes option.
Project Viability	The likelihood that the solution(s) associated with a Proposal can be financed and completed as required by the relevant agreement.

Functionality	The extent to which the proposed solution would meet the defined functional requirements and the ability to provide demand reduction during peak times and within the geographic area of need.
Technical Reliability	The extent to which the proposed type of technology and the equipment would meet the reliability need and can be integrated with utility operations including the ability to monitor and dispatch as applicable.
Safety	National Grid requires that the Bidders recognize safety is of paramount importance. Bidders will be required to provide safety information related to the proposed technology and information regarding safety history. The bid should comply with any jurisdictional compliance and regulatory safety codes.
Customer and Socio-economic Impacts	The Bidder's Proposal shall address how the proposed technology impacts the customer in addition to temporary and permanent jobs to be created, economic development impacts, and property tax payments. National Grid also assesses public health and energy pricing impacts of each solution proposal.
Scheduling	The Bidder's Proposal shall include proposed timelines outlining milestones and provide sufficient detail for each deliverable, including meeting the in-service need date.
Offer Price	The Bidder's Proposal shall be based on project-specific values and financing requirements.
Adherence to Terms	The extent to which the Bidder accepts National Grid's proposed terms will be taken into consideration. The RFP evaluation may impute an additional amount to Bidder's Proposal to reflect any proposed modifications to the non-price terms and conditions by the Bidder that result in National Grid incurring additional costs or risks. Redlines to the terms shall be provided by the Bidder as part of its proposal for review by National Grid during the evaluation period.
Credit	Bidder's capability and willingness to perform all of its financial and other obligations under the relevant agreement will be considered by National Grid in addition to Bidder's financial strength, as determined by National Grid, and any credit assurances acceptable to National Grid that Bidder may submit with its Proposal.
Customer Acceptance	The extent to which the bidder provides compelling evidence for achieving sufficient customer adoption to achieve needed customer adoptions. This may include data, market research, outreach plans on how to promote customer adoptions.
Cost-Effectiveness	This analysis will be performed to determine the cost-effectiveness of a proposal and the RI NPA BCA Model will be used.

8. Rhode Island System Data Portal

This section details the Rhode Island System Data Portal and associated resources.

The Portal is an interactive online mapping tool developed by the Company. The Portal provides specific information for select electric distribution feeders and associated substations within the Company's electric service area in Rhode Island. This information includes feeder characteristics such as geographic locations, voltage, feeder ID, planning area, substation source, approximate loading, and available distribution generation hosting capacity.

The Portal provides this information to stakeholders, customers, and third-party solution providers. The main target audience is third-party solution providers and the main goal of the Portal is to provide information in order to engage the market for cost-effective grid solutions to reduce costs for Rhode Island customers. Therefore, the Portal is considered an SRP resource because it adheres to LCP standards and goals and is a complementary activity to meet electrical energy needs.

Costs related to Portal maintenance and routine operation of existing Portal aspects and work by FTEs are included in the current rate case. Only new enhancements to the Portal are covered in SRP Investment Proposals. New enhancements are expected to originate from collaborative consultation between National Grid and external stakeholders.

A public landing page for the Portal is located on the customer-facing National Grid website.¹⁶

8.1 Updates to the Portal in the Past Year

The Company has added the following new enhancements to the Portal in CY 2020:

- Addition of the Sea Level Rise map, detailed in Section 8.2 below
- Addition of the ZIP Codes map layer for all maps
- Second update of the "Known Transportation Vehicle Fleet Locations" map layer. Added 19 new locations to detail non-EV fleets that have the potential to be electrified.
- Updated the Rhode Island System Data Portal User Guide to reflect the Sea Level Rise map addition and for better legibility.
- Added the 2019 and 2020 Electric Peak (MW) Forecast Reports to the "Company Reports" tab.
- Added the 2021-2023 System Reliability Procurement Three-Year Plan to the "Company Reports" tab.

These updates were incremental and at no additional cost.

¹⁶ See Rhode Island System Data Portal. *National Grid US*, National Grid USA Service Company, Inc., 2018, www.nationalgridus.com/Business-Partners/RI-System-Portal.

8.2 Portal to Date

To date, the Portal includes tabs that detail select Company reports, a distribution assets overview map, a heat map, a hosting capacity map, sea level rise, and National Grid’s NWA program. Each map tab has the date listed in its about dropdown for when the tab data was last updated.

The Company Reports tab lists documents such as the annual SRP reports, annual ISR proposals, the electric peak forecast, and redacted area study reports.

The FAQ tab lists common questions with standard responses to proactively inform and resolve confusion for visitors to the Portal, such as third-party solution providers.

The Distribution Assets Overview tab contains a map that displays specific electric distribution feeder and substation information, summer normal ratings, and up-to-date recorded loading and forecasted loading.

The Heat Map tab contains an interactive color-coded map of distribution feeders based on forecasted load compared to summer normal rating. The heat map provides information on circuits that would benefit from DER interconnection for load relief, and on circuits that have existing capacity for electric vehicle (EV) charging stations, heat pumps, and other beneficial electrification opportunities.

The Hosting Capacity tab contains an interactive map of distribution feeders based on interconnected DG and in-progress DG projects. The hosting capacity map also contains information on substation ground fault overvoltage (3V0) protection status. The Portal details if 3V0 is installed at a substation or if 3V0 is in construction or slated for construction and the proposed in-service date. Installation of 3V0 makes a substation transformer “DG-ready”.

The Sea Level Rise tab is an interactive map that overlays National Oceanic and Atmospheric Administration (NOAA) federal sea level rise map data with National Grid’s electric distribution network map data in Rhode Island. This map provides information intended to help third-party solution providers and DER developers identify locations on the National Grid electric distribution network in relation to areas that may experience potential coastal flooding impacts in the future. All sea level rise data is sourced and mirrored from the NOAA Sea Level Rise Viewer.¹⁷

The NWA tab contains a link to National Grid’s NWA Website¹⁸, which hosts information on the Company’s NWA process and NWA RFP opportunities.

¹⁷ “NOAA Sea Level Rise Viewer.” *NOAA Sea Level Rise and Coastal Flooding Impacts*, National Oceanic and Atmospheric Administration of the United States Department of Commerce, <https://coast.noaa.gov/slr/>.

¹⁸ “Non-Wires Alternatives.” *National Grid Business Partners*, National Grid USA, Inc., 13 Nov. 2019, www.nationalgridus.com/Business-Partners/Non-Wires-Alternatives/.

9. SRP Market Engagement

This section provides information regarding the Company’s market engagement efforts with respect to SRP.

SRP Market Engagement aims to raise awareness and perform outreach and engagement for the Rhode Island System Data Portal as needed, for NWA-related activities not covered by FTE work, and with third-party solution providers.

Outreach and engagement for activities specific to NWA, such as NWA RFPs, are already included in the work by FTEs dedicated to the development and pursuit of NWA opportunities and solutions. These FTEs are covered by the rate case.

SRP market engagement will enable third-party solution providers and vendors to more easily access available information about National Grid’s electric distribution system and SRP opportunities in Rhode Island and therefore further enable these solution providers to create, submit and develop innovative energy solutions for Rhode Island customers. SRP Market Engagement upholds the commitment of National Grid and the State of Rhode Island to advance a more reliable, safe, and cost-effective energy landscape for residents and businesses of Rhode Island.

9.1 Market Engagement Activity of the Past Year

The Company continued market engagement efforts with respect to SRP and NWA during calendar year 2020. The 2020 SRP Outreach and Engagement Plan, as filed in the 2020 SRP Report in PUC Docket No. 4980¹⁹, proposed the following primary business-to-business (B2B) engagement channels that National Grid planned to implement:

- In-Person Demonstrations
- Webinars
- Email
- Paid Search Terms
- Digital Advertisements
- Social Media Engagement
- Feedback Engagement
- Earned Media
- Vendor Contact List
- Contact Channels

¹⁹ “Docket No. 4980.” *State of Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers*, The Narragansett Electric Company d/b/a National Grid, 15 Oct. 2019, www.ripuc.ri.gov/eventsactions/docket/4980page.html.

The Company struck in-person demonstrations from its market engagement tactics for 2020 due to the rise of the COVID-19 pandemic and with regard to public health and safety.

The Company hosted two (2) Portal webinars in 2020, with email notifications and invites in advance of the webinar dates. The email campaigns had an average open rate of 32.79%, with the average email open rate target set as 15.0%. The Company hosted the first webinar in Q2 on June 18, 2020 with 34 external parties in attendance and the second webinar in Q4 on November 5, 2020 with 11 external parties in attendance. The average webinar attendance target for the Company was 35. The Company assesses that the decreased attendance in Q4 demonstrates market engagement saturation with respect to the Portal, especially considering the higher-than-expected average email open rate.

The Company stopped the paid search terms at the start of 2020 seeing as the four selected terms achieved top web rankings for the Portal landing page links, thereby ensuring that the Portal was now easy to find across all search engines. The terms are: “Rhode Island System Data Portal”, “RI System Data Portal”, “National Grid Rhode Island System Data Portal”, and “National Grid RI System Data Portal”.

The Company maintained digital advertisements for Q1 2020, however stopped the ads after Q1 seeing as web traffic appeared to reach a steady state. The Company resumed digital advertisements during Q3 2020 to drive engagement with the Portal vendor feedback survey.

The Portal vendor feedback survey entailed a pop-up survey form for visitors to complete when they arrived at the Portal landing page. Please see Appendix 7 for the SRP Market Engagement Year-to-Date Results, which is the SRP Marketing and Engagement Plan Quarterly Progress Report for Q4 2020 that shows the cumulative SRP market engagement progress over calendar year 2020 and contains the vendor feedback survey components and results. The Company received minor uptake of the survey by business users that provided National Grid with a perspective on the type of vendor that visits and utilizes the Portal. However, the Company did not receive the quantity of qualitative, targeted feedback that it anticipated; namely that most of the feedback was from residential and not business users. The Company will assess performing a new vendor feedback survey in a more targeted manner in the future with lessons learned applied from the CY 2020 survey. The Company also received residential user feedback that indicated residential user site visits to the Portal were largely incidental and a result of coming across the survey versus actively seeking out the Portal website. The Company did receive a residential user remark on EFI, which is National Grid’s rebate management vendor. The Customer Energy Management (CEM) team was made aware of this comment; however, given that survey submittals were anonymous, response and follow-up with the commenter was not possible.

The Company published four social media updates via National Grid’s LinkedIn page to promote upcoming webinars as well as the survey to the target audience of third-party solution providers.

The Company explored earned media in 2020; however, the Company currently did not find added value for driving market engagement through earned media with the Portal.

The Company further expanded its vendor contact list for SRP and NWA market engagement use. The NWA program has benefitted from this expanded contact list for vendor stakeholder calls and NWA RFP events.

Following calendar year 2020, the Company has entered a maintenance phase with market engagement for the Rhode Island System Data Portal. Therefore, the only planned SRP Market Engagement activities for the Portal are to maintain web traffic analytics to the Portal landing page. These web traffic analytics have no cost to operate or acquire.

Appendices

- Appendix 1 Rhode Island Company Electric Service Projected Load Growth**
- Appendix 2 Screened Wires Projects Table**
- Appendix 3 NWA Opportunities Summary Table**
- Appendix 4 RI NWA BCA Model**
- Appendix 5 RI NWA BCA Model TRM**
- Appendix 6 RI NWA BCA Model TRM Redline**
- Appendix 7 SRP Market Engagement Year-to-Date Results**

Appendix 1 – Rhode Island Company Electric Service Projected Load Growth

Forecasted Load Growth for NWA Opportunities

This appendix provides an overview and update on the Rhode Island electric service projected load growth rates as well as the forecasted load growth for locations in Rhode Island that have the potential for NWA opportunities.

The Company's electric distribution system serves close to 500,000 customers in 38 cities and towns in Rhode Island. The residential class accounts for approximately 41% of the Company's total Rhode Island load, the commercial class accounts for approximately 49%, and the industrial class accounts for approximately 10%.

The forecasted load growth rates for counties and towns in Rhode Island are shown in the Rhode Island Projected Load Growth Rates table below. Additionally, as seen in the sections below for Bristol, Kent, and Providence counties, the average annual growth rates are projected to be flat or negative over the next 10 years.

The Bonnet 42F1 and South Kingstown NWA opportunities intend to address the forecasted load growth and system need in Washington County.

The Company has not presently identified other NWA opportunities through the distribution system planning process.

The Company accounts for DR, EE, EV, and PV impacts in the Company's electric peak load forecasting.

Forecasted Load Growth in Bristol County

The Bristol County area annual weather-adjusted summer peak is expected to be flat at an average annual growth rate of 0.0% for the next 10 years. This rate is less than the statewide average annual growth rate of 0.1%.

Forecasted Load Growth in Kent County

The Kent County area annual weather-adjusted summer peak is expected to be flat at an average annual growth rate of 0.0% for the next 10 years. This rate is less than the statewide average annual growth rate of 0.1%.

Forecasted Load Growth in Newport County

The Newport County area annual weather-adjusted summer peak is expected to increase at an average annual growth rate of 0.3% for the next 10 years. This rate is greater than the statewide average annual growth rate of 0.1%.

Forecasted Load Growth in Providence County

The Providence County area annual weather-adjusted summer peak is expected to decrease at an average annual growth rate of -0.2% for the next 10 years. This rate is less than the statewide average annual growth rate of 0.1%.

Forecasted Load Growth in Washington County

The Washington County area annual weather-adjusted summer peak is expected to increase at an average annual growth rate of 0.3% for the next 10 years. This rate is greater than the statewide average annual growth rate of 0.1%.

Rhode Island Projected Load Growth Rates

State	County	Town	Annual Growth Rates (%)										5-year Average (%)	10-year Average (%)
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2021 to 2025	2021 to 2030
RI			-0.9	-0.8	-0.1	0.5	0.6	0.5	0.4	0.3	0.2	0.2	-0.1	0.1
	BRISTOL		-1.0	-0.9	-0.3	0.3	0.5	0.4	0.3	0.2	0.1	0.1	-0.3	0.0
	KENT		-1.0	-0.9	-0.2	0.4	0.6	0.4	0.3	0.2	0.1	0.1	-0.2	0.0
	NEWPORT		-0.5	-0.4	0.1	0.7	0.9	0.7	0.6	0.5	0.4	0.3	0.2	0.3
	PROVIDENCE		-1.3	-1.1	-0.5	0.2	0.4	0.3	0.2	0.1	0.1	0.0	-0.5	-0.2
	WASHINGTON		-0.6	-0.5	0.1	0.7	0.9	0.7	0.6	0.4	0.3	0.3	0.1	0.3
	WASHINGTON	Kenyon	-3.3	-2.9	-2.1	-1.3	-1.0	-1.0	-0.9	-0.9	-0.9	-0.8	-2.1	-1.5
	WASHINGTON	Narragansett	-2.3	-2.1	-1.3	-0.6	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-1.3	-0.9
	WASHINGTON	Peace Dale	-0.4	-0.3	0.2	0.8	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.4

Appendix 2 – Screened Wires Projects Table

The Narragansett Electric Company
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Count	Project ID	Project Description	NWA Comment	Partial NWA Comment	Capex Spending Rational	Date Initiated
1	C085464	Apponaug 3V0 Distribution Substation	Does not meet NWA screening requirements - Programmatic Ground Fault Overvoltage Protection to address accumulated Distributed Energy Resource interconnections	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	4/6/2020
2	C085540	ELDRED 3V0 Distribution Substation	Does not meet NWA screening requirements - Programmatic Ground Fault Overvoltage Protection to address accumulated Distributed Energy Resource interconnections	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	4/15/2020
3	C085553	RI Repl ACNW Vault Vent Blowers	Does not meet NWA screening requirements - Specific project opened as part of the program to provide manhole ventilation methods to promote natural exchange of air in the duct systems	This project would not be suitable for consideration of a Partial NWA	Asset Condition	4/17/2020
4	C085628	RI Mobile 3V0 Units	Does not meet NWA screening requirements - Programmatic Ground Fault Overvoltage Protection to address accumulated Distributed Energy Resource interconnections	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	4/28/2020
5	C085688	RI- VVO Putnam Pike	Upon further evaluation, the VVO projects are not proposed to address system concerns, the program is used to reduce customer cost and customer energy and therefore there are no comparable NWA projects at this time.	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	5/6/2020
6	C085689	RI VVO Putnam Pike	Upon further evaluation, the VVO projects are not proposed to address system concerns, the program is used to reduce customer cost and customer energy and therefore there are no comparable NWA projects at this time.	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	5/6/2020
7	C085812	Covid Scenario Analysis Work RI	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	5/20/2020
8	C085927	Shippee Ave Voltage Conversion	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	6/11/2020
9	C086391	Verizon Copper to Fiber Conversions	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	Non-Infrastructure	8/28/2020
10	C086486	Admiral Sub Animal Fence	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	9/11/2020
11	C086494	LightHouse URD Cable Replacement	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	9/14/2020

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Count	Project ID	Project Description	NWA Comment	Partial NWA Comment	Capex Spending Rational	Date Initiated
12	C086514	RI GE type U bushing Replacement	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	9/16/2020
13	C086518	Columbus Ave Voltage Conversion	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	9/16/2020
14	C086631	RI Repl ACNW Vault Vent Blowers	Does not meet NWA screening requirements - Asset Condition Driven Project	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	10/5/2020
15	C086694	IR-URD Village Point Jud Narra, RI	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	10/15/2020
16	C086862	ACNW Vlt 46 Reconstruction, Prov.	Does not meet NWA screening requirements - Specific project opened as part of the program to provide manhole ventilation methods to promote natural exchange of air in the duct systems	This project would not be suitable for consideration of a Partial NWA	Asset Condition	11/13/2020
17	C086869	ACNW Vlt 72 Reconstruction, Prov.	Does not meet NWA screening requirements - Specific project opened as part of the program to provide manhole ventilation methods to promote natural exchange of air in the duct systems	This project would not be suitable for consideration of a Partial NWA	Asset Condition	11/13/2020
18	C086879	Install PTRs-Highland Corp Ind Park	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	11/16/2020
19	C086993	IRURD Michael Drive Linc Rplc	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	12/16/2020
20	C087120	RI UG Cable Repl Prog Fdr 1103	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	1/13/2021
21	C087124	RI UG Cable Repl Prog Fdr 1171	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	1/13/2021

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Count	Project ID	Project Description	NWA Comment	Partial NWA Comment	Capex Spending Rational	Date Initiated
22	C087126	RI UG Cable Repl Prog Fdr 1103A	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	1/13/2021
23	C087128	RI UG Cable Repl Prog Fdr 1103B	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	1/13/2021
24	C087133	RI UG Cable Repl Prog Fdr 1121	Does not meet NWA screening requirements - Asset Condition Driven Project, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA because it is an Asset Condition Driven Program	Asset Condition	1/13/2021
25	C087239	Re-Conductoring 48F1 - COVID	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	1/29/2021
26	C087241	Re-Conductoring 20F2 - COVID	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	1/29/2021
27	C087242	72F3 Reconductor - COVID Analysis	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	1/29/2021
28	C087244	72F5 Reconductoring COVID Analysis	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	1/29/2021
29	C087276	COVID Re-conductoring 59F3	Does not meet NWA screening requirements - Timeline of need was immediate, <\$1 Million in cost	This project would not be suitable for consideration of a Partial NWA	System Capacity & Performance	2/2/2021
30	C087362	Natick 3V0 Distribution Substation	Does not meet NWA screening requirements - Programmatic Ground Fault Overvoltage Protection to address accumulated Distributed Energy Resource interconnections	This project would not be suitable for consideration of a Partial NWA	Reliability	2/12/2021
31	C087363	Wampanoag 3V0 Distribution Substation	Does not meet NWA screening requirements - Programmatic Ground Fault Overvoltage Protection to address accumulated Distributed Energy Resource interconnections	This project would not be suitable for consideration of a Partial NWA	Reliability	2/12/2021
32	C087367	Phillipsdale DLine	Does not meet NWA screening requirements - Asset Condition Driven Project	This project would not be suitable for consideration of a Partial NWA	Asset Condition	2/12/2021
33	C087630	Chopmist 34F2 Breaker Rplmt	Does not meet NWA screening requirements - Asset Condition Driven Project	This project would not be suitable for consideration of a Partial NWA	Reliability	3/23/2021

Appendix 3 – NWA Opportunities Summary Table

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Project Title	Project Purpose	System Need Detail	NWA Project Details	Affected System Components	Project Origination	Planned Wires Option Work	Planned Start Date	NWA Option Status
Bonnet 42F1 NWA	Load Reduction	The Town of Narragansett is mostly supplied by (4) 12.47 kV distribution feeders. Feeder 42F1 is projected to be loaded above summer normal ratings by 2024 and lacks useful feeder ties to reduce loading below their ratings. Either more capacity must be added or load must be reduced in the town.	Load reduction on Bonnet 42 substation, feeder 42F1 to defer or remove the need for feeder line work and reconfiguration.	Bonnet 42F1 feeder	South County East Area Study	Extend the 59F4 out of Peacedale down to the 17F3 out of Wakefield and create a new feeder tie, as well as move existing load. Make switching steps to further adjust load on the system.	5/1/2023	Bids in evaluation
Bristol 51 NWA	MWh Violation and Load Reduction	The Town of Bristol is mostly supplied by (3) 12.47 kV distribution feeders. Loading on the 51F1, 51F2, and 51F3 feeders is predicted to be over 100% of their summer normal ratings and will be overloaded in the next ten years. Either more capacity must be added or load must be reduced in the town.	Load reduction on Bristol 51 substation feeders 51F1, 51F2, 51F3 to defer or remove the need for feeder line work and reconfiguration.	Bristol 51 substation feeders: 51F1, 51F2, 51F3	East Bay Area Study	To resolve the projected MWh exposure and un-served load in the Bristol area, a new feeder is recommended at Bristol substation along with some feeder mainline upgrades and area feeder reconfigurations. The projected in-service date for this new feeder is calendar year 2028.	5/1/2022	No viable bids received
South Kingstown NWA	Load Reduction	The western section of the Town of South Kingstown is supplied mostly by (3) 12.47 kV distribution feeders. Two of those feeders (59F3 and 68F2) are projected to be loaded above summer normal ratings and lack useful feeder ties to reduce loading below their ratings. Either new feeder ties must be created or load must be reduced in the western half of the town.	Load reduction on Peacedale 59F3 and Kenyon 69F2 feeders to defer or remove the need for feeder line work and reconfiguration.	Peace Dale 59F3 feeder Kenyon 69F2 feeder	South County East Area Study	Tap existing 68F5 Kenyon Feeder (at Biscuit City Road with new PTR, and extend 20,000' to P12 Tuckertown Road to create a new Normally Open tie point with the 59F3). With this new line extension, load from 68F2 and 59F3 can be transferred to the 68F5, offloading the two overloaded circuits.	6/1/2022	Bids in evaluation

Appendix 4 – RI NWA BCA Model

The Company is seeking confidential treatment of Appendix 4.

The Company is providing Appendix 4 as an Excel file because it is too large to legibly produce as a PDF file.

Appendix 5 – RI NWA BCA Model Technical Reference Manual

Appendix 6 – RI NWA BCA Model Technical Reference Manual Redline

Appendix 7 – SRP Market Engagement Year-to-Date Results