JOINT UTILITIES OF NEW YORK

Stakeholder Engagement Webinar
DER Sourcing / Non-Wires RFP Process

May 29, 2019

NYSEG nationalgrid Orange & Rockland Rockland Electric Company conEdison Central Hudson A FORTIS COMPANY RG&E

Agenda

Time	Topic	Presenters
1:00 – 1:05	Introductions	Dale Murdock, ICF
1:05 – 1:15	Overview and Status Updates on the Evolving Non-Wires Process	Marie Schnitzer, National Grid
1:15 – 1:25	Con Edison Presentation	Damei Jack, Con Edison
1:25 – 1:35	Orange and Rockland Presentation	MD Sakib, O&R
1:35 – 1:40	Central Hudson Presentation	Mark Sclafani, Central Hudson
1:40 – 1:50	NYSEG/RG&E Presentation	Mike DeAngelo, NYSEG/RG&E
1:50 – 2:00	National Grid Presentation	Marie Schnitzer, National Grid
2:00 – 2:30	Q&A Session and Wrap-up	All

Today's Session

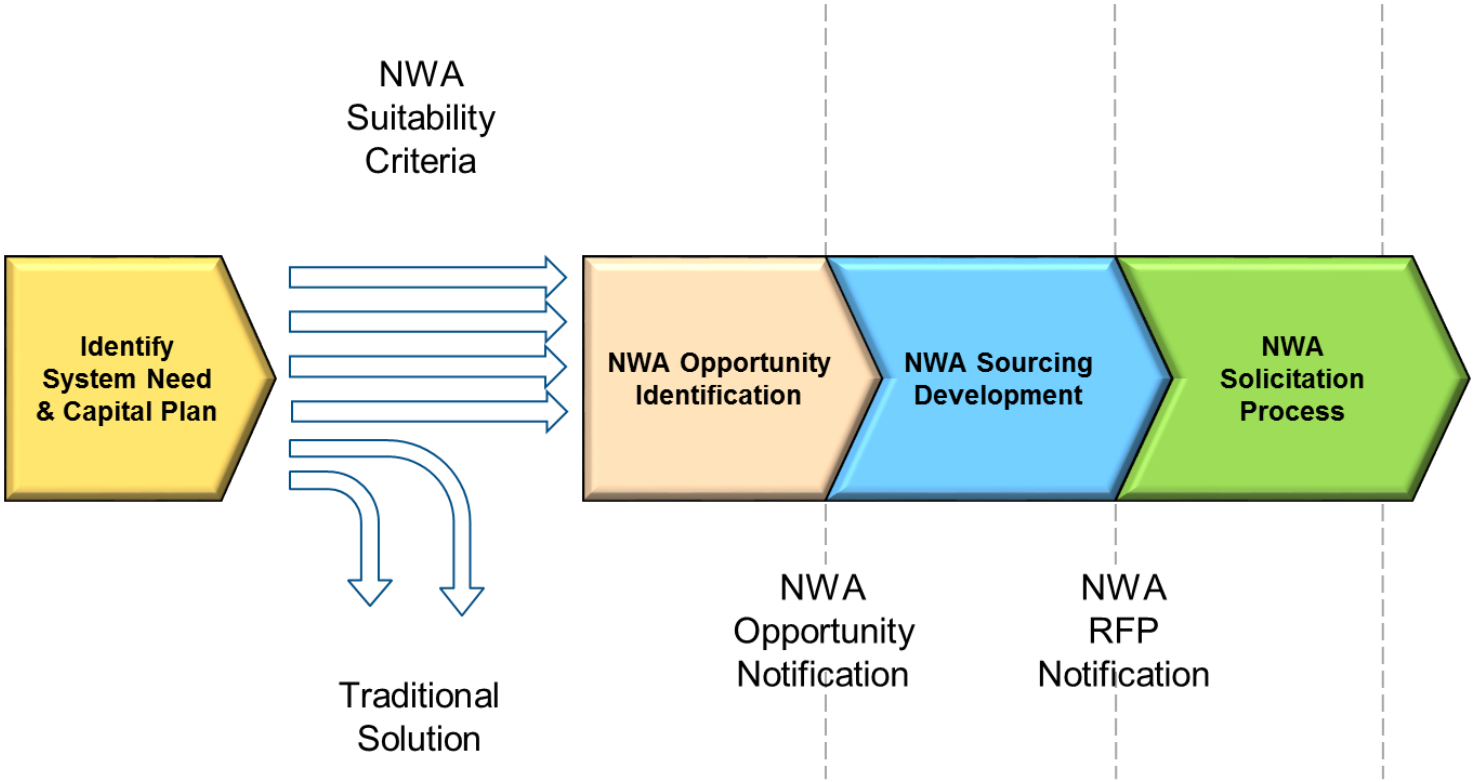
Objectives:

- Discuss challenges and lessons learned during the non-wires solutions RFP process to date
- Share how the JU are addressing these challenges to evolve and improve the RFP process
- Not intended to talk about a specific RFP, specific responses, or specific status of any particular RFP

Logistics:

- Please hold your questions and comments until the Q&A session of this webinar
- Please mute your phone line unless you are posing a question or providing a comment
- Questions will be taken first by phone and then through the 'questions' function on the webinar interface
- Please identify your company affiliation when you pose your question
- Contact info@jointutilitiesofny.org if you have additional questions following the webinar

Planning Process and Sourcing Overview



JU NWA Sourcing Process May 8, 2017 Filing:
http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=16-M-0411&submit=Search

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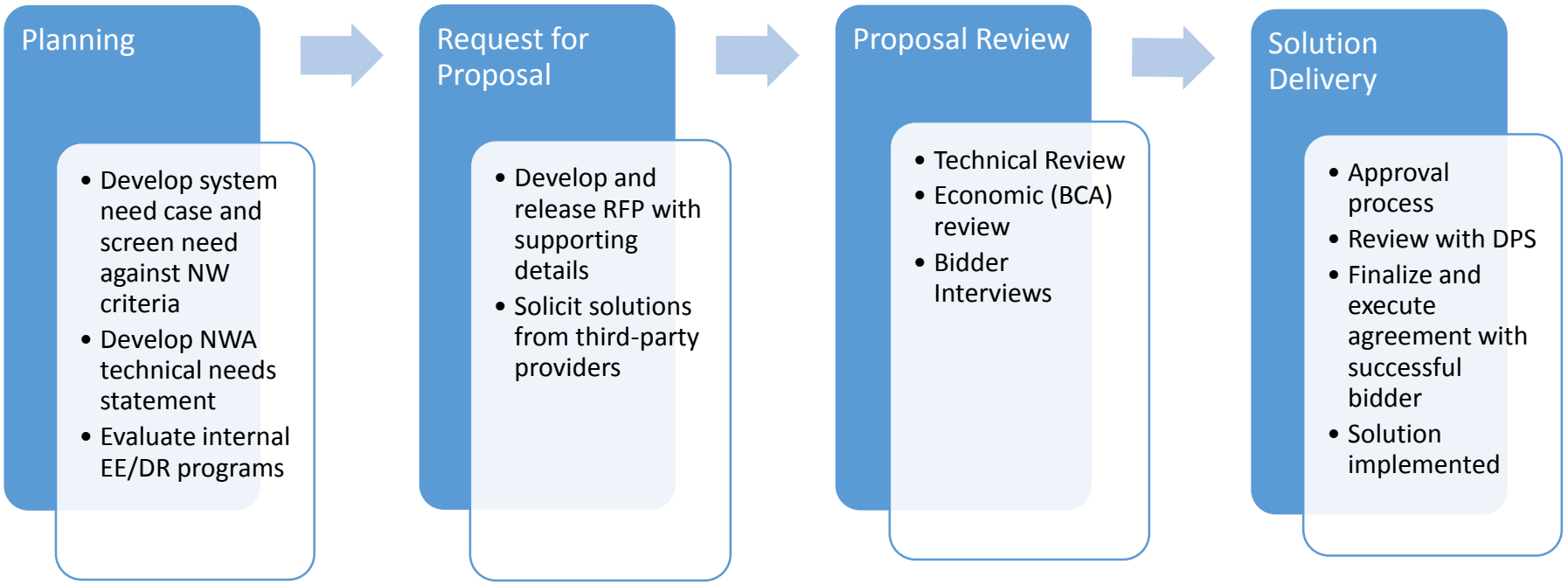
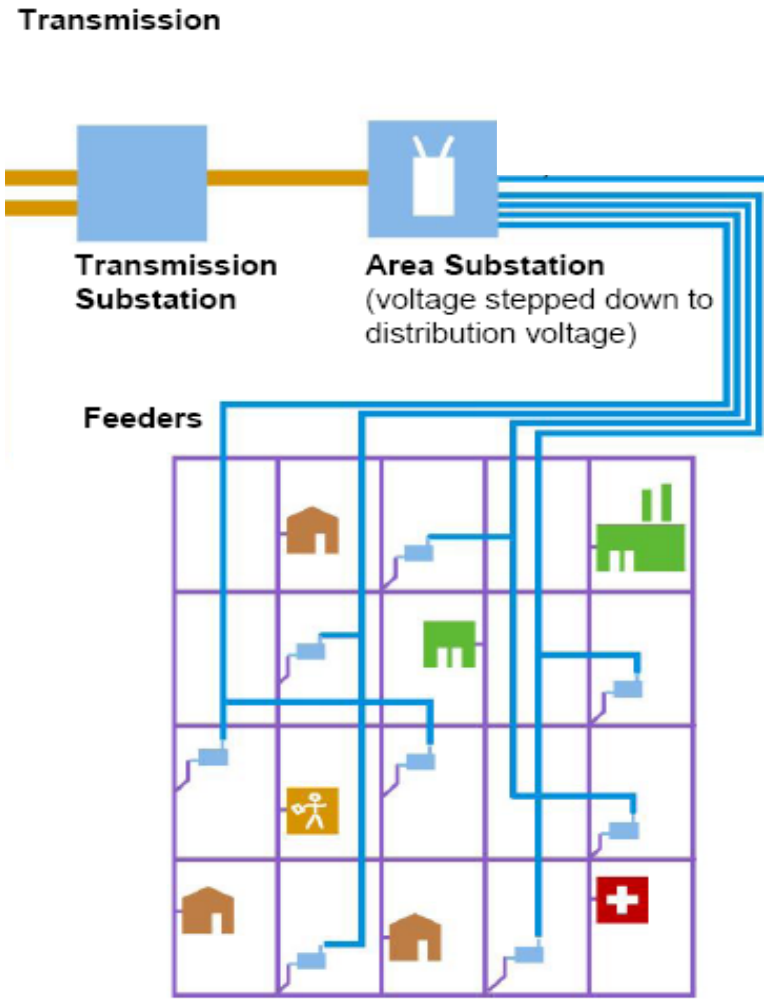
Non-Wires Process Overview



Non-Wires Solutions Update

Joint Utilities Stakeholder Webinar

Distributed Energy Resources (DERs): Customer Choice and a Utility Tool



Annual Load Forecast

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Analyze impacts to area substation, primary feeders, etc.

↓

Forecasted load expected to exceed capability of area/network

↙ ↘

Traditional Solution
Upgrade transformers, add new feeders, etc.

Non-Wires Solutions
Pursue demand reduction strategies

Market Solicitation

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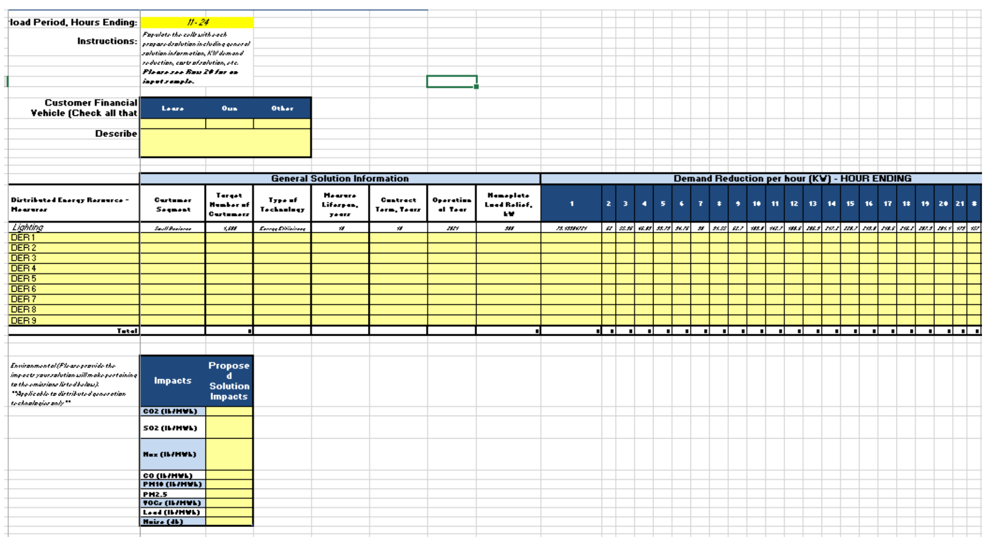
Consolidated Edison Company of New York, Inc.

Request for Proposal

Non-Wires Solutions to Provide Demand Side Management for Subtransmission and Distribution System Load Relief

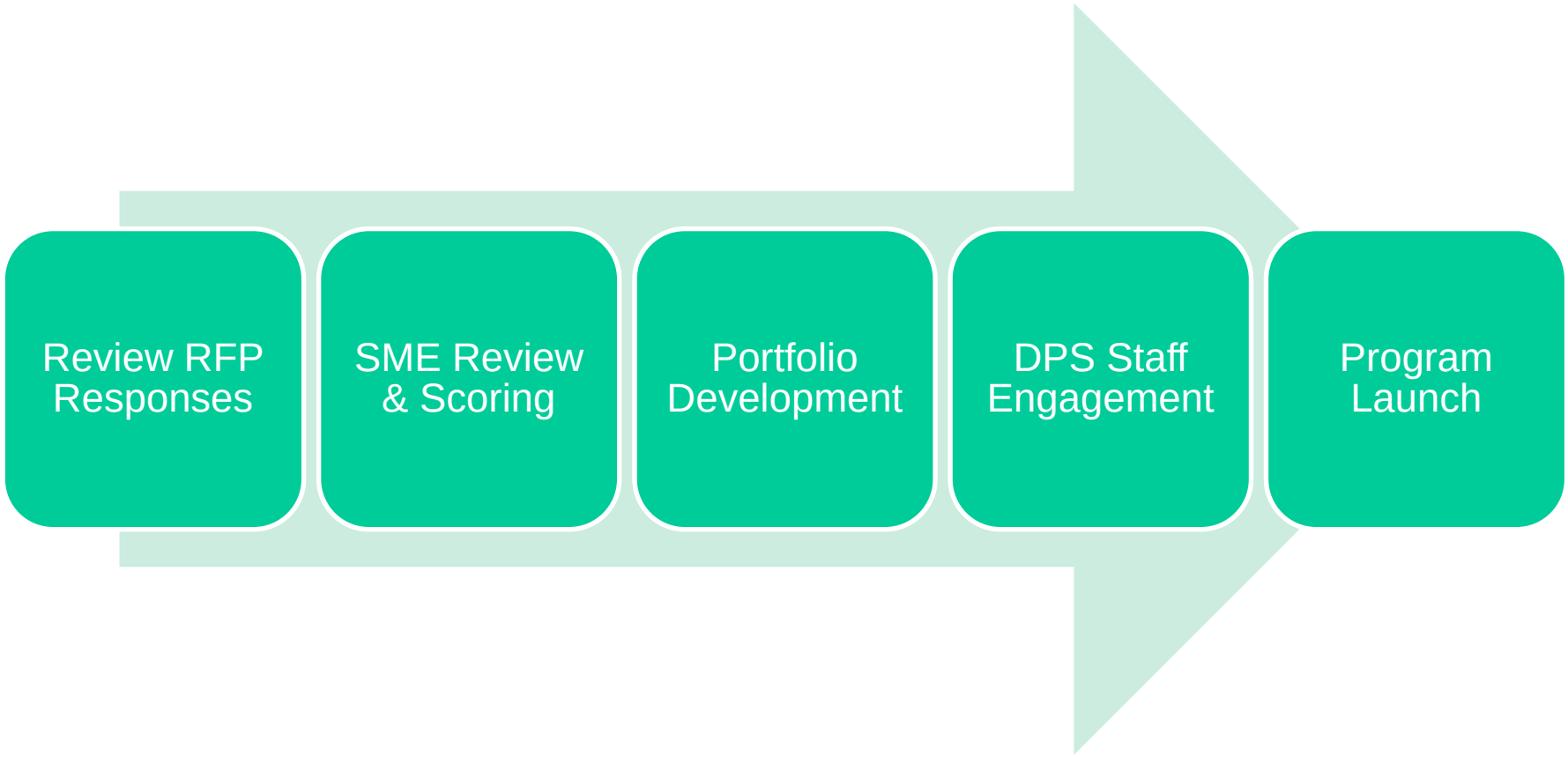


Review Approach	Objective
Proposal Content and Presentation	Information requested has been provided and is comprehensive to allow for evaluation.
Project Costs	Total cost of the project, incentive requested, and $/MW at peak required from Con Ed for the proposed solution.
Benefit-Cost Analysis	The Company is required to utilize a BCA as outlined in the BCA Handbook filed with the New York State Public Service Commission. A BCA will be applied to the portfolio of solutions to determine the feasibility of implementing an NWS.
Execution Risk	The expected ease of project implementation within the timeframe required for the NWS (e.g., permitting, construction risks, and operating risks).
Qualifications	The relevant experience and past success of Respondents in providing proposed solutions to other locations, including as indicated by reference checks and documented results.
Functionality	The extent to which the proposed solution would meet the defined functional requirements and the ability to provide demand reduction during the peak time and area of need.
Timeliness	The ability to meet Con Edison's schedule and project deployment requirements for the particular non-wires opportunity, reflecting that the detailed project schedule from contract execution to implementation and completion of projects is important for determination of feasibility.
Community Impact	The positive or negative impact that the proposed solution may have on the community in the identified area (i.e., noise, pollution).
Customer Acquisition	The extent to which Respondent's proposed solution would fit into the needs of the targeted network(s), the customer segment of the targeted network(s) and the customer acquisition strategy (Preliminary customer commitments from applicable customers will be highly desirable.)-**not applicable for Appendix D**
Availability and Reliability	The ability of the proposed solution to provide permanent or temporary load relief will be considered, along with the dependability and benefits that would be provided to the grid.

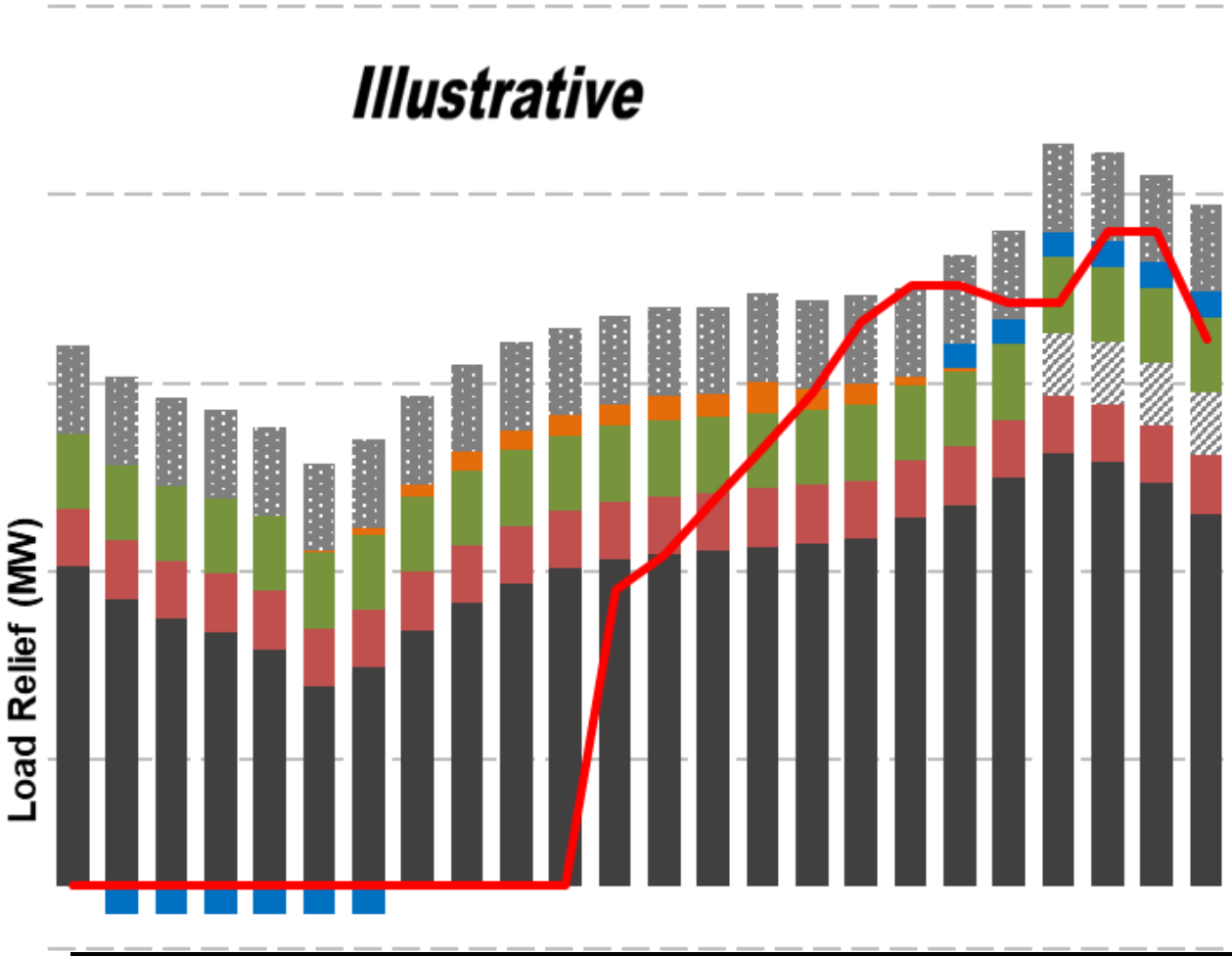
Recommendations to Potential RFP Respondents

- Ensure that you are qualified in Con Edison Oracle system
- A project will typically not be selected to address all needs
- Complete all RFP requirements and ensure requested attachments are fully completed
- Reach out to dsm@coned.com if you'd like to verify a customer is eligible (Account Number, name and address needed)
- Utilize additional revenue streams to propose a more cost-effective solution
- Documented customer letter of support and/or Solutions providing more load relief at network peak hour and/or overload period are prioritized
- Lower costs favored to maximize ratepayer benefit

Program Development Approach



Portfolio Approach for Deferral/Replacement of Traditional Solutions with DERs



A portfolio of DER technologies are needed to shave the peak.

Portfolio Development Learnings

Disqualifications

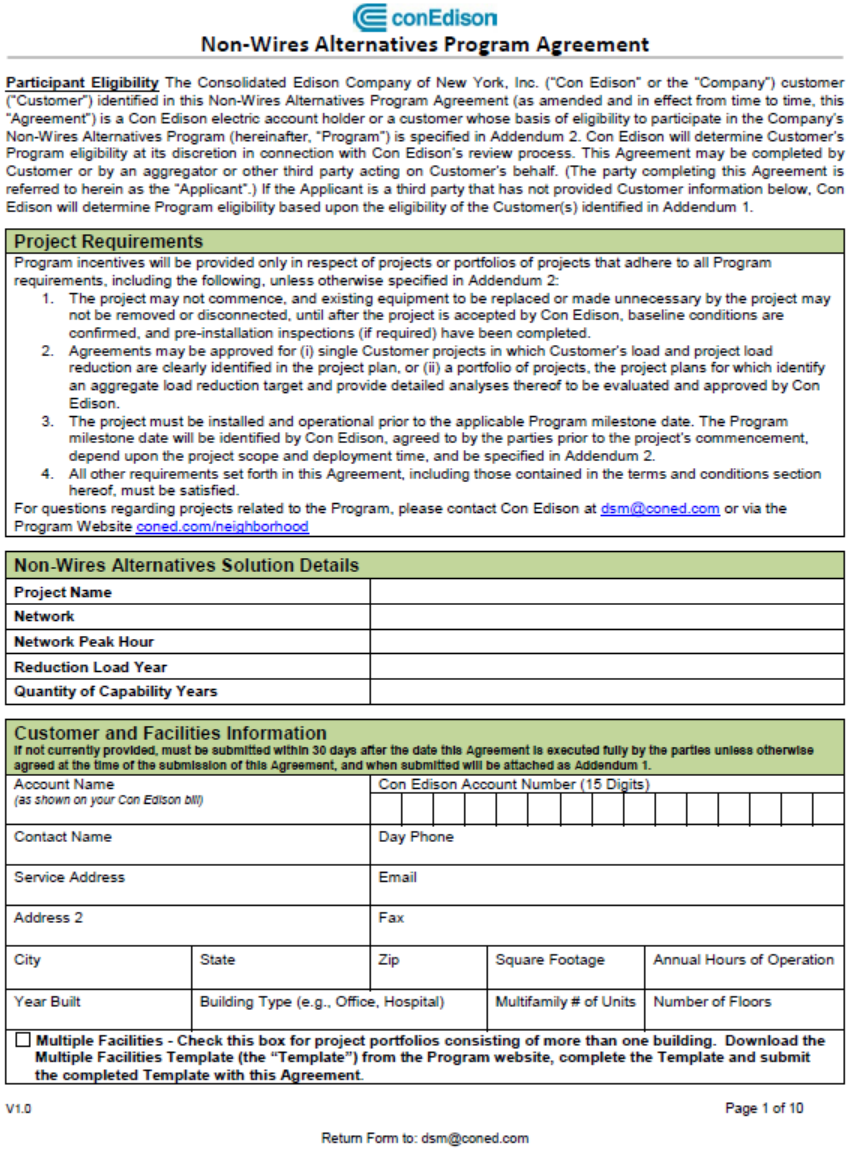
- Insufficient information provided
- Little to no reduction impact to times of need
- High costs compared to other solutions
- Technology proposed not yet proven

Selections

- Complete, clear proposal
- Helps to address overall portfolio needs
- Customer support/ understanding of demographics
- Cost competitive offering
- Proven technology

Contracting Approaches

- Coordination with core energy efficiency programs
- Distributed Generation & Energy Storage
  - Standard program agreement
  - Technical requirements
  - M&V and performance requirements
  - Security requirements
- Helpful links
  - Standard program agreement
  - ESS RFP



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Non-Wires Alternatives Program Agreement

Participant Eligibility The Consolidated Edison Company of New York, Inc. ("Con Edison" or the "Company") customer ("Customer") identified in this Non-Wires Alternatives Program Agreement (as amended and in effect from time to time, this "Agreement") is a Con Edison electric account holder or a customer whose basis of eligibility to participate in the Company's Non-Wires Alternatives Program (hereinafter, "Program") is specified in Addendum 2. Con Edison will determine Customer's Program eligibility at its discretion in connection with Con Edison's review process. This Agreement may be completed by Customer or by an aggregator or other third party acting on Customer's behalf. (The party completing this Agreement is referred to herein as the "Applicant".) If the Applicant is a third party that has not provided Customer information below, Con Edison will determine Program eligibility based upon the eligibility of the Customer(s) identified in Addendum 1.

Project Requirements

Program incentives will be provided only in respect of projects or portfolios of projects that adhere to all Program requirements, including the following, unless otherwise specified in Addendum 2:

1. The project may not commence, and existing equipment to be replaced or made unnecessary by the project may not be removed or disconnected, until after the project is accepted by Con Edison, baseline conditions are confirmed, and pre-installation inspections (if required) have been completed.
2. Agreements may be approved for (i) single Customer projects in which Customer's load and project load reduction are clearly identified in the project plan, or (ii) a portfolio of projects, the project plans for which identify an aggregate load reduction target and provide detailed analyses thereof to be evaluated and approved by Con Edison.
3. The project must be installed and operational prior to the applicable Program milestone date. The Program milestone date will be identified by Con Edison, agreed to by the parties prior to the project's commencement, depend upon the project scope and deployment time, and be specified in Addendum 2.
4. All other requirements set forth in this Agreement, including those contained in the terms and conditions section hereof, must be satisfied.

For questions regarding projects related to the Program, please contact Con Edison at dsm@coned.com or via the Program Website coned.com/neighborhood

Non-Wires Alternatives Solution Details

Project Name	
Network	
Network Peak Hour	
Reduction Load Year	
Quantity of Capability Years	

Customer and Facilities Information

If not currently provided, must be submitted within 30 days after the date this Agreement is executed fully by the parties unless otherwise agreed at the time of the submission of this Agreement, and when submitted will be attached as Addendum 1.

Account Name *(as shown on your Con Edison bill)*		Con Edison Account Number (15 Digits)		
Contact Name		Day Phone		
Service Address		Email		
Address 2		Fax		
City	State	Zip	Square Footage	Annual Hours of Operation
Year Built	Building Type (e.g., Office, Hospital)		Multifamily # of Units	Number of Floors

☐ **Multiple Facilities - Check this box for project portfolios consisting of more than one building. Download the Multiple Facilities Template (the "Template") from the Program website, complete the Template and submit the completed Template with this Agreement.**

V1.0 Page 1 of 10

Return Form to: dsm@coned.com

NWS Activity

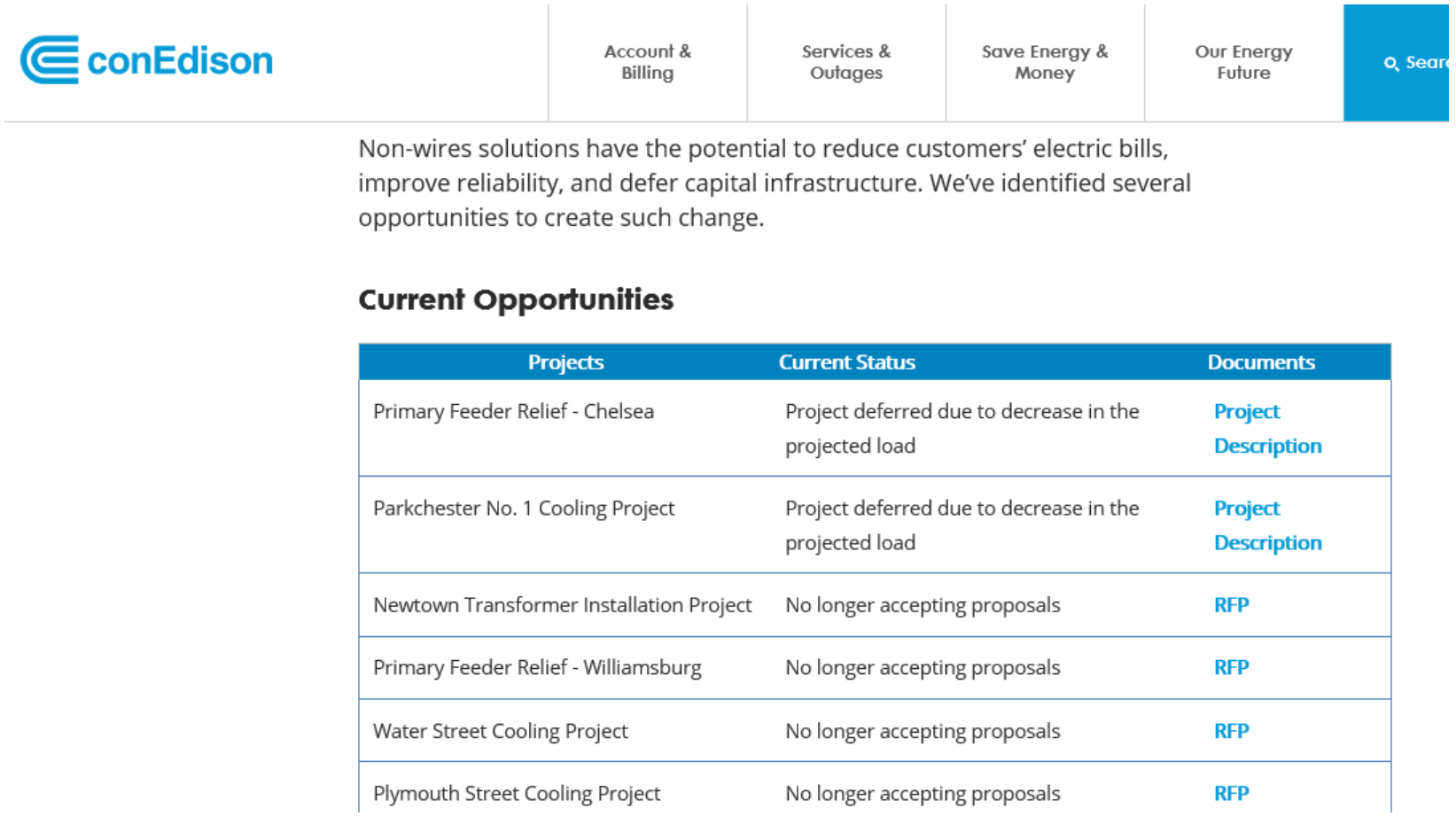
	Market Solicitation	Current Status
BQDM Program Extension	Implementation	Implementation/Procurement
Water St(+Williamsburg Feeder)	Implementation/Procurement	Implementation/Procurement
Plymouth St. CSS/USS		
Newtown Project	RFP Closed	Development and Evaluation
West 42nd St	RFP Closed	NO GO
Flushing Project	RFP Closed	NO GO
Hudson Feeder Project	RFP Closed	NO GO
Columbus Circle	RFP Closed	Project Cancelled

Active Programs in Brooklyn & Queens

To verify site eligibility email Con Ed account # to DSM@coned.com
Hosting Capacity Map: https://www.coned.com/en/business-partners/hosting-capacity

Stay Informed…

www.coned.com/nonwires



Non-wires solutions have the potential to reduce customers' electric bills, improve reliability, and defer capital infrastructure. We've identified several opportunities to create such change.

Current Opportunities

Projects	Current Status	Documents
Primary Feeder Relief - Chelsea	Project deferred due to decrease in the projected load	Project Description
Parkchester No. 1 Cooling Project	Project deferred due to decrease in the projected load	Project Description
Newtown Transformer Installation Project	No longer accepting proposals	RFP
Primary Feeder Relief - Williamsburg	No longer accepting proposals	RFP
Water Street Cooling Project	No longer accepting proposals	RFP
Plymouth Street Cooling Project	No longer accepting proposals	RFP

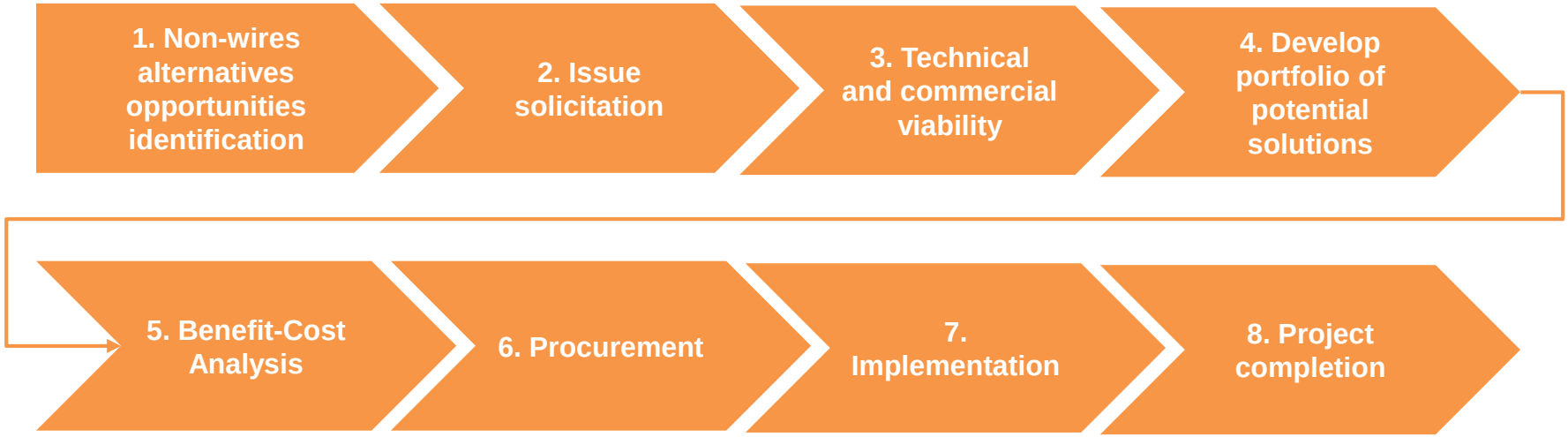
Other Helpful Links

- Con Edison Non-Wires Solutions: www.coned.com/nonwires
- Con Edison Hosting Capacity Map: www.coned.com/en/business-partners/hosting-capacity
- NYSERDA: www.nyserda.ny.gov/
- National Grid Metro NY (Gas): www.nationalgridus.com/NY-Home/

NWA Process Review

MD Sakib

O&R NWA Process Flow



NWA Identification and Solicitation

During the annual capital planning process, non-wires-alternatives are considered as potential solutions to an identified system constraint that would otherwise require a traditional infrastructure solution. O&R solicits market-based solutions offered by third-parties to service the utility.

Key steps during this process:

NWA identification (conducted annually)

1. Identify NWA opportunities through capital planning process
2. Screen with NWA suitability criteria filed March 2017

NWA solicitation (conducted on a per-project basis)

1. Draft project charter
2. Perform outreach/ education with AHJs
3. Draft, finalize, and issue RFP
4. Field vendor questions and collect responses

Process enhancements:

- Extended planning horizon from 5 to 10 years
- Provided additional details to vendor during RFP process
- Required additional detail from vendor to align with BCA inputs
- Shared vendor prequalification requirements
- Allowed multiple rounds of vendor questions
- Performed outreach/ education with AHJs early in process

Proposal Evaluation

After receiving proposals from vendors, O&R rates the responses following a consistent methodology. The final ratings are used to rank the proposals. Top vendors are subject to additional questions and evaluation.

Key steps during this process:

1. Gather team of subject matter experts and evaluate proposals
   - SMEs represented from key functional areas involved in proposed project
   - Criteria includes: technical capability, project cost, timeliness, and project feasibility
2. Host site visit at O&R with top vendors
3. Adjust and finalize ratings, rank proposals

Process enhancements:

- Requested more robust financial data from vendors during RFP
  - Must break down project cost by cost of equipment, cost of labor, and administrative cost
- Provided evaluation parameters and scoring guidance to SMEs
- Expanded internal SME group and/ or solicited external parties for proposal evaluation

NWA Portfolio Development

Top-ranked solutions are compiled to develop portfolios that fulfill NWA project need. O&R iteratively conducts a benefit-cost analysis on portfolio variations in order to determine the optimal portfolio with the lowest cost.

Key steps during this process:

1. Collect BCA inputs
2. Run analysis on portfolio iterations
3. Identify solutions with project ratios greater than 1.0
4. Gather and incorporate feedback from DPS, gain O&R executive leadership approval
5. Notify vendors of selection

Challenges:

- BCA input changes require model refresh:
  - Solution cost
  - Program incentives
- Business model/ deal structure is subject to change:
  - Wholesale market volatility
  - Decision on first right of dispatch vs. utility ownership

Contract Negotiation

After the portfolio has been selected and approved, O&R begins contract negotiation. There are numerous items to be negotiated between O&R and the vendor.

Key steps during this process:

1. Validate NWA need
2. Negotiate contract terms
   - Agree on terms and conditions sheet to begin the contract
   - Add details to terms and conditions sheet to drive contract to completion/ signage
3. Sign contract

Challenges:

- Negotiating the vendor contract is a complex process
  - Requires multiple rounds of discussion between vendor, O&R legal team, and business team
- Terms must be agreed upon by both parties

Process enhancements:

- Leverage common terms and conditions from (future) executed contracts as a boilerplate for future NWA contracts

Siting and Permitting

Siting and permitting requirements vary from one jurisdiction to another, and can be extensive given the technology being implemented. The siting and permitting process is led by the vendor with support from O&R.

Key steps during this process:

1. Collect vendor proposals for potential sites
2. Evaluate proposed sites against NWA need for feasibility
3. Understand local permitting, zoning, and project planning requirements
4. Solicit planning board approval and obtain building permit

Challenges:

- Site control is critical but can't always be obtained before contract is signed
  - Request for memorandum of understanding added to RFP
- Permitting and zoning laws are robust and differ from one jurisdiction to another
- Siting projects in densely populated load pockets near residential customers is a challenge
- Environmental challenges with certain locations lead to additional complexities

Process enhancements:

- Leverage NYSERDA guidebook on siting and permitting

O&R NWA Project Status

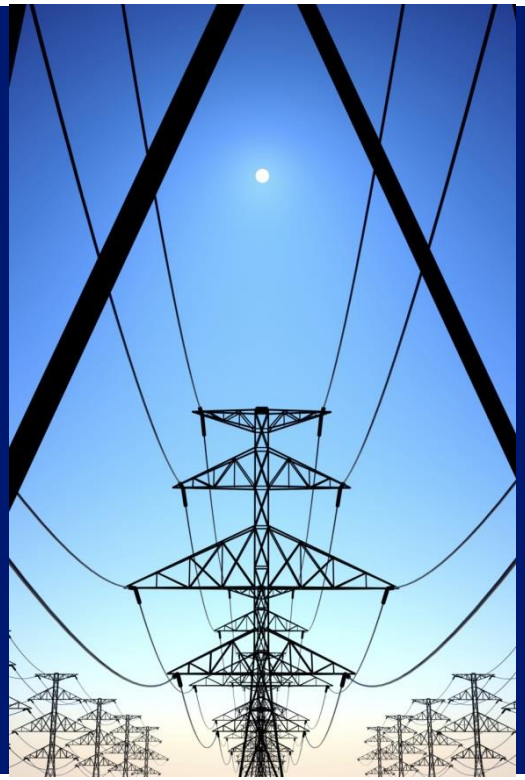
Current O&R NWAs

- Pomona
  - Undergoing evaluation from local Planning Board
  - Terms and conditions between O&R and the developer are underway for the project
- Monsey
  - Siting (leasing) is nearly complete for 2 of the 3 sites
  - Terms and conditions between O&R and the developer are underway for the project
- Blooming Grove
  - Awaiting responses from bidders (due to O&R on 5/31)

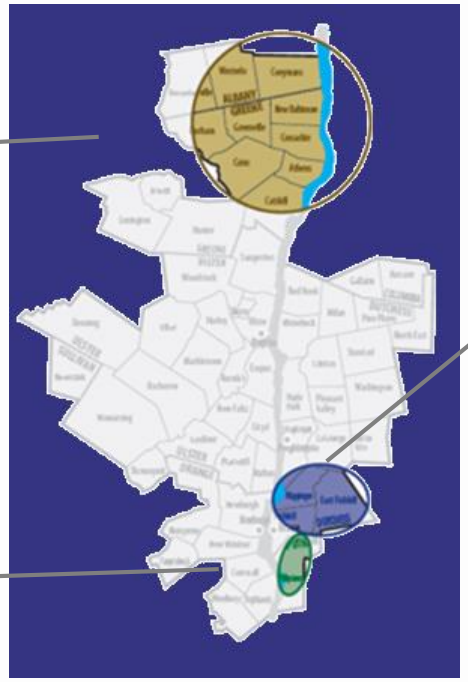
Project Name	Project Type	Required Load Relief	Need Date	Status
Monsey	Load Relief/Reliability	2.5 MW – 3 MW	2021	In siting and contracting phase
Pomona	Load Relief	Up to 6 MW	2021	Awaiting planning board approval and contracting
West Haverstraw	Reliability	5 MW	2021	Closing out
Blooming Grove	Load Relief/Reliability	15.5 MW	2021	RFP due on 5/31
West Warwick	Load Relief/Reliability	7 MW	2022	RFP to be issued Q3, 2019
Mountain Lodge Park	Load Relief/Reliability	280 kW	2022	RFP to be issued Q4, 2019

Central Hudson's NWA Procurement

May 29, 2019



TDM Program – Three Non-Wires Alternatives



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Demand Response Resources

CenHub
Peak Perks

Itron

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Targeted Lighting Initiative

- Existing ETIP Program (SBDI) covers ~50% of project cost
- Up to 100% of cost covered in targeted areas
- Locational coincidence analyzed for each region.
- Two programs split costs and benefits
- Almost 400 completed projects to date have resulted in ~1.3 MW of capacity

lime

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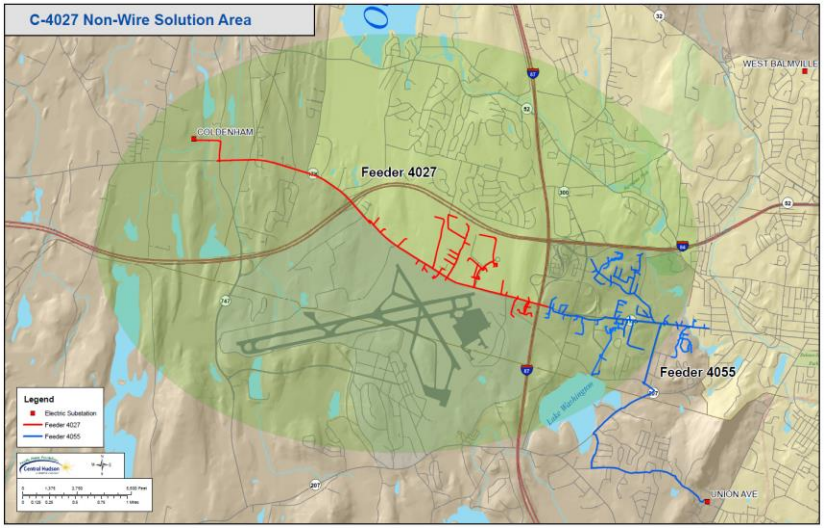
Coldenham / C-4027 NWA Update

- Project postponed as of December 2018
- In 2018, a new “4055” feeder was put into service
- The 4055 has capacity to absorb the expected near-term load growth in deferral area
- Central Hudson will closely monitor loads in this area and pursue a NWA solution in the future if it is determined to be necessary



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Needs Are Limited

- The system has declining load and excess capacity.
- Limited opportunity to avoid infrastructure costs.

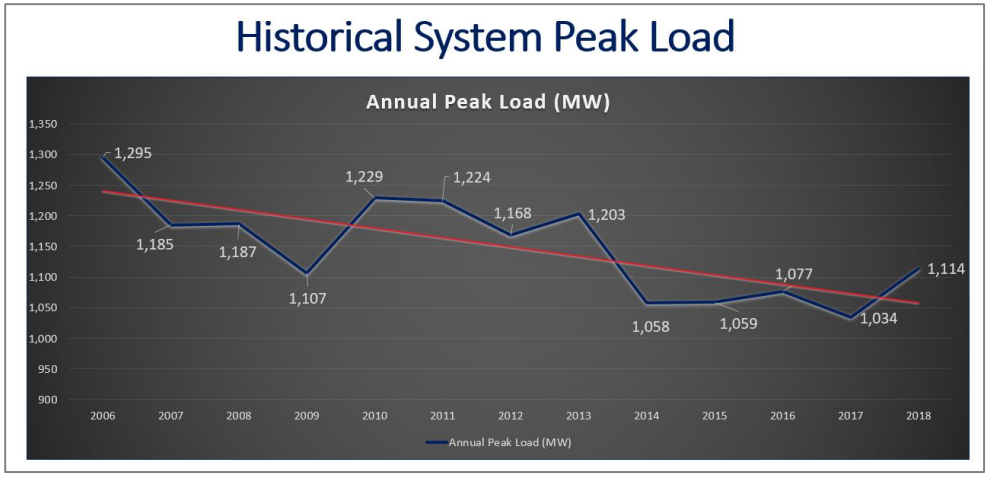

Table 12: Avoided Substation Cost Estimates ($/kVA-Year) – 10 Year Levelized Value

Year	Hunter	Lawrenceville	System
2019	$0.000	$0.000	$0.000
2020	$0.000	$2.756	$0.050
2021	$0.257	$3.866	$0.074
2022	$0.912	$4.247	$0.092
2023	$1.975	$4.191	$0.108
2024	$3.649	$3.372	$0.121
2025	$3.537	$3.183	$0.116
2026	$7.348	$3.251	$0.180
2027	$17.734	$3.719	$0.359
2028	$18.766	$3.878	$0.379
10-year Levelized	**$4.283**	**$3.113**	**$0.127**

*Table 12 from p.31 of "Avoided T&D Cost Study for filing in the above-referenced case."
Case 15-E-0751 – in the Matter of the Value of Distributed Energy Resources, Central Hudson Gas & Electric Corporation's Avoided T&D Cost Study"

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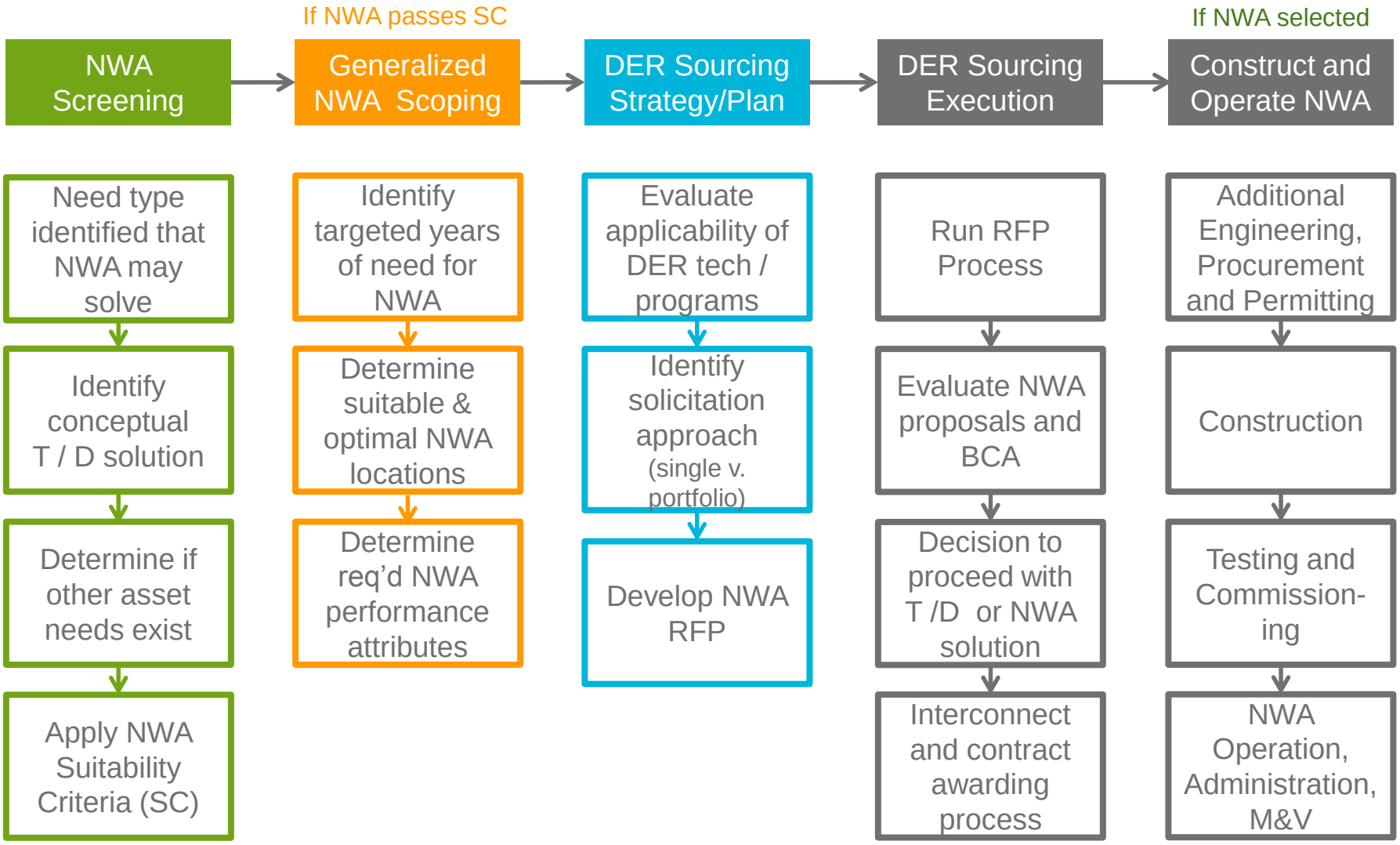
Presentation by NYSEG and RG&E

NWAs are becoming an integral part of NYSEG and RG&E's Planning Process



NYSEG and RG&E NWA/NPA – Project Updates

RFPs and RFIs Issued:

Company	Project	Need(s)	Status
NYSEG	Java	1 MW Peak Shaving 5 MW Redundancy	Final Evaluation/Contract Negotiation
NYSEG	Stillwater	<1 MW Peak Shaving Power Quality	Final Evaluation/Contract Negotiation
NYSEG	New Gardenville	19.5 MW Peak Shaving	Evaluation
NYSEG	Lansing - Gas	120 MCFH needed to return the system to 70% MAOP	Initial RFP in 2018 returned limited responses. A second RFI/RFP process is underway.
RG&E	Station 43	<3 MW Peak Shaving	Proceeded with "wires" solution based on RFP results and timing
RG&E	Station 51	<3 MW Peak Shaving	Initial Proposal Evaluation

NWAs Still Active: All NYSEG and RG&E NWA procurements are still active except RG&E Station 43.

Upcoming RFPs:

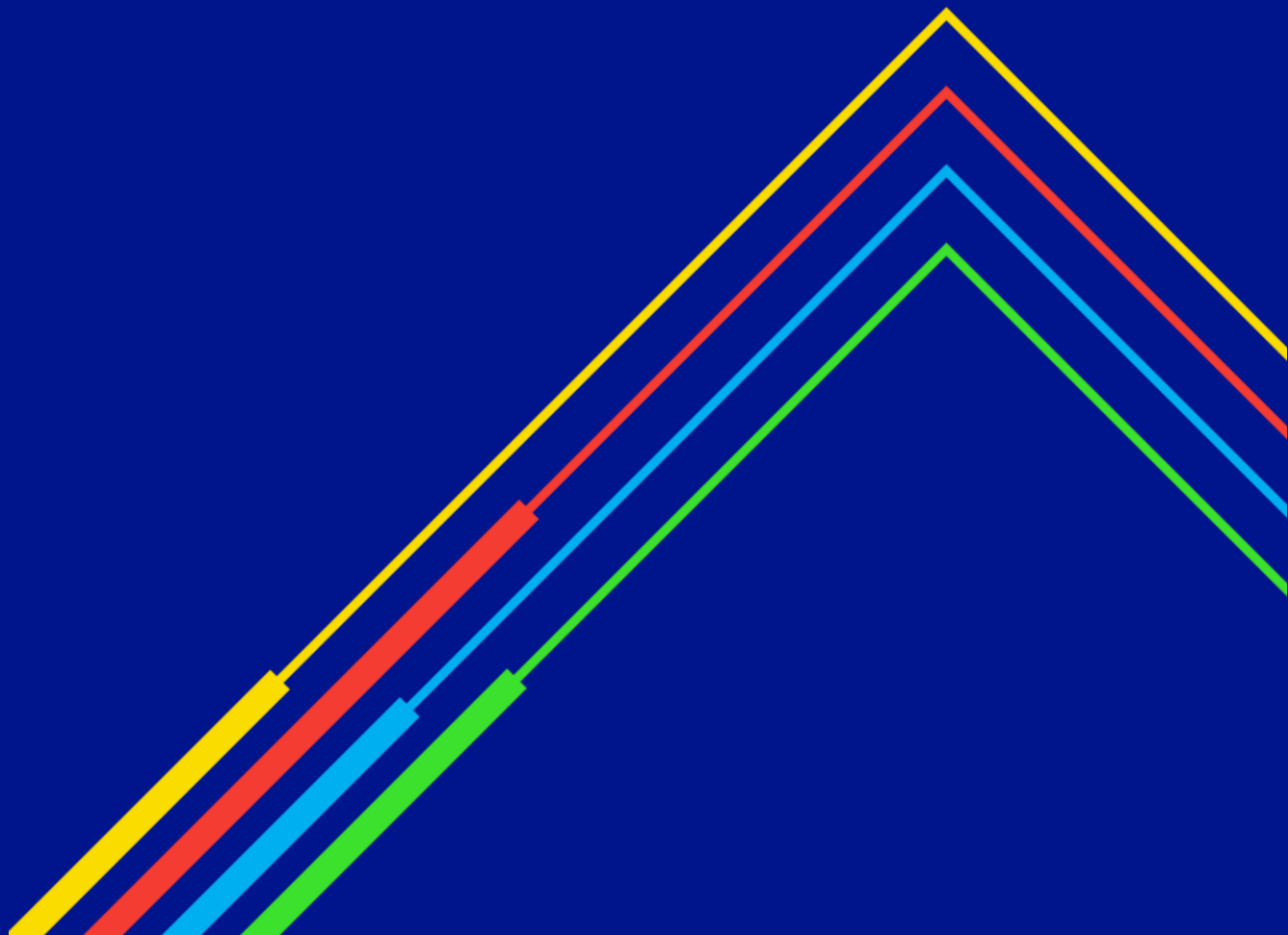
- NYSEG and RG&E are currently evaluating all planned T&D capital projects to determine which projects are suitable for NWA and will post/update the results on the companies websites soon.

Lessons Learned / Keys to the Success of the NWA Process

Determination of when NWAs are suitable	• Consider needs beyond the primary need driving the NWA process • I.e., A comprehensive assessment of “wires” solution facilities may be warranted to assure accuracy of potential T&D cost deferrals
Information provided to 3rd Parties	• Advanced/prior communications of planned NWA opportunities • NWA RFP information is clear and complete • Explain benefits/costs methodology (e.g., BCA Handbook) • Awareness of interconnection process requirements • Importance and accuracy of details in proposals
Contracts	• NWAs will be performing a reliability service and must be held to a different level of accountability then DERs are used to • Negotiations can be time consuming • Performance provisions • Liability and risk
Involve Operations and other key Business Areas early	• Alignment of planned NWA resource operation/use • Need for added grid visibility, automation and procedures • Deep cross-functional technical review integrating NWA into grid operations

National Grid's Non-Wires Alternatives Process

May 2019



nationalgrid

NWA Process - Planning

Planning

- Develop system need case and screen need against NWA criteria
- Develop NWA technical needs statement
- Evaluate internal EE/DR programs

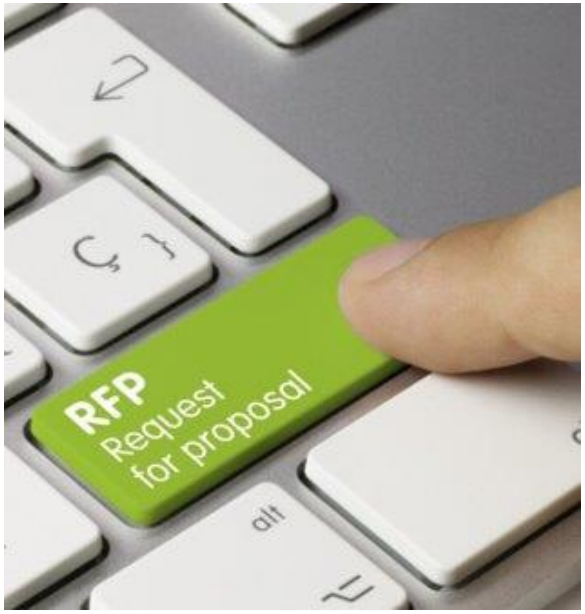
SCREENING CRITERIA		
Project Type Suitability	Project types include Load Relief and Reliability. Other types have minimal suitability and will be reviewed as suitability changes due to State policy or technological changes.	
Timeline Suitability	Large Project	36-60 months*
	Small Project	18-24 months*
Cost Suitability (Value of Wires Solution)	Large Project	Greater than or equal to $1M
	Small Project	Greater than or equal to $500K

*Solution can be in-service by the need date which is within the noted window of time.

Request for Proposal

The NWA RFP includes:

- Problem statement of electrical system need
- System data
  - Loading data
  - General description of the system need
  - Timing, duration of the need, and time of day the need occurs
  - Aggregated customer load profiles (no individual customers are identified)
- Area and electrical system description
  - Equipment listings, voltages, and mapping
- **Approximate value** of NWA solution



Proposal Review

Proposals are evaluated based on;

- Technology Maturity
- Compatibility with system operations (reliability, security, communications, dispatchability)
- Benefit-Cost Analysis

Bidders contacted for follow-up as appropriate

Selection process adapted based on market participation

Overview of NWA Project Opportunities

Project Location	RFP Release	Status
Baldwinsville	Jan 2017	Closed; Failed to pass BCA
Buffalo 53	Dec 2017	Closed; Failed to pass BCA
Fayetteville	Aug 2017	Closed; Failed to pass BCA
Golah Avon	Dec 2017	Under Review
Gilbert Mills	Aug 2017	Under Review
Van Dyke	Dec 2017	Under Review
Old Forge	Apr 2017	Under Review
Fairdale	Aug 2018	Under Review
Pine Grove	Nov 2018	Under Review
Rensselaer	Jan 2019	Under Review
Sawyer	Dec 2018	Revising load forecast and need; may be reissued in 2019

Process Improvements and Opportunities

Recent RFP Improvements

- More descriptive problem statement
- Technical details expanded
- Approximate value of NWA
- Collection of market interest to participate in a specific RFP

Portfolio Solutions

- Working with internal Demand Response and Energy Efficiency programs to find opportunities to reduce a load relief need
- Exploring software that will help National Grid optimize DER locations on the grid to develop more focused RFPs

Process Improvements and Opportunities (continued)

Market Interactions

- **More comprehensive vendor and stakeholder contacts**
- **Monthly stakeholder engagement sessions**
- **1:1 Meetings with vendors to gather market intelligence**
  - What do vendors want to see in an RFP?
  - What determines whether they bid or pass on an RFP?
  - How much time do they need to develop a strong proposal?
  - Where have they had NWA success elsewhere and what contributed to it?
- **New shared e-mail box for vendor communication**

Links/Contact Us

National Grid System Data Portal

https://www.nationalgridus.com/Business-Partners/NY-System-Portal

Email: non-wiresalternativesolutions@nationalgrid.com

Q&A Session

Summary and Wrap up

Summary

- This presentation will be posted to the Joint Utilities of New York website (https://jointutilitiesofny.org/joint-utilities-of-new-york-engagement-groups/) for review and records
- Please email info@jointutilitiesofny.org with any additional questions or comments

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Thank you!

www.jointutilitiesofny.org