

Orange and Rockland Utilities, Inc.

Request for Proposal

Seeking Energy Storage Solutions for
Pomona Distributed Energy Resources Program

ISSUED: DECEMBER 6, 2017

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Orange & Rockland



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1. Introduction

This Request for Proposal ("RFP") solicits proposals from qualified and experienced parties ("Respondents") to supply Orange and Rockland Utilities, Inc. ("O&R" or the "Company") with the capability to deliver and implement cost effective "turnkey" distributed energy storage systems ("DESS"), as part of the Pomona non-wires alternative ("NWA") solution portfolio. The DESS may allow O&R to defer capital infrastructure investment associated with the Pomona Infrastructure projects.

1.1. Background

O&R is a subsidiary of Consolidated Edison, Inc., one of the nation's largest investor-owned energy companies. O&R, which provides electric and gas service to Orange County, Rockland County, and parts of Sullivan County, New York, is regulated by the New York State Public Service Commission ("NYPSC").

O&R will use the Pomona NWA program to support the NYPSC's regulatory initiative, Reforming the Energy Vision ("REV"). REV aims to incorporate more of a consumer-centered approach that harnesses alternative distributed technologies and markets.

The Pomona, New York area is served by distribution circuits from the New Hempstead Substation, West Haverstraw Substation, Tallman Substation, and Stony Point Substation. Due to forecasted load growth, O&R anticipates that distribution circuits in the Pomona area will be close to capacity or will exceed allowable ratings, during contingency events through an upcoming forecast period.

1.2. Purpose

The DESS will provide electric distribution system load relief and reduce demand capacity requirements in the Pomona load area. The Company will dispatch the DESS for distribution system needs, primarily aligning with peak load reduction requirements in the Pomona area. The Company will consider both in front of the meter ("FTM") DESS, and behind-the-meter ("BTM") DESS projects submitted in response to this RFP. Innovative business models leveraging multiple value streams (providing value to multiple stakeholders that leads to multiple earning opportunities) are preferred and encouraged.

Respondents should include all information pertinent to their ability to meet O&R's requirements, as set forth in this RFP. Respondents should provide as much information as possible to assist in O&R's evaluation and selection process including:

- DESS functionality, including the operational and functional aspects of the proposed energy storage system, highlighting past experience with utility scale and/or BTM DESS, and including reliability, availability and forced outage rates for the proposed system that will be designed/implemented to meet the distribution system need.
- DESS technical information, including the technology type, system design, DESS future scalability, operational constraints, DESS deployment challenges and ability to perform the required load relief, as well as the ability to integrate the DESS with the O&R distribution system.
- Feasibility of implementing the DESS project including viability of construction, siting, permitting, interconnection issues and customer acquisition.
- Maturity and viability of the respondent's organization and the respondent's technological team, including the ability to provide support and training.



- Respondent's company profile, including financial health (*e.g.*, audited financial statements); biographical information of senior leadership team; and customer references.
- All-in cost of the DESS project, including but not limited to the cost of material and labor, siting and permitting cost, interconnection cost and any anticipated distribution system modification cost, as well as annual maintenance cost, operational cost, program cost, and all other and additional costs to be clearly identified and quantified.

The Company will evaluate successful responses based upon their ability to meet the requirements of this RFP, provide the load relief required during the time periods established, as well as on favorable pricing and the likelihood of successful performance (taking into account the Respondent's experience, proposed implementation plan and past performance, with emphasis on reliability and availability that must be demonstrated and defined).

O&R will be the primary user and beneficiary of the proposed DESS.

1.3. **General Guidelines**

O&R reserves the right to make changes to this RFP by issuance of one or more addendum or amendments and to distribute additional clarifying or supporting information relating thereto. O&R may ask any or all Respondents to elaborate or clarify specific points or portions of their submission. Clarification may take the form of written responses to questions or phone calls or in-person meetings for the purpose of discussing the RFP, the responses thereto, or both.

It is the sole responsibility of each Respondent to include all pertinent and required information in its submission. O&R reserves the right to determine, in its sole discretion, whether a submission is incomplete or non-responsive.

Respondents should clearly state all assumptions they make about the meaning or accuracy of information contained in their response to this RFP. If a Respondent does not ask questions or identify its assumptions, O&R will assume that the Respondent agrees with and understands the requirements in this RFP. While O&R has endeavored to provide accurate information to Respondents, O&R makes no warranty or representation regarding the accuracy of the information contained in this RFP.

Respondents are encouraged to provide and release necessary authorizations for O&R to verify any of the respondent's previous work, except where it is contractually prohibited from doing so.

This RFP shall not be construed to establish an obligation on the part of O&R to enter into any contract, or to serve as a basis for any claim whatsoever for reimbursement of costs for efforts expended by Respondents.

Furthermore, the scope of this RFP may be revised at the option of O&R at any time, or this RFP may be withdrawn or cancelled by O&R at any time. O&R shall not be obligated or bound by any responses or by any statements or representations, whether oral or written, that may be made by the Company or its employees, principals or agents in connection with this RFP.

Any exceptions to the terms, conditions, provisions and requirements herein must be specifically noted and explained by a Respondent in its response to this RFP. O&R will assume that any response to this RFP expressly



accepts all of this RFP's terms, conditions, provisions and requirements, except as expressly and specifically stated otherwise by a Respondent in its response to this RFP.

2. DESS Solution Requirements

O&R seeks information from qualified Respondents to implement a DESS that can provide load reductions as outlined in Section 2.1 for a total of six peak hours a day during spring/summer peak months (*i.e.*, May, June, July, August, and September). Priority will be given to projects that will require shorter time-span to deploy the DESS. NY Public Service Commission (PSC) has mandate each utility in NY to install two DESS by the end of 2018. This project may count towards fulfilling this PSC requirement.

The Company is seeking DESS that can provide load relief of 2MW of power for a total discharge period of six consecutive hours (12MWh) from a single or combination of locations and providers. Appropriate redundancy, reliability and availability should be accounted for in the solution design to meet the defined need. The size of the DESS may increase in the future, as load increases in the area. O&R prefers a modular DESS that can easily be augmented in the future to increase the size of the DESS.

Although the current size requirement for the DESS is a minimum of 2MW, the Respondent may propose systems of nameplate capacity greater than the requested 2MW to facilitate access to wholesale markets or other revenues. Systems must adhere to all requirements set forth in this RFP, regardless of size. The Respondent is responsible for all system installation costs, which could potentially include electric delivery system infrastructure upgrades, interconnection costs and any costs pertaining to installation of other FTM or BTM equipment. Potential DESS may include FTM and/or BTM applications of any technology type, which alone or in combination may allow the Company to defer the construction of otherwise needed traditional infrastructure. These assets will complement existing energy efficiency ("EE") and demand reduction ("DR") programs in the Pomona area to potentially meet the load reduction requirements.

The system must provide load relief during the period hereby referred to as the "Summer Period" (*i.e.*, May 1 through September 30) for at least 10 years from the commencement of system operation. During emergency events, O&R reserves the right to request that the DESS cease charging. The DESS must perform as described below during the Summer Period:

Power: Consistently output a minimum of 2MW throughout the entire six hour discharge period.

Frequency: The DESS must consistently output power at 60Hz when called upon by the Company.

Performance: Unsatisfactory performance will lead to a deduction from any incentive payments, as discussed in Section 6.8, below.

Scalability: Although O&R is currently seeking 2MW of load relief from energy storage technologies at this time, the Company sees potential for these technologies to meet additional future needs. Accordingly, proposed technologies should demonstrate the potential to expand cost effectively in output power and duration.

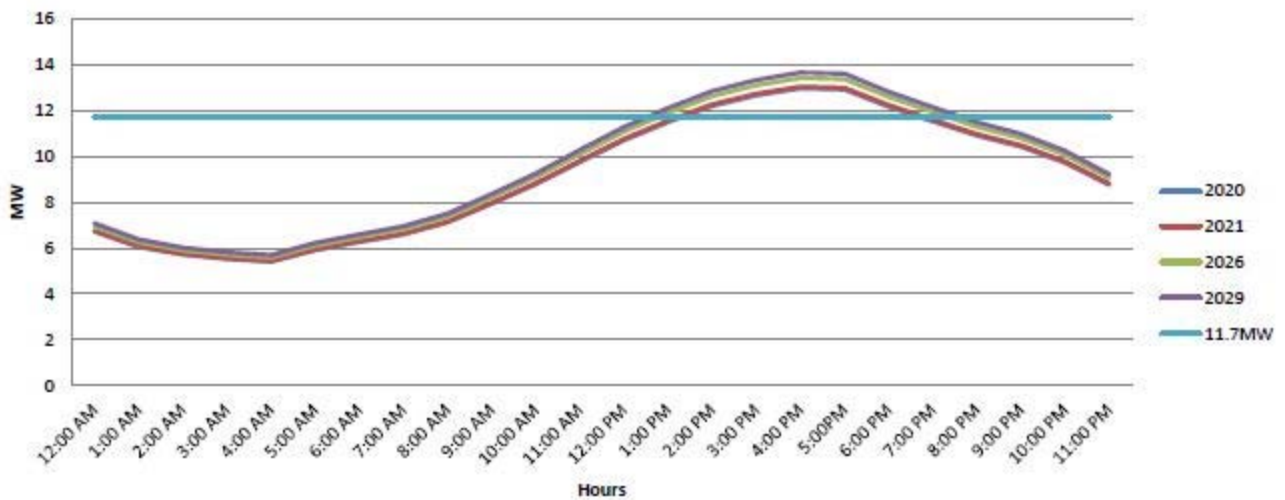


2.1. Required Reductions and Demographics

There are nine distribution circuits that comprise the Pomona load area. Reducing load on portions of these circuits will help to accommodate future load growth and address system overloads caused by distribution circuit contingencies. The Pomona load area is served by the New Hempstead Substation Circuits (45-1-13, 45-5-13, 45-6-13, 45-7-13), West Haverstraw Substation Circuits (27-6-13, 27-7-13), Tallman Substation Circuits (51-3-13, 51-6-13) and Stony Point Circuit 23-4-13.

Figure 1 below indicates the required, forecasted load reductions and the associated time periods during the Summer Period for such load reductions, which need to be met by the DESS solutions. The Company may use one or more Respondent proposals to meet the indicated load reductions. In accordance with the curve in Figure 1, load needs to be reduced at or below 11.7MW.

Figure 1: Load Reduction Profile



It is also important for the proposed DESS to provide load reduction service to O&R for certain hours during the Summer Period within a specific year. Table 1 below aims to give an estimation of the yearly hours of risk. Table 1 also shows the forecasted MW reduction and hours of need during the Summer Period for each of the ten years requested.



Table 1: MW Reduction Need for Pomona Load Area

MW Reduction Needed for Pomona Load Area										
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Yearly Hours of Risk	30	37	44	51	61	67	72	81	88	96
Total MW Reduction	1.35	1.51	1.66	1.81	1.96	2.12	2.27	2.43	2.59	2.75

Table 2 below shows the customer breakdown by circuit and customer type.

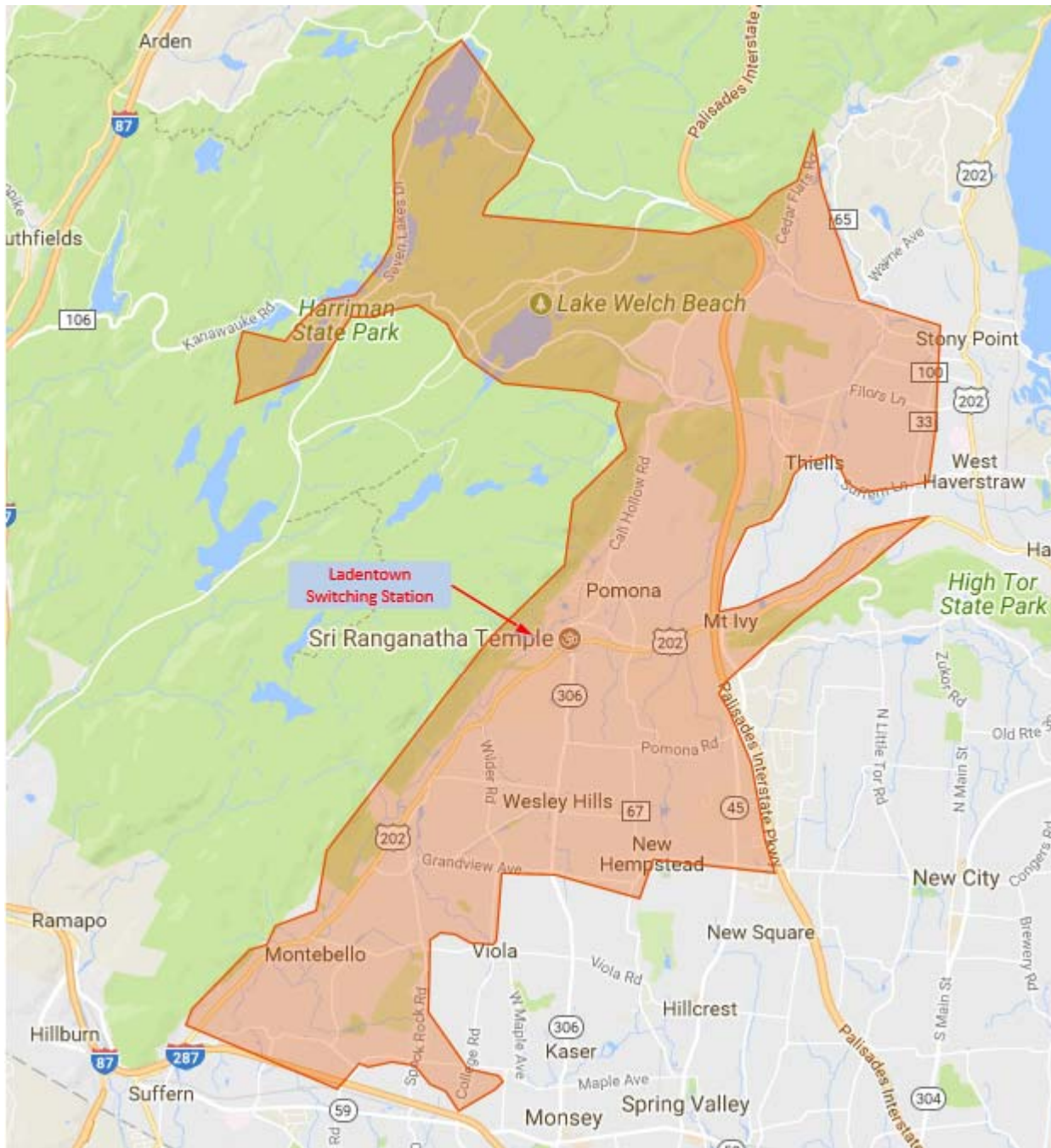
Table 2: Customer Breakdown by Circuit

Distribution Circuit	Customers		
	Residential	C & I	Total
23-4-13	1248	94	1342
27-6-13	990	74	1064
27-7-13	1683	180	1863
45-1-13	815	28	843
45-5-13	1348	45	1393
45-6-13	492	202	694
45-7-13	1225	63	1288
51-6-13	1300	109	1409
51-3-13	801	62	863
Totals	9902	857	10759

*Above numbers are approximate as of November 1, 2017.



Figure 2: Map of Pomona Load Pocket Area



The map in Figure 2 above approximates the geographical target area. From a street reference perspective, this is further defined to generally be from the Palisades Interstate Parkway west to South Route 202, from Viola Rd to



Grand View Avenue, and from New Hempstead Road North. It is encouraged that developers verify with the Company that potential site locations being considered are within the target area. The ideal solution locations would most beneficially be within a mile of the intersection of NYS Route 202 and NYS Route 306.

For detailed information and the precise areas served by those circuits, please refer to the O&R Hosting Capacity map which can be found at: <https://www.oru.com/en/business-partners/hosting-capacity>

2.2. Functional Requirements

2.2.1. General

The DESS must be available to provide at least 2MW of power during the time-frames indicated by the load curve set forth above in Figure 1, Monday through Friday during the Summer Period. In addition, the operating entity (this could be a third party contracted to operate the DESS) shall have control to operate the DESS when needs arise during other times within the year, as well as any discharge cycles required as part of the maintenance program of the DESS. The third party vendor can operate the battery at other times when the DESS will not be needed by O&R, provided appropriate system operating conditions and parameters are maintained. Any additional discharging or charging of the DESS, other than the timeframe mentioned above, must be approved by O&R. The vendor shall submit such request to O&R in writing at least 24 hour in advance before operating the battery. O&R also shall have the ability to override pre-programed cycles in the event of system emergencies (see Section 2.2.8.). The DESS must conform to all applicable laws, regulations, codes, and orders of jurisdictional governmental entities.

2.2.2. Project Timeline

The DESS is required to have at least ten years of design life, in order to fulfill the load requirement laid out in this RFP. Consideration of useful design life after ten years will be taken into account when evaluating proposals.

Table 1 above includes the current projection of the load reduction to be achieved each year by the DESS (subject to change based on local conditions or potential future growth reassessment). A priority will be given to a Respondent who can substantially demonstrate that completion of its proposed DESS installation is achievable by the end of 2018. A Respondent will need to provide O&R with a schedule detailing how this date will be met and indicate potential risks.

The Respondent shall provide an estimate of the DESS design life based on its use as described in this RFP, and shall provide calculations and applicable test data, as appropriate, which forms the basis of the estimate. The estimate shall describe the option of storage module replacement, if applicable to the design, and expected replacement intervals.

2.2.3. Minimizing Outages

The DESS shall be designed for high reliability, as follows:

- 99% starting reliability (unit shall start 99 out of 100 attempts);



- 99% or greater Annual Availability, during each of the first ten years of operation; and
- Less than 72 hours mean time to repair (“MTTR”), from the time of notification of a need for repair to the time of completion of repairs (i.e., inclusive of time for arrival of spare parts and repair personnel at site).

Accountable DESS outages are defined as those outages, caused or necessitated by the DESS equipment, which result in reduced capacity or loss of essential function of the DESS. These outages may be initiated by failure of components, loss of battery capacity, operation of protective devices, alarms or by manual action. Such outages include both forced outages due to equipment problems and scheduled outages for DESS maintenance.

The auxiliary power system and control system of the DESS should provide for any emergency power necessary for an orderly system shutdown during abnormal conditions, such as loss of utility power. The auxiliary power and control system should also provide for the capability to restart the storage system automatically after any system shutdown of several days duration.

DESS Efficiency

Power losses and any additional power consumed by required plant auxiliary systems shall be subtracted from the gross power output of the DESS in determining the efficiency. Unless otherwise specified herein, efficiency calculations shall be calculated on a 24-hour basis. That is, regardless of mode of operation, the energy consumed by auxiliary systems shall be accounted for during a full 24-hour period. Energy consumption outside of the 24-hour period for which an efficiency is determined (*e.g.*, energy consumed by auxiliaries while the DESS is in a standby mode) is not to be included.

The Respondent shall clearly state the expected efficiencies of the major subsystems of the DESS, as well as the expected losses from auxiliaries.

Codes, Regulations, and Standards

All materials, equipment and systems of the DESS shall be designed, engineered, fabricated, manufactured, installed, constructed and tested in accordance with the requirements of the following list of codes, standards, regulations or publications of organizations as applicable. This list is not intended to be all-inclusive; it only covers the major equipment standards and major categories:

Local Codes

The Respondent shall be responsible for identifying, obtaining and complying with local code requirements and permits both during construction and operation of the DESS. Areas for relevant permits include, but are not limited to, civil, structural, environmental, and fire safety.

National Codes

The DESS will be designed in accordance with applicable sections of the following codes and standards. Any deviations from these codes and standards will be identified and will require acceptance by O&R:

- National Electric Safety Code (“NESC”);
- Occupational Safety and Health Act (“OSHA”);
- American Society of Heating, Refrigeration and Air Conditioning Engineers (“ASHRAE”);
- American National Standards Institute (“ANSI”);
- American Society for Testing and Materials (“ASTM”);



- American Welding Society (“AWS”);
- National Fire Protection Association (“NFPA”); and
- Institute of Electrical Engineers, IEEE Std 1547.

In addition to other specific design standards listed in the following sections of this RFP, the National Electric Code (“NEC”) will be used as a basis for design requirements. The Respondent will identify deviations from NEC requirements to O&R in the Respondent’s response to this RFP.

3. Technical Requirements

3.1. General

All components of the DESS, including storage modules, switching devices, components of monitoring and control systems, and components of auxiliary systems must be commercially available. Electrochemical cells or modules (if used) must be replaceable (in small orders), with a maximum six-week lead time under normal business conditions. Designs employing experimental or otherwise undocumented components are not permitted.

The DESS shall be capable of unattended/remote operation, with remote monitoring and control capability by O&R. The DESS design shall be based on careful consideration of resonance, ferro-resonance and electromagnetic interference.

The DESS shall be designed so that all of its components can be properly maintained. Such maintenance tasks may require swapping out electronics or storage modules and replacing with spares. The DESS should be designed to minimize maintenance time and specialized training.

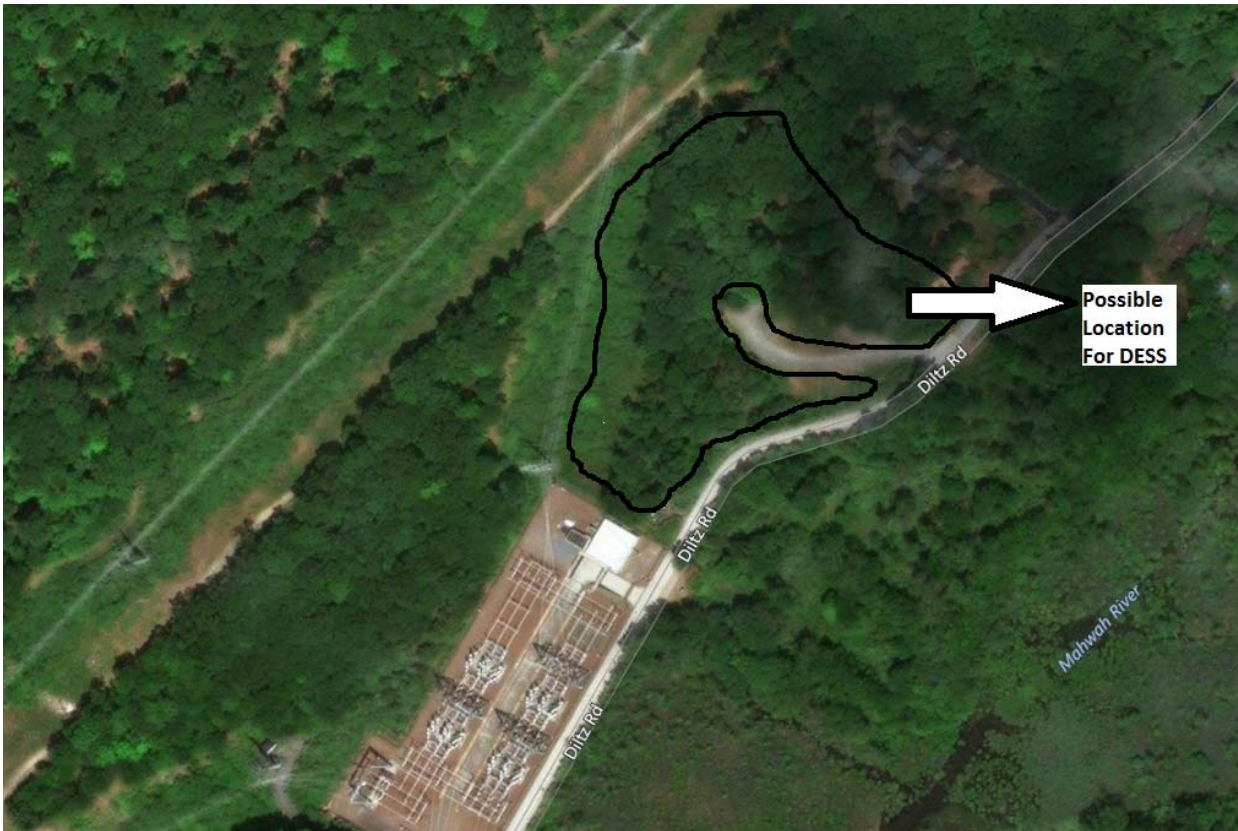
The Respondent shall include in its proposal a summary table of all technical requirements pertinent to the DESS design. For example, the summary table should have columns for efficiency (listed by component), surge withstand, noise level, environmental considerations, temperature range, cycle life and shelf life, optimal charge discharge rates, maintenance requirements, and previous projects/implementations.



3.2. DESS Proposed Location and Ownership

Respondents are encouraged to determine and develop appropriate solutions to be located and interconnected with the electric distribution system within the Pomona area defined in Figure 2 above. Developers may also review the potential to locate their systems at an O&R-owned property located on Mountain Road, Ladentown, Town of Ramapo, Rockland County, New York, 10901. Any such projects would be located and positioned immediately outside of O&R's Ladentown Substation ("Ladentown Site") shown on Figure 3 below in a location so as not to interfere with the operation of and access to that site. No DESS will be allowed to interconnect or locate within the Ladentown Substation. O&R may consider leasing a portion of the site for the installation of the DESS to the Respondent at a price to be mutually agreed to by O&R and the Respondent, which could be finalized during the final contract negotiation process. It should be noted though that any such lease arrangement will require NYSPSC approval pursuant to Section 70 of the Public service Law. The Respondent will be responsible for all electricity costs for charging, auxiliary and any other power. O&R retains the right to have the project relocated should the Company need to use the site for additional switching capability or an extension of the current yard and others if needed in the future.

Figure 3: Map of proposed Ladentown DESS site





3.3. Maintenance and Operational life

The Respondent shall be responsible for operation and maintenance of the DESS. The time period and duration for required maintenance and downtime must be specified in a schedule and is only permitted outside of the defined Summer Period. In addition, the Respondent shall indicate the expected lifetimes of key system components, including expected lifetime of storage module and associated subsystems, component calendar lifetimes, and a schedule of anticipated wear and replacement.

4. Solution Requirements

This section outlines the requirements for responses to the RFP. Respondents shall submit their responses to the functional questions included in Attachment A, as part of their proposals. Respondents are encouraged to include, as an attachment (maximum size – 2 MB), any additional information that will clarify how their proposed solution(s) will achieve the required demand reduction. Review priority will be given to the information submitted within the provided format. The responses should be limited to no more than 35 pages.

4.1. System Functionality and Site Conformance Requirements

Project permitting will be the sole responsibility of the Respondent.

Respondents are responsible for obtaining all permits (*e.g.*, building, site, transportation), and must include a permitting plan and cost estimates related to these activities as part of the projects all-in costs. Respondents are responsible for all costs associated with these permits, and are responsible for compliance, mitigation measures or other conditions of approval associated with these permits. O&R will assist the Respondent in obtaining the required site plan approval, if the Respondent proposes to install its proposed DESS at the Ladentown Site. The Respondent shall assist in the site plan approval as directed and necessary by O&R, and be responsible for all costs incurred by the Company in obtaining such approval.

The DESS shall consist of a battery (or comparable technology), smart inverter, associated control systems and all required transformers, pads, housing, conduits, switchgear, bus works (both AC and DC), cables and other equipment/materials as necessary to facilitate the complete installation. The Respondent will be expected to procure and construct the DESS and interconnect it to O&R's distribution system with appropriate approval from, and under the supervision of the Company.

The control system for the DESS shall be inclusive of all control algorithms and software programming required to direct and support specified DESS modes of operation and DESS internal management (including Battery Management System or equivalent, if applicable). This requirement includes program applications running on the System controller platform, as well as applications residing on remote computer systems necessary for remote monitoring and control of the DESS. Respondent shall install communications interface to accommodate monitoring and control of the DESS from a remote controller, in addition to local control capabilities. O&R will provide remote computer hardware and communication links, but the Respondent will be expected to provide, test and commission software necessary to perform required functions initiated from both remote points, as well as on site. The developer has to comply with O&R cybersecurity requirement and standard.



Interconnection

Respondents are responsible for procuring and installing all switchgear, step-up transformers to the site-specific interconnection voltage and other protection, monitoring & control technology and equipment as necessary, required and determined by the Company for acceptable interconnection with the O&R distribution system. The Respondent is responsible for construction and costs associated with interconnecting the project to the O&R's distribution system. The Respondent will develop cost estimates for this interconnection activity, and will include those costs in its bid.

BTM DESS may be sited BTM of O&R customers in the Pomona area, in order to provide the needed load relief. Respondents should indicate how they will acquire BTM customers and be able to demonstrate historical success in obtaining customer participation. If the respondent does not provide historical success for customer participation or an acceptable customer acquisition methodology, any BTM DESS proposed by the respondent will not be accounted for in O&R's evaluation process.

4.2. Professional Background and Experience with the Proposed Solution

Respondents should provide the following:

- Executive Summary of proposal;
- Firm's core business and organizational structure;
- Project organizational chart and project team resumes;
- Financial statements for the past three years, and services offered;
- Examples of prior industry specific work that is similar in nature and relevant to the NWA solution requirements, with particular emphasis on implementation of the solution, such as at other utilities, large municipalities, co-ops, or any other applicable facilities;
- Relevant project experience;
- Contact information of customers where the solutions have been implemented (a minimum of three references);
- Letters of support from customers located in the Pomona load area, who plan to implement the solution at their site (**Note:** O&R will need to verify customer qualifications);
- References, including any authorizations necessary for O&R to verify;
- Respondent's related previous work;
- Specific location of successful technology deployment; and
- Any other relevant information deemed appropriate and noteworthy supporting and validating the proposed solution.

Respondents should address any estimated costs associated with implementing the proposed technology/solution, including customer and utility costs, as well as any other relevant costs. Respondents should also describe in detail non-energy benefits, if any, associated with the proposed solutions.



Respondents should identify and provide contact information for customers who have implemented the technology/solutions. Respondents should note whether O&R can contact these customers for additional information and follow-up questions.

4.3. **Proposed Solution Description**

Project proposals must demonstrate how the proposed solution will achieve the demand reductions sought and maximize value to O&R's customers. Detailed project information must address the items mentioned below:

- Technology/Solution description (tested and proven or innovative technology);
- Performance characteristics of the technology;
- Description of the flexibility and applicability of the technology;
- Hourly electric load reduction impact provided by the solution;
- Risks, barriers and challenges to proposed DESS deployment;
- Describe ramp up time and quick start capabilities of the system;
- Calculation and discussion of the expected efficiencies of the major subsystems, losses from auxiliaries, as well as the overall system efficiency. Losses in standby mode should also be provided;
- Schedule for maintenance and any other DESS downtime;
- Any distribution infrastructure upgrade required to accommodate the DESS;
- Any potential risk to installing and commissioning the proposed DESS i.e. fire mitigation system
- Describe expected degradation and replacement timelines of storage module and subsystem components;
- List of all required state and local permits and provide a plan to obtain them expeditiously in order to meet project deadlines;
- Specification and details associated with implementing the proposed solution (e.g., permitting requirements);
- Detailed description of non-energy benefits associated with the proposed solution; and
- Description of the scalability potential of the storage system
 - Maximum MW to which the storage system can reasonably scale up to for an XX discharge period after 2029.

The proposal must specify the data (*e.g.*, detailed calculations) and methodology used to determine the estimated demand reduction and annual kWh savings attributable to each DESS proposed to be installed.

Detailed Costs Associated with Proposed Solution Section:

- Type of contract (*e.g.*, shared savings, performance contract, sale, lease-purchase, power purchase agreement, utility ownership);
- A proposed annual reliability payment or other compensation model, along with a schedule by which payments would be reduced ,eliminated or financial penalties imposed for poor performance; and
- A business plan for potential operation beyond 2027, including possible extension of the reliability contract, purchase of the system by O&R, and expansion of the system.

Risks, Challenges and Community Impacts Section:

- The Respondent shall provide a full Failure Mode and Effects Analysis ("FMEA"). The FMEA should include:



- All relevant mechanical, electrical, and chemical hazards associated with the proposed storage system;
- All failure modes and their respective contingency plans;
- Failure modes that produce hazardous conditions for personnel and the environment should be further discussed;
- Other safety concerns not tied to failure modes should also be identified;
- The likelihood of occurrence, the potential level of severity and proper mitigation strategies for all hazards discussed;
- Discussions of sensors, monitors, alarms, and emergency response equipment present in all major subsystems in case of failure; and
- Discussion of sound levels, electromagnetic interference levels and projected waste discharge.

4.4. Project Proposal Requirements

Respondents are encouraged to submit *alternative, creative proposals* for marketing, sales, financing, implementation, and maintenance, or transaction structures and pricing formulas that will achieve the demand reductions sought and maximize value to O&R's customers.

The selected Respondents, if subsequently contracted with to provide their solutions, will be required to provide full facility and equipment access to the Company and its representatives for pre- and post-installation inspections to verify the installations and the demand reductions, and for subsequent inspections (which may be performed at the Company's discretion), to verify continued operation and maintenance of the solutions for the applicable term.

The DESS must be in service, and the pledged demand reduction must be guaranteed to commence, by the respective need dates for the applicable load area, to address forecasted Summer Period capacity constraints. The type of compensation structure must be included (upfront payment/rebate, pay for performance, loan program or other). Priority will be given to projects that will require shorter time-span to deploy the DESS. O&R has a PSC mandate to install two DESS by the end of 2018. This project may count towards fulfilling this PSC requirement.

Respondents must provide any and all methods and procedures required to comply with technical, safety and operational requirements for the interconnection and operation of their equipment with the Company's electric delivery system, as well as performance measurement and verification ("M&V") (*i.e.*, are kW actually reduced). For any proposed renewable generation, it is particularly important to verify that any stated demand reduction coincides with the Company's peak loading period. The Company reserves the right to require periodic witness testing on any proposed protective systems and electric system interconnections that could adversely affect the Company's electric delivery system, should they fail.

The Company will require financial assurances of the selected Respondents so that the committed amount of demand reduction measures will be installed and the committed in-service date for each measure will be met. Failure of the selected Respondents to achieve the committed demand reductions or to meet the committed in-service dates will result in liquidated damages and/or other consequences which will be established during the contracting process.



The proposal should specify the data and methodology used to determine the estimated demand reduction, annual kWh savings attributable to each measure/solution proposed to be installed, and methods/proposals to confirm M&V of delivered demand reductions.

Respondents proposing to market the installation of BTM energy storage to O&R customers should include a full and complete assessment of the opportunities for such installations. At a minimum, this assessment should include a description of the markets, such as single to multi-family homes, multifamily buildings, small commercial (*e.g.*, retail stores, restaurants), large commercial (*e.g.*, office buildings, industrial) and government or institutional (*e.g.*, hospitals, hotels, schools, colleges), and the applicable technologies to be directed at each selected market or customer segment. In addition, Respondents should indicate the marketing and sales strategies that they will employ for customer acquisition and adoption in order to deliver the demand reductions included in their proposals. Preference will be given to Respondents which have a demonstrated ability to acquire the customer base needed to successfully deploy the solution.

Respondents may also include proposals that require deployment on utility property or ownership models involving utility ownership, or operation and maintenance, or both, by the Company.

Of key importance to the review of any proposal is consideration of community impact. Proposals must provide information on elements of the proposal that affect the community (both positively and negatively) including, but not limited to, associated greenhouse gas (“GHG”) emissions, waste streams and management, job creation potential and community disruption.

The Company is interested in proposals which will take advantage of funding available from other funding streams. In order to mitigate the cost impact on the Company’s customers, it will be important to maximize the use of existing municipal, State and Federal funding opportunities. Respondents should also identify their ability to unleash private sector funding. Respondents are expected to provide detailed explanations and validation of such funding strategies, including examples which are provable and repeatable.

4.5. Functional Requirements

Respondents have been provided a detailed NWA Solution Questionnaire in Attachment A. Please provide your responses in that Questionnaire and submit it as part of your RFP proposal. Major categories within the functional questions include:

- Respondent’s go-to-market strategy;
- M&V confidence plan;
- Other Funding Sources Available;
- Environmental and Community Impacts;
- Respondent’s Market Understanding;
- Proposed Solution Benefits;
- Other Funding Opportunities; and
- Other Additional Information to clarify or further explain the RFP proposal.

4.6. Detailed Project Plan and Timeline to Implement Solution



Proposed DESS must be in service, and the pledged demand reduction must be guaranteed to commence, by the date(s) specified in the Section 2, DESS Solution Requirements, above. As noted previously, priority will be given to projects that will require shorter time-span to deploy the DESS.

Responses must contain a detailed plan to implement the solution including:

- General scope of work;
 - Customer/site acquisition and marketing plan;
 - Financing, including transaction structures and pricing formulas;
 - Implementation plan and project schedule; and
 - Operation and Maintenance plan (if applicable).
- Respondents for BTM systems must illustrate the marketing and sales strategies that will be employed for customer acquisition and to deliver the load reductions included in their proposals. Preference will be given to Respondents with a demonstrated ability to acquire customers. Marketing and sales plans must be expressly approved by the Company.
 - The response must contain a detailed M&V plan for verifying the solution's load reduction. The plan must include provisions for access by the Company and/or its representatives for quality control and quality assurance. Independent M&V may be performed at the Company's discretion. The Company's M&V will include, but not be limited to, verification of continued operation and maintenance of the DER measures for the applicable term.
 - Proposals must provide information on those elements of the proposal that affect the community (both positive and negative) including, but not limited to, associated GHG emissions, waste streams and management, job creation potential, and community disruption.
 - Proposals must outline a detailed timeline from contracting, to implementation and completion of the proposed solution.

4.7. Detailed Costs Associated with Proposed Solution

To provide the most competitive response, the Respondent is encouraged to use a value-stacking approach (the DESS is to participate in multiple value streams to earn incentives for participating in these different marketplaces) for its business plan to access wholesale market revenues or other value streams available.

- Respondents must provide a detailed cost breakdown on a MW and MWh basis. Respondents are expected to provide detailed explanations and validation of funding strategies and business models, including examples which are proven and repeatable.
- Provide the following costs:
 - DESS installation cost;
 - DESS maintenance cost;
 - DESS operating cost;
 - Acquiring BTM customers;
 - Interconnection – Broken down by equipment, material and labor; and
 - Distribution Infrastructure upgrade(s) needed due to the DESS (if any).
- Respondents should identify other funding streams that may be used to mitigate cost impact to the Company's customers (*i.e.*, City, State, and Federal funding opportunities).
- Respondents should also identify if private sector funding will be used.



Project Tenure

Any DESS installed on O&R property will have a planned tenure from 2018-2029. After 2029, O&R may require the removal of the DESS or the Company may pursue an arrangement to purchase the DESS, extend the reliability contract and/or expand the DESS.

In addition, should the DESS fail to satisfy the performance metrics during the Summer Period, O&R reserves the right to order the DESS's removal from O&R's property. Should the installed DESS require retirement and removal at any point during its lifetime; the Respondent will be responsible for all associated costs.

5. Proposal Evaluation Approach

Solutions proposed in response to this RFP will be reviewed in detail by O&R. O&R will use an evaluation framework to develop the optimal portfolio to address the identified need. Some primary review criteria to be applied to qualified proposals received are listed below. The review process is intended to be fair and equitable, with the objective of achieving the greatest overall value for O&R's customers. Respondent should note that even if Respondent's solution meets the submission criteria, there is no guarantee that O&R will select the Respondent's solution.

Respondents should also note that each measure of any proposal submitted, whether part of a single-measure proposal or a multiple-measure proposal, will be evaluated against other like measures for equal comparison. Thereafter, the Company may evaluate all measures in the aggregate in a manner that considers the overall benefit to the Company based on the criteria set forth in this RFP, and to include considerations that could allow for the selection of more than one proposal.

5.1. Evaluation Criteria

O&R will review all solutions proposed in response to this RFP. Some of the main review criteria are listed below. The review process is designed to be fair and equitable, with the objective of identifying potential solutions that provide the greatest overall value to customers.

Evaluation criteria will include, but not be limited to:

1. Proposal content – information requested has been provided and is comprehensive to allow for evaluation;
2. Viability - the extent to which the Respondent's proposed solution would address the need mentioned in this RFP;
3. Functionality - the extent to which the proposed solution would provide the needed load reductions. Please note, O&R should have the priority to leverage the asset for any distribution related needs as it arises. O&R will send a signal to the developer to dispatch the DESS.
4. Cost Inclusivity – capture cost of all components mentioned in Section 4.7;
5. Feasibility of constructing/building the DESS project, including siting, licensing and permitting, any operational risk, any negative impact on community perception;



6. Environmental and community impacts associated with the proposed solution;
7. Unit Cost – total cost, and \$/MW and \$/MWh at peak required for the proposed solution;
8. Benefit-cost analysis (“BCA”) – a BCA of the proposed solution will be performed in accordance with O&R’s BCA Handbook as filed with the NYPSC (Case 16-M-0412, Benefit Cost Analysis Handbook, Revised BCA Handbook (submitted August 22, 2016) (BCA Handbook); a BCA will be applied to the portfolio of solutions to determine feasibility of implementing a NWA solution;
9. Timeliness - the ability to meet O&R’s schedule and project deployment requirements; the detailed project schedule from contract execution to implementation and completion of projects is important for determination of feasibility;
10. Price and reliability, particularly as compared to other proposed solutions along with the dependability and benefits that would be provided to the grid;
11. Respondent Qualifications - the Respondent’s relevant experience and success providing these solutions to other locations, including reference checks and documented results;
12. Applicability to REV- supports the goals and objectives outlined in the REV proceedings (Case 14-M-0101);
13. Execution risk - the expected ease of project implementation within the timeframe required for the non-wire alternative solution (*e.g.*, permitting, construction risks, operating risks); and
14. Community impact - the positive or negative impact that the proposed solution may have on the community in the identified area (*e.g.*, noise, pollution).

5.2. Proposal Response and Submittal Instructions

Respondents are strongly encouraged to submit a proposal in accordance with the summary instructions outlined in this section, with the proposal also to focus on the requirements of the DESS Solution Requirements laid out in Section 2 above in [Non-Wires Alternative Solutions Requirements](#) (and as well as a required submittal of a fully completed **Non-Wires Alternative Solution Questionnaire (Attachment A)** as a separate attachment), and such other requirements set forth in this RFP. Respondents are required to submit their bid response through the Company’s Procurement System (“Oracle RFQ System”). Any limitation regarding Respondent’s ability to supply information requested in this RFP (or to support or perform a particular function or service) should be explicitly stated in the proposal response. Any partnering with other solution providers to perform a particular function or service must be explicitly stated.

All proposals must be submitted through the Oracle RFQ System on or prior to the due date and time. Respondents who fail to submit by the due date and time will be locked out of the Oracle RFQ System and unable to submit their proposals. Therefore, Respondents are encouraged to upload their proposals well in advance of the closing time to avoid any potential issues that may occur, including due to unfamiliarity with the Oracle RFQ System, or otherwise. Respondents must take the following actions to complete their proposal submission:

1. Download this Non-Wires Alternative RFP, Non-Wires Alternative Questionnaire (Attachment A), and Supplier Enablement Template.
2. Become enabled in the Oracle RFQ System by submitting the below items to Michael Heaton at heatonm@coned.com (note that if Respondent has previously been enabled in the Oracle RFQ System as part of a separate bid event then they do not have to do it again, but Respondent should email Mike Heaton to notify him of participation interest for this RFP):
 - a. W-9 form (version last updated); and



- b. Supplier Enablement Template (Select 'Sourcing' under Oracle responsibility field).
- 3. Receive Formal RFQ response request (will be same information downloaded from non-wires alternative website).
- 4. Submit response and fully completed questionnaire to Oracle RFQ System.

Responses delivered by hand or fax, regular mail, or any other method will not be accepted. O&R will not be responsible for late, lost, illegible or misdirected submissions.

Review of responses submitted to this RFP will be coordinated through the O&R Utility of the Future department and other Company departments, as necessary. O&R, at its option, may contact Respondents with additional questions or information requests. Additional action by O&R related to this RFP is solely at the Company's option. As such, the Company has no obligation to address questions, comments, or information requests related to this RFP after receipt of Respondents responses.

Contact Information and Questions

All Respondents should direct questions during the clarification question timeframe via email to Michael Heaton, heatonm@coned.com, of O&R's/Con Edison's Supply Chain Department. All questions and answers deemed essential for the viable submission of a bid response will be publicly posted at <https://www.oru.com/en/business-partners/non-wires-alternatives>. Respondent's identities will be kept confidential.

The Company will have no obligation to evaluate late submissions, nor be responsible in any way for any consequences associated with late submissions.

5.3 RFP Schedule

Below is the expected schedule to be followed for this solicitation:

RFP Solicitation Milestones	Completion Date – Pomona*
RFP Issued	December 6, 2017
Pre-bid conference call (see details below)	December 19, 2017
Deadline to submit clarification Questions	December 27, 2017, 1PM EDT
Responses to Clarification Questions Due	January 10, 2017
Deadline to become enabled in O&R/Con Edison Procurement System	January 24, 2017
Qualified Respondents Proposals Due	February 7, 2017, 3PM EDT

*O&R reserves the right to change any of the above dates.



Pre-bid conference call details:

Date: December 19, 2017

Time: 1:00 pm Eastern

Join by phone

Dial-in Number: **(646) 679-1825**

Meeting ID: **775773783**

Smartphone link: (646) 679-1825,, 775773783#

Join by web browser

[Follow this link](#) for video conference and screen sharing.

5.4. Proposal Response Format

Note: The Oracle RFQ System is only capable of accepting individual documents no larger than 5 MB in size. Respondents may find it necessary to split up large documents into smaller files due to these system constraints. Please keep the responses to a maximum of 35 pages. The written proposal response for the NWA solution should be organized as follows:

Proposal Section	Proposal Section Title
N/A	Cover Letter
N/A	Respondent Checklist (Appendix)
N/A	Table of Contents
1	Professional Background, Financials and Experience with the Proposed Solution (as described in Section 3)
2	Proposed Solution Response & Project Plan (as described in Section 3)
3	Cost Associated with Proposed Solution (as described in Section 3)
4	Assumptions and Expectations
Appendix	Glossary of Terms
Attachment	Non-Wires Alternatives Solutions Questionnaire Response

5.4.1 Cover Letter and Checklist

The cover letter shall include the following:



- The legal name and address of Respondent;
- The name, title and telephone number of the individual authorized to submit information and execute the Agreement;
- The signature of a person authorized to contractually bind Respondent's organization; and
- Statement that the Respondent has read, understands, and agrees to all provisions of the RFP or alternatively, indicating that exceptions will be taken to the RFP and identifying such exceptions.

5.4.2. Respondent Checklist

Respondent checklist: Respondent should provide to the Company the properly completed Respondent Checklist (Appendix) as part of the proposal.

5.4.3. Professional Background & Experience with the Proposed Solution

This section is for the Respondent to provide an executive overview and summary of your company and general description of the key features of Respondent's proposed solution. It should include the items outlined in Section 2.1 of the RFP. Respondent shall also identify all subcontractors that it will employ to complete the proposed solution.

5.4.4. Proposed Solution & Project Plan

This is a response to the solution requirements as outlined in this document. Respondents should also provide a proposed project plan for the solution.

5.4.5. Costs Associated with the Proposed Solution

Respondents should provide a detailed breakdown of the costs associated with implementing the proposed solution.

5.4.6. Assumptions and Exceptions

Respondent should provide a list of assumptions made in developing the response to this RFP that should be considered when evaluating the response. Respondent should provide a stand-alone section listing any exceptions to the RFP (i.e., indicate which deliverables of the RFP Respondent cannot meet).

5.4.7. Glossary of Terms

Respondent should provide a glossary of terms that is specific to the Respondent's solution.

5.4.8. Non-Wires Alternative Solution Questionnaire

Respondents should attach their responses to the Non-Wires Alternative Solution Questionnaire (Attachment A), including as much detail possible, with the RFP submittal.

6. RFP Terms and Conditions



Each Respondent is solely responsible for including all pertinent and required information in its submission. O&R reserves the right to determine, at its sole discretion, whether a submission is incomplete or non-responsive.

Respondents should state clearly all assumptions made with respect to this RFP. In the absence of an explicit statement to the contrary, each Respondent shall be deemed to have agreed with and understood the requirements of this RFP. While O&R has endeavored to provide accurate information, O&R makes no warranty or representation of accuracy.

Any exceptions to the terms, conditions, provisions, and requirements herein must be specifically noted and explained in Respondent's response to this RFP. O&R will assume that any response to this RFP expressly accepts all the RFP terms, conditions, provisions and requirements, except as expressly and specifically stated by a Respondent in Respondent's response to this RFP.

Respondents agree to keep confidential all information provided by O&R in connection with this RFP.

6.1. Qualifications of Respondents

The Company may make such investigation as it deems necessary to determine the qualifications of Respondent and proposed subcontractors to perform the work. A Respondent should promptly furnish any information and data for this purpose as may be requested by the Company. The failure of a Respondent to produce timely information and data requested by the Company may provide a basis for rejection of the proposal.

6.2. Proprietary Information

If a proposal includes any proprietary data or information that a Respondent does not want disclosed to the public, Respondent must specifically designate such data or information as "CONFIDENTIAL" on each page on which it is found. O&R shall be held harmless from any claim arising from the release of proprietary information not clearly identified as such by a Respondent. Because of the need for public accountability, the following information regarding the proposal shall not be considered proprietary, even if such information is designated as such: pricing terms and non-financial information concerning compliance with RFP specifications.

6.3. Cost of proposal preparation

The cost of preparing a proposal in response to this RFP, including, but not limited to, the cost associated with site visits and preliminary engineering analysis, is solely Respondent's responsibility and will not be reimbursed by O&R.

6.4. Right to Reject

This RFP shall not be construed to establish an obligation on the part of O&R to enter into any contract, or to serve as a basis for any claim whatsoever for reimbursement of costs for efforts expended by Respondent. Furthermore, the scope of this RFP may be revised at the option of O&R at any time, or this RFP may be withdrawn or cancelled by O&R at any time. O&R shall not be obligated by any statements or representations, whether oral or written, that may be made by the Company, its employees, principals, or agents in connection with this RFP.



O&R reserves the right to accept any responsive proposal, to reject any and all proposals, and to waive irregularities or formalities if deemed to be in the best interests of the Company. Any such waiver shall not modify any remaining RFP requirements nor excuse any Respondent from full compliance with all other RFP specifications and contract requirements if the Respondent is awarded the contract. O&R shall reject the proposal of any Respondent that the Company determines not to be a responsible Respondent, or whose proposal the Company determines to be non-responsive.

O&R reserves the right to withdraw this RFP at any time and for any reason, and to issue such clarifications, modifications, and/or amendments as it may deem appropriate. Receipt by the Company of a response to this RFP confers no rights upon a Respondent, nor any obligations upon the Company.

6.5. Revision to the RFP

O&R reserves the right to make changes to this RFP by issuance of one or more addenda or amendments and to distribute additional clarifying or supporting information relating thereto. O&R may ask any or all Respondents to elaborate or clarify specific points or portions of their submission. Clarification may take the form of written responses to questions, phone calls or in-person meetings for the purpose of discussing this RFP, the response thereto, or both.

If it becomes necessary to clarify or revise this RFP, such clarification or addendum shall be issued by the Company by letter, email or written addendum to the RFP. Any RFP addendum shall be delivered by hand, certified mail, facsimile, e-mail or delivery by courier service which certifies delivery. Only those Respondents that have already received the proposal documentation directly from the Company will be provided the clarification. Any addendum to, and/or clarification or revision of this RFP shall become part of this RFP and, if appropriate, part of the Agreement that results from the RFP.

6.6. Basis of Contract Award

Any contract award(s) that may be made by the Company shall be made to the most responsive and responsible Respondent meeting the specifications, price and other factors considered, as determined by the Company, in its sole discretion. The proposal evaluation criteria are set forth within this RFP.

6.7. Duration of the Contract

The duration of the Agreement will be for a term agreed to by O&R and the Respondent during contract negotiations and will depend on the parameters of the proposed solution(s) (e.g., the ability to defer traditional capital investments for as long as possible while meeting BCA criteria). Agreements will typically commence upon the completion of construction and commencement of operation of the solution unless otherwise provided herein. In the event that the Company determines not to proceed with the project, the successful Respondent will be paid in accordance with the amounts as agreed by the Respondent and the Company.

6.8. Underperformance

Respondents should note that failure to deliver load relief committed to as part of any solution may result in liquidated damages and/or other consequences provided for by the contract between Respondent and O&R.



6.9. **Security**

Respondents are put on notice that if a Respondent's solution is selected, then Respondent will be required to furnish security to O&R that demonstrates, among other things, financial capability to pay liquidated damages in the event that the Respondent fails to satisfy its Load Reduction Guaranty during the period required.

6.10. **Subcontracting and Assignment**

No portion of the work associated with any project resulting from a successful response to this RFP by a Respondent may be delegated, subcontracted, assigned, or otherwise transferred without the prior written approval of the Company in each case.



Appendix A: Respondent Checklist

The Respondent must provide the following checklist which must be properly completed with the proposal and submitted to the Company as part of the proposal.

Checklist Item	Initial
REVIEWED ALL RFP DOCUMENTS AND LAWS AND REGULATIONS THAT IN ANY MANNER MAY AFFECT COST, PROGRESS, OR PERFORMANCE	
FULLY COMPLETED PROPOSAL ADHERING TO THE FORMAT PROVIDED WITHIN THIS RFP	
ENABLED IN CON EDISON PROCUREMENT SYSTEM	
FULLY COMPLETED NON-WIRES ALTERNATIVE SOLUTION QUESTIONNAIRE (ATTACHMENT A)	
<ul style="list-style-type: none"> • Summary 	
<ul style="list-style-type: none"> • Energy 	
<ul style="list-style-type: none"> • Financials 	
<ul style="list-style-type: none"> • Additional Review Criteria 	

NOTE: FAILURE TO COMPLY WITH RFP PROCESS, COMPLETION AND SUBMITTAL OF ALL THE ABOVE DOCUMENTS ON THE FORMS PROVIDED HEREIN, MAY RESULT IN A REJECTION OF YOUR BID.

By placing my initials in the boxes provided above, I acknowledge having read and that I understand fully all of the requirements of this RFP, including with regard to each of the documents referenced herein.

RESPONDENT (SIGNATURE):

RESPONDENT (PRINT NAME):

DATE: