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Consolidated Edison Company of New York, Inc.  
Orange and Rockland Utilities, Inc.

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REV Demonstration Project: Smart Home Rate  
Request for Information

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Track 2: Implementation of Price-Responsive Battery Storage Systems

**Issued: July 10, 2017**  
**Submission Deadline: August 25, 2017**

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## 1. Overview

Consolidated Edison Company of New York, Inc., and Orange and Rockland Utilities, Inc. (Companies) are requesting information from qualified parties to partner with the Companies in implementing a Reforming the Energy Vision (REV) Demonstration project that allows participating residential customers to efficiently manage their home energy usage using technology systems that interact with sophisticated price signals from the utility and automate loads.

The Smart Home Rate Demonstration Project (SHR Demo) is part of a larger statewide initiative by the New York Public Service Commission (NYPSC) to enact more cost-reflective, transparent rates that can be a platform for unlocking greater Distributed Energy Resource (DER) value and aligning demand-side resources to achieve greater system efficiency. The NYPSC put forward steps to enact rate reform for residential customers, singling out residential prosumers, i.e., early adopters of technology and those most engaged with DERs, as targets for more tailored and accelerated rate alternatives. Through the SHR Demo, the Companies will advance this concept by:

- 1) Issuing sophisticated rates that accurately reflect cost causation in a technology agnostic manner, allowing more efficient cost recovery and decision-making,
- 2) Forming partnerships to provide customers with implementable, understandable technology choices for price-responsive home automation technologies, and
- 3) Implementing a pilot test to collect empirical data about participant responses and answer key research questions that will gauge the market opportunity and inform its future growth and development.

The Companies laid out the project concept and objectives in its filing,<sup>1</sup> and Department of Public Service Staff issued a Letter of Approval on June 5, 2017.<sup>2</sup>

The Companies are continuing the approach and timeline laid out in the initial filing, summarized in Section 2 of this RFI. The project timeline includes a project planning phase, followed by a technology and project development phase and an active pilot phase (i.e., the implementation phases of the SHR Demo). See Figure 1.

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<sup>1</sup> <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B2F247C08-2258-4C39-A84C-CEBF1F4405B7%7D>

<sup>2</sup> <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={31C3E084-3589-4C06-AC38-336793C85DB4}>

Figure 1: SHR Demo timeline

SHR Demo phases	2017		2018				2019				2020				2021			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Project planning phase</b>																		
RFI and partner selection process	■																	
Implementation plan filing		▲																
<b>Technology and project development phase</b>			■	■	■	■												
<b>Active pilot phase</b>																		
Marketing, recruitment, and installation							■	■	■									
Rates and technology activated										■	■	■	■	■	■	■	■	■

This RFI is intended to select partners for the implementation phases of the SHR Demo. The partner selection process includes two separate tracks of focus:

1. Implementation of price-responsive home automation systems (Track 1)
2. Implementation of home battery storage systems paired with solar (Track 2)

**This Request for Information (RFI) seeks respondents only for Track 2.** A partner for Track 1 will be selected through a separate RFI process.<sup>3</sup> Respondents may respond to both tracks, but must submit separate responses to each RFI.

**(a) Background on Con Edison and O&R**

Consolidated Edison Inc., the parent company of Con Edison and O&R, is one of the nation’s largest investor-owned energy companies, with approximately \$13 billion in annual revenues and approximately \$45 billion in assets. Consolidated Edison Inc. provides a wide range of energy-related products and services to its customers through its two regulated subsidiaries: Consolidated Edison Company of New York, Inc. (CECONY or Con Edison), which provides electric, gas and steam service to New York City and Westchester County and is regulated by the New York State Public Service Commission (NYSPSC); and Orange and Rockland Utilities, Inc. (“O&R”), which provides electric and gas service to Orange County, NY and Rockland County, NY and parts of Bergen, NJ and Pike County, PA. O&R is regulated by the NYSPSC and the regulatory commissions of New Jersey and Pennsylvania. Consolidated Edison Inc. also has three unregulated businesses: Con Edison Solutions, a retail services company; Con Edison Energy, a wholesale energy supply company; and Con Edison Development, an infrastructure development company. Consolidated Edison, Inc. recently created a new subsidiary, Con Edison Transmission, Inc., to invest in electric and gas transmission projects. This Request for Information (RFI) is led by CECONY and O&R only and does not involve the unregulated businesses of Consolidated Edison, Inc.

<sup>3</sup> <https://www.coned.com/en/business-partners/business-opportunities/smart-home-rate-demo>

**(b) Important statement regarding confidentiality**

The Companies recognize that a respondent may wish to include information in its response to this RFI that the respondent considers proprietary, trade secret, or confidential to the respondent. If, in any response or information (initial or supplemental) that you provide to the Companies in connection with this RFI, you include information that you consider proprietary, trade secret or confidential, please identify such information by clearly marking both the top and bottom of each page that contains such information as “CONFIDENTIAL.” The Companies will deem any such designated information as submitted to the Companies and its designees, including, any third party advisors retained by the Companies to assist the Companies in the RFI evaluation process, with the express understanding that, subject to any legally mandated disclosure requirements, such designated information will be held in confidence and will not be disclosed or used for any purpose other than the review and evaluation of the applicable respondent’s response to this RFI or otherwise in connection with any resulting proposal from the respondent or any resulting contract between one or more of the Companies and the respondent.

**(c) General guidelines**

By responding to this RFI, respondents are deemed to accept and agree to these general guidelines. By submitting a response to this RFI, the respondent acknowledges and accepts the Companies’ rights as set forth in this RFI, includes these general guidelines.

The Companies each reserve the right (a) to reject any respondent submission, (b) to request clarifications or additional information from a respondent regarding its submission, (c) to revise and re-issue this RFI or to revise any requirements of this RFI, (d) to extend any deadlines applicable to this RFI, (e) to hold discussions with any Respondent and to correct any deficient responses which do not conform fully with the instructions set forth in this RFI, and/or (f) to file and implement REV demonstration projects without initiating an RFI process and on topics other than the topic that is the subject of this RFI. The Companies may exercise the foregoing rights at any time, without notice and without any liability to a respondent or any other party for expenses such respondent or other party incurred in the preparation of responses to this RFI. All costs and expenses associated with the submission of any initial or supplemental response to this RFI will be borne solely by the applicable respondent.

The Companies 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 RFI, the responses thereto, or both.

It is the sole responsibility of each respondent to ensure that all pertinent and required information is included in its submission to this RFI. The Companies reserve the right to determine, in their 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 this RFI. If a respondent does not ask questions or clarify any assumptions, the Companies will assume that the respondent agrees with and understands the requirements of this RFI. While the Companies have endeavored to provide, and will endeavor to provide, accurate information to respondent firms, the Companies make no representations or warranties of accuracy.

In evaluating a respondent's submission, the Companies may utilize any and all information available (including information not provided by the respondent).

The issuance of this RFI and the submission or a response by any person or entity does not obligate the Companies to qualify the person or entity in any manner whatsoever. A legal obligation on the part of Con Edison and/or O&R to engage in any business transaction with a respondent will only arise if and when a formal written contract is entered into between or among Con Edison and/or O&R and such respondent.

If a business transaction between a respondent and Con Edison and/or O&R were to be entered into in connection with this RFI, there are a number of terms and conditions and special conditions that may be applicable to any such transaction, depending on the nature of the respondents' response. Current examples of the Companies' disclosure form, standard terms and conditions and special conditions can be found using the following link:

<https://apps.coned.com/supplychain/APL/tc.aspx?lnk=terms%20and%20conditions>. These forms and documents are subject to change by the Companies at any time after the date of this RFI.

By responding to this RFI, respondents are deemed to agree to keep confidential all information that is directly or indirectly provided by Con Edison or O&R to a respondent in connection with this RFI, provided that the foregoing confidentiality obligation shall not apply to any information that Con Edison or O&R has previously made generally available to the public.

#### **(d) RFI objectives**

This RFI is designed to select partners to provide turnkey project implementation and recruiting services and price-responsive home automation technology solutions for the implementation phases of Track 2 of the SHR Demo, including the following activity areas:

- **Technology:** developing and testing communications protocols, battery storage system, technology platform, and user interfaces; performing installations;
- **Customer acquisition:** conducting preparatory customer research, preparing education/outreach materials, and performing participant targeting and recruitment.

**Customer communications:** Managing customer enrollments, managing customer inquiries.

Table 1 shows how these activities are divided between the partner and the Companies. This RFI seeks a partner that can provide a turnkey solution which covers all of the areas of responsibilities.

**Table 1: Roles and responsibilities for Partner(s) and the Companies**

	<b>Track 2 partner’s responsibilities</b>	<b>Companies’ responsibilities</b>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Project management</li> <li>• Provide price communication interface</li> <li>• Provide price responsive battery storage technology (including storage functionality and price responsive optimization capabilities)</li> <li>• Establish partnerships with device OEMs</li> <li>• Develop and test platform</li> </ul>	<ul style="list-style-type: none"> <li>• Provide design support and approval</li> <li>• Day to day operations to develop and transfer and integrate daily pricing information and CPP events</li> </ul>
<b>Customer acquisition</b>	<ul style="list-style-type: none"> <li>• Provide customer education, outreach, and messaging materials (including market research)</li> <li>• Responsible for customer acquisition (including targets – analytics, recruiting, marketing)</li> </ul>	<ul style="list-style-type: none"> <li>• Provide utility branding and support</li> <li>• Provide information on sample from which to recruit<sup>4</sup></li> </ul>
<b>Customer communications</b>	<ul style="list-style-type: none"> <li>• Manage enrollment process</li> <li>• Perform installations / Provide installation support</li> <li>• Manage recurring participant communications (outbound)</li> <li>• Manage inbound customer inquiries (route technology inquiries, billing inquiries to right place)</li> <li>• Provide technology support</li> </ul>	<ul style="list-style-type: none"> <li>• Implement customer billing</li> <li>• Provide billing-related support</li> </ul>
<b>Data evaluation</b>	<ul style="list-style-type: none"> <li>• Track and report enrollment, dropout, inquiries</li> <li>• Provide pertinent data required for M+V, including data related to technology performance</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct research evaluation</li> </ul>

**(e) RFI process and schedule**

The Companies’ schedule for the RFI response submittal and evaluation process is shown in Table 2.

<sup>4</sup> The companies have data on residence type (e.g. Single- or multi-family home) and PV systems, but incomplete data on the presence of end use loads such as central AC in individual homes. Other data sources may be available, including energy efficiency program data, monthly usage data, and limited amounts of AMI data.

**Table 2: RFI Schedule**

<b>RFI Milestones</b>	<b>Completion Dates</b>
RFI issued	July 10, 2017
Last day to submit clarification questions	July 21, 2017 by 5:00pm EDT
Answers to clarification questions posted	Aug. 4, 2017
Bidders' webinar	Aug. 8, 2017 (tentative)
Response submission deadline	Aug. 25, 2017 by 5:00pm EDT

All submissions made in response to this RFI will be evaluated by a committee consisting of representatives of the Companies and other committee members designated by the Companies. The Companies may seek third party subject-matter experts and advisors to assist with the review and evaluation of the submissions received in response to this RFI.

The Companies' evaluation process will include a screening process to select a shortlist of prospects for the next stage of consideration. Once the shortlist is selected the Companies may interview prospects and their references.

For those responses in which it is interested, the Companies will provide details on next steps and timelines when it notifies respondents of its interest.

**(f) Response evaluation criteria**

Responses will be evaluated on the extent to which they demonstrate the project team's ability to deliver on the following major evaluation criteria:

- **Delivery capabilities of team:** Respondent's capabilities/skills/experience, track record in delivering positive outcomes in the areas of: project management and program administration, participant acquisition and marketing, technology testing, setup, and installation, developing technology for pilots of similar scale; Composition of team and team members' qualifications;
- **Customer experience:** Quality of the technology package; quality of the technology's user interface (supported by research, detailed screenshots of the customer interface, and possibly a live demonstration to the Companies); approach to accounting for users' comfort and convenience; approach to user interface training, education, and technical support;
- **Technology capability and scalability:** Capability of the technology to perform price response and demand optimization based on the presented SHR rates (see Section 2(c)); approach to price signal communication; features of platform architecture; automation



features and automation of other end uses; ease of installation; readiness of technology; feasibility of technology development proposal;

- **Cost, funding, and contracting flexibility:** Cost of services and technology; inclusion of other sources of funding; comprehensiveness of response across areas of responsibility; and openness to being paired by the Companies with another partner;
- **Overall approach:** Thoughtfulness of approaches outlined for different elements of project; integration of overall approach; alignment with goals of project.

## 2. Background

### (a) Research Objectives

In the SHR Demo, the Companies will conduct a research study with two tracks. The track addressed by this RFI (Track 2) is designed to test an advanced SHR rate design in conjunction with battery storage technology in the presence of a solar PV system. The rate will have dynamic, time-varying components that closely reflect the various cost drivers of the electric supply and delivery system. A primary research goal of Track 2 is to test and compare how this rate performs in conjunction with price responsive automation technology (See Section 2(c) for detailed description on the rates).

With data gathered from Track 2 of the SHR Demo, the Companies will seek to answer research questions, including:

- What are the load and bill impacts of the granular, time-varying Smart Home Rate compared to a customer's previous net metered rate?
- Does the technology developed reliably enable customers to automatically optimize net energy demand and consumption to their own satisfaction?
- Are customers satisfied with their rate experience and with the enabling technology?
- How do customers perceive the various rate components and accompanying education materials?

### (b) Research design

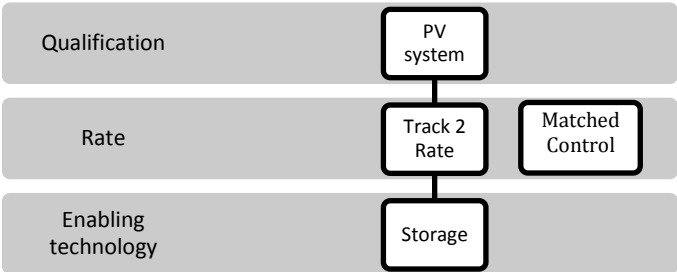
For the research under the track addressed by this RFI (Track 2), a battery storage system with price-responsive automation technology will be installed at homes with pre-existing solar PV installations and all participant homes will be placed on the dynamic, time varying rate (Track 2 Rate<sup>5</sup>).<sup>6</sup>

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<sup>5</sup> Note that the Track 2 Rate is the same as Rate A for Track 1

The primary purpose of Track 2 will be to understand customer satisfaction, bill impacts, and load impacts with the rate and battery storage automation as compared to the previous rate. The Companies plan to recruit 100 participants. Figure 2 lays out the quasi-experimental design<sup>7</sup> that will be used for Track 2.

**Figure 2: Track 2 Quasi-Experimental Design**



Supplementary technology capabilities which permit automation of other end uses will be accepted but not required. If these capabilities exist, the participant may also choose to connect and automate additional large electric loads, such as electric water heaters, pool pumps, or electric vehicle chargers.

**(c) Rate designs**

For Track 2, the Companies have designed a rate which reflects temporal and locational granularity separately for various unbundled cost components (including delineation between energy supply and energy capacity, and between future marginal, and past embedded, transmission and distribution (T&D) delivery costs). This rate includes three classes of charges: time-variant supply charges, embedded delivery charges (billed through a daily demand charge), and event-based coincident demand charges. These charges are described in more detail below.

**Time-Variant Supply Charges**

In Con Edison service territory, both rates will reflect Hourly NYISO LMP prices in Zone J in Staten Island and Zones H and I in Westchester County. In O&R service territory, the rate will reflect Hourly NYISO LMP prices in Zone G.

NYISO capacity costs will be recovered separately through event-based coincident demand charges.

<sup>6</sup> An initial assumption is that storage would be added to existing PV systems. The Companies may be open to refining this assumption provided it is still possible to collect pre-treatment billing data for summer 2018 under the standard NEM rate prior to commissioning of the storage system.

<sup>7</sup> Due to various constraints, a comparison group will be developed by the Companies using statistical matching rather than recruited through a randomized control trial approach.

## **Embedded Delivery Charges**

The daily demand charge is structured to recover embedded costs for past infrastructure investments.

The daily demand charge in the Track 2 Rate collects the customer's maximum demand intervals recorded during the on-peak period of each day of the billing period, including weekdays and weekends.

## **Event-Based Coincident Demand Charges**

The event charges is intended to avoid or attenuate future generation, transmission and distribution (T&D) capacity investments by decreasing coincident customer demand and reducing the peak loads that drive these investments. NYISO generation capacity costs are reflected in the Coincident Generation Event charges, while marginal T&D delivery costs are reflected in the Coincident Transmission Delivery Event and Coincident Distribution Delivery Event charges.

There will be on average per year 10 generation events, 10 system level transmission events, and 10 distribution events, meant to reflect periods of constraint at each level of the system<sup>8</sup>. Most of these events will be called for a duration of 4 hours. For testing purposes, some events may be shorter or longer than 4 hours and different types of events (generation, transmission, distribution) may be stacked, staggered, or sequenced. Generation and T&D events may or may not be called on the same days or during the same hours. This variation is intended to reflect and simulate the temporal differences between bulk generation peaks, system peaks, and distribution peaks, and locational differences between distribution networks or groups of networks. In this respect the coincident nature of the event charges means they apply to loads which occur within the same days, hours, and applicable geographic footprint as a generation, transmission, distribution peak.

## **Tariff details**

Table 3 (for Con Edison) and Table 4 (for O&R) lay out in detail the rate that the Companies will test in their respective service territories for Track 2 of the SHR Demo. During the planning phase of the SHR Demo, the above rate structure will likely be refined to incorporate adaptations upon further analysis. The specific tariff sheet that will comprise the rate will be finalized for the SHR Demo implementation plan to be filed by the end of 2017.

These tables describe the billing determinant for each rate component (in italics). Note that the SHR Demo rates will be revenue neutral within each rate class for each respective company.

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<sup>8</sup> A fully developed and deployed SHR rate could be constructed to be purely reflective of the peaking conditions at each level. However, for the purposes of the demonstration, event dispatch may also include operations considerations to ensure the mix and combination of events is conducive to evaluate impacts for individual and for combined events.

Note that several billing determinants are kW-based. Since AMI data will be collected in 15-minute intervals, these billing determinants will be taken from the average of 4 consecutive 15-minute intervals on a rolling basis.

**Table 3: SHR Demo Rates (CECONY)**

Rate components	Rate components ( <i>billing determinants in italics</i> )	
	Track 2 Rate	
Supply Charge	Hourly NYISO LMP prices, Zone H , I, J ( <i>kWh consumed each hour</i> )	
Embedded Delivery Charge	\$1.096 / max daily kW	<i>Daily charge based on interval with highest demand between 12 pm and 8 pm</i>
Coincident Generation Event	\$11.344 / max event kW	<i>Incremental to daily demand charge. Event charge based on interval with highest demand during event hours. 24 hour advance notice provided for events, hours may vary by event and by event type.</i>
Coincident Transmission Delivery Event	\$1.145 / max event kW	
Coincident Distribution Delivery Event	\$4.608 / max event kW	
Fixed Monthly Customer Charge	\$15.76 per month	
Adjustments and Surcharges	\$0.XX ( <i>kWh consumed</i> ); varies, includes System Benefit Charge, MAC, RDM, etc.	

**Table 4: SHR Demo Rates (O&R)**

Rate components	Rate components ( <i>billing determinants in italics</i> )	
	Track 2 Rate	
Supply Charge	Hourly NYISO LMP prices, Zone G ( <i>kWh consumed each hour</i> )	
Embedded Delivery Charge	\$0.881 / max daily kW	<i>Daily charge based on interval with highest demand between 12 pm and 8 pm</i>
Coincident Generation Event	\$7.700 / max event kW	<i>Incremental to daily demand charge. Event charge based on interval with highest demand during event hours. 24 hour advance notice provided for events, hours may vary by event and by event type.</i>
Coincident Transmission Delivery Event	\$0.954 / max event kW	
Coincident Distribution Delivery Event	\$3.771 / max event kW	
Fixed Monthly Customer Charge	\$20.00 per month	
Adjustments and Surcharges	\$0.XX ( <i>kWh consumed</i> ); varies, includes System Benefit Charge, MAC, RDM, etc.	

**Export credits**

The SHR demo Track 2 rate design will incorporate the concept of export credits for distributed generation (DG). Export credits as part of a Smart Home Rate design will be differentiated by rate component. Supply charges and all of the event charges work bi-directionally, so that exported energy is credited according to those rates coincident to the time of the export. However, no

export credit will be given for embedded T&D delivery charges because the exported energy does not contribute to avoiding past infrastructure investments. Export credits are described as follows:

- **Supply charges:** exports will receive energy supply credit for kWh exported each hour at the locational marginal price (LMP) which varies by day and hour;
- **Embedded delivery charges:** no export credit will be given because this portion of delivery costs serves to recover costs for past, unavoidable infrastructure investments;
- **Generation capacity event charges:** exports will receive credit for kW reduction during Coincident Generation Events at the rates listed in Tables 3 and 4, since these costs may be avoided or attenuated by decreasing coincident customer demand;
- **T&D capacity event charges:** exports will receive credit for kW reduction during T&D capacity events at the rates listed in Tables 3 and 4, since these costs may be avoided or attenuated by decreasing coincident customer demand.

#### (d) Participant Pool

Targeting the optimal residential customer segment to participate in SHR Demo Track 2 is based on two primary criteria: (1) availability of Advanced Metering Infrastructure (AMI), and (2) the presence of a solar PV system. The first criterion narrows prospective participants to three counties that are among the first in the Companies' AMI deployment plans to receive a significant number of AMI installations by summer 2018 (the start of the SHR Demo's baseline data collection period). These are: the Borough of Staten Island (or Richmond County) and Westchester County in Con Edison territory, and Rockland County in O&R territory. The second criterion narrows the focus to single-family homes (SFH) with existing PV systems<sup>9</sup>, as these are a segment of residential customers which present more opportunity for leveraging a battery storage system given that both loads and generated energy can be shifted to reduce usage during peak event as well as to reduce maximum loads consumed on a daily basis. By focusing Track 2 research on customers currently on net metered rates it will also be possible to gain an empirically based understanding of how bills may differ under a future rate which reflects temporal and locational granularity.

Table 5 shows the total number of residential solar installations to date in the targeted areas<sup>10</sup> along with an estimate of the subset of the accounts which will also have AMI by June 2018, in time for participation in the Track 2 research. Recruiting 100 participants from an available pool of 5,100 implies that the rate of about 2% for conversions (including installation) must be reached.

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<sup>9</sup> For M&V purposes the PV system must be in place no later than the beginning of summer 2018 in order to ensure the availability of consistent pre-treatment comparison data.

<sup>10</sup> Installation of battery storage in New York City requires case by case approval from the New York City Fire Department and Department of Buildings.

**Table 5: Estimated Participant Pool for Track 2**

County	Residential PV system installs	2018 AMI deployment rate among SFH	Estimate of homes with PV and AMI
Staten Island	4,012	95%	3,792
Westchester	3,210	12%	389
Rockland	1,752	52%	919
Total	8,974	57%	5,100

In their responses, respondents should describe the battery storage system’s fire protection elements as well as the respondent’s approach to securing permitting for the installation of the systems within the applicable jurisdictions. Responses should include an assessment of permitting risks and planned approaches to mitigate those risks.

The leasing arrangements of some existing residential PV systems may complicate the ability to integrate battery storage. It is expected that the implementation partner should assess the arrangements necessary to implement the Track 2 requirements. In their responses, respondents should describe their approach to manage this issue.

### 3. RFI response outline

Below is the outline RFI responses should follow. The Approach, Capabilities, and Experience section should follow the sequence and structure found in the RFI Questions by Capability Area in Section 4, addressing each capability area and its related questions.

- I. **Executive Summary** — Respondents should provide a brief summary of their proposal. This summary should include a brief description of the company(ies) proposing.
- II. **Approach, Capabilities, and Experience** — Respondents should follow the sequence and structure laid out in the RFI Questions by Capability Area.
  - a. Turnkey project management and recruiting
  - b. Price responsive automation technology
  - c. Technology installation
- III. **Project team description** — Respondents should list all key team members. Include any partnerships and describe the relationships and roles of all parties involved in the proposal. Describe any ways the proposed team structure and roles deviate from the responsibilities laid out in Table 1. If forming partnerships to provide a comprehensive response, provide examples of past work with full project team.
- IV. **Costs**
  - a. Required resources & cost — Respondents should provide an estimated budget for the proposed solution. This budget should include key cost categories, incurred by quarter, and should clearly identify any underlying budgeting assumptions in detail. Any options on top of the base solution (e.g., options may include the integration of multiple end use loads into the technology system) should be clearly identified. Costs for options should be listed separately from those of the base solution.

- b. Sources of funding — Respondents should clearly identify the sources of funding for the proposed solution. Describe any secondary revenue streams or any third-party funding sources, if applicable. The Companies are interested in proposals that utilize other funding streams (i.e., Federal, State, City) to mitigate the overall project cost.
- V. **References**— Respondents should list prior experience and references and include the information listed in Section 5.
- a. Turnkey project management and recruiting (up to 5 projects)
  - b. Price responsive automation technology (up to 5 projects)
  - c. Technology installation (up to 2 projects)
- VI. **Attachments**
- a. Attach CVs of each team member listed in the project team description as a separate file.

#### 4. RFI Questions by Capability Area

The response’s Approach, Capabilities, and Experience section should follow the structure and address the questions laid out below.

##### (a) Turnkey project management and recruiting

Evaluation Criteria	Capability area	Related questions
Delivery capabilities of team	Project management and program administration	Provide a high level implementation schedule given the timeline provided in Section 1 of the RFI. Include roles and responsibilities for project team members and for the Companies. Describe your approach to delivering a well-integrated and executed project for this demonstration. Provide examples of prior experience managing multiple teams and organizations. Describe how you would deliver the enrollment, call center, installation support, management of recurring customer communication requirements of this demonstration project. Provide examples of prior experience deploying these capabilities.
	Participant acquisition	Describe your recruiting plan for Track 2 of the SHR Demo. Which recruiting channels will you use? What would your targeting approach be? Address specifically how you plan to convert 2% of the target population. Do you have concerns about achieving this conversion target? If so, describe your concerns and how you plan to address them. Describe the approach to addressing different ownership and leasing arrangements of existing PV systems. Provide an example where you delivered on high penetration targets with a project involving installation of battery storage or solar PV technology. Describe your local presence in Con Edison and O&R territories, including the number of existing solar PV or battery installations.
	Marketing	Describe your approach to marketing content development including collaboration with the Companies’ marketing teams and resources. Explain any specific considerations for a technology heavy demo with a specific target population, such as the SHR Demo.

**(b) Price responsive automation technology**

Evaluation Criteria	Capability area	Related questions
Technology capability and scalability	Price response and demand optimization <sup>11</sup>	<p>Describe how the technology would provide optimization of the battery storage system coupled with PV against the SHR Demo Track 2 rate as described in the Background section. What optimization approaches are used to respond to dynamic pricing (hourly day ahead, event-based CPP) and demand charges (i.e., describe optimization logic)? Does the technology take user preferences (comfort, bill impact, simplicity) into account? How are these balanced with the price optimization function?</p> <p>Describe any specific challenges you anticipate with implementing price response against the SHR Track 2 rate.</p> <p>Provide examples where the technology has been deployed with time-variant rate and demand rate optimization. Please characterize as prototype or field pilot.</p>
	Storage system	<p>What is the size (capacity) of the storage system? What is the storage technology? (e.g. battery chemistry) Describe the storage system architecture. Describe where the storage would be installed on the customer’s premises. Provide an interconnection diagram. Please provide documentation of UL-certification or safety permits. Describe your approach to fire protection. Describe the permitting process and your approach to key stakeholders. Provide an assessment of any permitting risks and approaches to mitigate them. Do you have existing residential installations of the storage system in the field today (in the US)? If so, how many? What is the life of the storage system? What are the maintenance requirements or warranty terms?</p>
	Other automation technologies	<p>(Note: Supplementary automation of end uses is not required.) If participants were to have large, discretionary end use loads, is the price-responsive technology capable of integrating them? How would you propose integrated automation of multiple end uses as an option? Describe any complementary technologies you plan to include, their automation functionality, and communication with the storage technology, and your rationale for including this complementary technology. For which end uses has automation been tested in the field (vs. a lab prototype)? Describe these field pilots / experiences. If applicable, please describe how your technology platform communicates with end use devices. Which communication protocols are used? What signals are sent / received?</p>
	Communications	<p>Please describe what protocols your technology could support receiving and using price signals from Con Edison/O&amp;R. If you cannot support an open communication protocol for this please explain why not. (Note: Integration with Con Edison/O&amp;R’s AMI network is neither necessary</p>

<sup>11</sup> i.e., minimizing bill impacts of demand charges by controlling demand



Evaluation Criteria	Capability area	Related questions
		<p>nor encouraged.)            What is your approach for addressing communication / internet outages? What factors reduce the reliability of connectivity to the devices and can this be mitigated?            What approaches are taken to ensure cyber security?            If applicable, describe how your technology platform communicates with other end use devices. Which communication protocols are used?            What signals are sent / received?</p>
Delivery capabilities of team	Technology development	<p>Is the technology capable of meeting the SHR Demo requirements today?            If not, what, if any, new functionalities would have to be built for this project? Describe development cycle and testing process / timeline. Note that the technology needs to be fully tested and ready for deployment by early 2018 for the purposes of the SHR Demo.</p>
Customer experience	User Interface	<p>(Note: An interactive user interface is not required.)            Describe any device automation user interface you have already developed or incorporated into your technology. Describe any market / customer research used in development of the interface.            What decisions does it require users to make? How do you educate users to use it? If possible, include screenshots of key interface screens. Indicate if you would be able to provide a live demonstration of the technology.            What mobile options / applications are there for the interface?            If you do not have an existing interface, describe the process you would use to develop one.            Do you propose using a Con Edison/O&amp;R branded interface or other?</p>

**(c) Technology installation**

Evaluation Criteria	Capability area	Related questions
Delivery capabilities of team	Storage installation	<p>Describe the requirements to install the battery storage system and commission it.            Describe your team’s experience with storage installations, especially retrofits of storage to existing solar. If this experience is not available describe other storage installation experiences.</p>
	Installation of other technologies	<p>(Note: Supplementary automation of end uses is not required.)            Describe your team’s experience with residential installations of other automation technologies, if included in your technology proposal. What additional installation requirements would be required by the integration of other automation technologies with battery storage? Please describe your team’s installation experience and approach for any complementary technologies.</p>
	Technology testing	<p>Describe the testing protocols and phases you would recommend for SHR Demo technologies. Provide examples where you have implemented similar protocols.</p>

Evaluation Criteria	Capability area	Related questions
Customer experience	User interface training, education, and support	Describe your approach to user interface training and education. What key components are necessary to avoid most issues? Describe the level of post-installation support you would recommend and could provide.

**5. References template**

Respondents should make an effort to supply references that correspond to prior experience cited in the responses to RFI Questions by Capability Area. Up to 12 references can be submitted depending on which capability areas are included in the response.

- i. Turnkey project management and recruiting (list up to 5 projects)
- ii. Price responsive automation technology (list up to 5 projects)
- iii. Technology installation (list up to 2 projects)

Each reference should include the following information.

- Relevant capability area(s) (e.g. correspondence to areas and sub areas laid out in the RFI Questions section)
- Brief description
- Technologies deployed
- Number of customers / participants
- Partners
- Client
- Name and title of client reference
- Contact information (direct phone, email) for reference

**6. Response and submittal instructions**

A complete submittal includes a cover letter (see below), the response as described in the outline in Section 3, and an attachment of key team members’ CVs. Responses should be provided in PDF format and each file should be clearly labeled.

A cover letter is required with the response. The cover letter must include the following:

- The legal name and address of respondent

- The name, title and telephone number of the individual authorized to submit information
- A statement that the respondent has read, understands, and agrees to all provisions of the RFI

Responses will be submitted by email to: [SHRDemo@coned.com](mailto:SHRDemo@coned.com). Please format the email subject line as follows: "Company Name – SHR Track 2 Demonstration Proposal."

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

The Companies may, at its option, contact respondents with additional questions or information requests.

Any questions or clarifications concerning this RFI should be directed to the Companies at [SHRDemo@coned.com](mailto:SHRDemo@coned.com). The deadline to submit questions via email is 5:00 pm EDT on July 21, 2017. Emailed questions received after this date will not receive a response. The Companies will not respond to any questions received in-person, by mail, by fax, or by phone. A summary of all questions submitted and the corresponding answers will be posted online at <https://www.coned.com/en/business-partners/business-opportunities/smart-home-rate-demo> on Aug. 4, 2017.