



Orange & Rockland

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Pomona Distributed Energy Resources Program

Implementation Plan

Case No. 14-E-0493

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## Executive Summary

The Pomona Distributed Energy Resources Program (“Program”) Implementation Plan (“PIP”) details the Program’s purpose, current state, path forward, community engagement plans, and budget for deferring the construction of the Pomona substation and associated infrastructure through 2023. This PIP is a “living” document that Orange and Rockland Utilities, Inc. (“O&R” or “Company”) will update, as needed, but at least annually, as part of its fourth quarter reporting.

The Company proposed this Program<sup>1</sup> to the New York State Public Service Commission (“Commission”) in order to defer the construction of the Pomona Substation and associated 138 kV underground transmission loop. The Commission, on October 16, 2015, issued an order adopting the terms of the Joint Proposal<sup>2</sup> in O&R’s most recent electric base rate case which included the Pomona DER Program. The Joint Proposal requires the Company to submit an implementation plan within 60 days of the Commission’s order. This PIP and accompanying General Accounting Procedure (“GAP”) satisfies this requirement.

The Program focuses on the reduction of electric load in Pomona, Rockland County, New York. The Company intends to evaluate distributed energy resources (“DER”) and demand management (“DM”) alternatives that will serve to both stimulate the developing DER marketplace and reduce peak load demand by 6.0 MW, thereby improving electric service reliability and delivery system resiliency. The Company will evaluate its own DM offerings, consisting of various existing energy efficiency (“EE”) and demand response (“DR”) programs in addition to third-party alternatives to determine the best aggregate of solutions. The Company envisions that a diverse set of solutions will be employed to address Pomona’s peak load reduction requirements. The solutions will be considered for efficiency and effectiveness as well as alignment with the Commission’s Reforming the Energy Vision (“REV”) policy objectives.<sup>3</sup>

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<sup>1</sup> Case 14-E-0493, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Orange and Rockland Utilities, Inc. for Electric Service. The Program was included in testimony and the Joint Proposal, dated June 5, 2015.

<sup>2</sup> Ibid.

<sup>3</sup> Case 14-M-0101, *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, Order Adopting Regulatory Policy Framework and Implementation Plan (issued February 26, 2015) (“REV Proceeding”).

## 1. Introduction

The Company forecasts electric load growth in and around Pomona, NY will necessitate construction of a new substation and associated 138 kV underground transmission loop starting in 2019 in order to meet the Company's distribution planning criteria and significantly improve the area's electric delivery system reliability. Construction costs for the Pomona substation and associated transmission upgrades are estimated at \$55.7 million. The Company anticipates that implementing targeted DER and DM programs which employ a combination of EE, DR, distributed generation ("DG"), and energy storage ("ES") solutions through a phased approach will provide sufficient peak load reduction to support deferral of construction of the Pomona substation for up to four years, while also providing increased contingency reliability.

The area in and around Pomona, NY ("Program area") is comprised of seven distribution circuits<sup>4</sup> that serve 6,938 customers, providing electric service to portions of the towns of Haverstraw, Ramapo, and Stony Point and includes some or all of the areas of Ladentown, Montebello, Mount Ivy, New Hempsted, Pomona, Thiells, Viola, Wesley Hills, and West Haverstraw. The customer demographic is primarily residential, and includes approximately 6,170 homes. The commercial and industrial ("C&I") customer base consists of small retail stores, restaurants, several strip malls, a large shopping complex, a college, and a pharmaceutical manufacturer. There are approximately 760 C&I customers.<sup>5</sup>

## 2. Program Description

The Program's solutions will be designed and developed as targeted DER and DM programs to enable the deferral of the Pomona substation, while meeting the intent of REV objectives and providing customers with reliable energy. The Program is designed as an iterative process that requires continuous evaluation of the current state and effectiveness of in-progress and completed DER and DM projects, and assessment and execution of additional solutions to meet the overall Program goal, i.e., 6.0 MW peak load reduction by 2021. The Program will initially have a dedicated Project Manager ("PM") and business specialist as well as a third position as the Program develops.

The Company estimates that 1.5 MW of peak load reduction will come from established O&R customer-sided DM solutions, discussed in Section 3 below; the remaining 4.5 MW of peak load reduction will come from new initiatives. The new initiatives being evaluated include solar, battery storage, DG, and new DM programs (e.g., incentivizing new appliances with a ZigBee chip for appliance cycling). The Company plans to achieve the 6.0 MW target through incremental peak load reductions as set forth in Table 2-1. The Company will develop, evaluate, design, and deploy these solutions as part of the process outlined in Section 4 below.

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<sup>4</sup> The Tallman Circuits 51-3-13 and 51-6-13, Stony Point Circuit 23-4-13, West Haverstraw Circuits 27-6-13 and 27-7-13, and New Hempstead Circuits 45-1-13 and 45-7-13.

<sup>5</sup> Customer data is current as of November 2015.

**Table 2 – 1: Pomona DER Program Incremental Peak Load Reduction Schedule (estimated)**

	2016	2017	2018	2019	2020	2021
Established O&R customer-sided DM Solutions	0.4 MW	0.7 MW	1.0 MW	1.4 MW	1.5 MW	1.5 MW
New Initiatives		0.1 MW	0.3 MW	1.8 MW	2.5 MW	4.5 MW
<b>TOTAL</b>	0.4 MW	0.8 MW	1.3 MW	3.2 MW	4.0 MW	6.0 MW

### 3. Current State

The Company, in establishing the Program, plans to develop incremental peak load reduction in the Program area to be provided by established O&R EE and DR programs.

#### 3.1 Current DER and DM Programs

The Company currently has in place, as reported in its July 15, 2015 Energy Efficiency Transition Implementation Plan (“ETIP”), a portfolio of EE programs.<sup>6</sup> These programs are available to both residential and C&I customers. In addition, in 2015, O&R established a C&I DR<sup>7</sup> program. Many of the projects to be implemented Program area will be funded by the Pomona DER Program. The associated incremental MW savings produced by these projects will be counted toward the 6.0 MW reduction goal and performance incentive.<sup>8</sup>

There is potential for incidental peak load reductions within the Program area as a result of other program’s funding, e.g., EE projects funded through the Company’s ETIP program. The benefits of incidental peak load reductions, while supporting the 6.0 MW reduction goal and deferral of the Pomona substation, will not count toward the Program performance incentive.<sup>9</sup>

Based on Company analysis, approximately 3,100 residential homes in the Program area have central Air Conditioning (“A/C”) systems. Since establishment of the DR tariffs in July 2015, approximately 30 customers In the Program area have already submitted applications to enroll in A/C cycling through the Bring Your Own Thermostat Program in the .

<sup>6</sup> Case 15-M-0252 – *Orange and Rockland Utilities, Inc. – Energy Efficiency Transition Plan* (filed July 15, 2015) (“ETIP”). Programs include the Small Business Direct Install Program, C&I Electric Program and Residential Electric Program.

<sup>7</sup> Case 15-E-0191, *Petition by Orange and Rockland Utilities, Inc. to Effectuate Dynamic Load Management Programs*. The Commission issued an Order on June 18, 2015 adopting O&R Dynamic Load Management filing with modifications. O&R then made a compliance filing, effective July 1, 2015, containing revisions to its Schedule for Electric Service, P.S.C. No. 3 – Electricity. The Company’s filing included three demand response programs – Direct Load Control Program, Commercial System Relief Program, and a Distribution System Relief Program.

<sup>8</sup> The Commission’s Order Adopting Terms of Joint Proposal and Establishing Electric Rate Plan issued October 16, 2015 in Case 14-E-0493 (“2015 O&R Electric Rate Order”)(p. 21), has an earning incentive of up to 100 basis points. Up to 50 basis points can be earned for reductions in cost per MW compared to the cost of the proposed Pomona Substations. Up to an additional 50 basis points can be earned for load reduction achieved above 3.0 MW.

<sup>9</sup> Ibid.

Within the Program area there are currently 44 customers with 341 KW of installed solar capacity. Incentivizing customer installed solar or tying energy storage capacity to the installed solar also has the potential to provide further peak load reduction.

The Company is also working with the New York State Energy Research and Development Authority (“NYSERDA”) to incentivize energy efficient new home construction. This program would be similar to NYSEDA’s Net Zero Low-Rise Residential New Construction Program. The Company estimates 0.5 MW of peak load potentially could be avoided through new home efficiencies.

### 3.2 Customer Analysis

Understanding the customer segment is essential to maximizing the benefits of DER and DM programs. This includes the type of customer (i.e., residential, commercial, or industrial), energy consumption patterns, potential for load management, and more broadly, the customer demographics within discrete segments. A deep understanding and segmentation of customers’ energy usage patterns allows for effective solution design and deployment targeting.

As noted previously, the Program area consists of 6,170 residential homes and 760 C&I customers. Some C&I customers have interval data meters in place informing the Company of C&I customer peak demand, by industry type. This information, devoid of customer identifying information, can help both the Company and third-party providers during Solution Development (see Figure 4-1). In addition, it will assist in determining which customers are able to obtain the greatest benefit from DER/DM projects and provide the greatest peak load relief benefit.

The Company will ensure consumer protection throughout the Program. Industry standard security and data protections across Personally Identifiable Information, transaction information, and data storage will be used. Consumers will also be protected by the New York State Division of Consumer Protection for any complaints or issues related to goods or services purchased through this program. In addition, the Commission has initiated a proceeding to develop final rules for oversight of DER suppliers<sup>10</sup>.

Residential housing is currently the largest customer segment in the Program area, and it is anticipated that the new construction during the Program period will be primarily residential as well. Providing multiple solutions targeted at residential load relief and the aggregated benefits of that relief will be critical to the success of the Program. Within the Program area, C&I customers will also be targeted with EE and DR programs with some larger C&I customers having the potential to host DG or large solar projects.

The Company will also be able to improve its understanding of customer’s energy usage over time with the installation of Advanced Metering Infrastructure (“AMI”). Phase 1 of the AMI installation, which includes the Program area, is scheduled to occur in in the first quarter of 2017. The planned AMI project will enable the Company to fulfill the REV objectives of both market animation and providing enhanced customer knowledge and tools that will support effective management of a customer’s total energy bill.

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<sup>10</sup> Case 15-M-1080, In the Matter of Regulation and Oversight of Distributed Energy Resource Providers and Products. Staff, July 28, 2015, proposed Uniform Business Practices for DER Suppliers.

When integrated into the REV envisioned energy marketplace, customer energy consumption data, obtainable through AMI, will become invaluable to both customers and DER providers as they bundle various products and services together to meet unique customer needs and provide solutions at scale.

### 3.3 Measurement and Verification

In order to validate peak load reductions, it is essential that the Company verify load reduction through a measurement and verification (“M&V”) plan that will document pre- and post-measure conditions to quantify load. The Company is in the process of designing a comprehensive M&V approach that will work concurrently with the implementation of each solution to verify the load relief for each installed project on an ongoing basis.

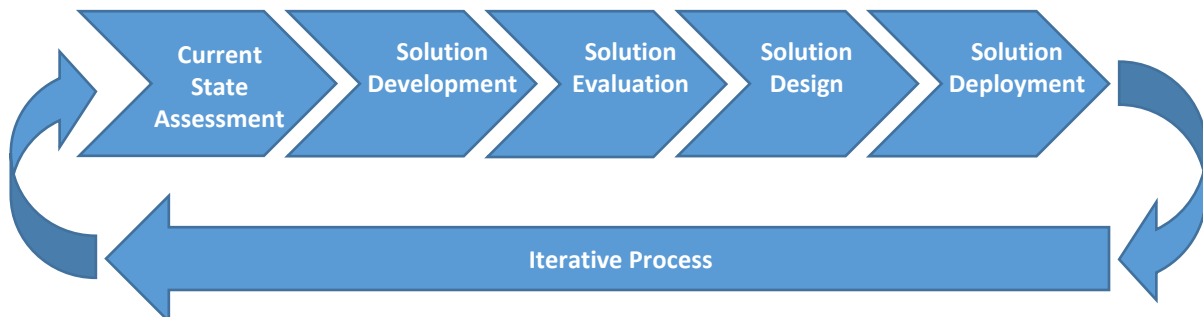
The Company will use specific procedures so that all projects have some form of M&V oversight, either via desk-review, AMI data, and/or onsite verification prior to measure installation. O&R is developing an M&V process for the current O&R EE and DR programs.

AMI capability will provide increased granularity and confidence in the M&V process, once fully installed and implemented within the Program area. It will facilitate both measurement of the baseline prior to a project initiation as well as verification of load reduction. In addition, the installation of AMI may provide for future solution options, as discussed in Section 4.1 below.

## 4. Program Implementation

Along with the 1.5 MW of estimated peak load reduction from established O&R customer-sided DM solutions, the Company has established a process to develop, implement and assess DER and DM solutions to achieve the remaining 4.5 MW peak load reduction needed. The Company will utilize the Portfolio Development Process (Figure 4-1) to develop the initial solution set. As the Company executes the Program, the Company will iteratively execute the Portfolio Development Process to assess the current state and develop and deploy new solutions, as required. Through this process the Company seeks to encourage an expanding robust and diverse DER marketplace that facilitates DER provider participation and take advantage of NY REV Proceeding’s outcomes and knowledge gained from on-going REV demonstration projects. The Company recognizes that solutions require customer and stakeholder input along with an animated marketplace.

**Figure 4 – 1: Pomona DER Program Portfolio Development Process**



## 4.1 Solution Development

O&R, as noted in Section 3 above, has conducted a review and assessment of on-going and planned DER and DM programs. The Company has conducted an assessment of on-going programs measuring peak load reduction achieved and expected against the Program target. The next step in the Portfolio Development Process, Solution Development, involves both refining current program DER and DM offerings and exploring new solutions. The Company is gathering and evaluating information on DER and DM solution sets to reduce peak load. This is being accomplished through a Request for Information (“RFI”) process, engagement with Staff, NYSEDA, other utilities, customers, and stakeholders. This is in addition to the on-going evaluation of the Company’s current DM programs and the impact of AMI. The Company also expects to gain insight on DER projects and DM programs as current and planned REV demonstration projects are implemented.

During this process the Company seeks to expand and animate the DER marketplace and facilitate DER provider participation<sup>11</sup>. This will be accomplished by capitalizing on current REV demonstration projects, use of RFIs, and open and transparent competition during the Solution Design and Deployment processes.

The Company’s REV demonstration project<sup>12</sup> implements an animated and active marketplace, which will provide customers with EE and DER products and services designed to reduce energy usage. The marketplace and various customized offerings will also be made available to customers in the Program area. A key design of the project is to encourage third party product and service provide participation without significant barriers of entry. This supports the Program’s efforts for an expanded DER marketplace.

Through the RFI process, the Company has received a range of existing and emerging technology capability solutions and gained insight into prevailing prices and the state of the marketplace. The Company received 30 responses from its initial RFI process on June 30, 2015. Solutions offered included EE, ES, DR, solar, microgrid, gas and co-generation, and grid management/optimization. Some of the solutions offered included a mixture of the above resources. The Company completed an assessment of the responses, based on criteria listed in Section 4.2, and is using the responses to inform the development of the potential portfolio of solutions. The Company has been in contact with the respondents to discuss the viability of the proposed solutions or variations, to include different business models. The Company intends to employ the RFI process, as required, throughout the Program lifecycle. There is no set timeline for future RFIs, rather it will be dependent on the outcomes of current state reviews, the advancement of technology, and an assessment of the sufficiency of the current set of solutions.

The installation of AMI may also inform the options available to the Program. AMI will provide a foundation of information and communications capabilities that will enable the Company’s customers to

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<sup>11</sup> Case 15-M-1080, In the Matter of Regulation and Oversight of Distributed Energy Resource Providers and Products, DER providers will be expected to comply with the final Uniform Business Practices guidance, which are in development.

<sup>12</sup> Case 15-M-1040 - Orange and Rockland Utilities, Inc. REV Demonstration Project Implementation Plan (filed November 20, 2015).



become informed and engaged energy consumers. Aligned with REV objectives, operating in concert with an advanced web portal, AMI will provide customers with the information and controls necessary to help them manage their energy usage and control costs. As AMI implementation progresses, O&R will continue to monitor market trends and evaluate other customer products and services such as further enhancements to DR programs, integration of DER, and smart homes and appliances.

## 4.2 Solution Evaluation

The Company will use an Evaluation Committee to assess potential peak load reduction solutions and develop a portfolio of solutions. The Evaluation Committee is composed of members from the Company's Utility of the Future, Energy Services, and Electrical Engineering organizations, to include Planning and Technology sections. Solutions will be evaluated by the Evaluation Committee with the objective of identifying an aggregate of solutions that provide a cost-effective means to achieve the needed peak load reduction. Refinement of the Company's established DM programs and benefits from O&R's REV demonstration projects will be evaluated as part of the solution set. Evaluation criteria will include but are not be limited to:

1. Viability - the extent to which the proposed solution would address the needs of the Program area;
2. Functionality - the extent to which the proposed solution would provide the needed demand reductions;
3. Environmental and community impacts associated with the proposed solution;
4. Cost effectiveness of the proposed solution;
5. Timeliness - the ability to meet O&R's schedule and project deployment requirements;
6. Reliability, particularly as compared to other proposed solutions; and
7. Applicability to REV- supports the objectives and criteria for REV demonstration projects.

## 4.3 Solution Design and Deployment

Each potential solution selected by the Evaluation Committee will undergo a design and development process. These processes will be coordinated with customers, the community, stakeholders and Staff. The process also seeks to encourage an expanded and animated DER market with a diversity of market vendors. This will be accomplished through outreach and engaging with marketplace participants during the design process. Solution Design serves to refine potential solutions and determine how to proceed to deployment in a manner consistent with the Pomona DER Program. Performance standards based on M&V protocols developed by the Company and in consultation with outside experts, where appropriate, will be included in the design of all solutions.

Solution Deployment will be processed through O&R's standard procurement process. As appropriate, the Company intends to conduct solicitation through a Request for Proposal. The Company expects Solution Deployment to be a continuous process. The various solutions may be solicited, designed and

deployed in stages as well as tiered over the program timeline. This will enable progressive assessment of solution effectiveness and the ability to modify solutions, as required. The Company expects to engage with Staff, customers, and stakeholders throughout the process and plans for an open and transparent process to enable competition and provide value to customers.

## 5. Community Engagement

The Pomona DER Program requires a comprehensive customer engagement strategy that incorporates direct marketing to customers and enhanced customer outreach and education, including engagement with community groups, key community stakeholders, State and local governments, non-governmental organizations, existing market partners, and new market participants.

The Company communicates to its customers through bill inserts, newsletters, and the Company's website, digital web advertisements, and other media, such as radio and television advertisements and social media. In addition, the Company promotes EE and DR programs at community events ranging from energy fairs to the Rockland County Home Show. Through focused outreach and education efforts, the Company better serves business and community needs and provides increased opportunities for the community, customers, and stakeholders to be a part of the solution process.

The Company will develop a Program customer outreach and education plan<sup>13</sup> ("O&E Plan") to inform and enhance effectiveness in communicating facts about the Program and provide information on how to save energy, through participation in the Program. As part of the O&E Plan, the Company will seek out opportunities to meet with customers within the Pomona area, civic leaders, and state and local government officials at a variety of events, including periodic Town Hall Meetings and personal consultations. Issues to be addressed will include:

- i. Energy conservation advice, such as recycling second refrigerators and the benefit of installing low-cost weatherization measures;
- ii. Energy technology and programs available to customers including, energy efficiency, energy storage, DG, and demand response;
- iii. Energy efficiency measures and tips for the home and business, such as upgrading lighting and the benefits of smart thermostats and appliance controls; and
- iv. Information on smart grid, AMI communications, and dynamic pricing.

These interactions will provide an opportunity for Company representatives to listen to the concerns of its customers, respond to questions, explain utility bills, and promote energy efficiency programs for the Company and NYSERDA.

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<sup>13</sup> Engagement O&E Plan is planned for completion in the first quarter of 2016 and will be reviewed for updates annually.

## 6. Budget

The operating budget for the Program is \$11,500,000<sup>14</sup>. This will fund DER and DM program solutions as well as the Program employee positions. The estimated expenditures are projected as follows:

Established O&R Customer-Sided DM Solutions	New Initiatives	Labor <sup>15</sup>	TOTAL
\$ 2,645,000	\$ 7,905,000	\$ 950,000	\$ 11,500,000

On-going O&R customer–sided DM solutions costs include funding the portion of current O&R EE and DR programs that is estimated to address 1.5 MW peak load reduction in the Program area. New initiative costs include the evaluation, design, and deployment of other DER and DM solutions that provide the most cost-effective means to achieve the remaining 4.5 MW peak load reduction required. The Company may request additional funding if the Program has the potential to defer construction of the Pomona substation and related facilities beyond the initial four years.

A Company General Accounting Procedure is being filed concurrently with this PIP.

## 7. PSC Reporting

The Company will submit quarterly reports on the DER Program to the Commission. The first report will cover Program activities through January 31, 2016 and will be submitted by March 25, 2016. The quarterly report will include relevant information on the Program including costs incurred by initiative, in-service dates for capital investments, and participation levels for customer demand reduction and efficiency programs. Every fourth quarter report will include information regarding the Company’s progress toward the 100 basis point<sup>16</sup> earning opportunity.

## 8. Internal Checkpoints

The Company has established internal program checkpoints, see Table 8-1, to provide management controls and guide the implementation process. These are aligned with the Portfolio Design Process and Commission quarterly reporting requirements.

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<sup>14</sup> Pursuant to the Joint Proposal adopted by the Commission in Case 14-E-0493 (p. 38), the Pomona DER program is allotted \$9.5 million total in 2014 dollars, which equates to \$11.5 million in future escalated dollars.

<sup>15</sup> In the 2015 O&R Electric Rate Order (p. 20), the Commission directed that the cost of the three positions for the Pomona DER Program is not to exceed \$950,000 over the two-years term of the electric rate agreement

<sup>16</sup> The 2015 O&R Electric Rate Order approved an earning incentive of up to 100 basis points. The Company can earn up to 50 basis points for reductions in cost per MW compared to the cost of the proposed Pomona Substation. The Company also can earn up to an additional 50 basis points for load reduction achieved above 3.0 MW.

**Table 8-1: Pomona DER Program Internal Checkpoints, per Annum**

	Current State Assessment <sup>17</sup>	Program Implementation Stages				PSC Reporting
		Portfolio Development	Solution Evaluation	Solution Design	Solution Deployment	
Quarterly	<b>X</b>					<b>X</b>
Annually	<b>X</b>					
As Required		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	

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<sup>17</sup> Current State Assessment will include the annual review of the Engagement Outreach and Education Plan