

BQDM QUARTERLY  
EXPENDITURES &  
PROGRAM REPORT

Q1 - 2017

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## 1.0 Background

On December 12, 2014, the New York Public Service Commission (“Commission”) issued its *Order Establishing Brooklyn/Queens Demand Management Program* (“Order”).<sup>1</sup> The Order requires Consolidated Edison Company of New York, Inc. (“Con Edison” or the “Company”) to submit quarterly reports to the Commission on its “expenditures and program activity” that include project costs, project in-service dates, Monthly Adjustment Clause (“MAC”) recoveries, incremental costs incurred, operational savings, and other benefits. This is the ninth Brooklyn Queens Demand Management (“BQDM”) quarterly report (“Report”) and primarily covers expenditures and program activity for the first quarter of 2017.

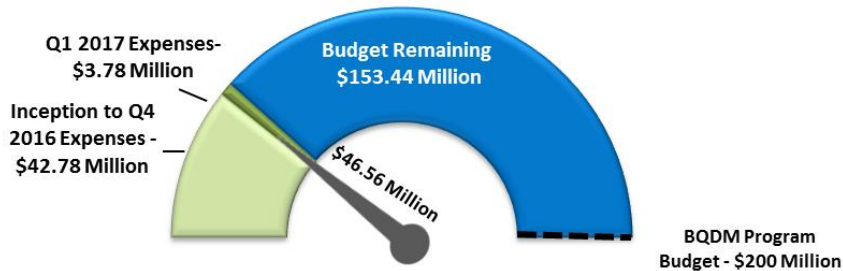
## 2.0 Executive Summary

### 2.1 Costs and Recovery

The Company spent \$3.78 million on the BQDM Program during the first quarter 2017, and has spent \$46.56 million to date (see Figure 1 and Table 1).

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<sup>1</sup> Case 14-E-0302, *Petition of Consolidated Edison Company of New York, Inc. for Approval of Brooklyn Queens Demand Management Program*, Order Establishing Brooklyn/Queens Demand Management Program (issued December 12, 2014).



**Figure 1: BQDM Program Budget and Expenditures<sup>2</sup>**

Prior to January 1, 2017, costs incurred were recovered through the MAC in accordance with the Order. With the Commission’s approval on January 25, 2017 of the of the Con Edison electric rate plan in Case 16-E-0060,<sup>3</sup> and per the Order, beginning January 2017 BQDM expenditures are being recovered through base rates. The Company incurred expenses related to efforts undertaken to address reliability needs in the BQDM target area (“BQDM Area” or “BQDM Target Area” or “Target Area”)<sup>4</sup> prior to the issuance of the Order. Those efforts were

<sup>2</sup> Note that the costs incurred during the quarter may include expenses related to services rendered prior to the quarter if the invoices were processed during the quarter. Similarly, the costs incurred during the quarter may not include all expenses related to services rendered during the quarter, if the invoices related to such services were not processed during the quarter.

<sup>3</sup> Case-16-E-0060, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service, Order Approving Electric and Gas Rate Plans (issued January 25, 2017).

<sup>4</sup> References to Brooklyn-Queens Area in this filing refer to north central and eastern Brooklyn neighborhoods, including parts of Greenpoint, East Williamsburg, Bushwick, Bedford-Stuyvesant, Crown Heights, East Flatbush, Brownsville, and East New York, and southwestern Queens neighborhoods, including parts of Richmond Hill, Howard Beach, Broad Channel, Ozone Park, South Ozone Park, Woodhaven and Kew Gardens.

pursued through the then existing Targeted Demand Side Management (“TDSM”) program.<sup>5</sup> In order to accurately reflect all costs incurred to address the projected overload in the BQDM target area and to maintain a single set of accounting rules on all expenses related to the BQDM Program, charges incurred under the TDSM program that are related to the BQDM target area have been reclassified to the BQDM Program, so that the Company can collect all BQDM Program related charges incurred before or after the issuance of the Order as BQDM Program costs.<sup>6</sup>

**Table 1: BQDM Program First Quarter 2017 Expenditures<sup>7</sup>**

Program/Projects	Jan-17	Feb-17	Mar-17	Q1 2017 Total	BQDM Total
<b>Customer Sided Solutions</b>					
Incentives	\$ 0.88	\$ 0.30	\$ 1.10	\$ 2.27	\$ 24.24
Program Implementation & Administration	\$ 0.01	\$ 0.06	\$ 0.03	\$ 0.10	\$ 1.27
Sales, Marketing, & Training	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.08	\$ 0.45
Technology, Measurement and Verification (M&V), and Evaluation	\$ 0.12	\$ 0.00	\$ 0.28	\$ 0.40	\$ 6.55
Third-Party Oversight	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Utility Sided Solutions</b>					
Program Implementation & Administration	\$ 0.09	\$ 0.26	\$ 0.57	\$ 0.92	\$ 13.92
Technology, Measurement and Verification (M&V), and Evaluation	\$ -	\$ 0.00	\$ -	\$ 0.00	\$ 0.13
<b>Total</b>	\$ 1.11	\$ 0.64	\$ 2.03	\$ 3.78	\$ 46.56

The work to implement the load relief programs (described in more detail in Section 3 of this Report), research new technologies, manage RFI, RFP and other acquisition activities, and develop foundational elements of the BQDM Program (i.e., accounting protocols, regulatory reporting, marketing approaches and outreach) was primarily conducted by Con Edison

<sup>5</sup> Case 09-E-0115, *Proceeding on Motion of the Commission to Consider Demand Response Initiatives*, Order Adopting with Modifications a New Targeted Demand Side Management Program for Consolidated Edison Company of New York, Inc. (issued June 1, 2011).

<sup>6</sup> See <http://www.coned.com/documents/elecPSC10/GR25-Forms.pdf>, Leaf 343.1, Section 26.1.1 (43).

<sup>7</sup> The Customer Sided Solution expenditures in October 2016 of the Q4 2016 report were placed in incorrect expenditure category. The overall BQDM total expenditures remained correct, however, an update has been made to reflect the appropriate totals for each task. The expenditures have also been updated to include a second decimal point to capture expenses that are not visible when rounded to the first decimal point.

employees. The Company developed a General Accounting Procedure (“GAP”)<sup>8</sup> for treatment of costs and collections associated with the BQDM Program and established internal billing accounts to properly manage program expenses. The Company has recovered \$3,065,864 through the MAC and NYPA surcharge<sup>9</sup> up to the end of Q4 2016. The Company recovered \$4,021,500 through base rates for the first quarter 2017, resulting in total of \$7,087,364 program inception to date.

## 2.2 Projects Summary

By the end of the fourth quarter of 2016, the Company reported achieving over 23 MW of operational peak hour non-traditional utility side and customer-side solutions based on the Company’s current estimates. Near the end of Q1 2017, the BQDM Program team was notified of revisions<sup>10</sup> needed on the hourly distribution of the energy savings being claimed, primarily for the Commercial Direct Install (“CDI”) program in the BQDM portfolio, driven by an error that had resulted in an inappropriate shift forward of the CDI hourly load curves by two hours. Consequently, the Company has begun a full review of its M&V processes so that errors will be prevented or captured and corrected as soon as possible to protect the integrity of data used to report and forecast program load reductions and energy savings. With corrections applied to the hourly load reduction distribution, the Company has achieved over approximately 19 MW

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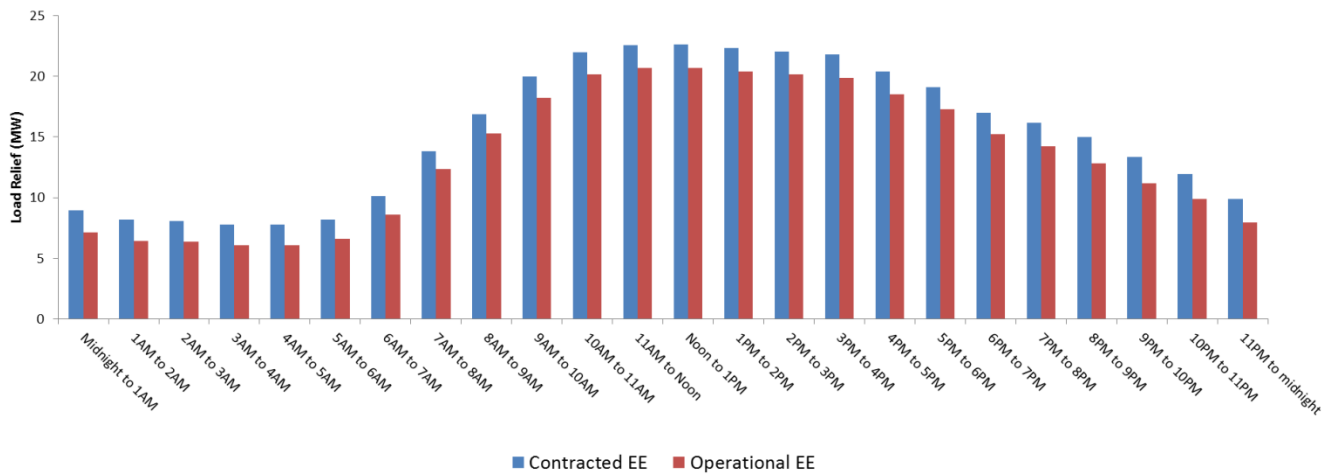
<sup>8</sup> The Company filed the GAP with the Commission on February 10, 2015. See <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={59F25E6A-7ABA-4D95-BBD2-F6142F90C798}>.

<sup>9</sup> Recovery costs through the NYPA surcharge were not included in the previous quarterly reports. Adding the NYPA surcharge recovery costs of \$351,348 to MAC recovery of \$2,714,516 as reported in the Q4 2016 report, results in a total of \$3,065,864 from inception through the end of 2016.

<sup>10</sup> Inaccuracies were reported in the hourly load reductions being provided primarily related to the CDI adder program in the BQDM portfolio. The error found was due to a two hour incorrect time shift in data calibration during analysis and development of load curves. The incorrect time shift resulted in inaccurate coincidence factors being applied to the 9PM-10PM peak hour. The Company has updated load curves to reflect a more accurate depiction of each hourly load reduction for the small business segment and has also made slight updates to multi-family load curves.

of peak hour non-traditional utility side and customer-side solutions installed by the end of first quarter of 2017.

The Company continued to make progress in contracting and installation of energy efficiency measures through incentive adders to two existing Energy Efficiency Transition Plan (“ETIP”) programs - the Small Business Direct Install (“SBDI”), now referred to as the Commercial Direct Install (“CDI”), and Multi-Family Energy Efficiency (“MFEE”) programs. In addition to the success of these programs, the Company made significant headway in contracting for various energy efficiency upgrades in the residential, commercial and public building sectors. At the end of the first quarter of 2017, customer commitments reached over 13.4 MW, of which, 11.2 MW of load relief measures were operational (Section 3.1 presents a detailed account of activities on various customer-side solutions) at the 9 -10 PM hour. Figure 2 provides an illustration of customer-side energy efficiency solutions, both contracted and operational. Solutions illustrated as operational are a subset of contracted solutions and the difference between contracted and operational amounts is indicative of the quantity of load relief solutions currently in the implementation pipeline for the second quarter of 2017. The Company expects to achieve this load relief through installation of efficiency measures at over 5200 small business, 1400 multi-family buildings, and 3900 residences in the community.



**Figure 2: Contracted vs. Operational Energy Efficiency**

Additionally, the Company is in the process of acquiring and installing non-traditional utility-side solutions with a portion of the Conservation Voltage Optimization (“CVO”) measures already operational during the summer of 2016. The Company was able to meet the reliability needs for the projected overload in 2016 for a design peak day using a combination of customer-side solutions<sup>11</sup> and non-traditional utility-side solutions.

Beginning with the report for the second quarter of 2015, the Company has provided charts showing current best estimates of load relief solutions’ contribution, both already acquired as well as anticipated for the next summer period, on an hourly basis in relation to the non-traditional load relief need for each hour of the design peak day including the twelve hours in

<sup>11</sup> The Company also activated its Direct Load Control (“DLC”) and Commercial System Relief Program (“CSR”) resources territory-wide, including the resources in the BQDM networks, per the rules of these demand response programs. In addition, Distribution Load Relief Program (“DLRP”) resources were activated in the BQDM networks during the third quarter of 2016 as a precautionary heat wave measure.



the BQDM overload period (approximately noon to midnight).<sup>12</sup> The charts provide a useful illustration of the diverse nature of non-traditional solutions that are not all available during the entire forecasted overload period and that are thus insufficiently defined by use of either a singular peak demand MW metric or the maximum load relief provided by each of the solutions during the overload period. Figure 3 below illustrates the anticipated hourly load relief provided by solutions that have already been implemented and are operational by the end of the first quarter 2017.



**Figure 3: BQDM Load Relief Progress**

The Company began and/or continued to pursue other load relief opportunities on both the customer-side and utility-side as shown in Table 2. The Company efforts during the quarter are described in greater detail in Section 3 of this Report.

<sup>12</sup> The Company has completed initial data collection of energy consumption data from representative samples of customers who have participated in energy efficiency programs in the BQDM target area and applied the newly-established load curves to the expected load relief from energy efficiency improvement at small businesses and multi-family dwellings in the BQDM Program area. The Company has updated these load curves to reflect load reduction based on latest M&V results.

**Table 2: BQDM Program Activity**

	Design Stage*	Deployment Stage*
<b><u>Customer-side Solutions</u></b>		
Commercial Direct Install		√
Multi-family Energy Efficiency		√
Residential Energy Efficiency Program(s)		√
Bring Your Own Thermostat Adder (“BYOT”)		√
Virtual Building Audits		√
New York City Housing Authority		√
Direct Customer Activity		√
Dynamic Resource Auction**		√
Fuel Cells		√
Queens Resiliency Microgrid	NP	NP
City Agency Solutions		√
Commercial Refrigeration		√
Combined Heat and Power (“CHP”)		√
Battery Storage		√
<b><u>Utility-side Solutions</u></b>		
Distributed Energy Storage System		√
Distributed Generation (DC-Link)	√	
Voltage Optimization		√
Solar Photovoltaic (PV) Pilot	√	
Fuel Cell	√	
<b><u>Foundational Elements</u></b>		
Distributed Energy Resource Evaluation Tool		√
Solutions Technology Validation		√
Community Engagement and Outreach		√
Measurement & Verification Activities		√
Demand Management Tracking System		√

\*- “Design Stage” refers to early efforts initiated by the Company to determine whether, and if yes, how to proceed to implementation in a manner consistent with the objectives of the BQDM Program. “Deployment Stage” refers to implementation efforts either substantially complete or well underway to meet the objectives of the BQDM Program. “NP” refers to efforts the Company is no longer pursuing and does not expect to be a part of the BQDM Program portfolio of solutions.

\*\* - “Dynamic Resource Auction” refers to market-driven approaches to procure demand response type resources with specific performance attributes.

### 2.3 Operational Savings and Other Benefits

The Company defines “operational savings” as reductions in costs incurred or expected to be incurred by the Company for the operation of the electric sub-transmission and distribution system supporting the BQDM target area as a result of BQDM solutions. No quantifiable operational savings in electric sub-transmission and distribution operations have yet been identified as a direct result of activities of the BQDM Program conducted in the first quarter of 2017 or earlier.

A portion of the load relief the Company acquired during the first quarter of 2017 came from the CDI adder initiative (Section 3.1 presents a detailed account of activities of the CDI adder initiative). Under the CDI adder initiative, more than 5,200 small businesses<sup>13</sup> in the BQDM Area have installed or agreed to install efficiency measures. These efficiency measures have resulted in over 110 GWh of annual energy reduction per ETIP guidelines<sup>14</sup> since the inception of the adder initiative. The outreach to these small businesses, in an area that continues to undergo considerable change, has been a positive development for the BQDM Program. Participation by these businesses will deliver direct benefits to an important segment of the community, and contributes to establishing a positive experience in the wider community as the CDI Adder initiative progresses.

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<sup>13</sup> The number of small businesses has been adjusted to reflect correction of an internal counting error. In previous reports this number reflected the number of projects rather than the number of customers, where multiple projects could have been implemented at a particular small business.

<sup>14</sup> ETIP (referred to as Energy Efficiency Portfolio Standard or EEPS in BQDM quarterly reports prior to second quarter 2016) guidelines are based on the New York State Technical Reference Manual, which has a standard set of deemed hours of operation for various businesses in order to estimate annual energy savings. The Company is pursuing M&V efforts to provide region-specific hours of use for the upgraded equipment at the local businesses within the program area.

Additional load relief was secured during the first quarter of 2017 through the adder incentive to the ETIP MFEE program (Section 3.1 presents a detailed account of activities of the MFEE adder initiative). Since the MFEE Adder initiative commenced in December 2014, over 1,300 multi-family buildings with more than 9,900 individual apartments have participated or agreed to participate in the MFEE Adder initiative. Collectively, the efficiency measures installed at the participants' premises are expected to result in more than 27 GWh of reduction in annual energy consumption per ETIP guidelines since the inception of the adder initiative. Given that multifamily buildings vary in size from five units and above per building and the MFEE program includes a mix of common area and in-unit measures, the annual savings per building varies widely. The MFEE program executed a competitive procurement vendor selection process at the beginning of 2016 and selected a new implementation contractor to oversee the program under ETIP. The program remains largely the same as prior to 2016 and the Company anticipates future results and energy savings that are similar to those achieved in the past.

### **3.0 Program Activity**

#### **3.1 Customer-Side Solutions**

In the first quarter of 2017, the Company's CDI Program and the MFEE Program, both direct installation programs that have been augmented with adders through the BQDM Program, continued to offer an implementation vehicle with proven technologies, which the Company is using with high confidence to reduce load. The programs continue to enable the Company to positively engage important members of the targeted community as the Company continues to

develop additional resources that can provide critical load relief in the BQDM Target Area.

During the second half of 2016 and the first quarter of 2017, additional load relieving initiatives began field operations in the residential, large commercial and public building segments. First quarter 2017 program activities are detailed in the following sections.

### **Commercial Direct Install Program**

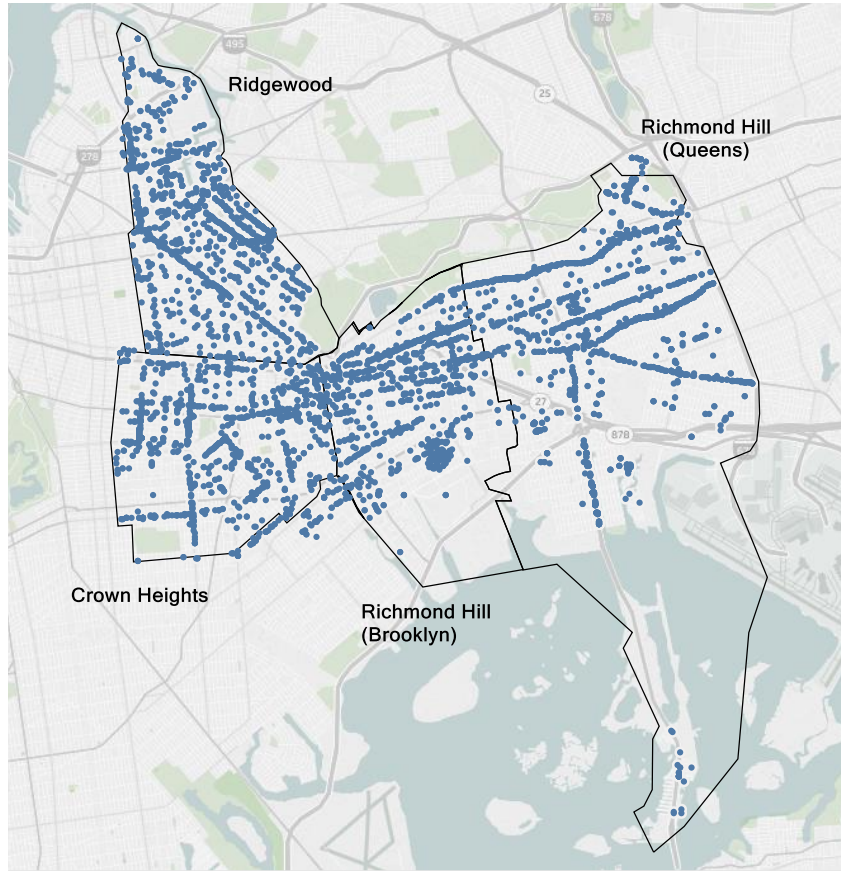
The Company initiated the “CDI Adder” initiative on August 1, 2014. The CDI Adder initiative is open to commercial customers with a peak demand of 300 kW or less.<sup>15</sup> Participating customers receive a walk-through survey identifying cost-effective electric efficiency measures. Customers may elect to have all or any of the recommended measures installed. The ETIP CDI Program provides a payment of up to 70 percent of costs for the selected measures and the customer is responsible for the remaining amount. Under the CDI Adder initiative, customers in the BQDM Area receive an additional incentive, effectively allowing installation of eligible measures at no cost to the customers. The Company delivers this program through an implementation contractor responsible for the sales and installation of measures.

The geographical distribution of the participants in the CDI Adder initiative as of March 31, 2017 is graphically portrayed in Figure 4.<sup>16</sup>

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<sup>15</sup> Beginning with the first quarter of 2016, the Company has offered the CDI adder program to all commercial customers in the BQDM Target Area that have a peak demand of less than 300 kW, an increase from the 110 kW threshold that was used through the end of 2015.

<sup>16</sup> The graphical representation of the network boundaries reflects approximate geographical boundaries. Some customers that seem to be outside of the boundaries are within the electrical circuits of the BQDM networks.

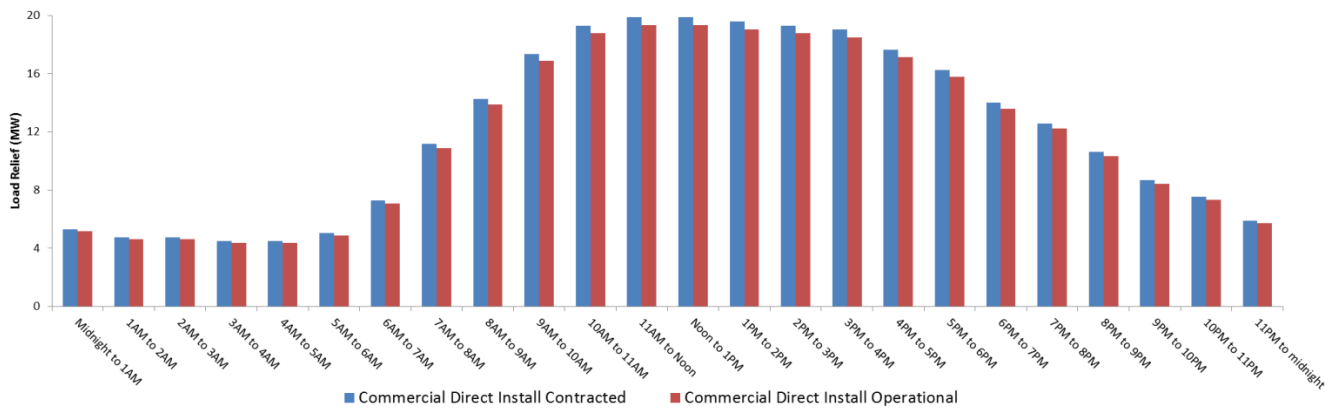


**Figure 4: BQDM Commercial Direct Install Project Locations**

Customer response in the first quarter continued to be strongly driven by a focused outreach to small businesses in the community. As of March 31, 2017, approximately 8.7 MW of peak hour load reduction projects, which are equivalent to approximately 28.0 MW as measured under the ETIP guidelines,<sup>17</sup> involving approximately 5,200 small businesses, have been contracted.

Estimated hourly load relief from CDI program activities is presented in Figure 5.

<sup>17</sup>The Company is reporting expected load relief provided by energy efficiency resource during the peak hour of the BQDM sub-transmission constraint. For the purposes of reporting on ETIP programs the Company only reports load relief quantities for CDI and MFEE on the basis of a system (or New York Control Area (“NYCA”)) coincidence measurement as calculated using the New York Technical Resource Manual (“TRM”). Because the TRM assumes that external lighting would be off during afternoon hours, ETIP programs cannot claim any demand reduction benefits from external lighting upgrades. In contrast, the BQDM Program benefits greatly from external lighting upgrades, which provide load relief coincident with the BQDM needs in the evening hours. For external lighting upgrades, the Company has, since the first BQDM quarterly report, included their contribution on a delta-Watt basis in the gross demand reduction value when reporting figures attributed to the ETIP methodology.



**Figure 5: Commercial Direct Install Contracted vs. Operational Hourly Load Relief**

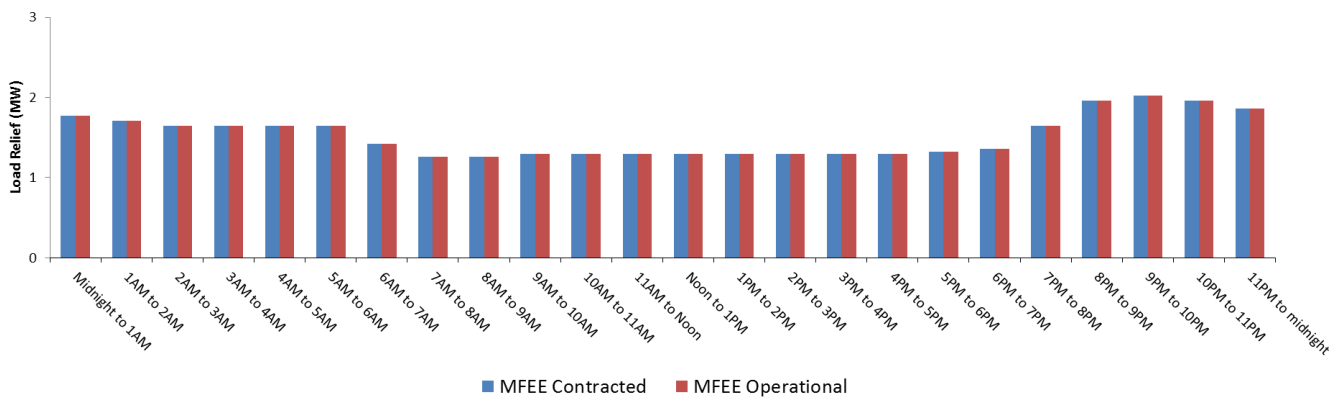
### Multi-Family Energy Efficiency Program

The Company developed an adder initiative for the existing ETIP MFEE Program, which offers multi-family dwellings of five units or higher a survey identifying potential load-reduction measures.<sup>18</sup> The MFEE Program includes both measures installed within the dwelling units and measures installed within the indoor and outdoor common areas. Under the ETIP program, 100 percent of the cost of measures installed within the dwelling units is covered, but the program requires a landlord or building manager contribution for a percentage of the cost of measures installed in the common areas. Under the BQDM MFEE Adder initiative, eligible buildings within the BQDM networks will continue to have no out-of-pocket costs for measures installed in dwelling units, and will also receive the measures in common areas at no cost to the landlord or the building manager. The MFEE Adder initiative is delivered through a central

<sup>18</sup> Beginning with the first quarter of 2016, the Company has offered the MFEE adder program to all multi-family buildings in the BQDM Target Area that have five units or higher, without the restriction that the building must have less than or equal to 75 units; that restriction was in effect through the end of 2015.

implementation contractor that in-turn is utilizing multiple independent subcontractors within the BQDM Area.

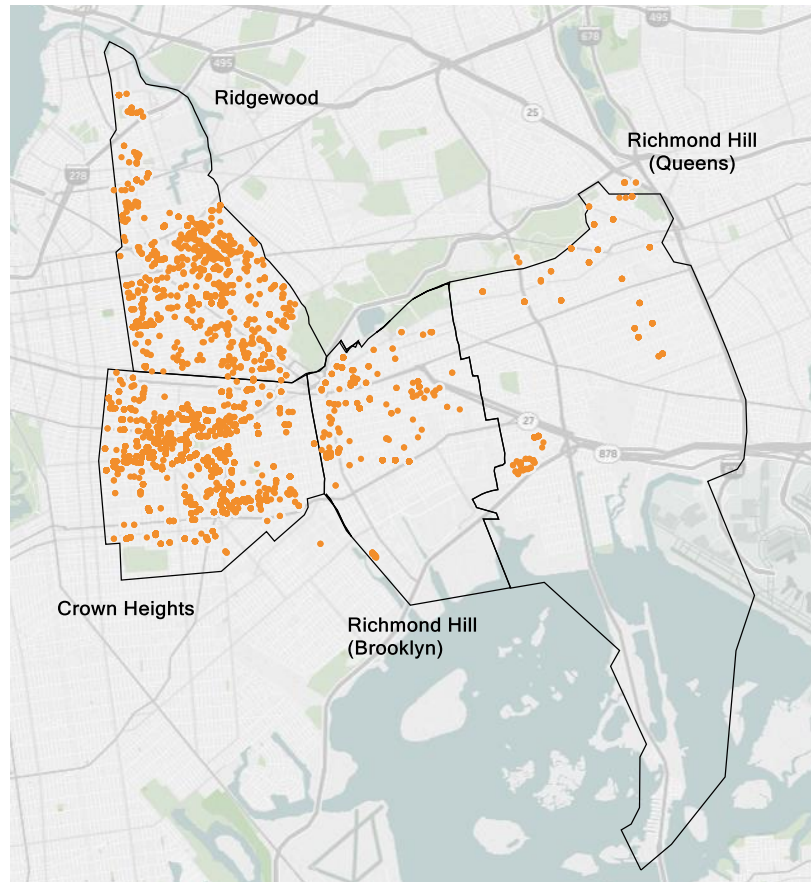
The MFEE Adder initiative commenced on December 10, 2014, and as of March 31, 2017 has contracted and installed load reduction for in-dwelling and common area measures in over 1,300 buildings, representing over 2 MW of peak hour load relief, which is equivalent to approximately over 3 MW as measured under the ETIP guidelines. The MFEE Adder initiative delivers approximately 80 percent of its load reduction contribution through the common area measures. The MFEE Adder initiative provides valuable load relief that typically extends into late evenings, and is thus coincident with the peak of the networks targeted by the BQDM Program. Estimated hourly load relief from MFEE activities is presented in Figure 6.



**Figure 6: Multifamily Energy Efficiency Program Contracted vs. Operational Hourly Load Relief**



The geographical distribution of the participants in the MFEE Adder initiative as of March 31, 2017 is graphically portrayed in Figure 7.<sup>19</sup>



**Figure 7: BQDM MFEE Project Locations**

### **Residential Energy Efficiency Programs**

Residential (1-4 family buildings) properties make up roughly 60 percent of all customer accounts, which represent approximately 30 percent of total peak demand in the BQDM area. Given the significant portion of electric demand that residential properties cumulatively represent, the Company is targeting this customer segment to achieve load relief. Because practical solutions at a single residential customer location only provide a small amount of load

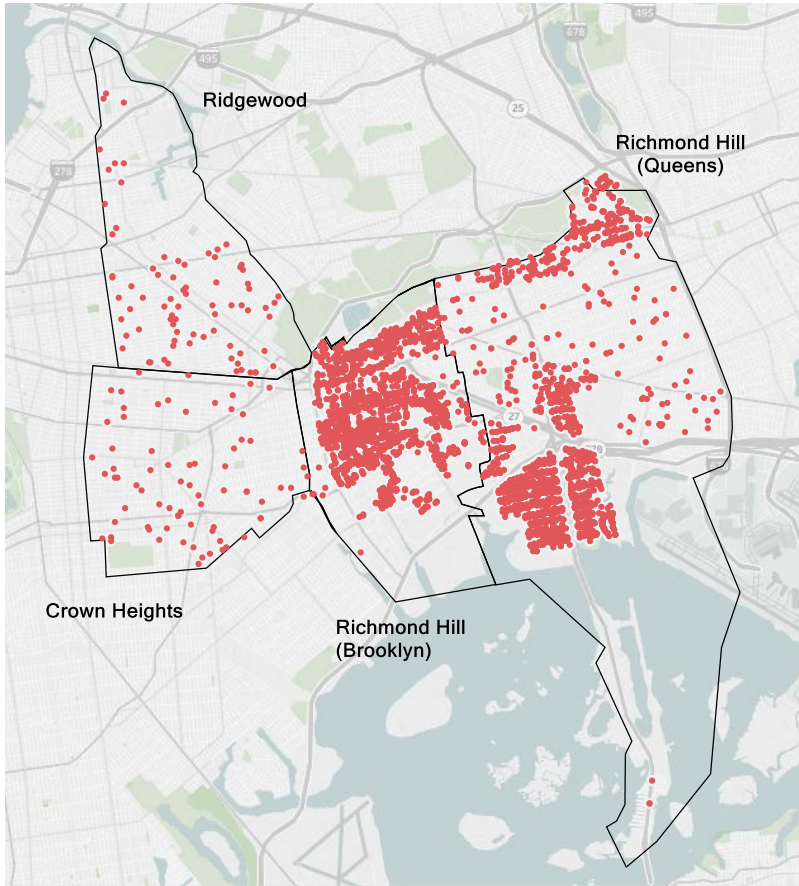
<sup>19</sup> The graphical representation of the network boundaries reflects approximate geographical boundaries. Some customers that seem to be outside of the boundaries are within the electrical circuits of the BQDM networks.

relief, a large number of customers need to be engaged to obtain meaningful load relief. Such an undertaking, in addition to providing critical load relief to the Company, is expected to positively impact customer satisfaction for a large customer segment in the BQDM Target Area.

During the third quarter of 2016, the Company finalized contracts with the implementation contractor for the BQDM Residential Lighting Direct Install program. The program expects to install nearly 250,000 LED light bulbs in over 20,000 residential properties by the end of 2017.

In August 2016, the implementation contractor began executing a lighting give-away street sweep plan by conducting door-to-door light bulb installations at residential households with 1-4 units in the BQDM Area. The objective of the program is to achieve 2 MW load reduction in the BQDM zone by distributing LED lights to residential households with 1-4 units. The program is supported by marketing efforts including direct mail, email, call center outreach, social and digital advertising. Through the end of the first quarter of 2017, over 4,345 units were completed, resulting in approximately 668 kW of peak load relief based on the Company's current best estimates for the 9 to 10 pm peak hour.

The geographical distribution of the participants in the Residential Direct Install initiative as of March 31, 2017 is graphically portrayed in Figure 8.



**Figure 8: Residential Direct Install Project Locations**

As a separate initiative, the BQDM Program is working with the Company’s Bring Your Own Thermostat (“BYOT”) program to develop an additional incentive mechanism to spur participation in the BYOT program within the BQDM networks by providing an additional benefit for customers who have the ability to control central air conditioning in their homes using thermostats. An incentive mechanism was established during the second quarter of 2016 providing an adder-incentive to the BYOT and ETIP residential program. These adders were announced with an e-blast (mass electronic mail marketing), and were available to qualifying residential customers beginning in June 2016. By the end of the first quarter of 2017,

approximately 48 kW of load relief were procured through the adder programs based on the Company's current best estimates for the 9 to 10 pm period. Verification of the measure savings is currently underway and results are expected to be finalized mid- 2017.

### **Direct Customer Activity**

In addition to talking with firms that can provide potential load relief, as discussed in this Report, the Company has also engaged in discussions with customers in the BQDM Target Area who have expressed interest in pursuing load relief solutions at their locations. The Company has been encouraged by the active engagement of such customers who have the ability and willingness to implement load relief projects that would both benefit the customers as well as address BQDM Program goals. The Company continues to evaluate potential specific project opportunities at those locations for their feasibility, efficacy, cost-effectiveness, and appropriateness in the BQDM solution portfolio on an ongoing basis.

The BQDM Program leverages existing ETIP funding channels when a customer's project is deemed beneficial for the BQDM Program. Several commercial customers, who have applied for the Company's ETIP Commercial and Industrial program for various energy efficiency projects, also applied for additional funding from the BQDM Program to increase the scope of their projects to deliver higher level of load relief in BQDM Target Area. By the end of the

fourth quarter of 2016, one project that has delivered 25.6 kW of load relief<sup>20</sup> has received incentives from the BQDM Program and the Company's ETIP Commercial and Industrial program. The Company has contracted with five additional projects expected to deliver approximately 180 kW of load relief.

## **Customer-Side Solutions Pipeline Activities**

### ***CHP Solutions***

The Company has worked closely with NYSERDA's combined heat and power ("CHP") program administrators as well as the natural gas provider in the area, National Grid ("NG"), and its CHP team, to investigate the potential for CHP development. The Company, working in collaboration with NYSERDA, is offering additional funds up to the base incentive level that NYSERDA offers under its CHP Acceleration Program, covered by Program Opportunity Notice ("PON") 2568,<sup>21</sup> for eligible installations in the BQDM area. The NYSERDA CHP Program provides incentives for the installation of pre-qualified and conditionally qualified CHP systems by approved CHP system vendors. The Company's 2017 CHP Incentive Program incentive is additionally contingent upon M&V of each CHP system's summer performance. By providing incentives in addition to those offered by NYSERDA, the Company expects to increase adoption of rapidly deployable CHP technology to reduce electric demand throughout the year, especially during the 2017 and 2018 summer peak hours.

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<sup>20</sup> Load-relief estimates will be finalized after post-installation M&V activities by mid-2017.

<sup>21</sup> Information about NYSERDA's CHP Acceleration Program can be found at <http://www.nyserda.ny.gov/PON2568>; URL last accessed 10/28/2016

During the summer of 2016, NYSERDA updated PON 2568.<sup>22</sup> This update removed the previous floor and ceiling on eligible CHP system sizes, increased the number of pre-qualified CHP systems, and changed the program name from “PON” to “CHP Program.” This change increased the volume of customers eligible to participate in both NYSERDA and BQDM’s incentive programs. The Company has contracted over 1 MW of load relief from CHP systems with an expected in-service date during 2017. On March 13, 2017, the Company hosted a webinar to announce the acceptance of applications and details for the 2018 BQDM CHP Incentive Program and plans to open the application process.

#### *New York City Housing Authority*

The Company identified publicly administered housing buildings within the BQDM Program Target Area, including over 60 complexes and over 29,000 housing units, which account for over 46 MW of load supplied by the Company’s Brownsville Substation. During the first half of 2015, the Company worked with the New York City Housing Authority (“NYCHA”) and a contracted partner to prepare a report identifying energy and demand savings opportunities in these facilities, and existing funding opportunities that may be available but may not as yet be fully leveraged. Following the evaluation of this report, during the second half of 2015, the Company and NYCHA reached a preliminary agreement to pursue 2.4 MW of load relief measures, focused on in-unit and common area lighting.

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<sup>22</sup> Summary of Revisions to PON 2568:  
<https://portal.nyseda.ny.gov/servlet/servlet.FileDownload?file=00Pt0000002BHLZEA4>

During the first quarter of 2016, the Company and NYCHA successfully negotiated the terms of that agreement. The agreement became effective in the first week of the third quarter after the NYCHA Board approved the procedure to effectuate the BQDM Program agreement. NYCHA will be responsible for the project management of the energy efficiency upgrades.

Working with the Company, NYCHA completed the RFP process to select an Energy Performance Contract contractor that will perform the field work to provide the 2.4 MW load relief during the 9 to 10 pm period, ahead of a formally signed agreement between NYCHA and the Company, so that the project can meet implementation milestones. Investment grade energy audits (“IGEAs”), which are required by NYCHA rules and procedures, were completed during the third quarter to begin the installation of the energy efficiency measures. The Company expects a 1.5 MW peak load reduction by June 1, 2017 and an additional 0.9 MW peak load reduction by June 1, 2018. The BQDM Program agreement was signed and executed for the load reduction expected in 2017 during the fourth quarter, and installation work began early 2017, with a goal to complete the installation work ahead of the June 1, 2017 milestone. The Company is currently working with NYCHA to execute an agreement for an additional load reduction in 2018.

As noted in its previous BQDM quarterly reports, the Company had engaged with NYCHA on a smaller initiative to support its Weatherization Assistance Program. This program targets smaller buildings and includes energy efficiency opportunities funded by the State. With a fixed budget, NYCHA is able to complete weatherization upgrades in a set number of apartments.

The Company intends to incent lighting measures, as it has done through the MFEE Adder initiative, and expects to achieve approximately 23 kW in peak hour demand reduction with a goal to complete the installation work prior to the June 1, 2017.

The Company has obtained information about 14 local hires from a program that engages young adults from low income communities in national service related to the environment, supporting field operations for the NYCHA projects. Activities include performing apartment surveys and in-unit energy efficiency installations.

#### *Other Opportunities with City Agencies*

In addition to the work with NYCHA described earlier in this Report, the Company is continuing to work with other City agencies to identify a range of viable demand reduction solutions.

During the fourth quarter of 2015, the City presented the projects it vetted through a project solicitation it previously conducted to the Company. These projects include interior and exterior lighting at several City agency facilities, and have been evaluated by the City for technical and implementation feasibility.

During the first quarter of 2016, the Company and the City agreed to a funding level for the proposed projects. The Company will provide incentives for lighting retrofits that are expected to provide load relief during the 9-10 pm peak hour (primarily exterior lighting). The Company will also incentivize projects that primarily provide load relief during hours before the peak hour but during the forecasted overload period, i.e., projects at facilities that close earlier in the day but can provide load relief during the afternoon. The Company anticipates it will realize



approximately 132 kW of load relief through “on-peak” projects and 215 kW of load relief through “off peak” projects.

The first project, which is led by the Department of Citywide Administrative Services (“DCAS”), began during the third quarter of 2016 with a thorough pre-inspection by the Company’s M&V contractor, and lighting upgrades commencing shortly thereafter. Implementation continued early 2017, as the Company increased the scope of work to include in-unit window air conditioner swaps at select DCAS, Fire Department of New York and New York Police Department locations scheduled to be completed prior to June 1, 2018.

#### *Dynamic Resource Auction*

With the goal to meet the reliability need around the peak hours in the targeted area in 2017 and 2018, including any deficiencies identified as the BQDM portfolio, the Company developed and hosted a descending clock auction to procure resources with specific performance attributes as described below.

In this auction, the Company sought resources that were dynamic, i.e., callable, and expected to be dispatched for up to four hours at a time during the BQDM Target Area peak period. The Company obtained such dynamic resources through a competitive market acquisition process, a descending clock auction, which attracted demand response (“DR”) type solutions to meet the Company’s program objectives. Throughout 2016, the Company designed the attributes of the auction, including qualification criteria, event performance requirements, incentive structure,

financial arrangements for underperformance penalties, program agreement, and successfully hosted the descending clock auction in the third quarter of 2016.

To simplify Company operations and avoid market confusion, the Company petitioned the Commission for approval to offer peak-shaving DR products through the BQDM DR auction in lieu of the Commercial System Relief Program (“CSRP”) in the BQDM Target Area. The Commission approved the Company’s petition on July 14, 2016.<sup>23</sup>

The Company established a detailed timeline balancing expediency and the time bidders would need to prepare for the auction process. This schedule was publicized through outreach presentations with potential bidders. The Company gave a detailed presentation of the auction rules during a forum event at the Company’s 4 Irving Place facility and broadcasted online through a webinar on June 6, 2016. The Company hosted a follow-up informational webinar on June 22, 2016 incorporating some program modifications per the feedback received from the previous event. In addition, the Company and its consultants held multiple follow-up clarification meetings as well as one-on-one training sessions to educate DR service-providers about the fundamentals of the auction mechanism, the logistics of the auction platform as well as the technical requirements for participating in BQDM DR events.

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<sup>23</sup> Case 16-E-0236, *Tariff filing by Consolidated Edison Company of New York, Inc. to Make Revisions to Rider T - Commercial Demand Response Programs*, Order Approving Tariff Amendment (July 14, 2016).

Eligible DR products consisted of a set of contracted hours, also known as call windows, during the summer capability period when resources would provide load relief. There were four DR products in the BQDM DR offering:

- 8 PM — 12 AM for the 2017 capability period;
- 4 PM — 8 PM for the 2017 capability period;
- 8 PM — 12 AM for the 2018 capability period; and
- 4 PM — 8 PM for the 2018 capability period.

An auction was conducted by the Company on July 27-28, 2016 for each of these four DR products in the BQDM DR offerings. The results of the auction provided sufficient capacity to meet the Company's need, however execution risk remains.

The auction exceeded expectations on supplier diversity, new entrants, and technological diversity of solutions. Six of the ten awarded bidders had never before participated in a Con Edison DR program. More than half of awardees proposed new technologies such as battery energy storage as their primary means of attaining DR, which in the past has traditionally been provided through curtailment or onsite generation technologies in the Company's service territory. The auction produced a total of 782 bids and demonstrated both a competitive pricing outcome and a proof of concept of a forward market for non-wire alternatives for reliability.

In the first quarter of 2017, awarded bidders were required to notify the Company of any deficiencies they were claiming from their pledged kW reduction for the 2017 capability period. Six of the ten awarded bidders claimed full or partial deficiency on their 2017 awarded pledge. The BQDM DR Auction procured a total of 11.52 MW of load reduction for 2017 between the two products offered. Of that, 7.58 MW was declared deficient, with the majority for the 8PM – 12AM product. Feedback from DR providers primarily focused on two specific issues that led to claiming deficiencies on their pledge quantities. The first issue was the limited amount of time between the date the auction was hosted/awards given and the customer enrollment deadlines required for the program. Secondly, DR providers that were planning to implement battery storage projects noted the length and complexity of the permitting process as a hurdle impacting their ability to deliver load relief on a timely basis.

After the deficiency declaration period, the reallocation of deficient kW was initially offered to non-deficient BQDM Aggregators who received an award in the BQDM DR auction, on a first come, first-served basis. To be considered for award of deficient kW, the non-deficient BQDM aggregator was required to provide proof of full commitment of the original kW obligation by providing proof of new customer acquisition through fully executed customer contract(s) or signed and dated customer letters of intent.

Since there were remaining non-reallocated deficient kW above 100 kW for the 8PM – 12 AM product after five (5) business days from the reallocation offering, the kW were offered to

aggregators in good standing that participated in Con Edison's Reservation Option CSRP or Reservation Option Distribution Load Relief Program ("DLRP") in 2016.

Enrollment for BQDM DR Aggregators was opened on March 1, 2017, with an enrollment deadline of April 3, 2017.

### *Innovative Distributed Generation*

The Company has investigated innovative solutions that could provide reliable load relief during the entire period of more than 12 hours of potential overload. In particular, the Company studied the use of efficient fuel cells or other similar resources that generate electricity through non-combustion chemical mechanisms and determined that they are able to provide long periods of load relief efficiently and reliably, with minimal operational overhead. These resources can be built with minimal lead time, while using a relatively small footprint in the land-constrained targeted area. The Company investigated business arrangements that would incent adoption of such technologies such that third-party capital can be leveraged in a manner that is both beneficial to the customer and cost effective to the Company. The Company identified and engaged customers who have the potential to realize savings and gain additional benefits by implementing these solutions. The engaged customers have allowed site visits and additional analyses to help them determine if fuel cells are feasible and beneficial to their operations. During the first quarter of 2017, customers who actively manage their energy consumption are in different stages of negotiation, contracting, and implementation phases with tailored solutions. The Company continues to work with and offer incentives for adoption of appropriate load relief measures to customers who are undertaking the process to move

forward with fuel cells, are still determining whether to pursue the fuel cells, or are exploring other or additional load relief options. The Company anticipates significant progress in second quarter 2017 as contracting discussions advance toward implementation.

The BQDM Program helps customers with the interconnection process for various distributed energy resources (“DER”) in the target area. In one instance, the BQDM Program agreed to cover the cost of the Supervisory Control Data Acquisition (“SCADA”) system upgrade required to interconnect the applicant’s solar photovoltaic project to the electric grid. The project is expected to have a rated nameplate capacity of approximately 750 kW and anticipated to be fully operational by June 2017. Actual hourly load relief will be monitored through the Company’s M&V efforts once the project is operational.

### *Commercial Refrigeration*

In the first quarter of 2016, the Company started to explore additional innovative refrigeration measures to provide demand reduction around the BQDM peak hour. As such, the Company entered into discussions with a respondent to the Company’s Commercial Refrigeration RFP, which offered an innovative thermal storage solution. The thermal storage system is designed to offset process cooling load for a predetermined period, callable upon Con Edison’s request. A salt water solution is frozen during off-peak hours that can then be used to provide for at least four hours of load relief during periods of reliability need by displacing refrigeration compressor load.

During the first quarter the Company and the respondent engaged in multiple rounds of contract negotiations. The Company also created a comprehensive M&V plan for the thermal storage solution. During second quarter of 2016, a contract with the respondent was executed. The contract established a goal for 1.5 MW of load reduction to be installed and operational by May 1, 2018. By third quarter of 2016, the respondent entered into a contract with a separate thermal storage provider, to supplement the low temperature refrigeration customers. The respondent is currently working with Con Edison personnel and also conducting its own targeted research to identify potential customers for this technology.

#### **Customer-Side Solutions Program Management Activities**

##### ***Request for Information (“RFI”)***

On July 15, 2014, the Company issued a broad RFI which drew 78 responses initially, followed by an additional eleven by the end of September 2016 as a result of the Company’s decision in 2015 to keep the RFI open so that innovative solution providers can submit their newest solutions to the Company for consideration. An RFI, by its nature, allows for broader responses than an RFP but requires a greater level of scrutiny and validation of the information provided. The proposals presented via the RFI have provided the Company with valuable insight into potential solutions, including indicative pricing, operational needs and reliability, potential environmental impacts and, in a few cases, potential customer partners. As the quality of the RFI responses varied significantly, the ability of the Company to gain confidence and insight into viable solutions has taken considerable work. Developing a comparative analysis among the solutions presented has been a complex undertaking.

The Company recognizes that the solutions presented in the RFI responses did not represent the complete universe of potential solutions available to the BQDM Program. The Company has remained open to other solutions, either via solution providers or customers. The Company will continue to use both RFI submissions and other available solutions to inform purchasing actions for the BQDM Program, where applicable.

#### *Distributed Energy Resource Evaluation Tool*

The Company built a tool, using both internal and external expertise, to evaluate on a comparable basis a diverse range of DER while accounting for the duration of their availability (e.g., four-hour battery, eight-plus-hour energy efficiency, two-hour demand response), their risk, their maturity, their flexibility, and their ability to otherwise meet the needs in the BQDM Target Area. The Company also developed a portfolio approach to identify a mix of resources that can meet the reliability need over the 12 hours on a design peak day. Using the evaluation tool, the Company evaluated DER solutions using a combination of multiple criteria.

Throughout the BQDM Program timeline, the Company intends to supplement results from the evaluation with additional qualitative assessments of the solutions' ability to meet the BQDM Program timing and reliability needs while fostering engagement with the community.

#### *Solutions Technology Validation*

The Company has validated potential DER solutions for both the quantity of load reduction and the length of the resource's availability (or duration) based on technical judgment provided by internal and external subject matter experts. These assessments of the validated solutions have been incorporated into the evaluation tool criteria.



### *Community Engagement and Outreach*

The Company has continued to be proactive in engaging with community stakeholders to understand the priorities in the diverse and rapidly changing communities across Brooklyn and Queens. Community engagement is critical to the success of the BQDM Program, which is marketed as the “Neighborhood Program” to customers living in the Targeted Area. The Company continues to actively reach out to existing community partners and develop new relationships.

In the first quarter of 2017, Con Edison conducted a range of community meetings with local community boards and civic groups throughout Brooklyn and Queens to provide program updates on the C&I, SBDI, MFEE and residential adder programs. The Company met with Brooklyn Community Boards 1, 3, 5, 16, and in Queens, the Locust Grove and the Kew Gardens civic associations to summarize the diverse offerings such as mini-split air conditioning units and LED lighting incentives available for customers. Additionally Company staff participated in Brooklyn’s Cypress Hills Local Development Corporation’s Senior Fair and Housing Resource Fair, as well as met with representatives from local schools in the Cypress Hills neighborhood and the 75<sup>th</sup> Precinct to bring awareness to the Company’s neighborhood program offerings. BQDM and other Company initiatives were also presented by Company staff at the Medgar Evers College Environmental Conference in Crown Heights.

In furtherance of the Company’s battery storage project, presentations were made to a Queens delegation representing the project area and Queens Community Board 10. Newly -

elected Assemblywoman Stacey Pheffer-Amato was briefed on the battery storage project as well as the additional incentives offered under the Neighborhood Program. Separate meetings were conducted with representatives of a middle school and clergy members of a local church near the site of the project. In preparation for the a Board of Standards and Appeals hearing, a community letter detailing the Company's intentions for a second battery storage site was prepared and distributed in Lindenwood.

Company staff met with Brooklyn Borough President Eric L. Adams and partnered in a press event to produce promotional social media content in order to validate and showcase the Residential LED adder program in Brooklyn's residential neighborhoods. Additionally the Company participated in and provided Neighborhood Program updates at the Borough President's quarterly Renewable and Sustainable Energy Taskforce ("ReSET") stakeholder meeting. The Company reached out to New York City Councilmember Raphael Espinal, New York State ("NYS") Assembly member Erik Dilan, NYS senator Martin Malave Dilan and U.S. House Representative Nydia M. Velazquez to provide an overview of BQDM Program initiatives in their districts.

The Company conducted a meeting with members of the Brooklyn Alliance for Sustainable Energy ("B.A.S.E.") to provide updates on the BQDM initiative. Part of the discussion included local hiring efforts, made by the Company's implementation contractors, in projects such as described in the NYCHA projects section above and the Company's support of Workforce Development programs throughout the borough. The Company plans to continue these

meetings on a regular basis to keep the community abreast of its plans and actions, and to ensure the effectiveness of its outreach strategies.

### *Customer Engagement*

As of March 31, 2017, the BQDM Program served a total of 4,345 households in Brooklyn and Queens combined. The number of BQDM residential direct installers nearly doubled during the last quarter, resulting in greater energy savings each month. The Company estimates 27,000 households will need LED retrofits over a 12-month implementation phase to achieve the 2 MW load reduction in the BQDM residential program, which may require targeting up to 175,000 Con Edison accounts within the BQDM Area.

In first quarter 2017 the Company sent postcards to 12,864 customers within the program area. The marketing team designed an email prompting customers to sign up for the program to reinforce the postcard. The Company sent the email in late March and will continue to do so in the coming months of the program. The Company also prepared social and digital advertising campaigns that launched in March. The contractor's field staff was outfitted with Con Edison branded attire, and their vehicles were wrapped with Con Edison branded decals, to provide brand recognition and to build trust with the residents of the targeted neighborhoods.

In addition, throughout the first quarter 2017, the Company continued its community outreach efforts to raise program awareness in the BQDM Target Area. The Company also worked with its Regional Corporate Affairs groups to distribute a packet containing background information

on the program as well as customizable social and newsletter communications. The implementation contractor has seen increased customer interest in the field with the additional marketing efforts, and as a result increased installations. The contractor also reports that customers are receptive, and several customers have approached its staff to discuss the mailer and their interest in the LED lamps offered at no-cost to the customers by the BQDM Program. While at a household, the field staff, in addition to installing the LED lamps, distributes flyers informing residents of the benefits of an LED retrofit and informs them about various other rebate offerings for energy efficiency measures.

#### *Measurement & Verification Pilot*

The Brooklyn-Queens Metering & Market Characterization Study commissioned by Con Edison to gather comprehensive data on consumer's electricity usage patterns through 24-hour load shapes of end-use equipment is complete, but will be undergoing additional review and verification. As discussed earlier in the report, inaccuracies were reported in the hourly load reductions primarily related to the CDI adder program in the BQDM portfolio, resulting in a two hour incorrect time shift in data calibration during analysis and development of the load curves. The Company still utilizes this information to gain a better understanding of how and when customers consume electricity for three important BQDM Program segments: small businesses, multifamily in-units and multifamily common areas. The results of this study have been incorporated into an interactive dashboard, which not only illustrates the demand reduction the BQDM Program has acquired to date but also provides strategic insights for more effective

acquisition of demand reduction by the Company. This dashboard will be updated regularly as M&V results are incorporated to reflect changes and to verify peak demand reduction for the BQDM Program.

The Company has begun a full review of its M&V processes so errors are prevented or corrected early to protect the integrity of data used to report and project program load reductions and energy savings. The Company expects possible outcomes of this review to include the introduction of an independent QA/QC review process from the inception of all such M&V work with a rigorous QA/QC plan for each effort to assure regular and systemic review of both methods and results. Another outcome would be to conduct regular internal reviews of contractors' interim results and work product for consistency of processes to serve as an additional check of program goals and accomplishments.

The Company constantly looks to improve its processes in order to be well-prepared to perform M&V, on additional projects and technology specific programs even as increasing amounts of DERs such as distributed generation and energy storage are implemented under the BQDM Program, and procured for future non-wires alternatives generally.

The Company continues to work closely with public entity stakeholders, such as NYCHA and DCAS, to accommodate their stringent installation schedules. The Company has completed all pre-inspections in a timely manner to allow a seamless workflow of installations and is prepared to perform the post-inspections immediately following installations. Demand

reduction from the Residential Direct Install Program is being verified by the Company as the implementation contractor continues to retrofit inefficient lighting with LEDs for BQDM residential customers.

An innovative M&V methodology has been devised for measuring acquired peak demand reduction for ductless heat pumps and window air conditioners. This methodology may be applied to other programs within BQDM portfolio where applicable.

The Company will incorporate lessons into its processes, including for M&V, for future targeted demand reduction efforts.

#### *Demand Management Tracking System*

The Company is continuing to develop and expand the Demand Management Tracking System (“DMTS”) with capabilities to manage customer relationships, project management activities, and to serve as the system of record for the Company’s energy efficiency and demand management programs. This system is used to process, monitor, and store customer leads and project information for the purposes of program reporting.

DMTS is intended to become the primary source of information for internal and external reporting, including regulatory reporting, once all the programs have been fully implemented.

DMTS includes project and measure details associated with CDI and MFEE adder installations for the BQDM Program. DMTS also tracks energy savings calculations and load relief impacts that are used to validate payments to contractors. Contractors for both the MFEE and CDI

programs are uploading project data to the system for tracking, validation, and reporting. The DMTS is being expanded to provide additional functionality and tracking for various other efforts under the BQDM Program such as the Residential Direct Install program, C&I adder installations as well the efforts associated with DCAS and NYCHA. The DMTS will also be configured to manage the data associated with the overall residential Portfolio. This will include the BQDM Direct Install Lighting Program once requirements gathering efforts can be finalized and an implementation plan can fully scoped out and kicked off.

### **3.2 Non-traditional Utility-Side Solutions**

The focus of the non-traditional utility-side solutions is to leverage innovative technologies and strategies. While the Company expects that some of the design and implementation activities to implement these non-traditional utility-side solutions will be developed within the Company, the Company is also soliciting services from external vendors on an as needed basis.

Deployment of the non-traditional utility-side solutions to meet the 11 MW goal is expected to focus on Distributed Energy Storage System (“DESS”), more specifically battery technology, and CVO,<sup>24</sup> The Company is actively investigating these solution options and has already started implementation of the DESS Battery and voltage optimization options.

#### **Distributed Energy Storage System**

The DESS (battery) will provide Con Edison with 12 MWh of stored energy and can be configured to deliver this power at 1 MW for 12 hours or 2 MW for 6 hours. Con Edison signed the contract with a vendor on August 18, 2015. Site feasibility studies, surveys, and designs

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<sup>24</sup> Voltage optimization is the systematic controlled management of the voltages received by an energy consumer.

have been completed for two locations in Queens. Construction drawings were received and approved. All battery modules and interconnection transformers and switchgear have been delivered and are ready for installation. Applications, permitting, and other documentation are still in the submittal process with the various New York City agencies. Site construction is expected to commence in the second quarter of 2017 with an in-service target of January, 2018, depending on the speed of permitting approvals.

#### **Distributed Generation (DC-Link)**

Previously considered for the 2016 goal, this initiative is now on hold.

#### **Voltage Optimization**

The purpose of the CVO project is to optimize the voltage on the 27kV primary system, including the 4kV overhead system, by implementing enhanced, efficient voltage control. Based on the M&V calculations, CVO reduced a total peak load of 7.9MW for 2016. M&V has been completed. System analysis for low voltage complaints showed no links to CVO. Additional load flow studies have been performed to identify areas of relative low voltage compared to surrounding areas. Substation work has been completed and distribution system work continues for previously identified low voltage areas to allow for implementation of solutions. For 2017, voltage reduction is anticipated to increase from 1.5% to 2.5% with a target voltage reduction of 12MW. A preliminary functionality test is scheduled for early May to verify that all settings are working. The targeted date for completion is June 2017.



### **Utility Side Solar Photovoltaic (“PV”) Pilot**

The PV project RFP was closed on September 14, 2015. Bid submissions were reviewed for completeness and technical presentations were scheduled for October. The project is investigating the possibility of generating an aggregate of 1 MW by means of utility-side PV systems installed on the grounds of 10 unit substations and other buildings located in the BQDM Area, Brownsville No.1 and Brownsville No.2 substations, as well as at the Cleveland Street work out location. Similarly to the utility-side fuel cell project, the Company has reviewed the submitted proposals to understand the pricing proposals and determine the most cost-effective option. However, because of the reduction in the Brownsville load growth, the solar PV project has been put on hold.

### **Utility Side Fuel Cell**

Similarly to storage solutions, the Company believes there are many benefits to using fuel cell technology on the Company’s system. During June 2015, the Company issued an RFP soliciting solutions of up to 1 MW at a Company owned location within the BQDM Area. The Fuel Cell RFP solicitation closed on July 17, 2015. Technical presentations were completed on September 9, 2015. The Company has reviewed the submitted proposals to understand the pricing proposals and determine the most cost-effective option. As with the solar project, the fuel cell project has been put on hold due to the reduction in the Brownsville load growth.

### **Non-traditional Utility-side Solutions Pipeline Activities**

Con Edison continues to investigate additional projects that fall under the non-traditional utility-side solutions category. As these projects evolve, more details will be provided in future reports.

## 4.0 Synergies

During the summer of 2016, the Company dispatched the DR resources enrolled in the DLRP, CSR, and DLC programs in the BQDM networks. Twenty-five customers enrolled in the CSR program provided 4.7 MW of load relief on average during the events on July 25, July 26, August 12 and August 15, honoring 115 percent of their combined 4.1 MW pledges. Twenty-nine customers, who collectively enrolled 4.9 MW of DLRP resources, provided an average of 1.7 MW load relief during the extended heat-wave from August 11 to August 16 during 2016. Table 3 provides a detailed summary of the commercial DR program performance during the third quarter of 2016. DLC program performance evaluation is underway and an estimated impact to the BQDM networks will be provided in future quarterly reports.

**Table 3: Summer 2016 CSR and DLRP program performance in BQDM networks**

Program	Event Date	Event Hours	Average MW Reduction	Performance Factor
CSR	July 25	4 PM – 8 PM	2.1	83%
CSR	July 25	7 PM – 11 PM	5.1	315%
CSR	July 26	4 PM – 8 PM	2.6	106%
CSR	July 26	7 PM – 11 PM	0.9	56%
CSR	August 12	4 PM – 8 PM	2.8	111%
CSR	August 12	7 PM – 11 PM	1.4	86%
CSR	August 15	4 PM – 8 PM	2.8	113%
CSR	August 15	7 PM – 11 PM	1.1	70%
DLRP	August 11	2 PM – 8 PM	2.6	53%
DLRP	August 12	2 PM – 8 PM	3.0	61%
DLRP	August 13	3 PM – 9 PM	0.9	19%
DLRP	August 14	4 PM – 10 PM	0.4	9%
DLRP	August 15	3 PM – 9 PM	1.8	37%
DLRP	August 16	4 PM – 10 PM	1.7	35%

In addition to load relief projects being pursued under the BQDM Program, the Company is assessing other load relief solutions being developed in the BQDM Target Area. In particular, Company personnel responsible for the BQDM Program have worked closely with personnel managing the Demand Management Program (“DMP”). DMP was instituted to incentivize development of load relief solutions, which would serve as part of the solution to a potential supply constraint resulting from retirement of the Indian Point Energy Center to identify synergies and benefit from mutual load relief efforts. The Company estimates that DMP solutions in the BQDM Area, once fully implemented and verified could potentially provide over 400 kW of load relief at the peak hour and over 1 MW of maximum load relief between 2 pm and 6 pm.

In addition to various demand management and energy efficiency programs, the Company is also seeking opportunities to create synergies with the wider Company efforts such as the Company’s REV Demonstration projects and other rate case programs. The Company intends to leverage innovative demonstration projects in the constrained networks to defer traditional utility investment whenever the demonstration project possesses any benefit for the load relief efforts.