



REV Demonstration Project:
Community Power

2019 Q2 Quarterly Progress Report

Dated: July 31, 2019

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1.0 EXECUTIVE SUMMARY

Consolidated Edison Company of New York, Inc. (“Con Edison” or the “Company”) submits this report for the second quarter of 2019 on the progress of the Community Power Demonstration Project (the “Project”) it is being implemented as part of the Reforming the Energy Vision (“REV”) initiative¹. In the *Order Adopting Regulatory Policy Framework and Implementation Plan* (the “Order”), issued by the New York State Public Service Commission (“Commission”) on February 26, 2015², the Commission directed the Company to develop and file REV demonstration projects, consistent with the guidelines adopted by the Order. The Company’s REV Demonstration Project proposal dated September 24, 2018, provided an outline and overview of the Project and was assessed by the Department of Public Service Staff (“DPS Staff”). On October 16, 2018, DPS Staff approved the Project and provided a discussion of the Project implementation plan to be filed by the Company. Con Edison filed an implementation plan for the Project with the Commission on April 23, 2019.

The Project is designed to examine a new model for increasing the access of low- and moderate-income (“LMI”) customers to distributed energy resources (“DER”), such as solar powered generation. The Project seeks to do this by demonstrating (1) that LMI community distributed generation (“CDG”) can yield stable and consistent financial returns and subscription revenue realization rates that are sufficient to attract third-party investors at scale, and (2) that LMI CDG can provide economic benefits for LMI customers in a self-sustaining manner. [In this Project, customers will be charged only for actual CDG production, instead of a flat production fee. This helps to ensure that customers will be able to pay for the CDG subscription through the savings they receive from bill credits, increasing on-time solar subscription payments.]

LMI CDG using the Project model can provide:

¹ REV is a set of multi-year regulatory proceedings and policy initiatives launched in New York State in April 2014.

²Case 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 and effective February 26, 2015).

- Monthly energy savings – the expected energy savings per participant may vary but could total approximately \$78 annually (or \$6.36 per month)³
- 1,416,000 KWh of clean energy and a reduction of 1,727,520 lbs. of CO2 equivalent in greenhouse gas emissions per year,
- Access to and indirect ownership of DERs for LMI residents, an increase in participating customers’ ability to manage energy costs,
- Paid solar apprenticeships and job placement support for up to 15 to 30 low-income New Yorkers.

Con Edison is executing the Project in partnership with a team assembled by Solar One that includes WE ACT, Green City Force, Co-op Power, Resonant Energy, NYCHA, and a third-party impact investor.

In Q2 2019, the Company and the Project team completed several key preliminary start up activities including filing the Project’s Implementation Plan, entering into contracts with the Project team lead Solar One, conducting roof assessments for all participating New York Housing Authority (“NYCHA”) buildings where the solar arrays will be installed, and releasing the request for proposal (“RFP”) to solar installers capable of assembling the solar arrays for the project.

Contracting between community based partners’ pro bono counsel and Con Edison can add additional weeks to the project time line in order to accommodate schedules. The Project team must allot additional contracting time going forward. In addition, given the assessment of the Project conducted by external consultants the project workplan will be revised. Details regarding this assessment are described in the Changes to Project Design Section below.

1.1 CYBERSECURITY AND PERSONALLY-IDENTIFIABLE INFORMATION PROTECTION

Consistent with Commission policy related to cybersecurity and the protection of personally-identifiable information (“PII”), each partner agreement executed for the implementation of the Project includes an amendment detailing specific protections related to cybersecurity and PII required of the project partner and its information

³ Throughout the 25-year life of the solar assets (an estimated \$667,3526 for participating LMI customers over the lifetime of the project, depending on individual participant monthly energy usage)

technology systems. This protection is critical in encouraging customers to sign up with new and innovative services offered by the Company.

1.2 ACCOUNTING PROCEDURE ESTABLISHED

On February 16, 2016, in Case 15-E-0229, Con Edison filed an accounting procedure for the accounting and recovery of all REV demonstration project costs.⁴ This accounting procedure establishes a standardized framework that will govern how the Company categorizes and allocates the costs of the REV demonstration projects, and facilitates analyzing each project to determine the overall financial benefits of the program to customers.

1.3 COSTS, BENEFITS, AND OPERATIONAL SAVINGS

Budget information, including costs incurred and projected to be incurred?, for all of the Company's REV demonstration projects is being filed confidentially with the Commission, concurrently with the filing of this document. All costs filed are incremental costs needed to implement the projects. To date, no tax credits or grants have been available to reduce the net costs of the projects, but Con Edison will take advantage of such offsetting benefits when they are available. Due to the early stage of implementation for the Project, there are no operational savings to report at this time.

⁴ Case 15-E-0299, *Petition of Consolidated Edison Company of New York, Inc. for Implementation of Projects and Programs that Support Reforming the Energy Vision*, General Accounting Procedure (issued February 16, 2016).

2.0 COMMUNITY POWER – QUARTERLY PROGRESS

2.1 DEMONSTRATION HIGHLIGHTS

2.1.1 Since Previous Quarter - Major Task Completion

- Primary Contract Executed:
 - Con Edison and Solar One entered into a universal? agreement with terms that will apply to all subcontractors that Solar One utilizes in the execution of the Project and to all project partners.
- Site Review and Confirmation:
 - Project team conducted a full review and assessment of the host sites where the solar arrays will be installed.
 - The optimal rooftops have been selected taking into consideration system size and roof structural condition, among other factors.
- RFP Release:
 - Solar One created and released the Project RFP on June 21, 2019.
 - The RFP was distributed widely to contractors who recently requested a solar interconnection through Con Edison, to NYSERDA and its NY-Sun distribution list, and to Solar One's list of qualified contractors.
 - Solar One has:
 - Conducted a respondent webinar on July 1, 2019.
 - Responded to respondent questions on July 11, 2019.
 - Planned to receive final RFP responses for evaluation by August 1, 2019.
 - Started preliminary financing and customer engagement discussions.
 - Conducted planning meeting with Project team and outlined next steps - July 2-, 2019.

2.1.2 Activities Overview

Phase 1, Pre-Development – started in _____2019, this phase is 40 percent complete with four out of ten major activities identified as milestones accomplished.

Milestone Activities Complete

Develop legal agreements

Initiate site selections

Release competitive RFP

Raise tax equity

- Deploy project financing for capital costs (a loan)
- Deploy program costs (an impact investment)
- Selecting solar installers
- Negotiating pricing and terms for the solar installations
- Secure community outreach partnerships

- Create the Project's LLC

After signing a Project agreement on June 18, 2019 that contractually obligated Solar One and the Community Power project partners to the activities outline is the project filing, Solar One identified three potential sites where the solar arrays will be installed – Carver Houses (East Harlem) public housing development; Kingsborough (Brooklyn) public housing development; and Glenwood (Brooklyn) public housing development. The final system designs and costs (capacity by site and which buildings are included) will depend on the proposals that the Solar One receives in response to the RFP released on June 21, 2019. Solar One required that RFP respondents include the six-story buildings in the Carver Houses, which will be ~120 kilowatts-DC across four buildings. The remaining ~1,080 kW-DC will be spread between the Kingsborough and Glenwood developments with each rooftop installation between 30-50 kW-DC. There will be several small interconnections in the electric rooms of the buildings. Solar installers will be selected by August 1, 2019. Installation is expected to occur in Q1 of 2020.

Financing and community outreach partnerships activities are expected to take place in Q3 2019. The Company plans to review and provide feedback on a lender term sheet and finalize agreements with the Project's financing partner by early Q4 2019. The Company has also outlined what it will include in the development of the Project's customer engagement and workforce development plans. This outline requires a summary of the recruitment and enrollment process, a strategy for and a checklist of Uniform Business Practices for DER compliance, a strategy for conducting pre- and post-demonstration surveys, samples of customer enrollment materials, curriculum lesson plan for solar workshops, and a plan for educating customers on challenges such as auto pay, separate bills, and differences between

CDG and energy service companies (“ESCO”s), among other potential obstacles to successful execution of the Project.

Phase 2, Implementation: planned to begin in Q3 2019 – early 2020, this phase is 0 percent complete with zero out of seven major activities identified as milestones accomplished.

Milestone Activities Complete

- Procure solar arrays
- Install solar arrays
- Recruit workforce apprentices
- Train workforce apprentices
- Engage subscribers (on a rolling basis)
- Enroll subscribers (on a rolling basis)
- Launch the Project

Phase 3, Evaluation: slated for 2021, this phase is 0 percent complete with zero out of three major activities identified as milestones accomplished.

Milestone Activities Complete

- Documentation of results (analysis of bill impacts, default rates, on time payment, revenue realization rates, etc.)
- Job placement for workforce trainees.
- Draft initial final project report

Phase 4, Closing: slated to begin in 2021. This phase is 0 percent complete with zero out to three major activities identifies as milestones accomplished.

Milestone Activities Complete

- Final survey or participants
- Final Survey or workforce trainees
- Finalize closing report

This phase is comprised of several key milestones that are expected to occur after the close of the demonstration project over the next 20 years – in 2024 (year 6 after installation), tax equity investment will be fully repaid, and ownership of the solar arrays will revert back to the community energy cooperative; In 2033 (year 15 after installation), the loan for capital costs are expected to be fully repaid and cooperative members are expected to manage excess operating profit; and in 2038 (year 20 after installation), the assets are expected to reach their useful life.

2.1.3 Key Metrics

In Q2 2019, the Project team focused on developing legal agreements, the RFP, and engaging with community partners. The following are the Phase 1 metrics targets set by the Project team: three sites selected for solar arrays installation, three to five quality responses to the RFP, and one partnership agreement signed with Solar One, which governs what each of the five project partners are required to do for the project. Of the five partner subcontract agreements, one is with Project sponsor Co-op Power, two are with community engagement partners We Act and a yet to be determined community based organization, and the final one is with a workforce development partner Green City Force.

Phase 1 Key Metrics

- Sites Identified: 2 of 3 targeted
 - The Project team has decided to eliminate the Bronx as no zero dollar leases were secured in the borough by Solar One in their application for NYCHA's Access Solar initiative. Access Solar awarded no cost roof leases to qualified LMI solar projects and the Community Power project was awarded several of NYCHA's roofs, however, the roofs awarded were only in Brooklyn and the Bronx. Subscribing individuals in the Bronx, therefore, would have required the Project team to secure building leases at a cost. In addition, continuing the Project in the Bronx, when the solar arrays are in Manhattan and Brooklyn, would confuse customers and

would be inconsistent with the Project's messaging and goal of providing access to local, community generated power.

- Legal Agreements Developed: 1 of 6 targeted
 - The Company has executed its agreement with Solar One, the lead for the Project. In Q3 2019, Solar One is planning to subcontract with WeACT, Co-op Power, Green City Force, a select group of solar installers, and a yet to be determined community based organization in Brooklyn that will manage customer engagement and enrollment in Brooklyn.
- RFP Released: 1 of 1 targeted
- Contract for Program Costs Processed: 1 of 1 targeted
 - Full amount issued and dispersed to the team on a time a materials bases

Program Metrics and Ancillary Benefits Metrics

These metrics will be tracked once the Project is launched in 2020 on a quarterly bases (for program metrics) and annually (for ancillary benefits metrics) .

Finance and System Metrics

These metrics will be filed with Staff confidentially and will allow Con Edison and Staff to assess the health of the financing instruments and the solar systems.

2.1.4 Next Quarter Forecast




In Q3 2019, the Project team plans to develop the remaining legal agreements with subcontractors, select RFP responses from three to seven proposals, begin to secure predevelopment financing, negotiate pricing and finalize installers for the Project, and have an approved customer engagement plan ready for deployment

2.1.5 Checkpoints/Milestone Progress

Checkpoint/Milestone	Timing*	Status
Business Structure Established	Phase 1 Beginning/Midpoint	○ ● ○
Workforce Trained	Phase 2 Midpoint / End	● ○ ○
Subscribers Enrolled	Phase 2 End	● ○ ○
Array Installations	Phase 2 End	● ○ ○
Adequate Revenue Realization	Phase 3-4 Midpoint / Beginning	● ○ ○
Sufficient Customer Energy Savings Obtained	Phase 4 Beginning	● ○ ○

*Detailed descriptions of the Phases can be found in the Appendices.

Legend

 On Schedule	 Delayed w/out Major Impact	 Delayed or Stopped – Project Goals Impacted
-------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------

2.1.6 Planned Activities

2.1.6.1 Business Structure Established

Status: **Yellow**

Expected Targets by Phase 1 Beginning/Midpoint: LLC created, tax equity raised, legal agreements negotiated and executed, and final course of project finance deployed.

Actual by Phase 1 Midpoint: 1 of 6 legal agreements developed and signed

Solutions/strategies in case of results below expectations: The Project team will revise the Project's work plan by July 31st. Now that the primary contract with Solar One is signed, the revised work plan will reflect a more precise project timeline. Other strategies include active involvement of Con Edison in each stage of contract development and bi-weekly progress reports from the Project team to Con Edison on the status of each target listed above.

2.1.6.2 Workforce Trained

Status: Green

Expected Targets by Phase 2 Midpoint/End: 15-30 apprentices having successfully completed their training and matriculating to work opportunities with selected installers.

Actual by Phase 2 Midpoint/End: N/A

Solutions/strategies in case of results below expectations: The Project team will continually evaluate progress on a monthly basis and if there are specific issues, Con Edison and Solar One will actively discuss delays with Green City Force to understand the recruitment and training bottlenecks and to develop preemptive plans and mitigation strategies that 1) address current bottlenecks and 2) anticipates any future bottlenecks that might occur.

2.1.6.3 Subscribers Enrolled

Status: Green

Expected Target by Phase 2 End: At least 350 participants signed up to receive discounted solar energy credits on their utility bill.

Actual by Phase 2 End: N/A

Solutions/strategies in case of results below expectations: Bi-weekly evaluation of enrollment and periodic evaluates of participant satisfaction will help subscription levels remain high enough to support the Project's revenue requirements.

2.1.6.4 Array Installations

Status: Green

Expected Target by Phase 2 End: Complete System Design, Installation, Inspection, and Commissioning

Actual by Phase 2 End: N/A

Solutions/strategies in case of results below expectations: Solar One and Con Edison will collaborate and determine ways to expedite the installation process. Solar One will provide ongoing bi-weekly reports about potential bottle

necks in the construction schedule and appropriate mitigation strategies will be clearly outlined by Solar One, for Con Edison.

2.1.6.5 Adequate Revenue Realization

Status: Green

Expected Target by Phase 3-4 Midpoint/End: A Project revenue realization rate of at least 95 percent, where revenue realization is defined as the total possible dollar amount of solar energy credits provided, divided by the actual dollar amount of subscription payments received from subscribers.

Actual by Phase 3-4 Midpoint/End: N/A

Solutions/strategies in case of results below expectations: The Project team will evaluate engagement metrics bi-weekly to ensure that the Project maintains a adequate number of enrolled and waitlisted customers. The Project team will also actively work with the pool of subscribers (providing a monthly statement and promptly following up with and replacing non-paying participants from a waitlist) to enable a project revenue realization rate greater than 95 percent, even with some level of participant non-payment. If a participant decides to stop participating at any time, the existing participant will be promptly replaced by a LMI customer on the project's waitlist. The Project team will also continue to watch engagement and revenue metrics for two quarters after a given drop in revenue realization. This rate will be compared to benchmarks gleaned from pre demo impact investor surveys used to assess investor appetite for financing future CDG projects that use the Project model. After two quarters of evaluation, if low performance persists, Con Edison will consider closing the Project, as the Project cannot be successful without a revenue realization rate that is satisfactory to investors.

2.1.6.6 Sufficient Customer Energy Savings Obtained

Status: Green

Expected Targets by Phase 4 Beginning: An average net utility bill savings delivered to LMI participant, a percent reduction in energy costs (target 15 percent), and a relatively equal projected solar energy capacity targeted versus actually solar generated.

Actual by Phase 4 Beginning: N/A

Solutions/strategies in case of results below expectations: The Project team will evaluate solar system performance and Project financing and solar system metrics monthly against targets. Con Edison will troubleshoot with the Project team based on the specific financing area experiencing underperformance. These metrics will be evaluated monthly and quarterly, and customer savings obtained

from the project will be analyzed and compared to saving projections. Consistent under performance will result in closing of the Project in order to minimize financial losses for the Project's partners and investors.

2.2 CHANGES TO THE PROJECT DESIGN

Consultants were brought in to provide actionable feedback to Con Edison on the experimental design of its portfolio of LMI REV Demonstration projects to maximize each projects chance to succeed. After a review of all documents related to the Community Power project, the consultants provided an assessment and recommendations across three areas: Execution (project milestones, key performance indicators, and scalability); Sample Size (test population and test period); and Design Structure/Validity (research questions, hypotheses, metrics, and expected benefits/targets). Material changes to the design of the Project are below.

- The team has increased the test population to include a sustained, 175 minimum to 350 maximum control group.
- Additional program metrics were added to the Project design that will be tracked on a quarterly bases. The metrics are related to customer engagement and affordability and were included as a result of the addition of three new hypotheses:
 - 1) If Con Edison customers participate in the Project, then participants will show high customer satisfaction. improved energy literacy, trust in Con Edison, and positive perceptions of the Utility
 - 2) If participants attend the informational workshop, then these participants will have an increased likelihood and length of participation and energy literacy.
 - 3) If LMI customers participate in the CDG program, then, due to monthly bill savings,these participating customers will have on average fewer late fees and penalties on their electricity bills, as well as fewer disconnections and lower disconnection costs.

New metrics added related to tracking engagement and affordability are set forth below.

Engagement Metrics

- # of workshop attendees
- % of participants engaged via workshop
- % of participants engaged via marketing materials
- % of participants who live in the area where the systems are located and outreach occurs

- Participation length when recruited via workshop
- Participation length when recruited via marketing materials only
- Participation length when outside of outreach area

Affordability Metrics

- # of arrearages for those participating
- # of arrearages for those waitlisted/control group
- % of participants removed for non-payment
- Average net utility bill savings

The Project team also refined its customer survey topics to evaluate ancillary benefits of the Project, and determined a schedule for survey distribution. The Project team plans to conduct surveys with the timing, audiences, and topics outlined below, in addition to tracking the metrics listed above as set forth the Project’s initial filing ⁵sent to Staff.

Survey Topic	Participants			Non-Participants	Investors
	At Sign-up/Pre-Demo	Mid-Year	Post-Demo	Pre- and Post-Demo	Pre- and Post-Demo
Energy Literacy	X		X	X	
Trust	X	X		X	
Customer Satisfaction		X		X	
Positive Perception of the Utility		X	X	X	
Qualitative Benefits	X		X		
Third-party Investor Appetite					X

*Non-Participants is defined as the Waitlisted group in the demonstration.

⁵ Con Edison submitted the Project for approval by DPS Staff on November 30, 2018.

2.3.3 Updated Budget

As set forth in Section 1.3, budget information is being filed confidentially with the Commission.

2.4 CONCLUSION

2.4.1 Lessons Learned

Solar contractors desired to do site visits prior to submitting proposals. This was not initially planned, but the Project team easily adapted and run two site visits. Contracting between community based partners' pro bono counsel and Con Edison can add additional weeks to the project time line in order to accommodate schedules. The Project team will need to allot for additional time for contracting going forward.

The Project's work plan will be revised to reflect more detail than previously provided. In addition, the team will draft a detailed customer engagement and workforce development plan for the Company review. Both will help the Company properly track the Project's progress.

2.4.2 Recommendations

Given that the Company signed a contract with Solar One in early June of 2019 and the Project work plan and targets were approved in Q3 of 2018 (nine months prior), it is advised that the project work plan be updated for the next quarterly report. Elements of the Project have been made more explicit through the contracting process, and the assessment of the Project conducted by external consultants has identified potential off-ramps if the project proves successful earlier than expected. This same assessment recommended additional metrics related to tracking program and financing outcomes. As a result, it is the Company's recommendation that the Project team develop targets for new metrics, refine existing metrics if needed, and revised the current workplan in light of the items mentioned above.

COMMUNITY POWER REV DEMONSTRATION PROJECT

The **Community Power** project is designed to demonstrate that if securing financing is removed as a barrier, LMI customers will in aggregate make on time CDG subscription payments and they will not default at significantly higher rates than non-LMI CDG subscribers. The Community Power project business model uses third-party financing to facilitate indirect LMI customers ownership of distributed solar-powered generation, through LMI customer membership in a community energy cooperative, which entitles to LMI customer to indirect ownership rights. Con Edison is executing the Project in partnership with Solar One, WE ACT, Green City Force, Co-op Power, Resonant Energy, the New York City Housing Authority (NYCHA), and a yet to be determined third-party impact investor.

Project Start Date: June 18, 2019
 Project End Date: Q2 2022
 Budget: \$\$3.3M
 Q2 2019 Spend: Filed Confidentially
 Cumulative Spend: **Filed Confidentially (on budget)**



Lessons Learned: Customers

- Interest in programs, such as Shared Solar and the Community Power Project, as well as an In-Home Energy Audit through the EnergyFit project, is generally high, as low to moderate income customers see the potential to save money or lower their bills.
- Roughly half of survey respondents living in public, affordable or low income housing are interested in a learning session about the Community Power Project
- At least half find no upfront cost very important when considering the program.

LMI Customer Survey, August 2018
 508 Con Edison Residential Customers,
 Low Income = 301, Moderate Income = 207

Application of Lessons Learned: *Workshops with fully developed curriculums are being developed for the Community Power project to ensure that LMI customers are well educated on the various aspects of the Project's offerings and the requirements associated with participation. All workshops and materials will highlight that Community Power is at not upfront cost.*

Issues Identified: *No issues have been identified related to the Project.*

Solutions Identified: *Not applicable at this time. No issues have been identified related the Project.*

Recent Milestones: *a) Primary project contract executed with team lead Solar One, b) subcontracts undergoing legal review, c) Site assessment and selection complete, d) RFP for solar installers released, and e) Preliminary finance and engagement discussion with project partners has commenced.*

Upcoming Milestones: *Selecting solar installers Q3, Negotiating pricing and terms for the solar installations Q3, Secure second community outreach partnership Q3, Raise tax equity Q4, Create the Project's LLC Q4, and Deploy project financing for capital costs Q4.*