Mary Krayeske
Associate Counsel

August 24, 2017

Hon. Kathleen Burgess
Secretary
New York State Public
Service Commission
Three Empire State Plaza
Albany, NY 12223

Re: Proceeding on Motion of the Commission to Consider Demand Response Initiatives

Dear Secretary Burgess:

Please see the enclosed *Petition of Consolidated Edison Company of New York, Inc. to Move a Room Air Conditioning Program to Rider L, Make Changes to Rider L, and Continue Connected Devices Pilot with Modifications*.

Please contact me with any questions.

Very truly yours,

/s/ Mary Krayeske

Mary Krayeske

Enclosure

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to Consider Demand Response Initiatives **CASE XX-E-XXXX**

PETITION OF CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. TO MOVE A ROOM AIR CONDITIONING PROGRAM TO RIDER L, MAKE CHANGES TO RIDER L, AND CONTINUE CONNECTED DEVICES PILOT WITH MODIFICATIONS

I. Introduction

Consolidated Edison Company of New York, Inc. ("Con Edison" or the "Company") petitions the New York State Public Service Commission ("Commission") for approval to: (1) move the room air conditioning retrofit portion of the Connected Devices Pilot ("CDP") program ("smartAC kit") into Rider L, including removing the existing megawatt ("MW") target; (2) allow under Rider L, non-direct Con Edison customer participation and permit the Company to hold "test events;"[1] and (3) continue CDP as a connected devices pilot incubator with total funding capped at an average annual level equal to its existing annual funding level, with elimination of the MW target to reflect the removal of the smartAC kit, to provide the Company with the flexibility to both continue to grow CDP as a customer-side demand response ("DR") resource as well as to continue to develop innovative offerings and approaches.

[1] The proposed electric tariff changes are detailed in the concurrently-filed tariff amendments. There are several clarifying tariff changes included in the amendments that are not the subject of this petition.

II. Background

A. CDP Program

The Commission initially approved CDP in 2009 as the Residential Smart Appliance Program ("RSAP"),[2] a DR pilot focused on "smart" curtailable appliances to the residential market. RSAP participants received a rebate for each smart or DR-ready appliance installed and, in return, the Company would call upon enrolled appliances to reduce usage, if necessary, to meet system or network needs. More recently, in its *Order Adopting Modifications to the Direct Load Control Program and Instituting the Connected Devices Pilot Program* ("January 2016 Order"), the Commission approved the Company's use of CDP funding to further develop residential DR resources, including implementing the overall "Smart AC Program" (described below) and expanding the program beyond residential customers to include small commercial customers.[3] Currently, CDP primarily consists of one technology offering, the smartAC kit, complemented with other small-scale pilots and studies, including the Bring Your Own Device ("BYOD") program.

The January 2016 Order also included specific CDP program goals based primarily on the existing and expected participation levels of the smartAC kit program. For 2016, CDP had a target goal of 1.25 MW of enrolled capacity, which increased to 2 MW for both 2017 and 2018, with the flexibility to achieve these reductions through a $4 million annual funding

[2] Case 09-E-0115, *Proceeding on Motion of the Commission to Consider Demand Response Initiatives* ("Demand Response Proceeding"), Order Adopting in Part and Modifying in Part Con Edison's Proposed Demand Response Programs (issued October 23, 2009).
[3] Case 15-E-0593, *Petition of Consolidated Edison Company of New York, Inc. for Approval to Continue its Residential and Small Commercial Demand Response Programs*, Order Adopting Modifications to the Direct Load Control Program and Instituting the Connected Devices Pilot Program (issued January 25, 2016) ("January 2016 Order").

authorization.[4] Finally, the Commission established criteria for moving CDP pilot-scale initiatives to full-scale programs: the Company is permitted to request such a change when the pilot (1) is cost-beneficial and (2) the projected market potential shows at least three years of growth.[5]

B. Smart AC Program

Under the Smart AC Program, currently a technology pilot under CDP, Con Edison provides, or incents customers to purchase, devices that allow the Company to adjust the settings on customer window or through-the-wall air conditioning units ("room air conditioner") to reduce peak load on the electric distribution system as required to meet system or network needs during an Event.[6] These devices also enable customers to better manage their electric use. While the Company is permitted to control the device when an Event is called, the customer can override the Company's reduction signal during the Event.

The Smart AC Program provides two customer options to remotely control room air conditioner unit loads: the Company-provided smartAC kit and BYOD. The terms of participation in the two options are similar: the former provides a retrofit kit that enables a standard non-Wi-Fi enabled room air conditioning unit to become Wi-Fi enabled, and the latter uses the customer's existing Wi-Fi enabled room air conditioner. Customers using either option enroll their room air conditioners and receive both up-front and Event participation incentives.[7]

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[4] January 2016 Order, p. 5.
[5] *Id*.
[6] The Company refers to the occurrence which triggers a signal to customer devices to reduce peak load as an "Event." The term is further defined in Rider L and clarified in the accompanying amendments..
[7] In 2017, participation is defined as participating in at least one whole DR Event during the capability period (May 1 – September 30). For complete current program qualifications and incentive structure, see www.conEd.com/SmartAC.

For both options, through CDP, the Company has explored differing means of incentivizing customers and gauging the impacts on customer response and satisfaction to enhance program performance so that incentive funds are spent efficiently and to improve customer satisfaction. Under the existing Smart AC Program, the Company offers redeemable online credits that may be converted to cash or gift cards because the Company has found that the incentives points and rewards structure, introduced in 2015, which continued in 2016 and 2017, results in greater program participation as compared to providing a gift card at the end of summer.[8]

Currently, the Company has 20,275 devices enrolled in total in the two options – 18,002 in smartAC kit and 2,273 in BYOD. As noted in the 2016 Company's DR evaluation report, the Company expended $3,756,786 in 2016 for this program and currently expects to spend approximately $3,270,000 in 2017. The smartAC kit achieved 1.43 MW in demand reduction in 2016.[9]

C. Demand Response Tariff

The Company's tariff[10] for residential and small business demand response for central air conditioning is Rider L. In July 2014, the Commission approved the Company's request to add the Bring Your Own Thermostat ("BYOT") offering to Rider L.[11] BYOT is a central air conditioning offer that allows customers who have their own eligible smart thermostat to enroll

[8] See the 2016 Evaluation Report for more detail, beginning page 51: http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7bC09B7623-AA7F-48DE-AF64-3A2F488E96EA%7d.

[9] Demand Response Proceeding, Report on Program Performance and Cost Effectiveness of Demand Response Programs (filed December 1, 2016).

[10] Schedule for Electricity Service, P.S.C. No. 10 – Electricity.

[11] Case 14-E-0121, *Tariff Filing of Consolidated Edison Company of New York, Inc. to Modify Rider L – Direct Load Control Program contained in P.S.C. No. 10 – Electricity*, Order Approving Tariff Revisions (issued July 25, 2014).

their central air conditioning unit with a service provider to provide demand reduction and receive incentives.[12] This is distinct from BYOD, which allows for enrollment of room air conditioners through CDP.

III. Proposed Changes

A. Incorporation of smartAC kit into Rider L

The Company requests that the Commission approve transfer of the smartAC kit portion of CDP to Rider L, as a tariffed program, with two additional changes noted below.

1. Transfer smartAC kit to Rider L

As noted above, under the January 2016 Order the Company may request transfer of a program from pilot status under CDP to a full scale program when: (1) the pilot is cost-beneficial and (2) projected market potential shows at least three years of forecasted growth. As explained below, smartAC kit performance satisfies the Commission criteria and should be moved to Rider L.[13]

Regarding the first criterion, the Company calculates cost-effectiveness using the Benefit Cost Analysis ("BCA") Handbook.[14] A program is considered to be cost-effective when the BCA result is 1.0 or greater, *i.e.*, providing more benefits than costs to society. The Company's cost-effectiveness calculations demonstrate that once 18,000 smartAC kit devices are enrolled and operating or connected, the smartAC kit is cost-effective at 1.04. As of this filing, there are

[12] Bring Your Own Thermostat program details can be found online at https://www.coned.com/en/save-money/rebates-incentives-tax-credits/rebates-incentives-tax-credits-for-residential-customers/bring-your-thermostat-and-get-$85

[13] January 2016 Order, pp. 5, 7. As benefits for BYOD are not yet quantified, the BYOD portion of CDP will remain in CDP at this time. Once BYOD is cost-effective, the Company may request Commission approval to move BYOD to Rider L.

[14] Case 16-M-0412, *In the Matter of Benefit Cost Analysis Handbooks*, Benefit Cost Analysis Handbook (filed August 22, 2016).

18,002 smartAC kit devices installed and the Company projects 21,000 enrolled devices by September 30, 2017 with a BCA of 1.89.

As for the second criterion, sufficient market potential, based on the expectation that the recent past growth levels will continue, the Company anticipates additional enrollment in upcoming years above current levels. The smartAC kit has experienced substantial annual growth in enrolled smartAC kit devices from program inception in 2011 to 2016. By September 30, 2017, the Company projects that the program will have grown approximately 81 percent from 2016 based on the number of enrolled thermostats. The Company forecasts continued growth going forward due to customer demand for these devices as well as growth potential because current estimates show that there are seven million window air conditioning units in the Company's service area with only 18,002 units enrolled in the program.

2. Changes to smartAC kit program under Rider L

If the request to move the smartAC kit to Rider L is approved, the Company requests elimination of the MW target and that the recovery of program costs be the same as any other offering through Rider L. The Commission approved a MW target for CDP in the January 2016 Order to help move the program from its pilot status to full program status. The Company anticipates that it will exceed the 2017 and 2018 two MW goal based on the expected 21,000 smartAC kits operational by September 30, 2017. As a tariffed offering that has already been proven cost-effective, the target is no longer necessary. The Commission has not imposed targets on any other demand response programs, including the residential and small business

demand response programs approved for other utilities through the Dynamic Load Management proceeding.[15]

The Company also proposes that smartAC kit costs be recovered through the existing recovery mechanisms for Rider L through the Monthly Adjustment Clause ("MAC"). If, based on the DLM Petition, the cost recovery mechanism for Rider L should change in the future, the costs associated with smartAC kit should follow such changes.[16] Regardless of the recovery mechanisms, the Company projects the cost per enrolled unit will decrease,[17] but that as more participants enroll the overall program cost will increase.

B. Changes to the Demand Response Tariff

In order to increase the penetration of Rider L offerings, the Company proposes two changes to Rider L to: (1) allow participation of tenants within buildings billed under Service Classification ("SC") 8, 12, and 13, or through the NYPA tariff,[18] which includes New York City Housing Authority ("NYCHA"); and (2) permit the Company to perform test events.

1. Participation of Tenants under SC 8, SC 12, SC 13, and NYPA Tariff

The Company believes that there are additional opportunities to increase program participation and seeks to broaden the applicability of Rider L to increase program participation

[15] Case 14-E-0423, *Petitions to Effectuate Dynamic Load Management Programs*, Order Adopting Dynamic Load Management Filings with Modifications (issued June 18, 2015) ("DLM Petition").
[16] The Company notes that under the existing recovery mechanisms, New York Power Authority ("NYPA") customers do not contribute to the cost recovery of Rider L costs. Under the Company's proposed *Dynamic Load Management Program Cost Recovery*, filed on October 6, 2016, in Case 14-E-0423, pending before the Commission, the Company proposes allocating a *pro rata* portion of Rider L program costs to NYPA.
[17] Current per enrolled unit costs include device enrollment and Event participation incentives, including the existing points and rewards structure; program marketing, including incentives such as refer-a-friend and reengagement bonuses; program administration; program equipment; evaluation, measurement and verification; technology integration; and market research and analytics.
[18] https://www.coned.com/_external/cerates/documents/PSC12-PASNY/PASNYPSC12.pdf

by including tenants of SC 8,[19] SC 12,[20] and SC 13[21] customers as well as customers and tenants of NYCHA buildings. Over 450,000 residential units within SC 8, SC 12, and SC 13 buildings, a population with a significant load, are currently ineligible to participate in the smartAC kit because there are not separate meters for each unit.[22] Additionally, the Company understands that NYCHA, as the landlord, does not provide a room air conditioner demand response offering to its tenants. Changing the eligibility requirements for Rider L to allow these populations to enroll would allow the new participants to receive incentive payments and reduce load even though they are not direct Con Edison customers.[23]

The benefits of peak reduction through enrolled devices from participants residing in SC 8, SC 12, SC 13, or NYPA buildings would accrue to all Con Edison customers through potentially reduced upward rate pressure due to reduced system peak demand as well as through increased societal benefits such as carbon reductions.[24]

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[19] Service Classification No. 8 Multiple Dwellings – Redistribution; Applicable to Use of Service for light, heat, and power for multiple dwellings where the Customer's initial requirements are expected to be in excess of 10 kilowatts, subject to the Common Provisions and Special Provisions of this Service Classification. (Schedule for Electricity Service Leaf 431).

[20] Service Classification No. 12 Multiple Dwelling Space Heating; Applicable to Use of Service for light, heat, and power used in a multiple dwelling in which the entire space heating requirements of the residential tenants are supplied by the use of electricity purchased from the Company subject to the Common Provisions and Special Provisions of this Service Classification (Schedule for Electricity Service Leaf 478).

[21] Service Classification No. 13 Bulk Power - Housing Developments; Light, heat, and power used in an apartment house development to which the Company provides service for the entire electrical requirements of the development, subject to the Common Provisions and Special Provisions of this Service Classification. (Schedule for Electricity Service Leaf 493)

[22] An estimated one million residential room air conditioners fall under SC 8, SC 12, SC 13, and NYPA, out of the total estimated seven million room air conditioners found within the Con Edison service territory

[23] The landlord would not be eligible to enroll and receive the incentives.

[24] If the Company's proposal is approved, customers billed under SC 8, SC 12, SC 13, or through the NYPA tariff, may enroll their building in Rider T and have tenants that have devices enrolled in Rider T. This would create a small possibility of customers receiving a double incentive as coincident reductions from Rider L participants would contribute to overall building reductions. Currently there are 2,901 master metered buildings in the Con Edison service territory under SC 8, SC 12, and SC 13, 675 of which have an interval meter (a requirement to participate in Rider T). The Company proposes to monitor such potential for dual participation under both Riders L and T, and if such instances arise to report on them and propose a method to appropriately address such instances in the 2018 annual DR report.

The Commission has approved similar instances permitting non-direct Con Edison customers to receive financial incentives from the Company. For example, NYPA customers (who are non-direct Con Edison customers) are eligible to enroll in Rider T[25] demand response programs and receive incentives. Moreover, electric vehicle owners who charge their vehicles within the Con Edison service territory may enroll in the Smart Charge New York Electric Vehicle Charging Program, as these participants, while not customers, provides load relief while within Con Edison territory.[26]

2. Permission for Test Events

The Company proposes to include "Test Events" in Rider L for the ability to test participant responses to the signal sent to a control device. Testing participant responses is generally part of DR or other similar programs. In fact, currently, under CDP, the smartAC kit program performs test events to engage and prepare participants for events, quantify response rates and demand reductions. Rider T - Commercial Demand Response also uses Test Events.

C. Continuing CDP Program

Finally, the Company requests continuation of the CDP to allow the Company to continue developing and piloting new technologies and approaches for connected devices for customers. The Company proposes to: (1) continue CDP as a testing ground and broaden the range of pilots and value streams which CDP targets consistent with the original RSAP; (2) modify the existing budget from $4 million per year to $12 million over three years; and (3) remove the existing CDP MW goals.

[25] https://www.coned.com/_external/cerates/documents/elecPSC10/GR24.pdf, see Leaf 268, Revision 3
[26] http://www.fleetcarma.com/smartchargenewyork/

1. Future CDP Programs

The Company plans to continue using CDP to pilot technologies. These pilots would be designed to achieve several goals that align with the Reforming the Energy Vision proceeding, [27] including continued funding of DR technologies with secondary benefits such as reducing energy and/or demand, lowering bills, fostering technologies, and animating markets that may provide system, customer, and environmental benefits. As more connected devices become commercially available, technologies that provide a combination of multiple benefits will provide greater value to the customer and the Company.

The Company's 2018 plans include: (1) investigating and piloting different connected technologies,[28] such as enhanced optimization algorithms for connected thermostats, connected lighting, connected refrigerators, and (2) testing and moving forward standards[29] to allow for greater adoption of connected devices. Future ideas include: (1) integration of additional devices or technologies, (2) testing Event reduction methodologies, (3) programmatic changes to

[27] Case 14-M-0101, *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision.*

[28] Two technologies that the Company intends to pursue are connected Packaged Terminal Air Conditioners (PTAC) and Ductless Mini-Split Heat Pumps (mini-split). PTACs are typically found in multifamily residential buildings in lieu of room air conditioners and can provide heating as well as cooling. Mini-splits are typically found in the outer boroughs of New York City and in Westchester County in single-family homes and in small businesses around the Service Territory. While mini-splits are more efficient than room air conditioners, they are more expensive to install. The Company is working to incentivize customers to install mini-splits where possible rather than window or through-the-wall air conditioners. Based on industry trends and research, manufacturers of PTACs and mini-splits will begin to offer connected models of their devices in the near future. Limited manufacturers are offering this technology now and the availability is projected to grow in 2018. Given the prevalence of these technologies in this area, and the Company's desire to increase adoption and installations of mini-splits, the Company will be investigating the integration of these two technologies into CDP. Mirroring the development and adoption of BYOD, the Company plans to leverage CDP to help animate the market to accelerate the adoptions of these technologies by customers and manufacturers.

[29] One standard which the Company plans to test and move forward is the CTA-2045 Modular Communication Standard, which is already designed to communicate with PTACS, mini-splits, pool pumps, heat pump hot water heaters, and electric vehicle charging stations. By leveraging CTA-2045, the Company will help see cost efficiencies in providing one control device for these technologies with the appropriate port. The Company has already started to evaluate and test the CTA-2045 standard with PTACs in 2017, and has plans to grow the adoption of connected PTACs using CTA-2045 in 2018 and 2019. Having a modular communication standard provides for greater customer choice between equipment manufacturers and a greater customer experience by being able to control their devices within a single platform.

improve cost-effectiveness of piloted technologies, (4) scaling up of technologies and methodologies based on market trends and customer response.

The Company proposes to share information related to new pilot programs offered under CDP, as they are developed, to Staff. Similar to this request, once a technology or service funded through CDP meets the January 2016 Order criteria, the Company would petition to move this technology or service from CDP into a new or existing tariffed program, *e.g.*, moving new cooling technologies into Rider L.

2. Costs associated with Continued CDP

To continue the CDP program, the Company proposes to recover funding at the existing level, capped at a total of $12 million over three years through 2020, *i.e.*, at an average of $4 million per year, which is consistent with the intra-year budget flexibility granted to utilities under the ETIP Order.[30]

CDP continues to be the appropriate program for the new pilots described in this petition, as the Company utilizes the CDP to test promising new demand response technologies that are potentially attractive to customers in the Company's service territory and that also provide other system benefits. As such, a distinct and dedicated budget for connected devices will continue to advance relevant connected technology pilots in an effective manner while also allowing the Company to implement other more established programs cost-effectively to the benefit of customers and the grid alike.

Building from the smartAC kit, the Company plans to follow a similar strategy to achieve cost-effectiveness for the innovative connected device technologies under the CDP. Based on

[30] Case 15-M-0252, *In the Matter of Utility Energy Efficiency Programs*, Order Authorizing Utility-Administered Energy Efficiency Portfolio Budgets and Targets For 2016 – 2018 (issued January 22, 2016).

past pilot experience, the Company estimates that the launch costs for a new technology offering for an initial 500 customers is approximately $500,000, on average. (This is the base cost for a pilot until a minimum enrollment level is realized for any technology platform.) Ramp-up costs for an additional 1,000 customers in year two and 5,000 new customers in year three typically range between $700,000 and $1.5 million in those years, respectively. By 2020, the Company anticipates piloting four new technologies through CDP, which will follow a similar budgetary trajectory of the smartAC kit program. Taken together, per the Company's preliminary cost estimates, roughly $12 million would be required for the launch and implementation of four pilots over the three year period, 2018-2020.[31]

CDP costs are currently recovered through the MAC based on actual expenditure levels. Therefore, should the CDP programs result in total expenses lower than $12 million over the next three years, customers will only pay for the amounts expended.

3. Removal of MW target

The Company requests approval to eliminate the annual MW target for CDP because it was created to address the specific circumstances of and experience with the smartAC kit. Because CDP will continue to use its existing "Test and Learn" process in piloting newer connected technologies and other innovative approaches, the Company cannot predict what offerings it may have and the expected participation or reduction levels that it may experience.

[31] Existing funding for CDP is $4 million per year through December 31, 2018. January 2016 Order, p. 4.

IV. Conclusion

For the reasons discussed above, the Company respectfully requests that the Commission approve the requests included in this petition and the concurrently-filed tariff changes to Rider L.

New York, New York
August 24, 2017

Respectfully submitted,

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OF NEW YORK, INC.

By its Attorney,

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