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Public Service**

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March 1, 2023

Honorable Michelle L. Phillips, Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223-1350

Re: 18-E-0138 – Proceeding on Motion of the Commission Regarding Electric Vehicle
Supply Equipment and Infrastructure.

Dear Secretary Phillips:

On April 24, 2018, the Public Service Commission (Commission) issued an order initiating a Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure Order. On July 16, 2020, the Commission approved the Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs (Make-Ready Order). The Make-Ready Order directed Department of Public Service Staff (DPS Staff or Staff) to initiate a midpoint review for the Make-Ready program by October 1, 2022, that will conclude with the presentation of recommendations to the Commission by January 4, 2023 which was later extended to March 1, 2023.

Please find the attached *Department of Public Service Staff Electric Vehicle Make-Ready Program Midpoint Review and Recommendations Whitepaper* which provide recommendations for modification to the Make-Ready Program and other programs for the Commission's consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read "Zeryai Hagos".

Zeryai Hagos
Deputy Director,
Office of Markets and Innovation
Department of Public Service
3 Empire State Plaza,
Albany, NY 12223



CASE 18-E-0138 – Proceeding on Motion of the Commission Regarding Electric Vehicle
Supply Equipment and Infrastructure

DEPARTMENT OF PUBLIC SERVICE STAFF
ELECTRIC VEHICLE MAKE-READY PROGRAM MIDPOINT REVIEW AND
RECOMMENDATIONS WHITEPAPER

March 1, 2023

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List of Abbreviations and Acronyms

BESS	battery energy storage system
BEV	Battery electric vehicle
CEWG	Customer Experience Working Group
CLCPA	Climate Leadership and Community Protection Act
CCS	combined charging system
DAC	disadvantaged community
DAC tier	100 percent incentive tier for eligible projects in DACs
DCFC	direct-current fast charging
DER	distributed energy resource
EAM	earnings adjustment mechanism
EV	electric vehicle
EVSE	electric vehicle supply equipment
FHWA	Federal Highway Administration
GHG	greenhouse gas
ISO	International Organization for Standardization
ISO 15118	A set of protocols that allows an electric vehicle to communicate with charging infrastructure
JU	The Joint Utilities of New York
JTWG	Just Transition Working Group
kW	kilowatt
\$/kW	dollar per kilowatt
kWh	kilowatt-hour
L2	level 2 charger
LIPA	Long Island Power Authority
LMI	low- to moderate-income
MHD	medium- and heavy-duty vehicle
MWBE	Minority- and Women-Owned Business Enterprise
MUD	multi-unit dwelling
MW	megawatt
NREL	National Renewable Energy Laboratory
NEVI	National Electric Vehicle Infrastructure
NYC	New York City
NYCHA	New York City Housing Authority
NYCSBUS	New York City School Bus Umbrella Services
NYSEG	New York State Electric & Gas
NYSERDA	New York State Energy and Research Development Authority
NYP&A	New York Power Authority
O&R	Orange and Rockland Utilities
OCPP	Open Charge Point Protocol

OJT	on-the-job training
Partial tier	Incentive tier for sites that do not meet all access requirements
PHEV	Plug-in hybrid electric vehicle
PSEG-LI	Public Service Enterprise Group - Long Island
Public tier	Incentive tier for sites that meet all accessibility requirements
SAPA	State Administrative Procedure Act
REDC	Regional Economic Development Council
RG&E	Rochester Gas & Electric
SDVOB	Service-Disabled Veteran-Owned Business
TSWG	Technical Standards Working Group
V2B	vehicle-to-building
V2G	vehicle-to-grid
V2H	vehicle-to-home
V2X	vehicle-to-everything
VGI	vehicle-grid integration
ZEV	zero-emission vehicle

Executive Summary

In the Make-Ready Order, issued on July 16, 2020, the Public Service Commission (Commission) directed the Department of Public Service Staff (DPS Staff or Staff) to commence a formal Midpoint Review of the Make-Ready Programs administered by the investor-owned electric utilities by no later than October 1, 2022. This Midpoint Review Whitepaper provides an overview of the Midpoint Review and identifies recommendations that DPS Staff and other Stakeholders identified to improve the Make-Ready Program.

Since the initiation of the Make-Ready Order the market for electric vehicles continues to evolve in New York State, as do advances in the analytical tools used to predict the future charging needs. The improved insight into the market, along with Stakeholder input, helped shape the Midpoint Review, and enabled Staff to identify the following proposed changes to the Make-Ready Program. Each recommendation is described in further detail in the Midpoint Review Whitepaper, and include:

- Increasing the budget from \$701 million to \$1.108 billion and updating the plug targets to a total of 43,122 L2 plugs and 6,302 DCFC plugs;
- Extending the deadline of the Make-Ready Program beyond January 1, 2025, if plug targets are not met;
- Creating a \$25 million micromobility make-ready program targeting Disadvantaged Communities (DACs);
- Modifying the DAC tier for L2 plugs to use premise-specific eligibility criteria for stations located in multi-unit dwellings (MUDs) and the addition of curbside charging as an eligible use case;
- Modifying the Medium- and Heavy-Duty (MHD) Pilot to increase the total budget to \$54 million as well as expanding eligibility to include EPA's Clean School Bus Program and customer-side costs; and
- Creating a Stakeholder process to address problems with the interconnection queue.

In the Midpoint Review Whitepaper, Staff also proposes to test the Electric Vehicle Supply Equipment (EVSE) by an independent third-party facility for compliance with OCPP version 1.6, or later, that has no proprietary extensions. Staff endorses increasing the site-specific limits for the future-proofing incentive, and adding the contact information for service providers, site hosts, and utility customer service on EV chargers so that EV users can contact the appropriate personnel if there are issues with the chargers. Moreover, in the Midpoint Review, Staff describes the minimum milestones necessary for a successful Transit Authority Make-Ready Program, proposes a process to modernize the fleet assessment application process, requests that quarterly updates be provided to load-capacity maps, and suggests continued collaboration with New York State Energy Research and Development Authority (NYSERDA) and the New York State Education Department to address school transportation electrification objectives.

Lastly, Staff requests Stakeholder feedback on the Midpoint Review Whitepaper, including the Make-Ready Program, and specifically on the (i) waitlisted interconnection applications; (ii) the cost and eligibility of fire suppression systems for micromobility charging sites; (iii) approaches to integrating DAC-focused workforce development; (iv) customer-side power

sharing; (v) site-specific budgetary limit on future-proofing; and (vi) the data collection and reporting process.

Introduction

Since the commencement of the Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure in 2018, the Commission has striven to support New York State's goals to reduce greenhouse gas emissions through the deployment of electric vehicle-related infrastructure. In pursuit of this goal, on July 16, 2020, the Commission an Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs (Make-Ready Order) in this proceeding. As part of the Make-Ready Order, the Commission directed the DPS Staff to commence a formal Midpoint Review of the Make-Ready Programs run by the large investor-owned electric utilities (the Utilities) by no later than October 1, 2022, and to provide its recommendations to the Commission by no later than January 4, 2023.¹ This filing deadline was later extended to February 1, 2023.² A second request extended the deadline to March 1, 2023.³

In the Make-Ready Order, the Commission stated that the Midpoint Review should, at a minimum, assess the following:⁴

1. Program budget and incentive levels.
2. The need for additional phases of the program.
3. Redirecting unused program funding to multi-unit dwellings and workplaces or redefining the accessibility criteria to include multi-unit dwellings and workplaces.
4. Revising the accessibility criteria, to include public pay-to-park lots.
5. Recalibrating the 50 percent utility-funded, make-ready level for private and proprietary technology types.
6. Revisiting future-proofing requirements and budgets.
7. Reviewing implementation requirements and budgets.
8. Utility ownership of charging station hardware.
9. Emerging plug standards.
10. Potential need for residential make-ready.
11. Modifications to performance incentives.

As discussed in the Make-Ready Order, the Climate Leadership and Community Protection Act (CLCPA) codified a target and objective related to the reduction of greenhouse gas emissions

¹ The large investor-owned electric utilities include Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas & Electric Corporation.

² 18-E-0138, Ruling on Extension Request (issued January 3, 2023).

³ 18-E-0138, Ruling on Extension Request (issued February 1, 2023).

⁴ 18-E-0138, Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs (Make-Ready Order) (issued March 19, 2020), p. 101.

in New York State.⁵ At the time the Make-Ready Order was issued, the Commission was confident that the electrification of the transportation sector would help attain the goals of the CLCPA. In the three years since the Make-Ready Order was issued, it has only become clearer to DPS Staff that the electrification of the transportation sector is paramount to the achievement of the goals of the CLPCA. DPS Staff is confident that the recommendations contained within this Whitepaper are consistent with the attainment of the statewide greenhouse gas emissions limits. To the extent that any of the recommendations specifically implicate the CLCPA, Staff has noted that.

Midpoint Review Commencement

The Notice of Meeting and Commencement of the Make-Ready Program Midpoint Review (Notice) was issued on August 30, 2022, informing stakeholders of the commencement of the Midpoint Review on September 20, 2022. The Notice included a series of questions designed to address the above-listed Midpoint Review topics, as required by the Commission.⁶

Stakeholder Technical Conferences

Staff convened four Stakeholder technical conferences during the Midpoint Review period. The technical conferences were intended to solicit additional relevant information, expanding on that which was collected from the responses to the Notice. The topics of the technical conferences were designed to obtain Stakeholder feedback and to take a deep dive into the complexities of the subject matter. The subjects of the four technical conferences were:

- 1) The Midpoint Review Kickoff Meeting;⁷
- 2) Overview of a National Renewable Energy Laboratory (NREL)/ NYSERDA Analysis of New York Statewide Charging Infrastructure and Incentive Baselines;⁸
- 3) Reporting Data and Vehicle to Grid Integration (VGI);⁹ and
- 4) Disadvantaged Communities (DAC) and Medium- and Heavy-Duty (MHD) programs.¹⁰

Overview of the Make-Ready Order

The Make-Ready Order established the light-duty Make-Ready Program, which incentivizes between 50 and 100 percent of eligible costs to make a site ready for Electric Vehicle (EV) charging. Eligible EV make-ready costs include infrastructure on the utility and customer sides of the meter, which is illustrated in Figure 1 below.

⁵ Environmental Conservation Law §75-0107.

⁶ These questions are included in Appendix B with the corresponding Stakeholder responses.

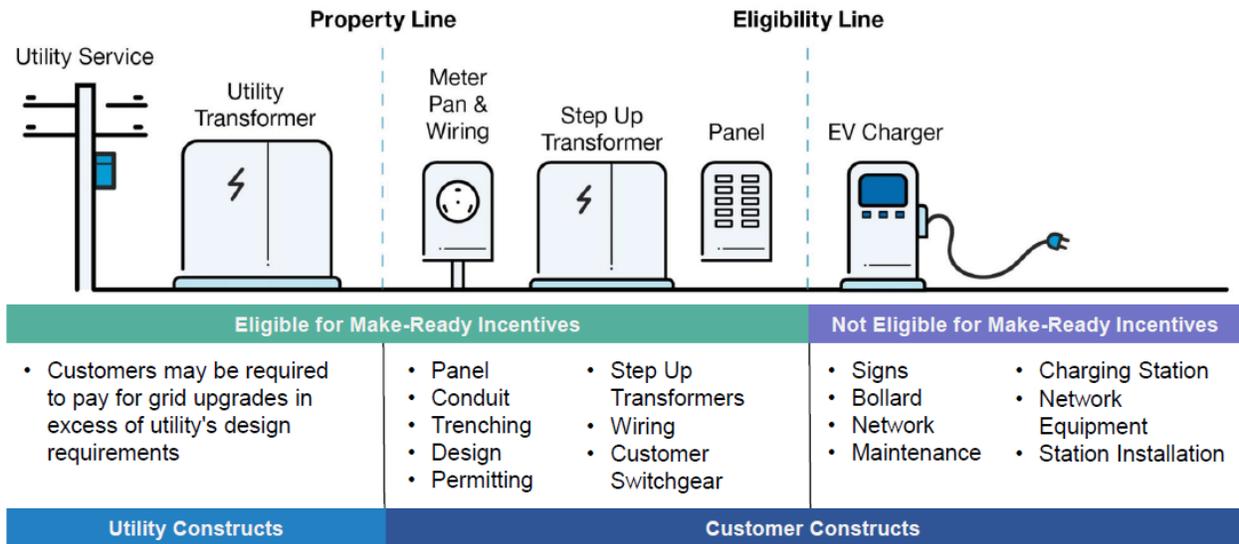
⁷ 18-E-0138, Midpoint Review Kickoff Meeting Presentation (filed September 20, 2022).

⁸ 18-E-1038, NREL/ NYSERA Study and Incentives Baseline Presentations (filed November 18, 2022).

⁹ 18-E-0138, Reporting Data and VGI Presentations (filed November 29, 2022).

¹⁰ 18-E-0138, DAC and Medium- and Heavy-Duty Vehicles Presentations (filed December 2, 2022).

Figure 1: EV Make-Ready Program Eligible Costs



Source: Joint Utilities of New York, November 18, 2022, EV Make-Ready Program Midpoint Review Technical Conference (image modified by DPS Staff).

The Make-Ready Order also approved additional programs that support the deployment of EV charging infrastructure that include the MHD Make-Ready Pilot Program, which funds utility-side make-ready infrastructure for MHD fleets, and the Fleet Assessment Services, which provide fleet operators with site feasibility and rate analysis. The Make-Ready Order also approved make-ready funding for four upstate transit authorities towards their 2025 electrification goals and three prize competitions that were designed to expand access to clean electric mobility solutions and reduce air pollution in DACs.

The directives in the Make-Ready Order apply to the investor-owned utilities in New York State, which include Central Hudson Gas & Electric Corporation (Central Hudson), Consolidated Edison Company of New York, Inc. (Con Edison), New York State Electric & Gas Corporation (NYSEG), Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), Orange and Rockland Utilities, Inc. (O&R), and Rochester Gas and Electric Corporation (RG&E), collectively, the Joint Utilities. Specific provisions of the Make-Ready Order also applied to New York Power Authority (NYPA) and Long Island Power Authority (LIPA).

Program Incentive Levels

The following incentive levels were approved in the Make-Ready Order: 1) up to 100 percent of eligible make-ready costs for publicly accessible Direct Current Fast Charging (DCFC) and Level 2 (L2) charging sites in multi-unit dwellings (MUD) within one mile of environmental justice areas in Con Edison's, Central Hudson's, O&R's, and RG&E's service territories, and

within two miles of DACs in NYSEG and National Grid’s service territories (DAC tier); ¹¹ 2) up to 90 percent of eligible make-ready costs for sites that meet all the applicable eligibility requirements (public tier); and 3) up to 50 percent of eligible make-ready costs for sites that do not meet all the applicable eligibility requirements (partial tier).¹²

Eligibility Criteria

Accessibility

In the Make-Ready Order, the Commission directed that DCFC and L2 stations must be publicly accessible and must accept common forms of payment in order to satisfy the accessibility criteria for the up to 90 percent incentive level. Sites considered to be publicly accessible must not charge an access fee or restrict access.¹³

Sites within an enumerated distance of a DAC qualify for a higher incentive of up to 100 percent.¹⁴ In the Make-Ready Order, the Commission noted that the 10-mile radius definition originally proposed in the 2020 Staff Whitepaper would qualify most urban areas in the state for full incentives and would therefore be ineffective in channeling program benefits directly to the intended beneficiaries of DAC incentives.¹⁵ As a result, the Commission established a narrower one-mile radius for predominately urban areas in Con Edison, Central Hudson, Orange & Rockland (O&R), and Rochester Gas & Electric (RG&E) service territories, and a two-mile radius for New York State Electric & Gas (NYSEG) and National Grid (with exceptions for urban areas in those territories where a one-mile radius would be more appropriate). The Commission established that twenty percent of the light-duty Make-Ready Program budget would be dedicated to DACs for both publicly accessible DCFC and L2 plugs at MUDs.

In February 2022, Con Edison filed a petition with the Commission requesting modifications to its Make-Ready Program, including a proposal to delineate eligible DACs without the one-mile radius originally established in the Con Edison service territory (informally known as “DAC+1” zones).¹⁶ In its petition, Con Edison argued that due to the dense urban environment

¹¹ Make-Ready Order, p. 46. In Con Ed’s service territory, this one-mile radius was later reduced to a zero-mile radius. See, Modifications Order p. 19.

¹² Make-Ready Order, p. 67.

¹³ Municipal paid parking lots are considered publicly accessible.

¹⁴ The Commission adopts the New York State Department of Environmental Conservation’s (DEC) definition of Environmental Justice: the fair treatment and meaningful involvement of all people regardless of race, color, religion, national origin or income with respect to the development, implementation, and enforcement of laws, regulations and policies affecting the quality of the environment. New York State Environmental Conservation Law §48-0103(3).

¹⁵ Case 18-E-0138, Department of Public Service Staff Whitepaper Regarding Electric Vehicle Supply Equipment and Infrastructure Deployment (filed January 13, 2020).

¹⁶ Case 18-E-0138, Petition of Consolidated Edison Company of New York, Inc. to Modify its EV Make-Ready Program to Improve Service to Disadvantaged Communities and Development of Fast Chargers (filed February 11, 2022) (Con Edison 2022 Petition).

of its service territory, the DAC+1 definition unintentionally qualified projects in adjacent, economically affluent areas for the higher incentives meant to serve disadvantaged areas. In its July 2022 Order Approving Modifications to Make-Ready Program, the Commission agreed with Con Edison that less broad geographical eligibility definitions should be applied in its service territory and therefore established a provisional “DAC+0 zone” thus eliminating the one-mile radius to allow Con Edison to focus remaining funding on communities in greatest need of higher incentive levels.¹⁷ In establishing this interim definition, however, the Commission ordered that this matter be addressed further during the Midpoint Review of the EV Make-Ready Program in order to allow for additional Stakeholder input.¹⁸

Station Maturity

The Commission stated that an eligible EV charging site must be considered “new,” which is defined as “construction commencing post-issuance of the Make-Ready Order.”¹⁹

Plug Type

In the Make-Ready Order, the Commission adopted an up to 90 percent make-ready incentive for standardized plug types, and further stated that any site that has a proprietary plug that is collocated with an equal number of commonly accepted standardized plug types of equal or greater charging capacity may receive an up to 90 percent make-ready incentive.²⁰ However, where a site with proprietary plug types is not collocated with an equal number of commonly accepted standardized plug types of equal or greater charging capacity, that site will receive the up to 50 percent make-ready incentive.²¹ The number of plugs eligible for incentives at sites with more than one plug should be the number of plugs capable of simultaneously charging at 50 kilowatt (kW) or greater. L2 stations that utilize the standard Society of Automotive Engineers (SAE) Electric Vehicle Conductive Charge Coupler J1772 and DCFC stations that utilize the standard SAE Combined Charging System (CCS) plug type are considered to be non-proprietary in the Make-Ready Program. Along with these program rules, the Commission continued to emphasize the importance of standardization and the need for collaboration among site developers with the expectation that as new plug types and charging site business models emerge, the criteria would be reexamined during Midpoint Review.²²

¹⁷ Case 18-E-0138, Order Approving Modifications to Make-Ready Program (issued July 14, 2022); (Modifications Order), p. 19.

¹⁸ Modifications Order, p. 19.

¹⁹ Make-Ready Order, p. 48.

²⁰ Make-Ready Order, p. 49.

²¹ Make-Ready Order, p. 50.

²² Make-Ready Order, p. 51.

Future-Proofing

Future-proofing is an opportunity to increase the growth potential of a site and save money on future expansion. It is common for sites to initially install a limited number of plugs with plans to increase the charging capacity as EV adoption increases. However, future-proofing expenses represent additional utility costs that are not tied to the quantity or charging capacity of plugs initially installed at a site. Therefore, the Commission directed the utilities to keep future-proofing costs as a separate line item of the Make-Ready Program budget and that the costs are capped at eight percent of each utility's overall Make-Ready Program budget.²³ The site-specific future-proofing cap was set at ten percent of the site-specific make-ready cost.²⁴

Location Capacity

In the Make-Ready Order, the Commission directed that a limited number of sites with two plugs will be eligible for the incentive for both DCFC and L2 charging sites.²⁵ For the five boroughs of New York City, the number of plugs at locations with two plugs cannot be more than 50 percent of the target number of plugs included in the program. In the rest of the state, no more than 25 percent of the target number of plugs to be developed should be at locations with two plugs.²⁶ The Commission initially limited participation from DCFC sites with more than ten plugs and/or demands more than 2 Megawatts (MW) to projects that do not cause the utility to incur new business costs that exceed the costs that would have been incurred to develop a site with a maximum demand of 2 MW and limited the total. Lastly, the number of plugs at locations with more than ten plugs cannot exceed 50 percent of the target number of plugs included in the program for each utility.

Program Budgets and Plug Targets

The Commission authorized a statewide make-ready budget of \$701 million through 2025 with corresponding statewide plug targets of 35,217 workplace L2, 18,556 Public L2, and 1,500 DCFCs. Table 1- Budgets and Plug Targets per Utility illustrates how the Commission delegated the make-ready budgets and plug count to each utility.²⁷

Table 1- Budgets and Plug Targets per Utility

	Consolidated Edison	Central Hudson	NYSEG	Niagara Mohawk	O&R	RG&E
Level 2 Plugs	18,539	3,204	9,279	15,728	2,845	4,178
Level 2 Budget	\$191,643,671	\$17,653,800	\$51,126,000	\$86,658,600	\$15,675,600	\$23,020,200
DCFC Plugs	457	69	250	504	71	149
DCFC Budget	\$42,015,747	\$3,487,000	\$12,628,000	\$25,459,500	\$3,586,000	\$7,529,500

²³ Make-Ready Order, p. 55.

²⁴ Make-Ready Order, p. 57.

²⁵ Make-Ready Order, p. 59.

²⁶ Make-Ready Order, p. 59.

²⁷ Make-Ready Order, Appendix B.

Incentive Budget	\$233,659,418	\$21,140,800	\$63,754,000	\$112,118,100	\$19,261,600	\$30,549,700
Futureproofing	\$18,692,753	\$1,691,264	\$5,100,320	\$8,969,448	\$1,540,928	\$2,443,976
Implementation & Fleet Assessment Service	\$35,048,913	\$3,171,120	\$9,563,100	\$16,817,715	\$2,889,240	\$4,582,455
Make-Ready Program	\$287,401,084	\$26,003,184	\$78,417,420	\$137,905,263	\$23,691,768	\$37,576,131
Transit Authority Make-Ready Program	\$2,960,000	-	-	\$5,090,000	-	\$1,950,000
Total	\$290,361,084	\$26,003,184	\$78,417,420	\$142,995,263	\$23,691,768	\$39,526,131

The \$701 million statewide budget includes additional funding to address the disproportional environmental impact of diesel transit in DACs and the needs of underserved communities, directing the utilities to implement a \$10 million make-ready program for the Upstate Transit Authorities and a \$15 million MHD Make-Ready Pilot Program. The Commission also directed NYSEDA to develop three prize competitions in DACs with the following funding levels: 1) \$40 million to Environmental Justice Community Clean Vehicles Transformation Prize Pilot; 2) \$25 million to the Clean Personal Mobility Prize; and 3) \$20 million to MHD Competitive Pilot.²⁸ These additional programs are described in further detail, later in this section.

Cost Recovery

Plugs developed under the Make-Ready Program are eligible to receive up to 100, 90, or 50 percent of eligible developer make-ready costs, depending on location and eligibility requirements. There are two categories of make-ready costs associated with plugs developed under the Make-Ready Program: (1) utility-owned make-ready; and (2) customer-owned make-ready. The Make-Ready Order directed that utility-owned make-ready work, including work related to future-proofing utility infrastructure, shall be treated as capitalized plant in service with cost allocation and recovery via traditional ratemaking methodologies, through an existing surcharge, recovered from all customers, until the costs can be recovered through rates.²⁹ Incentives paid for customer-owned make-ready work, including work related to future-proofing customer facilities, shall be recovered from all customers, and included in base rates as a regulatory asset after the Make-Ready Program terminates and total costs are known.³⁰

Performance Based Regulation

The Make-Ready Order developed an Earnings Adjustment Mechanism (EAM) that is tied to incentivizing EV charging infrastructure at least cost, stating that customers will benefit from both the anticipated increase in penetration from EVs themselves and benefit by decreasing

²⁸ Make-Ready Order, p. 136.

²⁹ Make-Ready Order, p. 78.

³⁰ Make-Ready Order, p. 79.

expenditures below the currently forecasted budget amounts.³¹ The EAM structure adopted from the Make-Ready Order is a positive-only “share-the-savings” EAM and consists of two components: 1) L2 EAM metric and 2) DCFC EAM metric. The L2 EAM metric is calculated as 30 percent of the difference between: (1) the baseline incentive cost forecast per plug multiplied by the population of plugs incented as part of the program; and (2) the actual incentives provided by the utility.³² The DCFC EAM metric is calculated as 30 percent of the difference between: (1) the product of the baseline incentive cost forecast per kW of charging capacity and actual kW charging capability achieved; and (2) the actual program incentive costs provided by the utility.³³ In order to earn the incentive the utility must install a specified minimum number of applicable plugs and the incentives are capped at a combined maximum of 15 basis points.³⁴ The Commission directed Staff to examine the utilities’ performance during the Midpoint Review and if the utilities are performing poorly then to recommend the implementation of a negative revenue adjustment.³⁵ The share-the-savings EAMs are complimented by EAMs approved in rate cases that provide shareholder incentives for high levels of EV deployment, which should encourage a balanced approach managing the costs of the EV Make-Ready program and providing the company with an reward for advancing applications that support greater EV adoption.

Utility Role

While the customer-sited and customer-owned make-ready infrastructure and EVSE are eligible for make-ready incentives, the utilities are barred from ownership of the infrastructure. This moratorium on utility ownership of EV charging infrastructure is consistent with long-standing Commission policy that excludes utility ownership of distributed energy resources (DER).³⁶

New York Power Authority Eligibility

In the Make-Ready Order, the Commission determined that building the necessary network of EV chargers across New York State will require investment in certain areas that would likely be overlooked by a private sector provider.³⁷ Therefore, the Commission concluded that New York Power Authority (NYPA) is eligible to access Make-Ready Program incentives. Specifically, the Commission authorized NYPA access to build ten fast charging locations in every regional economic development council (REDC) by 2022 and to invest in fast charging locations

³¹ Make-Ready Order, p. 84.

³² Make-Ready Order, p. 88.

³³ Make-Ready Order, p. 88.

³⁴ Make-Ready Order, p. 89.

³⁵ Make-Ready Order, p. 90.

³⁶ Make-Ready Order, p. 32.

³⁷ Make-Ready Order, p. 38.

to build out a robust network of DCFC under NYPA's Evolve NY program. Both initiatives are capped at \$15 million for a combined budget limit of \$30 million.³⁸

Application Portal

In the Make-Ready Order, the Commission directed the utilities to develop an online EV Infrastructure service application portal.³⁹

Program Review

In the Make-Ready Order, the Commission directed Staff to conduct a formal Midpoint Review, to begin no later than October 1, 2022. To conduct the formal review, Staff and the Commission required periodic program progress reports to be submitted by the Joint Utilities (JU). The information contained in the progress reports was broken down into two categories: information provided by the JU and information provided by the site owner.

The first set of information was that which was primarily within the JU's responsibility.

- 1) Reporting period program participation information:
 - a. the percent of service applications that have matured into operating sites,
 - b. number of site owners participating,
 - c. the number of sites for which incentives were issued,
 - d. the number of plugs installed, and
 - e. infrastructure costs incurred.
- 2) Utility system and billing information for each site:
 - a) 15-minute interval data,
 - b) load profiles for the site's for the top ten demand days of each year, and
 - c) utility bills.⁴⁰

The second set of information was that which was primarily within the developer or site owner's responsibility. The dissemination of the data was tied to incentives; that is, if a party failed to provide the data, they would be subject to a claw back of the incentives or revocation of service.⁴¹

- 3) Plug and charging session data:
 - a) the number of sessions daily,
 - b) start and stop times of each charge,
 - c) the amount of time each vehicle is plugged in per session,
 - d) peak kW per charging session,
 - e) kWh per charging session, and
 - f) plug outage information.

³⁸ Make-Ready Order, p. 39.

³⁹ Make-Ready Order, p. 95.

⁴⁰ Make-Ready Order, pp. 104-5.

⁴¹ Make-Ready Order, p. 107.

- 4) Financial information:
 - a) fee structure (structure of fee to the end-use customer, i.e., cost per minute, cost per kWh, cost per session and whether the site owner is providing charging for free),
 - b) charging revenues derived, and
 - c) operating costs, which should include energy-related costs and non-energy-related costs separately identified.⁴²

Additional information required by the Commission was related to uptime requirements. The Commission directed program participants to certify to specific program uptime requirements: DCFC Plugs must be operational 95 percent of the time on an annual basis and DCFC sites must be operational 99 percent of the time on an annual basis, with a minimum of half of the plugs operational to be considered “up.”⁴³ The Commission directed the performance of these metrics to be revisited at the Midpoint Review.⁴⁴

In order to ensure public funds flow to responsible developers, the Commission requires each Make-Ready Program participant to actively operate the chargers and provide the above-referenced data for a minimum of five years.⁴⁵

Finally, the Commission required participating developers to report customer complaints to the appropriate utility and Staff.⁴⁶ It is Staff’s responsibility to monitor customer complaints for egregious behavior and report any such instance to the Commission for appropriate action. Staff was also directed to convene the EV Charging Customer Experience Working Group in order to get direct customer feedback, as discussed below.⁴⁷

Technical Standards

The Make-Ready Order directed Staff to convene a Technical Standards Working Group (TSWG) whose focus would be on discussing how to incorporate emerging technical standards and best practices into the Make-Ready Program. The TSWG was required to include the Department of Agriculture and Market’s Bureau of Weights and Measures, NYSERDA and other appropriate New York State agencies.⁴⁸

Customer Experience

The Make-Ready Order directed Staff to convene an EV Charging Customer Experience Working Group (CEWG) to examine drivers’ experience with existing consumer protections, complaint procedures, and issues related to price transparency at EV charging sites. The

⁴² Make-Ready Order, pp. 104-6.

⁴³ Make-Ready Order, pp. 107-8.

⁴⁴ Make-Ready Order, pp. 107-8.

⁴⁵ Make-Ready Order, p. 108.

⁴⁶ Make-Ready Order, p. 109.

⁴⁷ Make-Ready Order, p. 109.

⁴⁸ Make-Ready Order, p. 111.

Commission directed the CEWG to leverage data contained in utility annual reports and Stakeholder input to find ways of improving the EV charging customer experience.⁴⁹

System Planning and Mapping

To provide the developer community the best available information about expected grid constraints and least cost locations for new charging site development, the Commission directed the utilities to develop suitability criteria to identify potential EV charging sites; suitability criteria includes load serving capacity, EV charging infrastructure forecasts, and strategic locations.⁵⁰ The utilities were directed to develop EV charging infrastructure forecasts that align with their capital planning processes and publish load serving capacity maps for EV charging no later than December 31, 2020.⁵¹

Managed Charging and Vehicle-to-Grid Integration

The Commission ordered Staff to organize a Stakeholder process for interested parties and other New York State agencies to discuss managed charging and vehicle-to-grid integration.⁵² This group was intended to work towards identifying vehicle-to-grid integration action items for the Midpoint Review.⁵³ The Commission also directed the utilities to file active and passive managed charging programs, to be reviewed by the managed charging and vehicle-to-grid Stakeholder group. The managed charging programs were adopted in July 2022 and are set to be rolled out in 2023.⁵⁴

Fleet Assessment Service

The Commission directed the utilities to offer Fleet Assessment Services for light-, medium-, and heavy-duty fleet operators.⁵⁵ The Fleet Assessment Services shall begin with a site feasibility and rate analysis and should be based on the maximum power draw of the electrified fleet under consideration to determine if the local distribution system can accommodate the increased load. The site feasibility analysis should include all planned utility work on the distribution system both nearby and on the infrastructure serving the existing site, to find cost-

⁴⁹ Make-Ready Order, pp. 111-12.

⁵⁰ Make-Ready Order, p. 116.

⁵¹ Make-Ready Order, p. 119.

⁵² Make-Ready Order, p. 124.

⁵³ Make-Ready Order, p. 124.

⁵⁴ Case 18-E-0138, Order Approving Managed Charging Programs with Modifications, (issued July 14, 2022) (Managed Charging Order).

⁵⁵ Make-Ready Order, p. 128.

saving synergies that may exist.⁵⁶ Additionally, the Commission directed the JU to design a customer satisfaction survey for those who participated in the Fleet Assessment Services.⁵⁷

Medium-and Heavy-Duty Fleet Make-Ready Pilot (MHD Pilot)

In the Make-Ready Order, the Commission directed Con Edison to design its Medium- and Heavy-Duty Fleet Make-Ready Pilot Program to mimic its Fleet DCFC Make-Ready Program approved in its 2020 rate filing.⁵⁸ Central Hudson, NYSEG, National Grid, O&R and RG&E were directed to develop Medium- and Heavy-Duty Fleet Make-Ready Pilot Program implementation plans in consultation with Staff.⁵⁹ The Commission explained that the Medium- and Heavy-Duty Fleet Make-Ready Pilot Program must support a direct reduction of diesel emissions located in environmental justice communities through electrification of the medium-duty/heavy-duty vehicles/trucks and that in order to qualify for the program participants must receive support through the New York Truck Voucher Incentive Program.⁶⁰

Additional Transit Authority Make-Ready Support

The Commission directed the utilities to provide transit authorities with make-ready support. Con Edison to partner with Westchester County Bee-Line Bus System \$2.96 million allocation National Grid to partner with Capital District Transportation Authority and Niagara Frontier Transportation Authority (\$5.09 million allocation), and RG&E to partner with Rochester-Genesee Regional Transit Authority (\$1.95 million allocation) to make ready bus depots for electric vehicle charging.⁶¹ The purpose of these partnerships was to address emissions reduction and public health benefits of electrifying public transit for DACs.⁶²

Additional NYSERDA-Led Environmental Justice Programs

In addition to the initiatives to electrify vehicle and truck fleets within DAC areas, the Commission directed NYSERDA to propose and administer the Environmental Justice Community Clean Vehicles Transformation Prize (\$40 million), the Clean Personal Mobility Prize (\$25 million), and the Clean Medium- and Heavy- Duty Innovation Prize (\$20 million) designed

⁵⁶ Make-Ready Order, p. 128.

⁵⁷ Make-Ready Order, p. 129.

⁵⁸ Make-Ready Order, p. 130; See also, Case 19-E-0065, Con Edison – Rates, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plan (issued January 16, 2020).

⁵⁹ Make-Ready Order, p. 130.

⁶⁰ Make-Ready Order, p. 131; The New York Truck Voucher Incentive Program provides funding for between 80 percent and 100 percent of the incremental cost between a new diesel-powered truck and a new battery-powered vehicle of the same type and class. See NYSERDA, Truck Voucher Incentive Program, <https://www.nyserda.ny.gov/All%20Programs/Programs/Truck%20Voucher%20Program>.

⁶¹ Make-Ready Order, p. 133.

⁶² Make-Ready Order, p. 132.

to prioritize emissions reductions in DACs.⁶³ These prize competitions were later rebranded as the New York Clean Transportation Prizes and the three individual prizes were respectively named the Clean Neighborhood Challenge, the Electric Mobility Challenge and the Electric Truck & Bus Challenge.

Summary of Utility Program Performance

In the Make-Ready Order, the Commission authorized make-ready incentives for customer and utility side work to support a five-year program goal of 1,500 DCFC plugs and 53,773 L2 chargers. As of the Midpoint Review, the utilities, in response to an interrogatory request, provided information on the plug progress of their programs to date which is summarized in Table 2.

Table 2 - Progress to Plug Goals

	Central Hudson	Con Edison	National Grid	NYSEG	O&R	RG&E
Count of Projects L2						
L2 Completed	133	947	1,517	298	113	219
L2 Committed	365	7052	1,052	118	523	138
L2 Committed and Completed	498	7,999	2,569	416	636	357
Program L2 plug goal	3,204	18,539	15,728	9,279	2,845	4,178
% towards program goal ⁶⁴	16	43	16	4	22	9
Count of Projects DCFC						
DCFC Completed	12	55	112	27	2	9
DCFC Committed	56	172	111	21	47	6
DCFC Committed and Completed	68	227	223	48	49	15
Program DCFC plug goal	69	457	504	250	71	149
% towards program goal	99	50	44	19	69	10

Midpoint Review and Staff Recommendations

This Midpoint Review allows for the Commission to reevaluate and implement any modifications to the programs as established in the Make-Ready Order. In order to assist in this reevaluation, Staff and Stakeholders worked in conjunction to reflect on and assess the course of the Make-Ready Program so far. First, by considering the current utility program performance. Second, by acquiring Stakeholder input from a series of questions and technical conferences designed to gain insight and acumen into, among many things, the Make-Ready Program's administration, practical applications, and the varying needs of each of the utilities' unique territories and DAC areas.

⁶³ The awardees were announced on November 16, 2022 and can be viewed at New York Clean Transportation Prizes, www.nycleantransportationprizes.org.

⁶⁴ Provides the program progress of the of number of plugs completed and committed as a percent of program's five-year goal.

Below are the topics the Commission asked Staff to examine during the Midpoint Review. Each topic includes a brief summarization of the affiliated Stakeholder responses and is followed by a Staff recommendation for program modifications, if needed.

Program Budget

Baseline Costs

The Make-Ready Order determined per-plug average costs for L2 chargers to be \$11,298 within Con Edison's service territory, and \$6,000 for all other utilities' territories.⁶⁵ The per-plug average costs for DCFCs was determined to be \$100,109 in Con Edison's service territory, and \$55,000 for all other utilities' territories.⁶⁶

In response to Staff questions, AEE ACENY state that the biggest challenge to program implementation is that project costs tend to be higher than the baseline estimates, contributing to the cancelation of projects, and recommend re-calculating program budgets based on updated costs. Fermata mentions that DCFC costs have decreased since the start of the program and that the funding should continue. AEE ACENY, ATE, and NYPA state that inflation and supply chain issues have affected all aspects of constructing EV charging sites. ATE suggests increasing the budget using per kW of capacity. ChargePoint, Revel, and SWITCH recommend increasing the incentive program budget to reflect actual average costs as incurred. Furthermore, the City, EDF, Joint Commenters, and the JU endorse recalculating the baseline costs so that the costs are more in line with what the current market indicates. Tesla also advocates for an increase in incentives for private access and proprietary technology sites. NYPA states that, while the current incentive levels remain appropriate, the number of L2 and DCFC chargers for upstate utilities should be reevaluated. ChargePoint advises for a modified program that covers 90 percent of the cost of a L2 charger and a maximum per-port incentive up to \$15,000 in Con Edison's territory and up to \$8,000 in the other territories.

Staff Recommendation

After reviewing historic data from the Make-Ready Program and Stakeholder comments, Staff finds that the per-plug averages from the Make-Ready Order were insufficient. Staff recommends that the baseline per plug cost be adjusted based on a historic data using a weighted average of reported costs from the Make-Ready Program. Based on information gathered by utilities from the Make-Ready Program, the average per plug cost for L2 chargers is, and should be adjusted to \$6,396 upstate and \$15,473 downstate. Staff also recommends that the per-plug average cost for fast charging should be updated to reflect a cost per kW range based on reported costs by utility, with costs ranging from \$724 to \$1,350 per kW. For a 150 kW charger costs by utility fall within the range of \$108,000 to \$202,000. Further information on the breakdown of per plug costs can be found in Appendix C.

⁶⁵ Make-Ready Order, p. 74.

⁶⁶ Make-Ready Order, p. 74.

Updated Plug Projections

Since the initial Make-Ready Order, Staff worked with NYSERDA and NREL, to conduct an updated and thorough analysis of the charging infrastructure needed to meet the State's goal of having 850,000 light-duty ZEVs deployed in New York by 2025.⁶⁷

In the initial analysis conducted for the Make-Ready Program, Staff used NREL's publicly available Electric Vehicle Infrastructure Projection Tool (EVI-Pro Lite). The initial analysis using EVI-Pro Lite modeling data found that 1,500 additional DCFC and over 50,000 additional L2 chargers would be needed to support the State's ZEV deployment goals. The simulation data approximated that 65 percent of those L2 chargers would be located at workplaces and 35 percent in public locations.

For the Midpoint Review, NREL completed a subsequent analysis using the more powerful EVI-Pro model tailored specifically to New York State that included new projections of residential charging availability, growing demand of for-hire vehicles, the proliferation of longer range EVs and advances in the availability of higher capacity fast charging.⁶⁸ The previously used EVI-Pro Lite model forecast used for the Make-Ready Order had assumed a nominal Battery Electric Vehicle (BEV) driving range of 100 to 250 miles; the updated EVI-Pro model increases the assumed driving range up to 230 to 330 miles to account for the prominence of longer-range BEVs in the US automotive market in 2023. The revamped EVI-Pro tool also takes into consideration larger sized vehicles (SUVs, pickup trucks, and vans) that were not part of the original analysis. These larger vehicles comprise 45 percent of the statewide light duty fleet. Both the updated nominal driving range and the inclusion of larger passenger vehicles elevate the need for fast charging.

The EVI-Pro Lite forecast used in the Make-Ready Order assumed that 57 percent of residents in New York City and 82 percent of residents outside of New York City have some access to residential charging.⁶⁹ The most recent forecast assumes that the early adopters, who purchase ZEVs through 2025, will tend to have greater access to residential charging options than the population at large; the forecast indicates that 77 percent of the early adopters in New York City and 95 percent of the early adopters outside of New York City have access to residential

⁶⁷ In 2013, Governor Cuomo signed onto the Multi-State Zero Emissions Vehicle Memorandum of Understanding (ZEV MOU). For the eight states that are participating, the ZEV MOU establishes a collective goal of 3.3 million Zero Emissions Vehicles on the road by 2025. New York State's allocation of this goal is 850,000 Zero Emission Vehicles registered in New York State by 2025. The text of the ZEV MOU can be found at the following link: <https://www.nescaum.org/documents/zev-mou-8-governors-signed-20131024.pdf>.

⁶⁸ During the November 18, 2022 Technical Conference, NREL presented a summary of their analysis, including updates, key assumptions, and results. Case 18-E-0138, NREL NYSERDA EVI-Pro (filed November 18, 2022).

⁶⁹ Make-Ready Order, p. 26.

charging.⁷⁰ The increase in assumed residential charging access leads to a decrease in the projected demand for non-residential L2 charging in the revised forecast.

Finally, the EVI-Pro Lite analysis in the Make-Ready Order assumed all EV drivers maximized their electric Vehicle Miles Traveled (eVMT), which suggests that Plug-in Hybrid Electric Vehicle (PHEV) owners are assumed to be using the electric motor as much as possible minimizing the use of the gasoline motor. The updated EVI-Pro forecast considers a mix of charging behaviors, informed by driver surveys, including the assumption that half of PHEV drivers do not charge outside the home and that 10 percent of BEV drivers use DCFC charging over all other charging options. Although the assumed charging behavior for the majority of drivers minimizes charging costs and maximizes eVMT, the assumptions described in this paragraph result in a net decrease in L2 demand and an increase in DCFC demand.

The updated EVI-Pro analysis includes refined assumptions on driving behavior, at-home charging access and technological advances, and results in high and low plug requirement scenario forecasts for both L2 chargers and DCFCs. Staff established a midpoint of the high and low forecasts for each plug type using the average of the two forecasts (midpoint forecast), resulting in a total of 6,302 DCFC and 19,293 workplace and public L2 plugs needed to support the State's 2025 goals. In addition, NREL conducted an analysis of residential charging access which resulted in the change to the assumed percentage of early adopters with residential charging access described earlier in this section. The residential charging access assumptions include approximately 44,300 L2 plugs for MUDs statewide by 2025, some of which are likely to require financial support.

Overall, using the midpoint forecast from the EVI-Pro analysis and incorporating NREL's MUD analysis results in an incremental increase in the number of plugs required compared to the amounts established in the Make-Ready Order. Based on the revised forecast, an additional 4,802 DCFC plugs and up to an additional 9,872 L2 plugs will be needed statewide. The increase in L2 plugs is driven by MUD charging access, which was not explicitly accounted for in the initial Make-Ready Order analysis.

Staff Recommendations

Staff recommends increasing the make-ready budget to reflect the updated EVI-Pro forecast and NREL's additional residential charging access analysis that further refines charging infrastructure needs. Considering that MUD was not initially factored into the Make-Ready Order plug goals and budget, Staff recommends adding a MUD L2 plug goal of 23,830 that is included in the total Midpoint Review L2 plug target of 43,122. In the NREL forecast, the incremental increase in DCFC plugs is 4,802 statewide, with the revised DCFC plug target of 6,302 statewide. The total proposed budget amount is \$1,108,597,912, an incremental increase of \$407,603,062

⁷⁰ The residential charging access assumptions include adopters who live in MUDs and single-family homes. Of the 77 percent of adopters in New York City with access to at-home charging, 36,553 are assumed to be residents in MUDs. Of the 95 percent of adopters with access to at-home charging outside of New York City, 7,799 are assumed to be residents in MUDs.

from the Make-Ready Order. In the Midpoint Review budget, \$503,348,547 is allocated to DCFC make-ready costs and \$282,155,825 is allocated to L2 make-ready costs.

The proposed budget reflects the incremental increase in plugs needed to reach the State’s 2025 ZEV target relative to the plugs currently completed and/or committed in the Make-Ready Program. The DAC budget would also be updated to reflect the revised plug counts (as described in the subsequent section).

The utilities should be directed to adjust project level payments to achieve the updated plug goals within the constraints of the new budget and the eligible cost thresholds. Staff recommends that public DCFC currently eligible for the public tier receive a reduced incentive tier of up to 75 percent of eligible costs for the downstate utilities (Con Edison and O&R). The proposed incentive tier updates are outlined in Table 3 and further details on DAC eligibility are described in the “Disadvantaged Communities” section. Further cost containment measures adopted in the proposed budget are summarized in Appendix C.

Table 3 -Proposed Incentive Tier Update

	Partial Tier	Public Tier		DAC Tier
Incentive Tier Level	Up to 50%	Up to 75%	Up to 90%	Up to 100%
Make-Ready Order	Non-publicly accessible sites and proprietary technology		Publicly accessible and non-proprietary technology	DAC Eligible Plugs
Midpoint Review Whitepaper Proposal	Non-publicly accessible sites and proprietary technology	Downstate publicly accessible and non-proprietary technology	Upstate publicly accessible and non-proprietary technology	DAC Eligible Plugs

Based on the updated analysis, reaching these updated plug targets will be necessary to support the State’s EV adoption goals. However, given the uncertainty around market conditions, supply chain issues, and labor shortage, Staff recommends that authorization to continue the Make-Ready Program expenditures remain in place either (1) through December 31st 2025 if a utility has met its plug goals, or (2) until the authorized program budgets are fully depleted if the utility’s plug goals have not been met.⁷¹

Administration Budget

In the Make-Ready Order, the utilities were directed by the Commission to provide estimated incremental administrative costs for the management of the Make-Ready Program in

⁷¹ In the event that a utility does not meet its plug goals by December 31, 2025, but is later able to meet such goals without having expended the full authorized budget, the remaining unspent budget should be retained for ratepayer benefit.

their implementation plans.⁷² The Commission determined that such incremental costs were to be inclusive of costs of the Fleet Assessment Service, were not to exceed 15 percent of each utility's Make-Ready Program budget, and would be examined at the Midpoint Review.⁷³ As of this Midpoint Review, it appears that no utility created administration budgets above the 15 percent as directed by the Make-Ready Order. However, there are some discrepancies with the administrative budget reporting from Central Hudson, NYSEG and RG&E. These utilities are reporting administrative budget amounts that differ between their respective implementation plans that were filed on September 14, 2020 and the interrogatory response filed on December 21, 2022. Notwithstanding this discrepancy, the administrative spending is approximately at 27 percent of the approved administrative budget for Con Edison and 43 percent for Central Hudson. NYSEG and RGE's midpoint administrative budget spending are at 29 and 28 percent, respectively; O&R reports 50 percent.⁷⁴

The reporting data included actual administration budget spending as well as its forecasted spending and the budget was allocated by specific cost categories: incremental staffing, education and outreach, information technology requirements, fleet assessment service, and evaluation.

Staff Recommendation

Staff recommends keeping the administration budget at 15 percent of the program incentive budget, as defined in the 2020 Make-Ready Order. As of this Midpoint Review, all utilities' program administration costs range between 16 percent and 50 percent of the total program administration budgets. This indicates that the utilities are managing their administrative budgets within the Make-Ready Order's requirement, with all but one utility (O&R) below 50 percent spending at the midpoint of the program. Staff advocates for the continued monitoring of the administration budgets in each of the utilities' implementation plans and recommends the use of cost categories that are consistent across all utilities and include separate line items that contain the costs for incremental staffing, education and outreach, information technology requirements, data collection and management, fleet assessment service staffing and general implementation costs, and evaluation. Staff recommends the JU create uniform definitions of the cost categories so that each utility is reporting the administrative cost categories and entries consistently and clearly in the implementation plans. Staff also recommends updating the implementation plans on a semi-annual basis if no modifications are generated, or immediately when modifications are generated.

Waitlisted Applications / Application Process

In the Make-Ready Order, the Commission declined to adopt a standardized interconnection procedure and enforceable timelines for EV supply equipment, citing the need for flexibility to quickly scale the program and the lack of data or experience to create a defined

⁷² Make-Ready Order, p. 75.

⁷³ Make-Ready Order, p. 75.

⁷⁴ Interrogatory Request DPS-1 LMR, received December 21, 2022.

process like the Standard Interconnection Requirements (SIR).⁷⁵ The Commission also directed the JU to develop an EV infrastructure service application portal that allows for the required documentation to be uploaded, and all payments clearly documented.⁷⁶ The application portal development is designed to capture information needed for both L2 and DCFC applications, including, among other things, a description of the project, the number of plugs, charging output and plug type of each, location, project application status, the steps that have been completed and the steps that are outstanding, the corresponding completion/deadline dates, acting party, and the status of all amounts paid and/or due to the utility by the applicant.

In response to Staff questions, the City comments on Con Edison's existing queue of projects and recommends: 1) improving the transparency of available incentives; 2) maintaining existing incentive levels and eligibility requirements; 3) implementing defined time periods and decision points for projects in the queue. EVgo recommends that all utilities employ the same, clear methodology for reviewing waitlisted applications. EVgo and Tesla advocate for more transparency into program progress on the JU's website, with updates on the number of applications submitted, as well as the number of committed and completed projects.

Staff Recommendation

Given there is a lack of transparency into the project maturity in the interconnection queue, and concerns that early stage and stalled projects may be contributing to a backlog of applications, Staff recommends that the utilities and project developers address project procedures from both sides of the interconnection process. Therefore, Staff is advocating for a Stakeholder process that is similar to the Interconnection Technical Working Group and Interconnection Policy Working Group, both of which were effective at curing the backlog of Distributed Energy Resource (DER) applications into the interconnection queue. Project developers, utilities, and other interested parties could develop a coordinated interconnection framework by identifying project rules, milestones, flexibility, and transparency in such a Stakeholder process. Staff additionally recommends that the Commission direct the utilities to improve the transparency of the interconnection process and is soliciting feedback on a process and rules that can address and eliminate the project backlog that occurs when some projects cease to move forward in the queue. Staff also recommends that the data that is on the service application portal be transparent to users and be updated on a monthly basis.

Disadvantaged Communities

Budget

In February 2022, Con Edison filed a petition requesting modifications to the company's Make-Ready Program to address an oversubscription of DCFC and L2 projects eligible for DAC-

⁷⁵ Make-Ready Order, p. 97.

⁷⁶ Make-Ready Order, p. 95.

tier incentives that led to the early depletion of the Company’s DAC-tier budget.⁷⁷ In the petition, Con Edison requested \$54 million of additional funding to bring the share of its Make-Ready Program budget available for DAC-tier incentives from 20 percent to 35 percent. The Commission denied Con Edison’s request for additional funding, stating that additional support for charging infrastructure in DACs would be addressed with more thorough consideration and Stakeholder involvement during this Midpoint Review.⁷⁸

In response to Staff questions, Fermata and the JU comment in support of increasing the share of the Make-Ready Program budget dedicated to DACs from 20 percent to 35 percent for all utilities to align with the Climate Leadership and Community Protection Act (CLCPA). AEE ACENY supports higher incentives for DACs and states that the higher incentive can deliver infrastructure upgrades to communities where existing, often older, building stock may require additional and costly electrical upgrades.

At the Disadvantaged Communities and Medium- and Heavy-Duty Vehicles Technical Conference held on December 1, 2022, Stakeholders voiced a range of responses to Staff’s questions regarding Make-Ready program investments in DACs. Stakeholders generally supported increasing the share of the program budget dedicated to DACs to at least 35 percent. While most Stakeholders agreed that light-duty vehicle charging infrastructure should be expanded in DACs, many cited other types of investments as higher priorities, especially MHD electrification and improved access to clean public transit options.

Staff Recommendation

Staff agrees with Stakeholders that additional investment in DACs is appropriate; however, Staff also notes that the 100 percent incentive tier in the light-duty Make-Ready Program is a subset of the \$206 million total spending on programs that benefit DACs that were authorized in the Make-Ready Order. The additional programs benefiting DACs include the Medium- and Heavy-Duty Fleet Make-Ready Pilot Program, Transit Authority Make-Ready Program, and New York Clean Transportation Prizes. The Commission authorized this suite of programs in recognition of Stakeholders’ concerns that a light-duty charging infrastructure program alone would not sufficiently address EV charging needs in DACs, particularly given the lack of light-duty vehicle ownership in DACs, therefore, Staff recommends designating 25 percent of the light-duty DCFC program funding for DACs downstate and 20 percent for DACs upstate. The 20 percent designation of L2 make-ready funds would be maintained statewide. If adopted by the Commission, these budget allocations increase the proposed DCFC DAC budget to \$117,221,991 and the proposed L2 DAC budget to \$56,431,165 statewide.

Additionally, Staff recommends funding for two supplemental programs beneficial to DACs; (1) micromobility program described in the subsequent section and (2) additional funding for the MHD Pilot described in the “Medium- and Heavy-Duty Make-Ready Pilot Program”

⁷⁷ Case 18-E-0138, Petition to Modify Make-Ready Program to Improve Service to Disadvantaged Communities and Development of Fast Chargers (filed February 11, 2022).

⁷⁸ Modification Order, p. 19.

section. Staff is proposing a micromobility budget of \$25,000,000 statewide. Staff is proposing an incremental budget of \$30,000,000 statewide for the MHD Make-Ready Pilot. The total proposed budgetary allocation for programs that benefit DAC is 35 percent and is consistent with the goals of the CLCPA.⁷⁹ This approach may provide solutions that support DACs while maintaining a light-duty make-ready budget that adequately supports the light-duty vehicle market.

Eligibility

In response to Staff questions, the City states that it supports the DAC+0 requirement because it directs benefits to DACs; however, the City does not support any other site-specific eligibility requirements for qualified projects. The JU supports making publicly accessible L2 on-street chargers eligible for the DAC tier as many residents live in buildings without designated parking and therefore rely on on-street parking. In New York City, there are parking regulations in place that prohibit the use of parking spaces with on-street charging for non-electric vehicles.⁸⁰ In addition, the JU recommends reevaluating the DAC eligibility radius and suggests additive eligibility for the up to 100 percent tier for LMI status MUDs, potentially as defined by the utilities' existing affordable housing energy efficiency programs. Revel states that, if the criteria is too restrictive, appropriately zoned sites that can serve DACs may become ineligible to participate in the program. NYPA recommends that any DAC incentives should specifically look at for-hire vehicles such as taxis, ride-share vehicles, and commuter vans, given that a large amount of these vehicles are driven by DAC residents.

Staff Recommendation

Appropriate eligibility requirements for the DAC tier are essential to ensure that the benefits of the program reach the intended communities. Staff endorses three modifications to DAC tier eligibility in all utility territories: 1) require MUD applicants meet premise-specific criteria modeled on those used by the statewide Affordable Multifamily Energy Efficiency Program;⁸¹ 2) allow for on-street L2 eligibility; and 3) reduce the L2 charger eligibility radius to zero miles (DAC + 0). With these additional requirements, Staff supposes that the DAC budget will more directly generate benefits for the intended communities.

Under current program rules it is possible that an MUD serving higher income residents that is located within the DAC eligibility radius could receive the 100 percent incentive, despite the fact that the chargers may not actually be accessible to the DAC residents who are the intended beneficiaries of the incentive. Therefore, Staff recommends that MUDs in the DAC eligibility radius must also meet premise-specific MUD criteria modeled on those used by the statewide

⁷⁹ See Appendix C for the full breakdown of budget allocation to DACs.

⁸⁰ New York City Department of Transportation Traffic Rules, "Parking, Stopping, Standing." §4-08(a)(3)(i).

⁸¹ See Affordable Multifamily Energy Efficiency Program details at:

<https://www.nyserda.ny.gov/All-Programs/Residential-and-Property-Owner-Income-Eligible-Programs/LMI-Stakeholder-Resources-New-Efficiency-New-York/NYS-Affordable-Multifamily-Energy-Efficiency-Program>.

Affordable Multifamily Energy Efficiency Program, incorporating existing affordable housing thresholds, including the following affordable housing types:

- HUD, USDA, and other federally regulated affordable housing;
- affordable housing regulated by NYS Homes & Community Renewal;
- affordable housing regulated by NYC Housing Preservation & Development;
- properties receiving Low-Income Housing Tax credits;
- properties subsidized for LMI residents with SONYMA subsidized financing;
- properties that are subject to other State or local affordable housing regulations; and/or
- properties that are not subject to State or local affordable housing regulations, but are able to demonstrate through their rent roll that 25 percent of units have a calculated household income no more than 80 percent of the Area or State Median Income.

The addition of such criteria would ensure DAC members benefit as intended, rather than higher income buildings that are located within the geographic boundary of a DAC.

Staff agrees with Stakeholders in supporting DAC tier eligibility for on-street L2 charging.⁸² Many MUDs in DACs do not have designated off-street parking and therefore would not be able to participate in the Make-Ready Program under current rules. Residents of these buildings who own a car often rely on on-street parking. However, only DCFC on-street chargers are currently eligible for DAC tier incentives. As such, Staff recommends that on-street L2 chargers also be eligible for DAC tier incentives to further meet the needs of these communities. Staff recommends that eligibility be limited to parking spaces where “EV parking only” curb regulations are in place.

Lastly, Staff recommends reducing the eligibility radius for L2 chargers to "DAC + 0" in all utility service territories. Staff supposes that the existing zero-to-two-mile radii are appropriate for DCFC charging which has fairly short charging times, but that these radii may not be appropriate for L2 chargers with notably longer charging times, as they may fail to meet the needs of DAC drivers to park on-street near their residences. Staff postulates that reducing the L2 DAC eligibility radius to “DAC + 0” in each of the utilities’ territories would focus funding towards the most beneficial locations.

Micromobility

In response to Staff questions, the City encourages funding for alternative transportation such as micromobility charging. Micromobility refers to lightweight and low-speed devices, including electric bikes, electric scooters, and electric skateboards. Charging infrastructure is typically paired with secure bicycle and scooter parking facilities that are eligible for credit towards

⁸² On-street parking has been referred to as “curbside” parking in Stakeholder comments and during the DAC Technical Conference. However, DPS Staff proposes that the term “on-street parking” more accurately describes the location intended to be targeted by this incentive.

certifications administered by entities like the Building Research Establishment Environmental Assessment Methodology (BREEAM) and the US Green Building Council.⁸³

During the Disadvantaged Communities and Medium- and Heavy-Duty Vehicles Technical Conference held December 1, 2022, multiple Stakeholders, including representatives from the New York City Housing Authority (NYCHA) and PUSH Buffalo, expressed support for incentivizing make-ready infrastructure for micromobility charging. PUSH Buffalo mentioned that they worked on a shared micromobility pilot serving affordable housing units. NYCHA commented that micromobility device ownership is more prevalent among DAC residents than higher cost electric vehicles.

In June 2022, NYCHA proposed, but did not implement, a ban of electric bicycles on their property as a safety measure after an uptick in lithium-ion electric bike battery fires. NYCHA mentioned during the Disadvantaged Communities and Medium- and Heavy-Duty Vehicles Technical Conference that they are currently working on an outdoor micromobility charging pilot with Con Edison to provide safe charging access for residents. Make-ready funding for micromobility would support lower cost electric mobility and address fire safety concerns by installing dedicated infrastructure outside of residential units but does not replace the need for EVSE serving DACs.

Staff Recommendation

Micromobility charging supplements the State's existing vehicle electrification goals. Staff recommends creating a \$25,000,000 make-ready program for charging infrastructure that supports micromobility. Staff proposes a \$20,000,000 allocation for downstate utilities and \$5,000,000 for upstate utilities due to the higher demand for micromobility and higher costs in denser areas of the State. Staff recommends that the utilities work with Staff on the appropriate allocation of funding based on projected demand. Staff analyzed the average per port cost of installing micromobility infrastructure using data obtained from a market survey of micromobility providers and site hosts. Staff found that in most cases, the cost of trenching and construction for outdoor application or running conduits from the electrical room for indoor applications are fixed, with little to no additional make-ready futureproofing needed to install additional plugs. Based on Staff's analysis of market demand and average costs, this funding can provide approximately 18,000 micromobility charging ports. Staff contends that the micromobility carveout should provide new charging infrastructure without reducing the number of plugs intended to be installed through the Make-Ready Program. Staff invites comment on the cost of fire suppression systems for micromobility charging sites, and whether any of those components should be considered eligible make-ready equipment.

⁸³ LEED, Bicycle Facilities, Location and Transport, See <https://www.usgbc.org/credits/new-construction-data-centers-new-construction-warehouse-and-distribution-centers-new-0>; BREEAM, Alternative modes of transport, Technical Manual, See <https://files.bregroup.com/breem/breem-usa/PD130-BREEAM-USA-In-Use-Technical-Manual-V2.0-%28April-2019%29.pdf>.

Workforce Development

The questions posed by Staff at the commencement of the Midpoint Review did not specifically address workforce development initiatives that train workers in the skills necessary to meet the clean transportation industry needs, such as the installation of EV infrastructure and the operation and maintenance of new technologies. However, in the course of subsequent technical conferences and conversations with Stakeholders, several parties pointed to workforce development opportunities as one important way in which residents of DACs can benefit from the transition to clean transportation. The State's transition to clean transportation will require the training and education of workers in clean energy technologies, including EVSE installation, maintenance, and operation. DPS Staff is interested in exploring how the Make-Ready Program can foster access to EVSE-related training and career opportunities for residents of DACs.

DPS Staff raised the topic of workforce development during the Disadvantaged Communities and Medium- and Heavy-Duty Vehicles Technical Conference held December 1, 2022. In response, representatives from PUSH Buffalo and the Adirondack North Country Association spoke to the need for a coordinated cross-agency effort to upskill workers in clean transportation technologies. PUSH Buffalo stated that workers from DACs require paid on-the-job training that includes benefits for the transition to clean energy programs to be successful.

NYSERDA has programs for internships, fellowships, and training designed to meet the needs of early-career residents of DACs who are interested in clean energy careers. One such option is an On-the-Job Training (OJT) program that subsidizes the wages of new hires employed by clean energy businesses, including businesses that install electric charging infrastructure. Businesses registered as Minority- and Women-Owned Business Enterprises (MWBE) and/or as a Service-Disabled Veteran-Owned Business (SDVOB) are eligible to receive a higher percentage of wage subsidies under the OJT program. In addition, if the employee is a DAC resident, the interval that wage subsidy covers under OJT is extended from 16 to 24 weeks.

NYSERDA also administers the Clean Energy Internship Program, which funds 70 to 90 percent of wage reimbursement for interns. The internships are available to recent graduates to work up to 480 hours at an eligible company in the clean energy sector. Residents of a DAC can qualify for an internship without being a college graduate. Additionally, NYSERDA's Climate Justice Fellowships provide full time employment for a 12-month period with a minimum annual salary of \$37,000 for individuals currently residing in a DAC. Clean energy businesses can apply to participate in the program with the requirement that the fellows must be working on projects that serve DACs.

The NYSERDA Clean Transportation Prizes program awarded New York City School Bus Umbrella Services (NYCSBUS), a non-profit bus contractor operating in the Bronx, an \$8 million grant.⁸⁴ NYCSBUS is allocating a portion of the funding to develop a Center of Excellence at

⁸⁴ The Make-Ready Order directed NYSERDA to propose and administer the Environmental Justice Community Clean Vehicles Transformation Prize (\$40 million), the Clean Personal Mobility Prize (\$25

their Zerega Depot, creating a hands-on clean energy training center with partnerships with technical colleges. In addition, PUSH Buffalo is developing a Sustainability Workforce Training Center funded by an Empire State Development Workforce Development Challenge grant.⁸⁵

The State University of New York created an EV maintenance curriculum taught at trade schools around the state to prepare future mechanics to work with emerging EV technologies. Hudson Valley Community College also offers an Electric and Autonomous Vehicles degree program to prepare automotive technicians to enter the work force with knowledge on the emerging technologies found in electric and hybrid cars, and Capital Region Board of Cooperative Educational Services is training automotive technicians with retired electric vehicles provided by NYPA. Union and trade groups, including the International Brotherhood of Electrical Workers are also training their members to prepare for the transition to EVs.

Staff Recommendation

There are several existing programs that fund workforce development and training for jobs that support the installation, maintenance, and operation of clean energy technologies which include EV charging stations, which are highlighted in the previous section. Staff is seeking comment on the value of creating an additional EV Make-Ready Workforce Development Pilot Program that would incentivize new jobs filled by residents of DACs, who are employed in the construction of EV charging stations funded by the Make-Ready Program. The proposed program would apply to projects in all incentive tiers and would fund a workforce development adder to the make-ready incentive that is equal to the lesser of an additional 10 percent of the eligible make-ready costs or \$1,000 per worker per make-ready application. The proposed program would have a lifetime per worker cap of \$4,000 to provide make-ready applicants with a sufficient incentive to sustain the employment of the newly trained workforce, while also leveraging the pilot's budget to create a meaningful number of new jobs. A \$5 million incentive budget for this pilot could fund between 1,250 and 5,000 new positions, based on the per project and per worker caps proposed.

Staff proposes that the workforce development budget be allocated to utilities based on their respective share of incremental plugs needed to reach the updated plug targets. Staff also proposes that eligible workers from a DAC must first complete NYSERDA's OJT program or a similar training program, to ensure the workforce development adder is funding new jobs, and to avoid creating an administratively burdensome verification process. Staff requests feedback from Stakeholders regarding approaches to integrating DAC-focused workforce development into the Make-Ready Program, including the pilot program described in this section. Specific areas of

million), the Clean Medium- and Heavy- Duty Innovation Prize (\$20 million), the Medium- and Heavy-Duty Make-Ready Pilot Program (\$15 million). Make-Ready Order, p. 135.

⁸⁵ The Workforce Development Capital Grant Program supports the capital needs of workforce training providers that seek to enhance or expand their offerings. The Program is open to training programs offering industry-recognized credentials and certificates in high-demand fields by helping trainers make capital investments crucial to industry-driven workforce training. For more information, please visit the Empire State Development, Workforce Development Capital Grant Program website: <https://esd.ny.gov/workforce-development-capital-grant-program>.

feedback for the pilot program include the appropriate budget for the program, the per project and per worker caps, the requirement that eligible workers must participate in the NYSERDA OJT program and the identification of additional training and workforce development programs that could be leveraged in addition to the OJT program.

Multi-unit Dwellings and Workplaces

In response to Staff questions, AEE ACENY, Calstart, NYPA, SWTCH, and Tesla argue that pay-to-park facilities and workplace charging should be eligible for the higher incentive tier because of the difficulty of parking in dense areas, such as in New York City. ChargePoint argues that a 50 percent funding level is inadequate for many “private” use cases, including charging at workplaces and MUDs that are outside of DACs. ATE disagrees and recommends not redirecting unused funding to MUDs and workplaces because the need for public charging has not been met. The JU does not see a need for any program changes or to redirect funds between site types. Fermata recommends that the incentives should not be limited to publicly accessible EVSE charging so as not to preclude funding for V2X projects.

Staff Recommendation

Staff continues to support the current approach to MUD and workplace chargers. Staff has not seen sufficient evidence from commenters that redirecting funds or redefining the accessibility criteria would improve program outcomes. Public charging is still relatively nascent in New York and redirecting funds away from publicly accessible chargers could result in insufficient infrastructure. Although staff recommends a budget increase to account for the need for L2 MUD plugs, it is Staff’s opinion that no changes to the MUD and workplace incentive tiers are required. However, Staff recommends that there be a mechanism to re-examine make-ready incentives due to changes in local laws, codes or regulations that imposes or updates make-ready requirements on buildings.

Pay-to-Park Lots

In the Make-Ready Order, the Commission recognized that there are different types of paid parking in the utility service territories.⁸⁶ In some utility service territories, parking fees are an essential revenue stream for municipalities, thereby making it impracticable for a municipality to waive parking fees in order to obtain the higher make-ready incentive amount. However, the Make-Ready Program’s broad objective is to build the critical infrastructure to support the ZEV Memorandum of Understanding EV deployment goals.⁸⁷ Therefore, the Make-Ready Order adopted accessibility criteria that included municipal paid parking as “publicly accessible.”⁸⁸

⁸⁶ Make-Ready Order, p. 44.

⁸⁷ Signatory States agree to coordinate actions to support and ensure the successful implementation of our Zero-Emission Vehicle programs. Additional information can be found at DEC’s Low and Zero Emission Vehicle website, <https://www.dec.ny.gov/chemical/8575.html>.

⁸⁸ Make-Ready Order, p. 44.

In response to Staff questions, AEE ACENY, ATE, ChargePoint, and Tesla support the inclusion of pay-to-park charging sites that meet the publicly accessible criteria in the eligibility for the higher incentive as this inclusion will assist with faster charging site buildout, expand charging access, and facilitate greater EV deployment, particularly for EV drivers that live in dense urban areas where the only available parking is pay-to-park. Revel comments that public, non-pay-to-park DCFC locations should be prioritized over pay-to-park lots, multi-unit dwellings, and workplaces not freely accessible to members of the public, noting that access to residential or workplace lots in New York City typically excludes lower wage workers.

Staff Recommendation

Staff remains in agreement with the Make-Ready Order, where the Commission determined privately-owned pay-to-park locations are eligible for the partial tier. While these locations are common in dense urban areas, access fees can vary greatly, meaning that charging stations installed in locations with costly parking fees are not truly and readily available to all drivers. Under current program rules, private pay-to-park locations are still eligible for the partial tier or may waive the access fee to these parking spots for the required five years of operation to be eligible for the public tier.

Staff remains supportive of the Commission's determination that public pay-to-park lots are eligible for the public tier. Parking fees are an essential revenue stream for some municipalities, and it may not be possible or practical for a municipality to waive parking fees in order to capture the higher make-ready incentive amount. Therefore, Staff recommends no changes to accessibility criteria for pay-to-park lots as described in the Make-Ready Order.

Private and Proprietary Plug Technology Types

In response to Staff questions, ATE supports the 50 percent funding for private and proprietary charging and comments that a proprietary customer should at minimum contribute a larger cost-share than those installing standardized chargers. The JU and Joint Technology Parties support the higher incentive level for public sites and standardized technology. SWTCH is not opposed to a reduced incentive for private and proprietary technology types, but states that hardware and software with Open Charge Point Protocol (OCPP) standards should receive the full incentive, while Tesla stated that the incentive should be increased to 75 percent. ATE points out that the industry is coalescing around the Combined Charging System (CCS)-Type 1 standard for EVSE.

Staff Recommendation

Staff recommends maintaining the Make-Ready Order determinations on proprietary plug type eligibility. CCS and SAE J1772 ("SAE J plug") are considered non-proprietary. Where a proprietary plug type is collocated at a charging site with an equal number of commonly accepted standardized plug types of equal or greater charging capacity, that charging site can receive the public tier incentive. However, where a charging site with proprietary plug types is not collocated with an equal number of commonly accepted standardized plug types of equal or greater charging capacity, that charging site will receive the partial tier incentive. The number of plugs eligible for

incentives at charging sites with more than one plug is the number of plugs capable of simultaneously charging at 50 kW or greater.⁸⁹

Staff notes that CCS and the SAE J Plug remain the industry standard and are supported by most automotive manufacturers. Staff maintains the importance of standardization and the need for collaboration among site developers. Staff proposes that the existing eligibility requirements encourage this standardization and collaboration while maintaining some level of support for all plug types, which may have varying degrees of capability for additional functions, including VGI, in the developing market. Staff is not persuaded that raising the partial tier above 50 percent is required at this time, and points to the Demand Charge Alternative Proceeding as an additional forum through which site developers subject to the partial tier will receive cost relief.⁹⁰

Communication Standards

In response to Staff questions, ATE states that any recipient of program funds should be required to install EVSE hardware and software that has been certified by an independent third-party as compliant with OCPP (version 1.6 or later).⁹¹ OCPP is an open communications protocol which allows EV charging sites and central management software to communicate with each other. NRDC and Sierra Club support the use of OCPP but warn that proprietary extensions imbedded within OCPP could prevent EVSEs from communicating with other networks thereby rendering them ineffective; if the charging manufacturer left the market, the charging site's communication with its network may also become ineffective. ATE, Chargepoint and SWITCH recommend that the TSWG monitor OCPP and ISO 15118-20, smart charge management, cybersecurity, reliability data and requirements. EDF adds that New York should align its standards with the California Public Utilities Commission (CPUC) which would be least cost and more beneficial to EVs and EV charger owners and operators. The JU states that it is best to avoid overly prescriptive approaches as the market develops.

The Joint Technology Parties, EDF, Electrify America, and NYPA support the adoption of International Standards Organization (ISO) 15118 as a standard. ISO standard 15118 controls the user- convenient and secure “Plug and Charge” feature which enables the EV to identify and authorize itself to the charging site to receive energy.⁹² The Federal Highway Administration's (FHWA) National Electric Vehicle Infrastructure (NEVI) Formula Program regulations would require chargers to conform with ISO 15118 to reciprocate communication with CCS-compliant EVs that have implemented ISO 15118. FHWA also states that ISO 15118 allows for several

⁸⁹ Make-Ready Order, p. 50.

⁹⁰ Case 22-E-0236, Proceeding to Establish Alternatives to Traditional Demand-Based Rate Structures for Commercial Electric Vehicle Charging (Demand Charge Alternative Proceeding).

⁹¹ The basic version of this is version 1.6, but recently the Open Charge Alliance (OCA) has published an updated version of 2.0.1 that includes more functionality, such as the ability to accommodate plug-and-charge in ISO 15118-20, smart charge management, cybersecurity, and others.

⁹² ISO I5118-1:2019, Road Vehicles – Vehicle to grid communication interface, <https://www.iso.org/standard/69113.html>.

innovative techniques that are not yet widely adopted in the domestic EV charging marketplace, but that are of significant interest in the industry for future adoption such as Plug and Charge and smart charge management. FHWA goes on to request information on other similar standards that may have the same functionality.⁹³

Staff Recommendation

Regarding OCPP, Staff agrees with ATE and recommends that EVSE hardware used in the Make-Ready Program should be tested by an independent third-party facility for compliance with OCPP version 1.6 (at a minimum) or later version, with no proprietary extensions. Regarding ISO 15118, Staff supports FHWA's position and recommends that installed chargers conform to the ISO 15118 standard and, therefore, be able to reciprocate communication with CCS-compliant EVs that have implemented this protocol. Establishing open and interoperable communication standards will simplify the charging experience for customers and reduce the risk of stranded assets.

Future-Proofing Requirements and Budgets

In response to Staff questions, the JU recommends that the 10 percent site-specific limit on future-proofing funds be removed or significantly increased, stating that it is not a sufficient amount to encourage developers to future-proof. Fermata suggests that the future-proofing rules should be reevaluated using data of sites that needed to install additional EVSE. Alternatively, ATE comments that the current rules should be maintained.

Staff Recommendation

At this time, Staff proposes that the overall future-proofing budget remains appropriate at 8 percent of the overall utility budgets. However, Staff agrees with the JU that the 10 percent site-specific limit on future-proofing should be increased to encourage cost-efficient choices; future-proofing is an opportunity to save money overall by simplifying future installation work when the expansion of a site is foreseen. However, Staff does not have enough information at this time to recommend a limit that may be more appropriate and invites the JU and other Stakeholders to propose what a sufficient increase in the limit would be.

Battery Energy Storage / Advanced Technologies

In response to Staff questions, AEE ACENY, ChargePoint, FreeWire, JU, NYPA, SRS and VGIC support incentives for battery storage and other equipment and software that supports load management where they provide cost benefits to the utility or customer. Revel supports the inclusion of rectifier cabinets that would allow for power sharing. ChargePoint reiterates the potential system benefits of co-locating energy storage with EV charging, such as peak load management, alleviation of demand charges, and improvement of project viability. ChargePoint

⁹³ See National Electric Vehicle Infrastructure Formula Program, <https://www.federalregister.gov/documents/2022/06/22/2022-12704/national-electric-vehicle-infrastructure-formula-program>.

suggests that incentives should include the costs of storage-related infrastructure but not the battery storage asset itself. The City recommends developing a pilot program for storage integration and states that incentives may not be needed to support battery storage adoption; however, if funding is provided then dispatch requirements should be required. Fermata states that any stationary storage should enable charging capacity in constrained areas, and the City states that it should be flood proof. FreeWire recommends providing incentives for customers to opt for battery integrated DCFCs.

Staff Recommendation

Regarding customer-side storage, Staff recommends that any cost-reducing advanced technology be eligible for make-ready incentives if the advanced technology provides grid and ratepayer benefits. Advanced technologies may enable various benefits, including peak load management, alleviation of demand charges, and improvement of project viability. In addition, standalone storage at charging sites can provide value to EV charging site owners, EV owners, and the local grid by moderating grid impacts and reducing the cost of electricity used for charging. Furthermore, other battery paired solutions such as chargers that contain a battery to reduce peak demand of chargers and lower make-ready cost, are eligible for incremental incentives for the batteries in so much as the solution can offset the cost of the make-ready installation.

Historically, the Commission has allowed utility ownership of DER only under certain circumstances:

- 1) procurement of DER has been solicited to meet a system need, and a utility has demonstrated that competitive alternatives proposed by nonutility parties are clearly inadequate or more costly than a traditional utility infrastructure alternative;
- 2) a project consists of energy storage integrated into distribution system architecture;
- 3) a project will enable low- or moderate-income residential customers to benefit from DER where markets are not likely to satisfy the need; or
- 4) a project is being sponsored for demonstration purposes.⁹⁴

However, the Commission is considering additional options, as outlined in New York's 6 GW Energy Storage Roadmap (6 GW Roadmap).⁹⁵ The 6 GW Roadmap proposes circumstances where utility ownership may be allowable because of the grid and ratepayer benefits provided. Specifically, the 6 GW Roadmap outlines opportunities for 'Utility Ownership with Traditional Market Participation' and 'Utility Ownership for Transmission & Distribution Services' with sets of criteria that position its place in the market to create grid and ratepayer benefits where the market

⁹⁴ Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Adopting Regulatory Policy Framework and Implementation Plan (REV Order) (issued February 26, 2015), p 70.

⁹⁵ Case 18-E-0130, In the Matter of Energy Storage Deployment Program, New York's 6 GW Energy Storage Roadmap: Policy Options for Continued Growth in Energy Storage (6 GW Roadmap), (filed December 28, 2022).

is not yet competitive.⁹⁶ Although Staff is interested in the possible use-cases of combined EV charging infrastructure and utility-owned energy storage, in considering the issue of utility ownership of DER, Staff recommends that any comments related to the question of utility-owned storage be filed in Case 18-E-0130.

Vehicle-to-Grid Integration (VGI)

VGI has the potential to provide a multitude of benefits that will help advance the climate goals of New York State while also bolstering electric reliability and resiliency. Using EVs as a source of energy to power homes and businesses during blackout events will provide both with an alternative to diesel generators. EVs will also be able to absorb renewable generation off the grid when needed to help manage load and help defer upgrades to the distribution system. Through VGI, customers could monetize services they provide to the grid, such as discharging power onto the distribution system when directed to by the local utility. The current Value of Distributed Energy Resource (VDER) tariff already provides a pathway for VGI to be compensated, provided that any VGI resource is able to meet all the requirements of the tariff.

The recent adoption of managed charging programs across the six investor-owned utilities in July 2022 was a significant investment in VGI across New York State, recognizing the benefits of the interaction between EVs and the grid. The Commission decision approved five passive managed charging programs where methods such as Time-of-Use rates and behavioral treatments are used to incentive drivers to charge off peak, as well as four active managed charging programs, where the utility or a third-party company will directly manage EV charging to minimize grid impacts and maximize customer savings. The Make-Ready Order further contemplated the interactions of EVs and the grid by directing Staff to organize a Stakeholder process whereby all interested parties would have an opportunity to further discuss VGI with the goal to provide recommendations to the Commission during the Midpoint Review.⁹⁷

As part of the initial set of questions for the Midpoint Review, Stakeholders were asked whether VGI pilots should be considered. ChargePoint recommends that any VGI pilot project should be focused on the residential sector due to its potential for cost savings and grid management. New York City is supportive of a VGI pilot project. Fermata supports a project that would examine VGI and MUDs and single-family housing as well as a pilot for a commercial or municipal site. The JU supports pilot projects to the extent that additional funding is authorized such that other aspects of the program budget are unaffected. NYPA states that any VGI pilot should help inform fleets of how to monetize any VGI services. VGIC states their support for additional incentives for bidirectional chargers.

Staff Recommendation

Staff recognizes the importance of VGI in maximizing the benefits of EVs. There have been multiple VGI pilot projects around the country, including in New York State, that have

⁹⁶ Utility Ownership with Traditional Market Participation, 6 GW Roadmap, p. 42; Utility Ownership for Transmission & Distribution Services, 6 GW Roadmap, p. 44.

⁹⁷ Make-Ready Order, p. 124.

showed the technical capabilities of VGI technologies.⁹⁸ At this time, Staff recommends the Commission direct the TSWG to identify and propose solutions to barriers of VGI, including interconnection. The TSWG may also consider specific use cases that would benefit from a pilot program while considering any utility specific issues. Staff also recommends that the Commission direct the JU to update their VDER tariff to clearly define VGI as eligible for compensation under that tariff, using consistent language across the state.

Data Reporting

The Make-Ready Order specified several data reporting requirements for utilities and charging site owners.⁹⁹ There were four broad categories of data reporting requirements: program participation, utility system and billing information, plug and session charging data, and financial information. The Commission detailed the importance of having access to this data on an annual basis due to the need to monitor and learn about the nascent EV charging market.

In their most recent annual report, the utilities noted difficulty in obtaining some of the required data components, including 15-minute interval data.¹⁰⁰ During the November 30th Technical Conference on VGI and data reporting, the utilities also noted the low percentage of plugs that could provide plug outage and peak kW per charging session information. In response to Staff questions, ChargePoint recommends that the Commission review the data requirements and eliminate any that do not provide any actionable information and that quarterly submission of data is burdensome. ChargePoint also points to the absence of industry standards of uptime and caution against penalizing charging site owners for outages outside of their control.

Staff Recommendation

Staff maintains that the information sought through the current reporting requirements is necessary to ensure that the goals of the Make-Ready Program are realized but recognizes the difficulty the utilities and electric vehicle service providers have encountered in obtaining some of the required data. The lack of plug outage information was particularly concerning to Staff, as

⁹⁸ Examples of successful VGI pilot projects can be found at the following links:

<https://www.power-grid.com/der-grid-edge/duke-launches-bi-directional-charging-pilot-with-ford/>;
<https://fermataenergy.com/article/revel-fermata-energy-ninedot-energy-launch-first-v2g-system-on-nycs-grid>; <https://www.coned.com/en/about-us/media-center/news/20220412/con-edison-and-partners-go-to-school-with-findings-from-e-school-bus-project>

⁹⁹ Make-Ready Order, p. 102.

¹⁰⁰ Case 18-E-0138, National Grid New York State Electric Vehicle DCFC Per Plug Incentive and Infrastructure Make-Ready Program 2021 Annual Report (updated) (filed June 24, 2022), p. 4; Con Ed & O&R Report on the Electric Vehicle Direct Current Fast Charging Per-Plug Incentive Program and the Electric Vehicle Make-Ready Program (filed April 18, 2022), p. 12; RG&E Direct Current Fast Charging Per-Plug Incentive Program and New York Electric Vehicle Infrastructure Make-Ready Program Annual Report (filed April 15, 2022), pp. 8-9; NYSEG Direct Current Fast Charging Per-Plug Incentive Program and New York Electric Vehicle Infrastructure Make-Ready Program Annual Report (filed April 15, 2022), pp. 8-9; Central Hudson Electric Vehicle DCFC Incentive Program and Make Ready Program Combined 2021 Annual Report (filed April 14, 2022), p. 21.

inoperable charging sites were cited as a significant issue with public EV charging infrastructure available today by several drivers in the CEWG, underscoring the importance of providing accurate data to track potential issues in a timely manner. Staff is looking for Stakeholder feedback on ways to streamline the data collection process, including details on aspects of the data requirements that may be too burdensome or do not provide actionable information. Staff therefore recommends convening a technical conference with industry Stakeholders to further discuss the barriers in obtaining and providing this data, including but not limited to network and data fees as well as customer confidentiality issues. The information gleaned in the technical conference would inform any potential modifications to reduce these barriers.

Driver Complaint Process and Procedures

In the Make-Ready Order, the Commission stated that participating developers must report customer complaints confidentially to the appropriate utility and to Staff to be used by the utilities to develop Make-Ready Program best practices.¹⁰¹ Staff was directed to monitor customer complaints for egregious behavior and report any such instance to the Commission for appropriate action.¹⁰² Staff was also directed to convene the CEWG.¹⁰³ During the CEWG meetings, several participants identified a distinct lack of uniformity for the submittal of complaints. Within the CEWG, the participants brought to Staff's attention concerns regarding personal safety due to the facilities not being maintained (i.e., snow and ice around site), credit card/billing function issues on the chargers, application interface issues, and identifying the proper entities to contact to report issues or complaints.

Staff Recommendation

Staff asserts that an established and uniform complaint process is essential to ensure continued growth of the Make-Ready Program. Contact information for both the EV service provider and site host are essential to resolving day-to-day issues but are not always easily identifiable by drivers. Under the current program structure, drivers also may not know to contact the utility in case of a continual problem with a station funded by the Make-Ready Program. In order to begin addressing the issues identified by drivers within the CEWG, Staff recommends that all chargers be required to clearly display contact information for the following parties: EV service provider, site host, and utility customer service. The easy identification of this information will improve problem resolution times and may provide an additional check for the utilities and Staff in case of a bad faith service provider not following the required complaint reporting procedure.

Performance Incentives

The Make-Ready Order established two multi-year EAM metrics (Make-Ready EAM). One metric includes earning up to 15 basis points which can be available to each utility based on

¹⁰¹ Make-Ready Order, p. 109.

¹⁰² Make-Ready Order, p. 109.

¹⁰³ Make-Ready Order, p. 109.

its performance when measured at the mid-point review, and another 15 basis points will be available to each utility based on performance upon the completion of the program.¹⁰⁴ The Make-Ready EAM metrics consist of a L2 metric and a DCFC metric. The L2 metric incentivizes utilities to reduce program costs on a per-plug basis. The similar DCFC metric incentivizes utilities to reduce program costs on a per-kW of charging capability basis.

The Make-Ready EAMs established in the Make-Ready Order only measured utility performance against eligible Make-Ready Program incentives paid to developers, and did not include other program-related costs, such as future-proofing or New Business, and did not establish EAM metrics for the other programs established in the Make-Ready Order. The Commission noted that determinations on whether to include future proofing and program administration costs within the EAM metric, and whether the costs and results of the Transit Authority Make-Ready Program and the additional Environmental Justice Programs included in the Make-Ready Order should be included in the Make-Ready EAMs would likely be considered as part of this Midpoint Review process.¹⁰⁵

As established in the Make-Ready Order, the L2 metric is calculated as 30 percent of the difference between: (1) the baseline incentive cost forecast per plug multiplied by the population of plugs incented as part of the program; and (2) the actual incentives provided by the utility. Similarly, the DCFC metric is calculated as 30 percent of the difference between: (1) the product of the baseline incentive cost forecast per kW of charging capacity and actual kW charging capability achieved; and (2) the actual incentives provided by the utility.¹⁰⁶ The Make-Ready Order also established minimum plug count requirements for the L2 metric and DCFC metric that each utility would have to achieve to be eligible to earn an EAM award on the applicable EAM metric – failure to achieve these minimum plug requirements would result in no EAM earnings for the applicable metric regardless of program performance or cost savings.

The utilities filed EAM performance data as part of the Midpoint Review data request.¹⁰⁷ As shown in Table 3 - Level 2 Minimum Plug Requirements and Performance and Table 4 – DCFC Minimum Plug Requirements and Performance, by and large the utilities have not achieved the minimum plug requirements for either the L2 metric or the DCFC metric. As of this Midpoint Review, only one utility, National Grid, is eligible to potentially earn a financial award related to the DCFC metric – all other utilities failed to meet the Midpoint Review minimum plug requirements established in the Make-Ready Order for the DCFC metric.¹⁰⁸ All utilities failed to meet the minimum plug requirements related to the L2 metric.

¹⁰⁴ Make-Ready Order, p. 87.

¹⁰⁵ Make-Ready Order, p. 88.

¹⁰⁶ Make-Ready Order, p. 88.

¹⁰⁷ Interrogatory Request DPS-1 LMR, received December 21, 2022.

¹⁰⁸ The data relied on was provided on December 21, 2022, however, performance under this metric is measured through December 31, 2022. Therefore, plug counts and actual EAM achievement may vary,

Table 3 - Level 2 Minimum Plug Requirements and Performance

L2 Progress to Plug Goals				
Utility	End of Program Goal	Mid-point EAM Goal	Completed	Qualify for EAM?
Central Hudson	3,204	641	133	FALSE
Con Edison	18,539	3,708	947	FALSE
National Grid	15,728	3,146	1,517	FALSE
NYSEG	9,279	1,856	298	FALSE
O&R	2,845	569	113	FALSE
RG&E	4,178	836	219	FALSE
Total	53,773	10,756	3,227	

Table 4 - DCFC Minimum Plug Requirements and Performance

DCFC Progress to Plug Goals				
Utility	End of Program Goal	Mid-point EAM Goal	Completed	Qualify for EAM?
Central Hudson	69	14	12	FALSE
Con Edison	457	91	55	FALSE
National Grid	504	101	112	TRUE
NYSEG	250	50	27	FALSE
O&R	71	14	2	FALSE
RG&E	149	30	9	FALSE
Total	1,500	300	217	

Staff Recommendation

Staff sees no evidence that the Make-Ready EAMs are either not working or are producing unintended or undesirable consequences. Based on Staff’s review of the utility-submitted data, the most significant factor in the utilities not earning EAM incentives on their Make-Ready Program efforts is the failure to meet the Midpoint Review minimum completed plug requirements established in the Make-Ready Order. The outcome of utilities not being eligible for EAM awards due to not meeting the minimum plug requirements is a feature, not a foible, of the EAM metric design – customers are protected from having to pay shareholder incentives when performance

for example, if multiple “committed” projects graduate to “completed” status prior to the end of the year.

under the program does not meet minimum standards. Staff recommends continuing the L2 metric and DCFC metric mostly as-is through the end of the Make-Ready Program.

While the L2 metric and DCFC metric should continue mostly unchanged, including formulae, and continuing the end-of-program minimum plug requirements Staff does recommend two modifications. First, the baseline cost assumptions shown in Appendix C of the November 3, 2020 Errata Notice should be updated based on the most recent baseline costs approved by the Commission as a result of this Midpoint Review process. Using the updated baseline costs will ensure that the best and most-relevant cost data is used to set the bar against which utility performance will be measured.

Second, while Staff does not recommend that the Commission establish new EAM metrics to specifically measure performance of the Transit Authority Make-Ready Program and other Environmental Justice Programs established in the Make-Ready Order, we are cognizant of the need for utilities to focus their efforts on those programs and not allow performance to fall by the wayside for lack of a specific EAM incentive. Therefore, similar to the requirement that utilities achieve a minimum number of plugs to be eligible to earn any EAM incentives, Staff recommends that the Commission establish minimum milestones that each utility must achieve in their Transit Authority Make-Ready Program to be eligible to earn incentives under the Make-Ready EAMs. If implemented by the Commission, this manner of on/off incentive will ensure that utilities must achieve at-least-minimum performance of all relevant programs in order to earn any shareholder incentives related to the Make-Ready Programs over and above the implicit incentives available through the cost recovery mechanism, *i.e.*, a return on and of the costs incurred under these programs.

NYPA's Role

The Make-Ready Order allowed NYPA to participate in the Make-Ready Program, citing its importance in building charging sites in rural and sparsely populated locations where private development of charging sites is unlikely in the short term. In order to establish a transparent process, NYPA published an Electric Vehicle Infrastructure Make-Ready Program Implementation Plan.¹⁰⁹ In the time since the Make-Ready Order was issued, and consistent with the process established in the Implementation Plan, NYPA has developed over 20 charging sites throughout the State, consistent with the directive and goal of the Commission approving NYPA's participation in the program.

In allowing NYPA's participation, the Commission required NYPA, in consultation with Staff, to develop protocols to limit the possibility of co-locating charging sites near those of a private developer. For upstate corridor sites NYPA seeks to avoid developing sites that are closer than ten miles from another charging site, while for downstate sites the distance is reduced to two

¹⁰⁹ Case 18-E-0138, Electric Vehicle Infrastructure Make-Ready Program Implementation Plan (filed October 23, 2020) (NYPA Implementation Plan).

miles.¹¹⁰ For urban sites, NYPA seeks to avoid developing charging sites in direct proximity to other owner-operators.¹¹¹ Additionally, each month NYPA publicly posts a list of sites for which it plans to apply for make-ready funds.¹¹² Potential sites and sites that NYPA is in advanced site host negotiations with are listed by ZIP code for a minimum of 30 days to give private developers time to reach out to NYPA and discuss co-location concerns. If a private site developer can show a signed site-host agreement and a timeline for construction within one year of the date of initial inquiry to NYPA, then NYPA is required to halt their development at that location.¹¹³ If after one year the site is still not developed, NYPA may continue to pursue site-host negotiations in consultation with Staff.¹¹⁴

As part of the Midpoint Review Notice, Stakeholders were asked to provide comment on the effectiveness of NYPA's public notification process. ChargePoint responded that the current notification process has not been effective in limiting co-location risk. ChargePoint comments that the requirement that developers have a signed site-host agreement before NYPA abandons a site is unlikely, as a site host generally will not sign such an agreement until after NYPA has abandoned the site. ChargePoint recommends that NYPA be required to post a list of sites it may build one year ahead of initial construction so that private developers can use this year-long waiting period to provide notice to NYPA that they intend to develop a particular site, demonstrating their intent through a signed memorandum of understanding (MOU) with the site host.

NYPA responded to ChargePoint's recommendations that the Commission increase the waiting period from 30-days to one year and lower the threshold for demonstration of intent to develop from a signed host agreement to an MOU. NYPA states that ChargePoint's proposed one year waiting period would interfere with NYPA's deployment of DCFC charging sites statewide, potentially resulting in the underdevelopment of EVSE in areas where current economics make the installation of EVSE unlikely. NYPA also responds that lowering the threshold of demonstration to develop from a signed host agreement to an MOU does not have the same legal binding force, and therefore is not an accurate indicator that a particular site will come to fruition.

Staff Recommendation

The buildout of New York's statewide EV charging network is still in the early stages. There remain areas of the state, predominately in rural and sparsely populated locations, where private development of charging sites remains unlikely because of poor economics. A well-connected and effective statewide EV charging network requires that these underserved areas have

¹¹⁰ Pursuant to NYPA's Implementation Plan, downstate sites include Westchester, New York City, and Long Island. Upstate sites are all other areas of New York State. NYPA Implementation Plan, p. 4.

¹¹¹ As defined in the NYPA Implementation Plan, urban sites are any site in a population center, typically (but not limited to) cities with more than 40,000 people. NYPA Implementation Plan, p. 5, fn. 10.

¹¹² This list of sites is published on DMM in case 18-E-0138 as well as on NYPA's own website, <https://evolveny.nypa.gov/>.

¹¹³ NYPA Implementation Plan, p. 8.

¹¹⁴ NYPA Implementation Plan, p. 8.

options for EV drivers to charge their vehicles. Therefore, Staff proposes that it is appropriate for NYPA to continue its participation in the Make-Ready Program as outlined in the July 2020 Order.

Staff recommends maintaining the current notification process that NYPA employs today. ChargePoint was the only developer to raise an issue with NYPA's notification process for a limited number of sites. This single complaint indicates that NYPA has been able to pursue the development of DCFC chargers without encroaching on areas where private development would otherwise take place, for the most part. The 30-day waiting period continues to be a reasonable balance between the interests of private developers and NYPA. The site host agreement, as a legally binding document, remains the appropriate marker of a developer's seriousness in building a site.

Residential Make-Ready

Several commenters support the development of a residential make-ready program. AEE ACENY state that a residential make-ready program can include behind the meter and between the pole upgrades as well as address the various utility tariffs and policies for home charging. ATE supports residential make-ready incentives for both single family and multifamily homes so long as the funding for the program does not occur at the expense of the existing program. ATE states that the program could help with EV adoption and recommends that in in homes, such as rental or multifamily, where the installation of chargers may be prohibited, a model where the utility owns and operates the charging. ChargePoint, the Joint Technology Parties, Tesla, and WeaveGrid note that the expense of installing the wiring, outlet equipment, EVSE installation, associated panel upgrades, service upgrades, and permits and that a residential make-ready program could offset these costs making residential charging more affordable. ChargePoint recommends that a residential make-ready program should require networked charger installation and load management program participation. Fermata agrees that a residential make-ready program should include a behind-the-meter customer costs such as panel upgrades. The JU states that a residential make-ready program requires a unique program design, incentive structure, eligible criteria, and marketing and education approach. Therefore, the JU recommends that any residential make-ready program be considered outside or the existing make-ready program. Sunrun recommends a residential make-ready program aimed at lower- and middle-income households to help defray the cost of installing EVSE. Lastly, VGIC states that any residential make-ready program should consider establishing make-ready incentives for equipment that enables VGI.

Staff Recommendation

Staff appreciates and acknowledges the appeal of a residential make-ready program as emphasized by the commenters. However, Staff understands that the market indicators suggest that ratepayer support for a residential make-ready program is not necessary. This is evident based on the high demand for but low inventory of EVs, which is creating waitlists for EV ownership. Additionally, Staff is cognizant of all the existing ratepayer make-ready investments; ratepayer make-ready investments must align with public policy and be just and reasonable and equitable to all ratepayers. Therefore, Staff is currently not convinced that a residential make-ready program

is prudent and meets the needs of all customers. Consequently, Staff does not recommend the advancement of a residential make-ready program.

Medium- and Heavy-Duty Make-Ready Pilot Program

In the Make-Ready Order, the Commission established the MHD Fleet Make-Ready Pilot Program as a relatively small-scale program to test fleet electrification in New York State and inform future efforts in this market sector.¹¹⁵ In January 2023, Governor Hochul announced during the State of the State that the Department of Public Service will initiate a proceeding that will identify and remove barriers to installing charging infrastructure to support the electrification of MHD vehicles.¹¹⁶ Staff anticipates that a dedicated statewide proceeding is the most appropriate venue for policymaking concerning MHD transportation electrification. However, in the interim, Staff supports near-term actions to improve certain program design elements identified during the Midpoint Review and discussed in further detail below.

MHD Make-Ready Pilot Program Budget and Scope

The MHD Make-Ready Pilot (MHD Pilot or Pilot) incentivizes up to 90 percent of utility-side costs to support electrifying heavier duty classes. Eligibility for enrollment in the pilot is conditioned on participation in the NYSERDA New York Truck Voucher Incentive Program or in New York City Department of Transportation's Clean Truck Program.

There was strident Stakeholder support for expansion of the MHD Pilot to a comprehensive, full-scale, multiyear program to meet state climate and transportation electrification objectives. Parties that stated such support include AEE ACENY, CALSTART, ChargePoint, the City, Fermata, Highland, NYPA, and Tesla. AEE ACENY, ChargePoint, and Highland called for dedicated funding for a full-scale MHD program, while ChargePoint additionally recommended that MHD market rate designs be considered. Other recommended modifications ranged from AEE ACENY suggesting that the existing MHD Pilot required a complete overhaul, to SRS requesting that the existing pilot be extended with replenished incentives.

Additional Stakeholder commentary on the future of the MHD Pilot called for the establishment of an entirely separate Commission proceeding to address this market, including ChargePoint's endorsement of the pending Petition of CALSTART et al. for the Initiation of a Proceeding and Interim Measures Addressing Electric Vehicle Supply Equipment and Infrastructure for Medium- and Heavy-Duty Electric Vehicles (Joint Petition).¹¹⁷ The Joint

¹¹⁵ Make-Ready Order, p. 129.

¹¹⁶ Achieving the New York Dream, 2023 State of the State, Governor Kathy Hochul, Advanced Transportation Electrification, p. 136.

¹¹⁷ Case 18-E-0138, Petition Of CALSTART, Environmental Defense Fund, Natural Resources Defense Council, Sierra Club, South Bronx Unite, And We Act For Environmental Justice For The Initiation Of A Proceeding And Interim Measures Addressing Electric Vehicle Supply Equipment And Infrastructure For Medium- And Heavy-Duty Electric Vehicles (filed May 11, 2022).

Petition requests the initiation of a proceeding and interim measures to specifically address the electric vehicle supply equipment and infrastructure needed for medium- and heavy-duty vehicles. Thereafter, on May 25, 2022, AEEI filed comments in support of the Joint Petition to initiate a medium- and heavy-duty vehicle proceeding.¹¹⁸

The Midpoint Review also invited more general assessments of MHD policies to date. ChargePoint alleged that the MHD Pilot is better suited to serving light-duty vehicle deployment and fails to adequately address fleet electrification barriers. EDF observed that the MHD sector is at a different stage of development than the light-duty market and noted that its infrastructure requirements need to be considered separately and as a distinct market segment on its own terms, and not as a mere extension of the light-duty market.

Staff Recommendation

Staff recommends increasing the MHD Pilot budget by \$30,000,000 making the total MHD budget \$54,000,000. The proposed MHD Pilot budget includes \$9,000,000 that was authorized in the previous Con Edison rate case and the \$15,000,000 authorized in the Make-Ready Order.¹¹⁹ While the present Midpoint Review allows for revisions to the MHD Pilot, Staff contends that the upcoming MHD proceeding, announced in Governor Hochul's 2023 State of the State Address, is the appropriate venue to develop the comprehensive policies and full-scale programs necessary to facilitate MHD electrification, which engenders its own particular challenges that are separate and distinct from the light-duty vehicle focus of this proceeding.

Customer-Side Costs

Several parties recommended that the MHD Pilot be modified to include incentives that cover customer-side make-ready costs. EDF identified the lack of customer-side incentives as a significant flaw in program design, arguing that even the application of 100 percent incentives under current program rules would fail to address the significant customer-side cost barriers to infrastructure deployment for the MHD market. Highland concurred that the inclusion of customer-side incentives will increase program participation, as these costs often represent even more substantial barriers to fleet electrification than utility-side costs. ChargePoint cited an observation by the JU made during their Midpoint Review kickoff presentation in which the JU noted an increase in program participation when existing incentives were exploited in concert with other funding opportunities to cover customer-side costs, and therefore suggested it may be beneficial to offer additional incentives for MHD charging equipment as well. FS noted that current eligibility requirements disqualify projects not requiring new service drops or utility transformer upgrades.

Highland specifically recommended adopting the 50 percent incentive level applicable to light-duty non-public charging for MHD customer-side costs, while AEE ACENY requested that incentives should cover all utility-side and customer-side costs. The JU and Lion offered general

¹¹⁹ Case 19-E-0065, Con Edison - Rates, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plan (issued January 16, 2020).

support for customer-side incentives without identifying specific levels. NYPA, the Joint Technology Parties, and Tesla also argued that energy storage equipment should be eligible for make-ready incentives as part of the MHD Pilot.

Staff Recommendation

Staff acknowledges that there are significant customer-side costs that remain barriers to MHD electrification and that these would likely be alleviated, to some degree, by permitting such costs to be eligible under a revised MHD Pilot. Given budget allocations authorized to this sector in the Make-Ready Order, incentives covering 50 percent of customer-side make-ready costs for MHD fleet electrification (as recommended by CALSTART and at the same level as light-duty non-public chargers) could rapidly deplete existing pilot funding. However, while noting that utility spending in the MHD Pilot to date has been limited – to such an extent so as to prevent meaningful analysis – Staff agrees that allowing limited eligibility for customer-side MHD costs may alleviate these impediments and increase program participation, while allowing the important truck voucher requirements to remain in place. Therefore, as an interim measure, Staff recommends allowing customer-side incentives up to the 50 percent level for projects in DACs only, with a \$/kW limit similar to those established to measure EAM performance in the light-duty program.

Moreover, Staff notes that – in addition to the recommendations described above – a Commission Order approving alternatives to the conventional demand-based rate structure for EV charging was issued on January 19, 2023.¹²⁰ This Order was issued as part of the legislative directive in PSL §66-s. Staff is optimistic that these efforts will further alleviate the significant operating costs of fleet electrification identified by Stakeholders as an impediment and ultimately result in continued MHD adoption.

MHD Eligibility

The MHD Pilot is intended to support fleet electrification and achieve reductions of emissions associated with diesel engine operation in environmental justice communities. To advance these objectives, the pilot required that qualifying program participants also participate in NYSERDA’s New York Truck Voucher Incentive Program or the New York City Department of Transportation New York City Clean Trucks Program, which both prioritize the decommissioning of older, more heavily polluting diesel engine vehicles.

In response to Staff questions, several Stakeholders note that these truck voucher requirements inhibit MHD Pilot participation and recommend their elimination as conditions of program eligibility. AEE ACENY argue that the truck voucher requirements limit the number of eligible fleets and restrict funding to entities that provide fleet services, while EDF notes that they exclude newer fleets and fleet operators who do not own their own vehicles. Highland acknowledges the beneficial purpose of the truck voucher requirements in prioritizing replacement

¹²⁰ Case 22-E-0236, Proceeding to Establish Alternatives to Traditional Demand-Based Rate Structures for Commercial Electric Vehicle Charging, Order Establishing Framework for Alternatives to Traditional Demand-Based Rate Structures (issued January 19, 2023).

of older vehicles but criticizes their effect on program participation. The JU and Tesla also argue for the elimination of truck voucher requirements to improve overall program participation. More generally, ChargePoint and the Joint Commenters argue against the adoption of additional eligibility criteria and program requirements for the MHD Pilot, cautioning that additional requirements would continue to impede program participation. During the MHD technical conference, some Stakeholders also noted that removal of truck voucher requirements would support greater flexibility by permitting mixed vehicle class charging cases, as in fleets comprising both light-duty and larger vehicles.

ChargePoint, the Joint Commenters, and Tesla cite a claim by the Joint Utilities that 96 percent of fleet operators directly engaged by the JU have failed to participate in the pilot due to program eligibility restrictions and urge the Commission to ease these. ChargePoint also warns that additional eligibility criteria and program requirements for specific MHD use cases will complicate administration and confuse participants, and that the Commission should refrain from further segmentation of the MHD market until market barriers are more fully investigated and understood. Similarly, Tesla cites the relatively nascent status of the MHD market in warning against the application of additional eligibility criteria.

NYPA and the JU recommend that all MHD vehicle types be eligible to participate in the Pilot. However, AEE ACENY propose that the program prioritize school buses, transit buses, delivery service vehicles, and refuse vehicles, with private fleets remaining eligible but with higher cost-sharing requirements.

Several Stakeholders suggest other revisions to the MHD Pilot eligibility requirements to improve outcomes. AEE ACENY proposed allowing a choice of business models to participants (e.g., owner-operated vs. third-party owned-and-operated). EDF recommends dedicated MHD Pilot funding for small fleets comprising approximately 10 to 15 vehicles to provide more equitable outcomes, as program funding could be exhausted primarily by larger, more powerful operators with the means to pursue electrification earlier and at greater scale. EDF also observes that smaller fleet operators would likely require additional technical support and recommends a dedicated staff person at each participating utility to provide such guidance. The JU notes that some developers and fleet operators have expressed interest in incentives to support make-ready infrastructure for small electric aircraft and non-passenger vehicles such as aviation ground service equipment and powered industrial trucks. While Staff acknowledges and values Stakeholder comment on these items, discussion related to these was relatively limited when compared to issues that provoked more widespread debate. Given the more limited comment these proposals inspired and the relatively nascent character of MHD electrification to date, Staff finds it reasonable not to introduce any of these recommended revisions to the MHD Pilot in the Make-Ready Proceeding at this time. Stakeholders should consider making these recommendations in the upcoming MHD proceeding.

Staff Recommendation

Though the current truck voucher requirements were identified by many Stakeholders as barriers to further success of the MHD Pilot, Staff stresses that these requirements were established

to ensure that early MHD electrification investments would directly displace existing diesel emissions in DACs. However, Staff recommends that transportation electrification programs with DAC requirements established by the federal Infrastructure Investment and Jobs Act and Inflation Reduction Act of 2022 be added to supplement present MHD Pilot requirements to provide additional flexibility for participants.

Staff specifically recommends that the Environmental Protection Agency's Clean School Bus Program be added to the list of qualifying voucher programs that determine MHD Pilot eligibility for projects using the program to purchase electric school buses. Much like the truck voucher program, the Clean School Bus Program has a scrappage requirement that decommissions existing polluting diesel buses to access funding for new zero emission and low emission buses. Staff is optimistic that such reasonable expansion of MHD Pilot participation eligibility will encourage greater program uptake in the near-term, particularly in combination with the limited addition of customer-side incentives discussed above.

Transit Authority Make-Ready Program

NYPA provided the most prominent discussion on the transit authority pilots in the written comments solicited by Staff as part of the Midpoint Review. NYPA states that it had completed transit fleet master plans for the five largest suburban transit agencies in the state and continues to work with other public transportation entities on further electrification efforts; NYPA observes that costs remain the greatest impediment to public transportation electrification efforts. In advising that the Commission establish a full-scale, multi-year MHD make-ready program that allows some funding of customer-side costs, NYPA noted that this expansion of eligibility would be particularly beneficial to public transit operators, for whom high installation costs often render electrification efforts uneconomical, especially for bus fleets that face perennial budgetary challenges and rely on state and federal funding for solvency.

In the MHD technical conference, some Stakeholders noted that other transit agencies, aside from the five directed by the Make-Ready Order, are actively pursuing electrification through transit bus master planning and that more funding should be allocated to support such activities statewide. In its written comments, Fermata recommends that this funding eligibility continue at the currently authorized 100 percent level for transit authority make-ready efforts. The City also recommends additional funding for transit make-ready, and the JU similarly states that current budgets are insufficient. Additional impediments to transit electrification were discussed at the MHD technical conference, with several parties observing that infrastructure upgrades at transit bus facilities often require construction of entirely new electrical rooms to accommodate enhanced service, which would benefit from incremental funding. To this end, it was also noted that future-proofing transit facilities would also provide economic and efficiency benefits by prioritizing depots for additional upgrades in advance of actual load need to avoid piecemeal repetition of invasive and expensive construction efforts, particularly in dense urban areas where such events typically affect other infrastructure.

There was also extensive advocacy in filed comments for greater support of school bus electrification efforts. AEE ACENY and CALSTART endorse a 100 percent make-ready

incentive to help meet New York State's commitment to transitioning to an entirely electric school bus fleet by 2035. FS also cites this statewide objective in recommending a dedicated make-ready program for school transportation electrification that would support school district, bus operators, and contractors. Highland concurs with these recommendations and cites the Maryland 2022 Climate Solutions Now Act that provides up to \$50 million to each administering utility for electric school bus pilot programs to demonstrate that more funding is needed in New York State. NYPA specifically suggests greater incentives for school transportation electrification may be necessary, as many school bus facilities are in rural areas with less existing grid capacity.

Staff Recommendation

Staff acknowledges that the transit bus market is the most mature segment of the MHD sector and is encouraged that transit electrification is also occurring among transit entities outside of the Transit Authority Make-Ready Program. Moreover, Staff recognizes that transit fleet electrification directly benefits disadvantaged communities and urban areas in particular, where public transportation is generally the most affordable, accessible, and convenient transport system for much of the population. However, while recognizing the fervent Stakeholder demand for greater support for transit electrification efforts statewide, Staff must cautiously balance such demands with an overarching obligation to ratepayers to allocate such funding prudently and justifiably. While the Transit Authority Make-Ready Program has yielded good progress and holds promise for additional future collaborations between public transport operators and public utilities, Staff advises that more detailed Stakeholder input and analysis are needed before it can recommend any modifications or expansion of the extant transit electrification efforts authorized by the Make-Ready Order. Therefore, Staff recommends that interested Stakeholders submit transit electrification proposals and supporting cost studies for review as part of the ongoing electric vehicle proceeding.

Likewise, Staff acknowledges school bus electrification is a vital component of overall MHD efforts both at the state and national level, which is evidenced by the following new programs and funding allocations. In the January 2022 State of the State address, Governor Hochul announced new objectives for school transportation electrification that called for ZEV-only new school bus purchases by 2027 and an all-ZEV statewide school bus fleet by 2035, commitments that became statutory mandate when enacted in the 2023 State budget passed in April 2022. Additionally, the passage of the New York State Environmental Bond Act of 2022 allocated an additional \$500 million for school transportation electrification.

In view of these developments, Staff recommends that the Commission direct the utilities to identify existing load serving capacity at school bus depots, in preparation for the broad electrification of this sector. Staff also recommends further engagement between utilities and interagency partners such as DPS, NYSEDA, and the New York State Education Department to ensure greater coordination of efforts necessary to achieve the State's school transportation electrification objectives. This collaborative work should include identification of existing grid constraints, identification of school transportation operators that can electrify fleets with current power capacity, and greater coordination to allocate Bond Act funding efficiently.

Fleet Assessment Services

The Fleet Assessment Services established in the Make-Ready Order are new utility-administered services to customers investigating fleet electrification options and currently comprise site feasibility and rate feasibility analyses. Site feasibility analyses are to assess potential maximum power needs of fleet charging at a customer location and evaluate the existing capacity of the local distribution system and its ability to accommodate load increases as necessary. If such site feasibility analyses determines that fleet charging is practicable at a location, the utility conducts a rate analysis to determine the costs of fleet electrification and to make recommendations for the most beneficial tariff for the fleet owner to enroll in as well as other best practices to ensure the economic viability of converted fleet operations.

In written comments, Highland recommends that Fleet Assessment Services should be expanded to address other fleet electrification concerns beyond the site feasibility and rate analyses currently offered, such as incentive availability, vehicle options, and DER integration assessments. The JU recommend that the Stakeholders consider increases to Fleet Assessment Services budgets and a reassessment the scope of this program, citing unanticipated demand for these services. During the MHD technical conference, Stakeholders endorsed further revisions of the Fleet Assessment Services, including adding total cost of ownership evaluation, fuel savings and emissions reduction estimates, guidance on sequencing fleet conversions and replacements, and greater coordination between fleet assessments and interconnection evaluations. These recommendations were premised on the argument that program participation will improve if Fleet Assessment Services are made capable of demonstrating the financial benefits of electrification to prospective fleet operators. Additionally, it was suggested that program participation could also be stimulated by offering incentives based on Fleet Assessment Services participation leading to successful fleet electrification, possibly with a modest increase in make-ready support. Stakeholders also stated that a more uniform suite of Fleet Assessment Services statewide would provide greater confidence to fleet operators considering electrification.

Staff Recommendation

Staff recommends that Stakeholders collaborate to investigate modification or expansion of the existing utility Fleet Assessment Services to a standardized program specifically adapted to serve the needs of school transportation operators. Staff notes that the NYSERDA FlexTech program could serve as a model for such an expanded school fleet assessment program to provide targeted, site-specific studies to better incorporate transportation electrification into capital planning. Staff further recommends that the Commission require the JU to modernize the fleet assessment application into a single standardized web-based form to further streamline onboarding fleets into the program.

Load-serving Capacity Maps

The Make-Ready Order directed the utilities to publish load serving capacity maps tailored to support electric vehicle charging sites sited by no later than December 31, 2020.¹²¹

Staff Recommendation

While the Make-Ready Order directed the utilities to publish load serving capacity maps no later than December 31, 2020, the Order did not recommend a timeframe for providing updates to the maps. Hence, Staff is recommending that the utilities provide quarterly updates to the load-capacity maps tailored to support electric vehicle charging siting.

Power Sharing

Power sharing allows for multiple chargers at a charging site to distribute the available energy capacity proportionally across all the active EV chargers. Currently the Make-Ready Program provides incentives that cover the same kW capacity on the customer and utility sides. This may discourage site developers from installing additional chargers and utilizing advanced software to enable power sharing to serve more vehicles when the site is busy.

Staff Recommendation

Staff is seeking Stakeholder feedback on whether to allow higher capacity on the customer side under certain circumstances, such as establishing a minimum utility-to-customer-side ratio or a minimum plug count, to enable larger charging sites to utilize power sharing.

¹²¹ Make-Ready Order, p. 148.

APPENDICES

List of Commenters

Advanced Energy Economy and the Alliance for Clean Energy New York (AEE ACENY)

Alliance for Transportation Electrification (ATE)

CALSTART

ChargePoint, Inc. (ChargePoint)

City of New York (City)

Earthjustice – Natural Resources Defense Council – Sierra Club (Joint Commenters)

Environmental Defense Fund (EDF)

EVgo Services LLC (EVgo)

Fermata Energy LLC (Fermata)

First Student, Inc. (FS)

FreeWire Technologies, Inc. (FreeWire)

Highland Electric Fleets (Highland)

Joint Utilities (JU)

Lion Electric Co. USA Inc. (Lion)

New York Power Authority (NYPA)

Revel

Shell Recharge Solutions (SRS)

Siemens eMobility and Veloce Energy (Joint Technical Parties)

Sunrun, Inc. (Sunrun)

SWTCH Energy, Inc. (SWTCH)

Tesla, Inc. (Tesla)

Vehicle-Grid Integration Council (VGIC)

WeaveGrid, Inc. (WeaveGrid)

Midpoint Review Questions and Comments Summary

Program Budget and Incentives

Questions: 1) Provide comments and suggested modifications for the non-DAC incentive levels for both the light-duty program and the MHD Make-Ready pilot. 2) Provide comments regarding the state of the EV charging station market and its continued need for make-ready subsidies. Is the market ready to begin reducing the percentage of make-ready costs subsidized by the program from 90 percent for publicly accessible nonproprietary sites and 50 percent for other types of chargers? If so, what percentage of costs should be subsidized? 3) Are the per plug cost estimates for utility- and customer-side make-ready, which the Commission used to establish the make-ready program budgets reflective of the costs developers encountered during the first two years of the program?

Summary of Comments

Advanced Energy Economy and the Alliance for Clean Energy New York (AEE ACENY)

AEE ACENY recommends developing an expanded MHD fleet vehicle make-ready program with dedicated funding as well as providing a separate dedicated funding source for school bus electrification. AEE ACENY proposes a comprehensive Stakeholder process that would build upon the light-duty EVSE proceeding and would address all the components of the MHD sector.

AEE ACENY states that one of the biggest challenges to program implementation is that the actual project costs tend to be higher than the baseline estimates, thereby contributing to the cancelation of projects. Moreover, AEE ACENY agrees that the implementation of a demand charge incentive would improve project economics but states that higher capital incentives can decrease the need to modify rate signals.

AEE ACENY states that inflation and supply chain issues increased the per plug cost of L2 chargers, preventing the utilities from offering incentives at the full 50%, 90% and 100% of project costs and recommends recalculating the Make-Ready Program budgets based on updated costs.

Alliance for Transportation Electrification (ATE)

ATE recognizes that the market transformation process is in an early phase with low EV adoption and therefore states that the incentives and budgets should continue to support the market transition. ATE asserts that the Inflation Reduction Act will provide a boost in EVs and the public's awareness of EVs and any corresponding programs, thus increasing the EVs in the market; therefore, the budgets should remain while the market catches up.

ATE recommends maintaining the current 90% and 100% incentive levels for non-proprietary plugs and 50% for proprietary plugs concluding that modifying incentives at this stage could create regulatory uncertainty, sending the wrong signals to developers.

ChargePoint

ChargePoint notes that per-plug costs vary across the state and anticipates that several utilities will not meet their L2 deployment targets. ChargePoint recommends modifying the light-duty incentive program to reflect actual average costs as incurred, specifically, ChargePoint recommends that a modified program should cover 90% of the make-ready costs of L2 ports, with a maximum per-port incentive of up to \$15,000 in the Con Edison service territory, and up to \$8,000 per port in services territories outside of Con Edison. As for the MHD Make-Ready Pilot, ChargePoint recommends expanding the program budget to cover 50% of the customer-side make-ready costs to encourage greater program participation.

ChargePoint asserts that the EV market is in its earliest states and notes that utility support for make-ready infrastructure is one of the most effective policy tools to boost the charging market and EV sales. ChargePoint anticipates that the make-ready incentives can be eliminated as the market matures but argues that support is still needed for charging infrastructure deployment.

City of New York (City)

The City proposes continuing to build on the successes of Con Edison's PowerReady Program. The City urges Con Edison to convert its existing queue of projects to "completed" projects and recommends: 1) improving the transparency of available incentives; 2) maintaining existing incentive levels and eligibility requirements; 3) implementing defined time periods and decision points for projects in the queue; 4) revising the current EAM structure to better incentivize the completion of projects. The City recommends developing a public-facing dashboard that has near-real time data on both the available and actual incentive levels for each project type. The City criticizes Con Edison's back log of applications and queue management, and states that it is imperative that the utility and program participants stick to a timeline to ensure projects progress in a timely manner. The City proposes Commission intervention to reset the queue by eliminating speculative projects that are blocking the completion of more advanced or realistic projects.

The City advocates for the inclusion of single energy distribution nozzle capability DCFCs as eligible infrastructure and thereby eligible to receive incentives. The City states that including DCFC devices from only one nozzle at a time can increase developer participation and EV penetration and implementation.

Furthermore, the City endorses recalculating the baseline costs that were in the Make-Ready Order to make the costs more in line with the current market, arguing that doing so would ensure that enough funding is designated to the program. The City recommends permanently eliminating the incentive cap on L2 chargers to address Con Edison's existing applications and anticipated future queue. The City advises that any reduction in the percentage of subsidized costs would discourage participation and hinder the deployment of EV infrastructure and technology. The City advocates for Con Edison leveraging the portion of its uncommitted budget to continue to develop and expand on the Make-Ready Program.

Earth Justice - NRDC – Sierra Club (Joint Commenters)

Joint Commenters state that the make-ready eligibility requirements are hindering the success of the MHD Pilot. Joint Commenters mention data obtained from the JU that found that 96% of fleets were unable to participate in the Pilot Program because of the program restrictions. Joint Commenters urge the Commission to expand the MHD eligibility requirements and incentive levels to better align with New York's ZEV and Advanced Clean Truck goals. Joint Commenters recommend that utilities and transit authorities work in unison to ensure the Transit Authority Program is successful in helping electrify fleets across the State.

Environmental Defense Fund (EDF)

EDF recommends recalculating the actual costs of make-ready infrastructure deployment and updating the baseline costs that were provided in the Make-Ready Order to create incentives consistent with today's costs.

EDF argues that any changes to the make-ready cost subsidies should consider that the MHD sector is at a different stage of development than the light-duty sector. EDF adds that the charging infrastructure needed to support MHDs should be considered a distinct market segment and not an extension of the light-duty market. EDF contends that not all utility spending on make-ready infrastructure needs a subsidy because vehicle charging can yield important grid and resiliency benefits. EDF states that ratepayer dollars should go towards enabling safe, reliable service and reasonable rates by leveraging demand flexibility and creating societal benefits. EDF maintains that unlocking efficient approaches to grid management can mitigate the cost of grid upgrades and air pollution impacts.

Fermata Energy (Fermata)

Fermata recommends increasing the current make-ready infrastructure budget from 20% to 35% for MHD fleets located in or servicing DACs as doing so would better align with the CLCPA DAC commitment. Fermata also suggests expanding the definition of DACs beyond physically defined census tracts to allocate some of the funding to MWBEs.

Fermata recommends modifying the Make-Ready Program to allow emerging EV charging technologies to qualify for funding because limiting eligibility to CCS connectors, the only standard plug, should be discontinued. Fermata states that support for CHAdEMO is necessary while CCS bidirectional functionality evolves as doing so would enable EV owners and ratepayers to adopt and benefit from bidirectional EV charging. Fermata recommends maintaining or even raising the incentive levels for EV charger make-ready to enable as many EV charger deployments as possible through the end of the program.

Fermata states that the cost to deploy DCFC infrastructure has not decreased since the inception of the program, therefore the make-ready incentives should remain at current levels.

Joint Utilities (JU)

The JU comments that the current make-ready incentive levels and budgets are insufficient for the State to meet the EV goals, as the costs often exceed the baseline costs that

were established in the Make-Ready Order. In Con Edison's territory the budget levels are also insufficient to address the increasing goals such as Advanced Clean Cars II. The JU notes that the cost of L2 chargers has been considerably higher than the baseline. The JU notes that first movers are more likely to have found the less expensive sites than those sites that will be available in the future.

The JU comments that a comprehensive modeling of MUD charging needs would be beneficial.

New York Power Authority (NYPA)

NYPA states that the current incentive levels for the light-duty program are set at an appropriate level but recommends that Staff re-evaluate the number of L2 and DCFC chargers for the upstate utilities to ensure that that is what is needed. NYPA also states that because of the State's clean MHD sale goals, a dedicated MHD EV make-ready program should be established that allows for participation by all MHD vehicle types, including transit buses.

NYPA recommends keeping the incentives as is because the costs are being negatively affected because of inflation and supply chain delays. Additionally, NYPA states that charging site utilization remains low, therefore the incentives help with supporting the economics for charging site operators.

The costs used to establish the make-ready budgets are consistent with NYPA's upstate experiences with costs. NYPA recommends examining how inflation impacts the cost of EVSE deployment to determine if any budget modifications are required.

Revel

Revel supports increasing the budget and incentive levels and prioritizing publicly accessible charging sites. Revel comments that even with greater levels of funding, public non-pay-to-park DCFC locations should be prioritized over those in pay-to-park lots, MUDs, and workplaces that are not freely accessible to members of the public. Revel emphasizes that access to residential or workplace lots in New York City typically excludes lower wage workers.

Siemens eMobility and Veloce Energy (Joint Technology Parties)

The Joint Technology Parties recommend that the Make-Ready Program be extended to include residential installations, including financial incentives for service panel upgrades and new technologies. In making these recommendations, the Joint Technology Parties note the expenses involved in the service panel upgrades required for most residential charging (up to \$8,000 to accommodate L2 charging). This expense is a significant barrier that impedes EV adoption by preventing the home installation of L2 chargers. Additionally, the Joint Technology Parties state that by not providing an incentive to moderate the cost to install and upgrade a home charging unit can be a missed opportunity for the beneficial use of managing home EV charging as a grid asset. The Joint Technology Parties note that the need for such upgrades is generally even greater in DACs that have typically older housing stock and lower service panel amperages. The Joint Technology Parties also report that the California Energy Commission workshop

research identified a number of less expensive alternatives to service panel upgrades, including load sharing devices, meter collars, smart circuit breakers, and smart panels and sub-panels.

SWTCH Energy (SWTCH)

SWTCH states that an inequitable deployment of charging is occurring between upstate and downstate locations, with upstate utilities lagging in EV deployment, causing a delay in EV adoption. SWTCH recommends modifying incentive levels to be more in line with actual project costs rather than baseline costs and layering the incentive with a small EVSE incentive. Lastly, SWTCH recommends reclassifying MUD charging as a public use case, as doing so would allow the projects to be eligible for 90/100% make-ready incentives where the charger is available to multiple end-uses.

Tesla

Tesla notes that there have been two new federal incentive programs created since the beginning of Make-Ready Program: The National Electric Vehicle Infrastructure Program and a restructured and expanded Alternative Fuel Vehicle Refueling Property Tax Credit. Tesla proposes that, to maximize program funding and prevent “double-dipping,” the Make-Ready Program should contain program rules that would restrict funding to the project’s net costs after any federal incentives have been applied.

Tesla remarks that despite significant deployment of EV charging infrastructure through the Make-Ready Program, the deployment pace has slowed and is falling behind targets, and in addition current application queues may contain projects that may not be completed. Tesla also questions whether EV infrastructure deployment has been more rapid than it would have been in the absence of Make-Ready Program incentives. To address these concerns, Tesla recommends program transparency to measure progress through updates on the JU’s website, particularly information on whether projects have been completed, committed, or applied for. Tesla also recommends expanding eligibility to include customer-owned switchgear and wiring up to a customer’s meter.

Tesla states that the MHD Pilot programs need improvement, as 96% of fleets that have engaged with the utilities have not been able to participate in the pilot program. Tesla argues that the MHD Pilot Program should be replaced with a full-fledged make-ready program for these vehicle classes, which will promote fleet electrification in New York State. Tesla recommends a budget of at least \$150 million for a MHD make-ready program through 2025, with an opportunity for additional funding when budgets are depleted.

Tesla contends that it is appropriate to maintain incentives for publicly accessible nonproprietary sites at 90%. Tesla proposes that private access and proprietary technology charging site incentives should increase from 50% to 75%. Tesla notes that there are many large fleet customers who would benefit from additional charging infrastructure enabled by such an increase in incentives, including car rental companies, vehicles-for-hire, and transportation network companies (ridesharing services), which account for more mileage per vehicle than privately owned standard light-duty passenger vehicles.

Disadvantaged Communities

Questions: 1) In addition to three transportation prize competitions focused on DACs, the Commission directed the utilities to fund up to 100 percent of eligible make-ready costs for eligible installations within a one-mile radius of DACs in Con Edison, Central Hudson Gas & Electric, RG&E as well as metro areas in NYSEG and National Grid and within a two-mile radius of DACs outside of metro areas in NYSEG and National Grid. Eligible installations include public DCFC which meet all accessibility criteria and L2 chargers at MUDs.

- a) Provide comments on the degree to which the higher DAC incentives address the barriers to EV adoption in DAC communities.
 - b) Should the DAC incentive amounts or budgets be modified? If so, in what way?
 - c) In high density areas such as New York City, a DAC can include economically affluent properties. Should additional, premise-specific eligibility criteria be developed for the 100 percent tier to ensure the incentives benefit DACs as intended in high density areas? If so, what additional criteria should the Commission consider?
 - d) Provide comments on how the DAC eligibility criteria is working in territories outside of NYC – does the criteria require modifications?
- 2) Are there any other issues concerning the Make-Ready Program’s DAC approach that are not addressed by question 1?

Summary of Responses

AEE ACENY

AEE ACENY states higher Make-Ready Program incentives for DACs can deliver infrastructure upgrades to communities where existing, often older, building stock may require additional and costly electrical upgrades.

City

The City states that it supports the DAC+0 requirement because it directs benefits to DACs, however, the City does not support any other site-specific eligibility requirements for qualified projects. The City remarks that funding in DAC and LMI communities should be directed towards electrifying public transit, ridesharing services, and medium-and-heavy-duty vehicles. The City also encourages funding for alternative transportation such micro-mobility charging.

Joint Commenters

Joint Commenters recommend scheduling a technical conference to assess how the Make-Ready Program is meeting the needs of DACs. Joint Commenters propose establishing a mandate that provides details on charging site installation in MUDs, stating that the current data is too sparse to accurately assess how the program is doing.

EDF

EDF supports providing higher DAC incentive levels to the MHD Pilot. EDF notes that, currently, the MHD fleets in DAC do not have a dedicated DAC budget or additional incentives to cover the make-ready costs. Because of the pilot's limitations to utility-side make-ready, EDF states that the infrastructure cost to install chargers is not sufficiently addressed, even if 100% of utility-side costs were covered.

EDF proposes that modifications to the MHD Pilot in DACs are necessary and that MHD electrification must be balanced with appropriate incentive levels in order to ensure that DACs are not subjected to increased congestion due to charging infrastructure siting. EDF recommends meeting with affected community groups prior to program modifications.

EDF recommends having clear criteria for prioritizing and increasing incentives levels for MHD fleets that operate a significant portion of time in DACs. Furthermore, EDF states that the criteria defined for MHD fleets should not penalize vehicles that operate within a DAC but charge outside of a DAC. Additionally, EDF states that when developing the criteria, it should consider the strategy used by the NY Clean Trucks program where vouchers are offered for fleets that operate within a half-mile of an industrial business zone.

Fermata

Fermata recommends increasing DAC funding to 35% in line with the CLCPA and proposes to keep the DAC incentive amounts at 100%. Fermata comments that carsharing in DACs must benefit the neighborhood residents but charging for the carsharing can be sited outside the DAC.

Fermata also promotes VGI technology as it may enable resiliency in neighborhoods that are traditionally last to have power restored.

JU

The JU comments that the DAC incentive should be set at up to 100% with the associated budget for DACs increased to 35% of the Make-Ready Program budget. The JU comments that eligibility should be extended to include on-street chargers in DACs, particularly because many residents rely on this kind of parking. The JU recommends that any changes to the DAC incentives should be accompanied by programs and/or advisory services that promote the electrification of fleets, public transit, and school buses that serve these communities. The JU comments that the DAC buffer should be reevaluated and suggests complementary eligibility for the up to 100% tier for LMI status MUDs, such as that defined by the utilities' existing affordable housing energy efficiency programs.

NYPA

NYPA recommends that any DAC incentive should specifically look at for-hire vehicles such as taxis, ride-share vehicles, and commuter vans. Given the large growth in ride-share trips and that those drivers typically live in areas where there is little access to public charging, NYPA

states that investment in L2 and especially DCFC chargers will help reduce range anxiety for these drivers who oftentimes work in DACs.

Revel

Revel supports the current make-ready incentive levels for sites in DACs. Revel comments that if the Commission considers additional premise-specific eligibility criteria, it should take into account the fact that many DAC neighborhoods are located within residentially zoned districts that do not allow standalone charging sites. Revel states that if the criteria are too restrictive, it is possible that the only appropriately zoned sites that can serve DAC will be ruled out.

The Need for Additional Phases of the Program

Questions: 1) What program modifications would improve the MHD Make-Ready pilot? 2) Should the Commission consider creating eligibility criteria and program requirements for specific MHD vehicle use cases or vehicle-types, to address the varying charging infrastructure needs across the class 2 – 8 vehicle markets? If so, which vehicle types or use cases should have unique program requirements? 3) Should additional equipment be added as eligible EV make-ready costs, for either the light-duty or MHD Make-Ready pilot? 4) What progress have Transit Authorities made on fleet electrification since the Make-Ready Order? 5) Are changes to the current Transit Authority Make-Ready program needed, to ensure the five upstate Transit Authorities meet their goal of 25 percent fleet electrification by 2025? 6) Should VGI pilots be considered as part of the Midpoint Review?

Summary of Responses

AEE ACENY

AEE ACENY notes that the current MHD Pilot requires a complete overhaul and states that the next phase of the Make-Ready Program should incorporate Stakeholder feedback. AEE ACENY recommends that the program be designed by combining aspects from the more successful LDV program, such as allowing participants a choice of business models (owner-operated or third-party owned-operated). AEE ACENY proposes that incentives be provided for all utility-side infrastructure costs as well as for customer-side infrastructure costs.

AEE ACENY notes that school buses, transit buses, delivery service, and refuse vehicles should be a priority and that private fleets, while eligible to receive incentives, should have higher cost sharing requirements.

AEE ACENY recommends that all types and configurations of EV charging be included in the light-duty Make-Ready Program. AEE ACENY also recommend eliminating the requirement that participants seek funding through NYSERDA's Truck Voucher Incentive Program or the NYC Department of Transportation's Clean Trucks Program as it limits the number of fleets that are eligible for the MHD Pilot as well as prohibiting funding to entities that provide vital fleet services.

AEE ACENY recommends prioritizing projects that integrate managed charging solutions, such as VGI. AEE ACENY states that incentives provided for automated load management, energy storage, integrated DERs, integrated facility, etc. should be used as a tool to avoid utility system peaks. Additionally, AEE ACENY states that VGI programs can play an important role in establishing a resilient power grid and system peak management and recommends providing funding to cover the incremental cost of bidirectional charging sites.

ATE

ATE states that additional phases of the program will be required unless investment accelerates to the pace where funding is fully allocated by the program's expected termination. ATE maintains that an extension of time will be necessary as more and more site hosts invest time and expense exploring options for hosting an EVSE but remain unprepared to complete installation at this time.

CALSTART

CALSTART states that it is critical to move beyond a pilot program to a full-scale program so that New York can meet its emission targets. CALSTART comments that the make-ready incentive levels are appropriate but that the eligibility of projects should be expanded beyond those requiring only voucher support. With this type of program change, CALSTART insists that there would be more interest directed at fleets and correspondingly a need for a larger overall MHD budget.

CALSTART recommends that the MHD program offer 100% Make-Ready incentive for electric school buses to help meet the 2035 clean school bus fleet target. CALSTART also proposes to establish dedicated funds for "MegaWatt+" commercial ZEV corridor sites which are important in electrifying long-haul freight.

ChargePoint

ChargePoint endorses a separate proceeding for MHD EVs, including dedicated infrastructure incentives and rate design. ChargePoint notes that 96% of fleets engaged by the JU have not participated in MHD Make-Ready Pilot Program and attributes this to what it perceives as a program design that is better suited to light-duty vehicles and fails to adequately address barriers to MHD electrification. ChargePoint argues that a more thorough Stakeholder process is necessary to address these program shortcomings and specifies that MHD programs and rate design for this market should be evaluated together. ChargePoint adds that it generally supports the pending Petition for the Initiation of a Proceeding and Interim Measures Addressing Electric Vehicle Supply Equipment and Infrastructure for Medium- and Heavy-Duty Electric Vehicles by CALSTART et al. in Case 18-E-0138 in initiating a comprehensive Stakeholder process to develop a full-scale MHD infrastructure program.

ChargePoint does not recommend additional eligibility criteria and program requirements for specific MHD use cases, as these may complicate administration and confuse participants. Although various use cases may require solutions different than those for the light-duty market,

ChargePoint argues that further segmentation of the class 2-8 markets would be premature without more thorough investigation of market barriers.

ChargePoint notes that the JU reported at the Midpoint Review presentation that Make-Ready Program participation increased with opportunities to cover both make-ready and equipment costs through stackable incentives; ChargePoint therefore suggests it may be appropriate to offer incentives for charging site equipment for the MHD market. ChargePoint adds that eligible equipment should be required to be networked, ENERGY STAR-certified (for L2), and UL-listed for safety.

ChargePoint recommends refraining from establishing a VGI pilot for commercial customers until rate design concerns are clarified with an order in Case 22-E-0236. ChargePoint states that if the Commission does proceed with a VGI pilot in the Midpoint Review, its focus should be on residential implementation because of the potential for cost savings and grid management. ChargePoint notes that residential charging will be unaffected by demand charges considered in Case 22-E-0236, so residential managed charging programs can deliver VGI benefits without duplicating programs. ChargePoint adds that residential active charging programs can be considered along residential make-ready programs.

The City

The City recommends incentivizing an expanded and permanent MHD program and to use the dollars that are currently in the MHD Pilot Program and other underutilized EV incentive programs (i.e., EV Per-Plug Incentive Program) to minimize rate payer impact. The City states that a permanent MHD program should mirror the light-duty program and that there should be no restrictions on incentive availability or eligibility criteria for MHD vehicles. The City recommends a program that focuses on electrifying delivery trucks and states that doing so will likely result in significant local air quality improvements and greenhouse gas reductions.

The City supports the implementation of a pilot program for VGI and states that the benefits that California found with VGI will translate into the New York market.

Joint Commenters

Joint Commenters recommend scheduling a technical conference to identify the other State and Federal funding sources that can be leveraged for the next phases of the program.

EDF

EDF argues that the current structure of the MHD Pilot is not meeting the needs of the fleets interested in electrification. EDF suggests several modifications to improve accessibility and therefore the impact of the program: 1) remove the requirement that the fleet must participate in the New York Truck Voucher Incentive program or the NYC Clean Trucks program which is too limiting and excludes fleets too new to be eligible or entities that do not own the vehicles themselves; 2) the MHD Pilot subsidies should include both utility-side and customer-side make-ready costs; and 3) the program should ensure that that fleets have access to the Pilot regardless of whether they are seeking to install L2 chargers or DCFCs.

EDF supports reserving a portion of the MHD Pilot funding for small fleets that contain between 10 to 15 vehicles. EDF argues that the funding that is set aside would help provide for more equitable outcomes in the Pilot. In addition, EDF states that small fleets may need additional technical support throughout the electrification process and that the inclusion of a dedicated utility staff person should be established as a knowledgeable contact.

EDF recommends the inclusion of managed charging technologies such as DERs and other equipment as eligible make-ready costs as these resources can provide benefits to the grid and mitigate the need for grid upgrades. EDF adds that these tools can help fleets customers more effectively respond to price signals.

EDF supports the implementation of VGI pilots as part of the review for innovative and new technologies or use-cases that are not currently at market-scale deployment. EDF argues that pilots for light-duty managed charging are not needed, but pilots for MHD fleets should be explored further. EDF adds that MHD VGI pilots should include on-site DER such as solar or battery storage to reduce make-ready and grid buildout costs and that VGI technologies should be considered for power and ancillaries services as well.

Fermata

To accelerate MHD fleet electrification, Fermata suggests making the MHD Make-Ready Pilot a permanent, stand-alone, dedicated Make-Ready Program.

Fermata advises the consideration of broader incentives for emerging use cases such as V2X bidirectional charging that can enable MHD EVs to provide grid services when parked. Fermata submits two examples of limitations to avoid: 1) Restricting make-ready to existing EVSE charging configurations would limit innovation; and 2) Restricting make-ready to EVSE installations with a separate service drop. Fermata states that many utility make-ready infrastructure programs exclusively fund front-of-the-meter equipment requiring chargers to use a separate service drop, which can effectively prohibit vehicle-to-building use cases.

Fermata comments that the Make-Ready Program should be expanded to include the V2X bidirectional EVSE, stationary storage and other DERs.

Fermata supports the terms laid out in the Make-Ready Order that states that transit authorities are eligible for 100% make-ready support.

Fermata supports the consideration of V2G pilots as part of the Midpoint Review. Fermata comments that V2X infrastructure should be developed today to maximize the value of public funding for EV charging infrastructure. Fermata also notes that V2X infrastructure planning and development should not be delayed until standard, unidirectional charging infrastructure is completely deployed.

Fermata recommends consideration of a VGI pilot that will evaluate VGI for MUDs and single-family homes that will clarify where make-ready funding may be needed to provide behind-the-meter make-ready infrastructure upgrades. Another VGI pilot to consider according to Fermata is a pilot that would evaluate VGI for commercial and municipal sites with fleets that

would determine additional make-ready needs. Lastly, Fermata recommends a pilot that would evaluate business models to support the use of V2X in AC and DC microgrids that could incorporate light-duty EVs in addition to MHD EVs.

First Student, Inc. (FS)

FS is currently electrifying five buses in Buffalo and two in Yonkers utilizing the NYSERDA rebates and was denied make-ready funding because there was sufficient power at the sites to electrify the new electric school buses. FS comments that this decision took into consideration the first phase and did not consider the buses that would be replaced in the next phases.

FS recommends that MHD programs provide funding for either side of the meter because the Pilot make-ready funds are only available for utility-side construction, thereby disqualifying projects that do not require a new service drop or utility transformer upgrades. FS recommends that consideration should be given for a specific make-ready program for school districts, bus operators, and contractors, especially because of the state mandate requiring the electrification of bus fleets by 2035.

FreeWire

FreeWire recommends the development of a portfolio of VGI pilots in the second half of the Make-Ready Program. FreeWire states that VGI should be considered in tandem with EV charging infrastructure investment rather than after. FreeWire comments that customers should be incentivized to utilize these solutions given that they reduce costs to all ratepayers. FreeWire suggests this could be achieved with a customer rebate or a rate discount based on the avoided distribution upgrade costs to the utilities.

Highland Electric Fleets (Highland)

Highland recommends that a separate proceeding be opened specifically for MHD vehicles. Highland argues that while the pilot programs mandated by the July 2020 Make-Ready Order were an efficient first step, a dedicated program and funding for MHD EVs is necessary. Highland recommends that the entire MHD Pilot Program be expanded. Additionally, Highland proposes that a dedicated program and funding be established for electric school buses. Highland notes that only \$15 million is currently allocated for electric school buses by the MHD Pilot Program and contends that more incremental funding is necessary to create a scalable program. Highland cites Maryland's 2022 Climate Solutions Now Act that provides up to \$50 million to each utility to implement electric school bus pilot programs in that state to demonstrate that \$15 million allocated across the JU represents insufficient funding of this effort in New York.

Highland also describes three changes it recommends be made to the MHD Pilot in the short term. First, Highland contends that the current MHD Pilot eligibility rules that require participants to receive support through the New York Truck Voucher Incentive Program or the Clean Trucks Program should be eliminated. Highland acknowledges that these requirements

are meant to facilitate the replacement of older, more polluting vehicles (model years 2009 and older), but argues they limit the number of fleets eligible for the MHD Pilot overall.

Second, Highland reiterates a recommendation by CALSTART et al. that the MHD Pilot Program be modified to include incentives for customer-side make-ready infrastructure as well as utility-side costs, which it argues will increase participation by MHD fleet customers. Highland notes that customer-side make-ready costs like trenching, permitting, and conduiting represent significant cost barriers to fleet electrification, even in comparison to utility-side upgrades (which, in many circumstances, may be negligible due to the availability of excess distribution capacity). Highland agrees with CALSTART et al. that customer-side make-ready costs should be subsidized at the 50% level currently used in the light-duty Make-Ready Program for chargers that are not publicly accessible.

Lastly, Highland observes that other fleet electrification factors – specifically, available incentives, vehicle options, chargers, and DERs also identified by CALSTART et al. in their comments – are important to fleet operators and are not currently addressed as part of the current fleet assessment programs. Highland recommends that the Commission and the IOUs work to expand fleet assessment programs beyond the site feasibility and rate analyses currently offered.

JU

The JU comments that participation in the MHD Pilot could be improved by: allowing customer-side make-ready incentives; eliminating the NYTVIP program participation requirement; allowing projects with L2 chargers to be eligible for Con Edison's pilot and extending Con Edison's pilot through 2025; allowing dealers and repair shops to participate; and allowing all MHD vehicles to participate.

The JU notes that it has received interest from site owners and developers in incentives to support the installation of charging infrastructure for micro-mobility, small electric aircraft, airport ground service equipment, and forklifts.

The JU comments that the transit authority pilots are on track; the Niagara Frontier Transportation Authority has electrified 10 buses, has a procurement plan to support 90 electric buses in one of their depots, and is discussing additional expansion at two other depots; the Capital District Transportation Authority has electrified six electric buses, with two additional ordered, and are conducting extensive analysis; Rochester-Genesee Regional Transportation Authority currently has 11 electric buses with nine additional buses coming online by 2023, and is designing a new bus depot for battery electric buses that will allow the fleet to expand by up to 80 vehicles; the Westchester Bee-Line put six electric buses into service in 2021 and expects another six in the near future, and is coordinating with Con Edison as they implement their long-term electrification plan.

The JU comments that the funds available under the Make-Ready Program are small compared to those needed to support the 25% goal.

The JU supports VGI pilots if incremental funding is provided in a manner that does not reduce the budget for other aspects of the Make-Ready Program.

Lion Electric Co, USA Inc. (Lion)

Lion requests that EV chargers be added to the list of eligible expenses in the Make-Ready Program because currently MHD fleet owners do not have access to grant funding opportunities to help offset the price of this equipment.

NYPA

NYPA states that the MHD Pilot should be expanded to a full scale, multi-year program. NYPA also recommends expanding eligibility to some or all of the customer-side make-ready costs in any future MHD program, as this expansion will be of particular importance for bus transit fleets.

NYPA recommends examining whether electric school bus infrastructure should receive higher incentives than other MHD vehicles since many school bus yards are located in rural areas with less grid capacity.

NYPA recommends expanding eligibility for the light-duty Make-Ready Program and MHD Pilot to include energy storage in an effort to reduce make-ready infrastructure costs.

NYPA states that it has completed transit bus master plans for five suburban and upstate fleets. The plans include details on required investments, capital expenditures, necessary depot upgrades, and funding availability. NYPA remarks that cost remains the largest barrier to electrification, with the largest cost being the bus itself followed by make-ready infrastructure.

NYPA recommends that VGI be discussed in the midpoint review and notes that MHD vehicles have more predictable use cases and schedules than light-duty vehicles and should therefore be prioritized for any kind of VGI pilot. NYPA states that the pilot should demonstrate a variety of applications and be located on areas of the grid where they would most benefit the distribution system. The pilot should also help inform a path for fleets to monetize any V2G services.

Revel

Revel comments that the flexibility to allow co-location of MHD with light-duty would serve as a valuable incentive for companies to build with future uses in mind.

Shell Recharge Solutions (SRS)

SRS recommends extending the MHD Pilot and replenishing the incentives, if necessary, to assist with the buildout of chargers in New York. SRS also strongly recommends that the MHD Pilot be modified so that incentives extend to the customer meter, not just the utility-side infrastructure.

Joint Technology Parties

The Joint Technology Parties reiterate that service panel upgrades and new technologies that avoid such upgrades should qualify for make-ready incentives. Additionally, they recommend that behind-the-meter DERs that reduce make-ready costs (including front-of-the-

meter costs) or that significantly reduce EV charger installation times should also be eligible for make-ready incentives. The Joint Technology Parties note that DERs such as microgrids, battery energy storage systems, and onsite solar and wind generation provide benefits that merit their eligibility for make-ready costs, including cost efficiencies and reduction of installation times by avoiding distribution system upgrades or interconnection inefficiencies, as well as their capacity to bolster asset resilience.

Tesla

Tesla reiterates that it supports creating a MHD make-ready program and states that this is one of the most important actions that DPS can take during the midpoint review. Additionally, Tesla supports the following modifications to the MHD Pilot: 1) elimination of the New York Truck Voucher Incentive Program requirement, 2) eligibility of customer-side make-ready costs, 3) greater transparency concerning costs covered by utilities, 4) elimination of a public accessibility requirement (as most fleets will have dedicated charging spaces), and 5) inclusion of energy storage make-ready costs. Tesla also recommends that project-level caps be removed to allow for full fleet electrification immediately, rather than by piecemeal incremental construction work as an EV fleet grows, and that connector type requirements be excluded, as fleet charging will mostly take place at private depots where accessibility is unimportant, and fleet operators should be able to select technologies that best suit their needs.

Tesla does not recommend additional eligibility criteria for these vehicle types due to the nascent nature of the current market but reserves the right to future comment as it develops.

Redirecting Unused Program Funding to Multi-Unit Dwellings and Workplaces or Redefining the Accessibility Criteria to Include Multi-Unit Dwellings and Workplaces

Question: 1) Provide comments on whether program funding should be further directed to multi-unit dwellings and workplaces

Summary of Responses

AEE ACENY

AEE ACENY argues that funding should be available for pay-to-park facilities, specifically because of the difficulty of parking in dense areas, such as NYC. AEE ACENY states that the current restriction for pay-to-park limits the number of facilities that can participate in the program, further stating that opting to provide funding to paid parking facilities will give more access to EV owners who lack home charging options or to those who pay-to-park in locations that do not provide charging equipment.

ATE

ATE recommends not redirecting unused funding from the existing Make-Ready Program to MUDs and workplaces because the need for public charging has not been met. ATE

predicts that there will be an increased need for public DCFC as the result of increased EV sales due to a maturing market.

CALSTART

CALSTART states that the DOE funded program called Charge to Work USA provides assistance for employers to install workplace charging, however, the program does not offer incentives. Therefore, CALSTART supports providing for workplace charging.

ChargePoint

ChargePoint argues that a 50% funding level is inadequate for many “private” use cases, including charging at workplaces and MUDs that are outside of DACs. ChargePoint states that 90% of EV charging occurs either at home or at work and recommends that the incentives be increased to drive EV adoption, particularly for MUD charging to overcome the split incentive barrier between landlords and tenants.

Fermata

Fermata recommends that Make-Ready incentives should not be limited to publicly accessible EVSE charging so as not to preclude funding for V2X projects. Fermata Energy supports accessing Make-Ready funding specifically for V2X particularly for underserved neighborhoods that could benefit from the infrastructure upgrades.

JU

The JU does not see a need for any program changes and to redirect funds between site types, given the utilities current flexibility to use their discretion to allocate funds to specific end uses, such as multi-unit dwellings or workplaces to maximize the Make-Ready Program.

NYPA

NYPA recommends using unspent funding for DCFC sites in urban areas, L2 charging for apartments, and workplace charging sites where the employees are largely apartment dwellers.

SWTCH

SWTCH supports reclassifying MUDs and workplaces as publicly accessible locations and thereby making them eligible to receive the full 90% incentive, stating that the change would benefit multiple end users. The publicly accessible reclassification would decrease some barriers to EV adoption such as range anxiety and uncertainty about access to charging.

Tesla

Tesla advocates for using unspent Make-Ready Program funds to support charger deployment at MUDs and at workplaces, where drivers park for long periods of time.

Revising the Accessibility Criteria to Include Public Pay-to-Park Lots

Question: 1) Should nonmunicipal pay-to-park lots be eligible for the higher incentive tier?

Summary of Responses

AEE ACENY

AEE ACENY support charging sites that meet the publicly accessible criteria for the 90% incentive levels and that these sites should not be ineligible from earning the higher incentive level if located in a facility that charges a fee to park there.

ATE

ATE supports the inclusion of pay-to-park lots at the 90% incentive level to assist in increasing of EV deployments.

ChargePoint

ChargePoint argues that commercial parking lots should be eligible for the same 90% incentive available to municipal lots, as this will expand charging access and facilitate greater deployment, especially for the L2 charger segment.

Tesla

Tesla argues that non-municipal pay-to-park lots should be eligible for higher incentives, as commercial parking spaces should also install charging infrastructure, especially in dense urban areas.

Recalibrating the 50 percent Utility-Funded, Make-Ready Level for Private and Proprietary Technology Types

Questions: 1) Provide comments on whether the 50 percent utility-funding make-ready level for private and proprietary technology types remains appropriate.

Summary of Responses

AEE ACENY

AEE ACENY state that the make-ready incentive levels are insufficient overall and has no comments on appropriate funding for private and proprietary technology types.

ATE

ATE supports the 50% funding level for private and proprietary charging even though there is a scarcity of public charging and a significant number of EV drivers do not have parking spaces. ATE remarks that the market is best served by incentivizing publicly accessible infrastructure. ATE recommends that, if private charging is incentivized, the customer

contributes a larger cost-share and any incentive be additive to, and not at the expense of, existing programs.

ATE argues that customers are best served when there are standards that enable drivers to all use the same chargers. ATE posits that standards can also support faster market development. ATE provides an example of where one proprietary network has created an adapter that will allow for cars charge at CCS locations, but CCS cars will be unable to charge at the proprietary network's chargers. ATE reasons that this type of situation will be exacerbated if proprietary plugs receive the full incentives.

ATE strongly supports the use of OCPP but notes it does not guarantee that an EVSE will not be tied to a single network. ATE comments that avoiding vendor lock-in should be of paramount consideration when awarding incentives.

JU

The JU supports maintaining a higher incentive level for public sites and standard technology.

Joint Technology Parties

The Joint Technology Parties recommend that make-ready incentives be restricted to make-ready equipment that supports interoperable chargers that have CCS or J1772 connectors, support OCPP now, and can support ISO 15118. The Joint Technology Parties emphasize their opposition to ratepayer funding of proprietary technologies where interoperable, open-standard alternatives are available, as this approach increases customer choice by preventing vendor lock-in, reducing the risk of stranded assets, lowering costs, and improving functionality and quality through the competitive provision of products and services. The Joint Technology Parties observe that their interoperable technology definitions correspond to those proposed by the Federal Highway Administration for the National Electric Vehicle Formula Program.

SWTCH

SWTCH state that they are not opposed to a reduced incentive for private and proprietary technology types, and suggest that only the hardware and software that meet OCPP standards should receive the full incentive. SWTCH recommends modifying the definition of non-proprietary to any SAE plug type and OCPP compliant hardware and software which has been verified to be operable by external network providers.

Tesla

Tesla recommends modest increase in the private access and proprietary category to 75 percent from 50 percent. Tesla reiterates that there are many large fleet customers who would benefit from additional charging infrastructure enabled by such an increase, including car rental companies, vehicles-for-hire, and transportation network companies (or ridesharing services), which account for more mileage per vehicle than privately owned standard light-duty passenger vehicles.

Revisiting Future-Proofing Requirements and Budgets

Questions: 1) Provide comments on the future-proofing framework for a Make-Ready site as described in the Make-Ready Order on pages 55 - 58. 2) Should battery energy storage systems be added as eligible equipment for the Make-Ready Program? Are there other forms of advanced technologies that should be considered for eligibility in the Make-Ready Program?

Summary of Responses

AEE ACENY

AEE ACENY supports battery storage and DERs and recommends this equipment be considered eligible for the Make-Ready Program. AEE ACENY recommends completing a site-by-site cost-benefit analysis to determine where the investments in the technologies are most beneficial.

ATE

ATE contends that future-proofing is a critical feature of EV charging including DCFC. ATE reasons that increases in vehicle battery storage capacity and charging speeds will necessitate EV infrastructure and that preparing a site for these improvements during initial construction is far more efficient and economical than doing it later.

ATE comments that the original Order strikes a reasonable balance in the formula for budgeting for future-proofing. ATE urges the Commission to apply the “used and useful” regulatory standard with flexibility as has been done to date.

ChargePoint

ChargePoint emphasizes the potential system benefits of co-locating energy storage with EV charging, including peak load management, alleviation of demand charges, and improvement of project viability. ChargePoint recommends expanding incentive eligibility to include the costs of storage-related infrastructure, but not the battery storage asset itself, until a rate-based solution is developed. ChargePoint recommends a separate battery storage incentive if incentives are provided for storage beyond the make-ready infrastructure.

EDF

EDF supports the Make-Ready Order’s general restrictions on future-proofing costs as a fraction of eligible costs but urges against treating the light-duty and MHD sectors as though they are the same sectors. EDF supports future-proofing cost caps but does not want to limit upgrades particularly when upfront costs are lower than the future costs. EDF argues that the utilities should complete regular, detailed load forecasting and grid planning and explains that the current DSIP process does not include the bottom-up granular forecasting that is needed to determine where and when grid upgrades are needed. EDF notes that the bottom-up forecasting

would require targeted outreach to customers to identify expectation of load growth, after which the utilities can aggregate the forecasted load upwards through the distribution system. EDF contends that this type of forecasting would alleviate any concerns about ratepayer funds being used for unnecessary future-proofing.

EDF supports incentives for the inclusion of solar PV and battery storage, as well as networked chargers and managed charging software, if these resources allow for managed charging and can mitigate grid upgrade costs.

EVgo

EVgo recommends that the JU publish and use a methodology for prioritizing and selecting waitlisted DCFC make-ready applications and suggests two methods for accomplishing this. The first recommendation is for the JU to develop and use a point-based scoring rubric for evaluating Make-Ready Program applications with publicized metrics to help third-party service providers allocate time and resources more efficiently. EVgo argues that by using transparent and understandable criteria, such scoring rubrics will support cost-effective deployment of DCFC in optimal locations. EVgo's second recommendation is to rank waitlisted applications on a dollar-per-kilowatt basis and prioritize projects with the lowest price according to this criterion.

EVgo notes that Make-Ready Program plug targets have been exceeded without depleting allocated budgets. To continue with this success, EVgo recommends that the JU publish and use a methodology for prioritizing and selecting future make-ready applications for the remainder of the program.

EVgo recommends that the utilities provide readily available information on the status and progress of each utility's program in the form of a tracker on the JU's website. EVgo suggests that this be updated monthly and provide cumulative plug deployment totals and cumulative budget totals for completed, committed, and applied projects, separately for L2 and DCFC plugs. EVgo commends the presentation of similar data at the beginning of the midpoint review and proposes that this be adopted for the remainder of the program.

Fermata

Fermata recommends re-evaluating the future-proofing framework by using updated data from sites that needed to install additional EVSE to support more EVs. Fermata recommends including stationary storage to enable charging capacity in constrained areas and including V2X bidirectional EVSE that transforms EVs into inverter-based battery resources.

FreeWire Technologies, Inc. (FreeWire)

FreeWire states that BESS should be included as eligible equipment in the Make-Ready Program and comments that Connecticut and New Jersey are supportive of utilizing EVSE with co-located BESS. FreeWire recommends incentivizing customers to choose battery-integrated DCFCs and states that keeping incremental BESS costs consistent with other aspects of the Make-Ready Program, streamlining the program design, would help to accurately compare costs

across technology solutions to promote its uptake. Additionally, FreeWire states that all parties would benefit long-term if more information on grid infrastructure and avoided transmission and distribution costs was publicly provided.

JU

The JU comments that use of the future-proofing funds has been very limited. The JU comments stating that the 10% cost limit is not sufficient to drive significant interest, nor does it provide meaningful impact in future cost reductions. The JU suggest removing or significantly increasing the 10% limitation and providing each company the flexibility to offer greater funds to support future-proofing on a per-project basis, which would not require changes in the overall future-proofing budgets. The JU comments that where projects require new business upgrades, the utility should have the ability to build out the service based on future EV charging capacity at the site as well as the customers' stated plans for charging utilization and increasing charging rates.

The JU recommends that battery energy storage, as well as software and other equipment that supports load management and provided cost benefits to the utility or customer should be eligible to receive incentives from incremental funding.

NYPA

NYPA recommends expanding eligibility to battery storage systems and providing an incentive for workplaces, apartments, or fleet sites that are VGI-ready. NYPA also maintains that VGI is more suited for non-public and MHD charging, as public charging usage is too unpredictable.

Revel

Revel strongly supports expanding eligibility to include battery energy storage systems and rectifier cabinets that allow for power sharing over multiple plugs. Revel comments that future-proofing funds should be expanded to encourage V2G by allowing for bidirectional capabilities.

SRS

SRS recommends funding for batteries that can be stacked onto make-ready incentives. SRS also recommends BESS be paired with managed charging technologies and EV charging infrastructure.

Joint Technology Parties

The Joint Technology Parties recommend that Make-Ready Program eligibility be extended to both service panel upgrades and to any new technologies that avoid the upgrades and to any BTM DERs that reduce make-ready costs (including front-of-the-meter costs) or that significantly reduce EV charger installation times.

SWTCH

SWTCH states that the Make-Ready Program should consider incentivizing battery storage systems and load management, by providing an adder or by over-building EV charging infrastructure where load management strategies are in place.

Tesla

Tesla recommends increasing the incentives for the private access and proprietary category to 75% from 50%. Tesla reiterates that there are many large fleet customers who would benefit from additional charging infrastructure enabled by such an increase, including car rental companies, vehicles-for-hire, and ridesharing services, which account for more mileage per vehicle than privately owned standard light-duty passenger vehicles.

Tesla recommends that energy storage should be eligible for make-ready incentives.

VGIC

VGIC states that battery storage systems should be considered as eligible for incentives and recommends that other Automated Load Management (ALM) systems also be eligible. VGIC also recommends a shared cost savings model that would give rebates to customers commensurate with the amount of load reduction and deferred infrastructure costs that are realized due to the investments in ALM systems. VGIC further recommends that a technical conference be convened on ALM and VGI topics before the Midpoint Review whitepaper is released.

VGIC states that V2X equipment, including bidirectional chargers, should be eligible for additional incentives given its potential to improve reliability and resiliency.

WeaveGrid

WeaveGrid recommends the development of VGI pilots, especially those deployed in a residential setting.

Reviewing Implementation Requirements and Budgets

Questions: 1) The Make-Ready Order, on pages 104-109, describes the information needed for an annual Make-Ready Report. Provide comments on and any suggested modifications to the annual data collection and reporting requirements. 2) Provide comments on the quarterly reporting process. Are any modifications necessary that can optimize the data collection and reporting process?

Summary of Responses

ATE

ATE comments that the utilities have had two years' experience establishing procedures and processing applications and suggest that it is a reasonable time for the utilities to report on best practices by conducting focus groups or roundtable discussions. ATE approves of

reviewing budgets but cautions against making direct comparisons between utilities because of the differences in scope and complexity of the internal organizations, nature of the grid, number of customers, and the complexity of installations.

ChargePoint

ChargePoint recommends reviewing data reporting requirements, assessing current data uses, determining the benefits of existing data collection practices, and eliminating data reporting requirements that do not provide actionable information or other benefits. ChargePoint states that the requirements to report on plug outages without an industry standard or enforcement mechanisms and provide certain financial details are of dubious usefulness.

ChargePoint alleges that a quarterly reporting process that relies on bulk data submissions is costly, complex, burdensome, and resource-intensive, in addition to being an ineffective method for collecting and conveying relevant information to the JU and the Commission. As an alternative, ChargePoint suggests allowing for data sharing via API integration with charging networks, which will also reduce the costs of networked charging equipment for site hosts.

ChargePoint recommends developing of a list of qualified EVSE vendors and equipment and limiting the incentives to products on the qualified list. Qualified equipment should be networked, ENERGY STAR-certified, and UL-listed for safety and site hosts accepting Make-Ready Program funding should be required to choose from the list of qualified equipment, allowing manufacturers to interact directly with customers to ensure project success, including maintenance and reliability concerns. ChargePoint adds that a new list of qualified vendors is especially necessary as the NYSERDA Charge Ready NY program funding has been exhausted, along with guidance that program was providing on the selection of qualified vendors. ChargePoint recommends that a new Make-Ready Program list align with the requirements for the Charge Ready NY program to simplify administration.

Joint Commenters

Joint Commenters state that the Make-Ready Program incentives are insufficient and that utilities are unable to offer the full 50, 90, and 100% project completion incentives as outlined in the Make-Ready Order. In addition, Joint Commenters state that the program implementation costs are higher than anticipated, therefore, eligible program baseline costs should be reassessed and recalculated.

EDF

EDF states that the current reporting requirements are significantly lacking and points out that the reporting requirements do not require public data information collection and have no clear metrics to determine the success of the MHD Pilot. EDF recommends that the reporting data include the number and location of chargers, capacity of the chargers, customer- and utility-side make-ready costs, what portion of the costs were covered by the utility, types of vehicles using the chargers, and sample charging behavior of those vehicles.

Fermata

Fermata recommends excusing MHD fleets from reporting on financial information because the fleet infrastructure will be dedicated to the fleet and will not be used to provide public charging.

JU

The JU observes that the existing reporting requirements are burdensome because of the technical limitations of the EVSE or charging network, or the ability for the two to work together or to ascertain data that is not readily known, such as co-mingled loads, high networking fees, and data confidentiality agreements. The JU recommends convening a working group to determine what reporting information is required and what information can be feasibly collected on an annual and quarterly basis. The JU comments that it may be useful to consider development of a statewide qualified product list.

Utility Ownership of Charging Station Hardware

Question: 1) The Make-Ready Order allows for NYPA participation in the Make-Ready Program, with certain conditions. Specifically, NYPA is directed to build 10 fast charging locations in every Regional Economic Development Council region by 2022, with a budget cap of \$15M. The Commission also authorized \$15M for NYPA's Evolve NY Program to help build out a robust network of DCFCs across the State. As part of the program, NYPA must make each of its proposed sites available for inquiry by other site developers to reduce the risk of colocation. Provide comments on the effectiveness of NYPA's public notification process and provide any suggestions for improvement.

Summary of Responses**ATE**

ATE supports market development with a hybrid approach – an “all hands-on deck” approach that other states and jurisdictions have recognized in the early phase of market transformation. ATE advises to keep an open mind when considering the ‘own and operate model’ along with the make-ready incentive model as the private market is not yet ready to make the investments necessary to achieve New York's goals. As such, ATE supports utility ownership of EVSE.

ChargePoint

ChargePoint alleges that the NYPA public notification process has neither effectively limited the risk of colocation nor facilitated market competition to construct charging sites as intended. ChargePoint notes that NYPA's monthly postings are not accurate or prompt enough for developers to identify conflicts and respond accordingly. Furthermore, under current requirements, NYPA is not required to relinquish a site until a private developer signs a site license agreement, but ChargePoint claims site hosts are reluctant to sign these agreements before that happens.

ChargePoint recommends amending the reporting requirements so that NYPA-owned sites do not overlap with private development and requiring NYPA to post a list of locations it intends to develop one year ahead, so that developers can review sites and provide notice during that period. ChargePoint emphasizes that NYPA should only proceed at these locations if no developers have provided a signed MOU within this period, or if a developer fails to begin construction within 12 months of the MOU. ChargePoint predicts that this process will ensure that NYPA refrains from developing charging sites at locations that would otherwise be served by the competitive market, rather than concentrating on actions that complement private development in travel corridors and underserved areas.

NYPA

NYPA responds to two of ChargePoint's recommendations, stating that the recommendations would unnecessarily delay and interfere with NYPA's overall deployment of EVSE. According to NYPA, the recommendation that the Commission impose a one-year "waiting period" for sites that NYPA proposes to develop would set back the aggressive GHG goal and NYPA's ability to reach its EVSE deployment target. The second recommendation from ChargePoint that NYPA argues against is reducing the threshold required to demonstrate intent to develop, from a signed site-host agreement to a MOU. NYPA states that an MOU does not carry the same level of assurance as a signed site host agreement which can ensure that if NYPA opts not to develop at a particular location that the site will be (or will most likely be) developed.

JU

The JU supports private ownership of charging equipment but recognizes that in certain situations, such as utility pole mounted public L2 chargers, it may be appropriate to have the option to pursue ownership.

Emerging Plug Standards

Question: 1) Are there any topics that the Technical Standards Working Group should address that are not already delineated in the Make-Ready Order or have not been discussed in previous TSWG meetings?

Summary of Responses

ATE

ATE recommends that the TSWG monitor: 1) OCPP, noting that the Open Charge Alliance (OCP) has published an updated version of 2.01.1 that includes more functionality, such as the ability to accommodate plug-and charge in ISO 15118-20, smart charge management, cybersecurity, and others; 2) ISO 15118-20, stating that there are several efforts underway within the ISO that should be monitored; 3) the developments of a new protocol in the MHD vehicle market, released in Oslo, Norway.

CALSTART

CALSTART recommends that any MHD program allow for MW+ charging sites for commercial charging.

ChargePoint

ChargePoint recommends that the TSWG investigate the use of uptime and reliability requirements, including the reporting of reliability data in the absence of industry standards, which it notes have only been discussed in the context of payment processing. ChargePoint maintains that such requirements can ensure that charging investments serve customers into the future and that site hosts experience uncomplicated installations and maintenance.

EDF

EDF supports the current TSWG but adds that New York should align its standards with the California Public Utilities Commission which would be least cost and more beneficial to EVs and EV charger owners and operators.

JU

The JU urges the TSWG to avoid overly prescriptive approaches as the market develops.

SWTCH

SWTCH supports the adoption of open and interoperable standards to future-proof the charging network and strongly recommends OCPP be adopted as a statewide standard with ISO-15118 compliance. SWTCH emphasizes that doing so ensures an interoperable statewide network that protects both site hosts and ratepayers.

Tesla

Tesla states that it is important for the Make-Ready Program and other transportation electrification efforts to maintain flexibility with regard to new charging technologies, so that these can be incorporated into programs following commercial deployment. Tesla predicts that it is likely that new charging technologies will be commercially viable and released before the end of the Make-Ready Program.

VGIC

VGIC states that the TSWG should continue to focus on submetering through telematics and enabling networked EVSE but does also state that the V2X should also be considered.

Potential Need for Residential Make-Ready

Question: 1) Provide comments on the potential need for residential make-ready.

Summary of Responses

AEE ACENY

AEE ACENY states that a residential make-ready program can address the barriers to EVSE infrastructure implementation. A residential make-ready program can include behind-the-meter and between pole and meter upgrades and address the various utility tariffs and policies for home charging which can establish best practices for furthering the EVSE residential market.

ATE

ATE supports residential make-ready incentives for both single family and multifamily communities but does not support funding coming at the expense of the existing incentive programs. ATE submits that utility and other incentives for upgrades on both sides of the meter are helpful to increasing EV adoption. In multifamily communities where drivers are not allowed to install chargers, ATE suggests a model where the utility owns and operates the charging.

ChargePoint

ChargePoint notes that residential charging is convenient, but the costs of equipment and installation can range from \$1,200 to \$2,500 on average. ChargePoint contends that a residential make-ready program with incentives covering 240-volt wiring and outlet equipment and installation, EVSE installation and associated panel upgrades, service upgrades, and permits could offset these costs and make residential charging more affordable. Additionally, as ChargePoint predicts that unmanaged residential charging will generate higher ratepayer costs as grid upgrades become necessary, it recommends that a residential make-ready program should require networked charger installation and load management program participation. ChargePoint recommends that the JU propose a residential make-ready program incorporating these elements within 90 days of the Commission's Midpoint Review order.

Fermata

Fermata suggests the addition of a residential make-ready program that includes behind-the-meter customer costs such as panel upgrades.

JU

The JU states that the residential EV charging segment is distinct from the commercial charging segment and will require a unique program design, incentive structure, eligibility criteria, and marketing and education approach. The JU notes that there will be differing needs upstate versus downstate and recommends that a residential program be considered outside of the existing commercial Make-Ready Program.

NYPA

NYPA states that older houses with 100-amp service may require electrical upgrades before EVSE can be installed. NYPA recommends that the utilities conduct an outreach and

education program that informs customers on how to choose the EVSE most appropriate for them.

Joint Technology Parties

The Joint Technology Parties recommend that the Make-Ready Program be extended to include residential installations, including financial incentives for service panel upgrades and new technologies that avoid such upgrades. In making these recommendations, the Joint Technology Parties note the great expense involved in necessary service panel upgrades for most residential charging (up to \$8,000 to accommodate L2 charging), which represents a significant barrier to home installation of L2 chargers that impedes EV adoption and the beneficial use of EVs as grid assets. The Joint Technology Parties note that the need for such upgrades is generally even greater in DACs with typically older housing stock and lower service panel amperages. The Joint Technology Parties also report that a recent California Energy Commission workshop research identified equipment, including load sharing devices, meter collars, smart circuit breakers, and smart panels and sub-panels, which may represent less expensive alternatives to service panel upgrades.

Sunrun

Sunrun states that home charging is the preference of EV owners, and that the convenience of home charging and lower fuel costs are major selling points of EVs. As such, home charging is beneficial for EV owners and the grid, including the ability to set specific charging times to avoid certain periods and help to reduce increases in the system's peak demand.

Sunrun states that today's residential make-ready costs are a barrier to deployment and that removing these barriers with a residential make-ready program, particularly aimed at LMI households, will provide a lower cost of ownership. Sunrun provides examples of residential programs in Connecticut, Maryland, and New Jersey and states that New York should take this opportunity to establish a residential make-ready program.

Tesla

Tesla states that residential customers can face the same cost barriers as commercial customers in installing charging infrastructure. Tesla argues that a residential make-ready program could help overcome such barriers by offsetting costs of expensive main electrical panel or utility-side upgrades, or additional costs generated by the distance between a panel and usual parking locations. Tesla cites a new residential make-ready program by Jersey Central Power & Light that provides up to \$5,500 for utility-side make-ready and \$1,500 for customer-side make-ready. Finally, Tesla contends that a residential L2 charger make-ready program should not restrict owners in their purchasing decisions in selecting L2 charging hardware for installation.

VGIC

VGIC notes that residential charging sites typically see long dwell times and supports establishing make-ready incentives for residential customers for equipment that enables VGI.

WeaveGrid

WeaveGrid recommends establishing a residential make-ready program as it could eliminate a barrier to EV adoption by deferring the costs of charger installation and assist with meeting the goals of the Make-Ready Program.

Modifications to Performance Incentives

Questions: 1) After the first performance incentive term, should any changes be made to the EAM framework? If so, what modifications should be made?

Summary of Responses**AEE ACENY**

AEE ACENY states that changes to the EAM framework are not necessary until the Make-Ready Program has concluded. AEE ACENY suggests implementing an EAM in the future that is based on overall charging utilization. In addition, AEE ACENY recommends an EAM to ensure that the projects are in service by 2025, such an EAM could incentivize utilities to accelerate the interconnection process.

CALSTART

CALSTART recommends utility EAMs specifically for fleet infrastructure interconnections, stating that an EAM that provides both an upside and downside risk around an assigned target will give utilities the business case they need to enable further fleet electrification.

The City

The City expresses its concerns about how the EAM is structured in the Make-Ready Program and states that it appears that the EAM does not reward the utility for exemplar effort and may instead discourage efforts if it becomes clear that the EAM targets will not be achieved. The City states that Con Edison is poised to earn a large reward without actually meeting the assigned targets. The City recommends that the EAMs be redesigned to focus on EV charging site deployment and for successfully converting the existing queue of projects into functioning EV charging sites in a timely and cost-effective manner. The City states that the EAM framework should be modified to include a negative revenue adjustment that focuses on meeting the EV pug deployment targets.

JU

The JU recommends that the baselines used in the EAM framework should be aligned with actual market conditions and reflect the higher costs of deployment.

SRS

SRS recommends performance incentives that are correlated with reliability and that any reliability aspect to performance incentives, or any budgeting for reliability should be addressed on a separate track.

Methodology for Setting Budgets

Staff developed its recommended budget using a multi-step process. First, Staff updated the per-plug cost assumptions relied on in the Make-Ready Order using historical Make-Ready Program cost data obtained from each utility.¹²² Specifically, Staff requested the following data from each utility for each project participating in the Make-Ready Program: (1) a unique project ID; (2) status of the project, whether complete or committed;¹²³ (3) Zip code and county; (4) plug type, whether DCFC or L2;¹²⁴ (5) number of plugs; (6) total kW of charging capability; (7) customer-side make-ready costs; (8) utility-side make-ready costs; (9) EV supply equipment costs, where available; (10) new business costs. Using these data, Staff calculated weighted average Make-Ready Program costs on a per-plug basis for L2 chargers, and on a per-kW basis for DCFC chargers.¹²⁵ While DCFC charger costs were calculated on a per-kW basis, the Make-Ready Order and the updates to the NREL EVI-Pro model for anticipated charging capability deployment are expressed in terms of number of DCFC plugs, therefore, Staff “priced out” DCFC plugs based on an assumption that DCFC plugs would likely be sized at 150 kW to correspond with present guidance for the federal government’s NEVI program. The results of Staff’s analysis are provided below.

¹²² Staff relied on data provided by utilities on a total cost basis, which is intended to be total costs of make-ready infrastructure, as opposed to the incentives paid by utilities to customers against those costs (typically provided as a percentage of the make-ready costs).

¹²³ A complete project has completed construction and is in service, whereas a committed project has agreed to the incentives offered through the program and may be presently under construction. For both completed projects and committed projects Make-Ready Program incentives are considered to have already been spent when calculating the incremental budgets needed for the Make-Ready Program going forward.

¹²⁴ For sites which contained a mix of both DCFC plugs and Level 2 plugs, costs were separated by plug type on separate lines of data.

¹²⁵ The Make-Ready Program only provides incentives against the customer-side make-ready costs and utility-side make-ready costs. Further, since cost data was reported per project/site, Staff calculated the average costs per plug using the number of plugs per site as a weighting factor. That is, the more plugs a site had, the higher weighting that site’s cost data was provided in the computation of average per-plug costs.

Figure 1 - Level 2 Average Cost Data per plug

Company	No. Plugs	No. Plugs-weighted Average Costs per Plug			
		Customer-Side Make-Ready	Utility-Side Make-Ready	Total Make-Ready Costs	New Business
CHGE	498	\$ 7,853	\$ -	\$ 7,853	\$ 127
Con Edison	7999	\$ 15,432	\$ 139	\$ 15,571	\$ 130
National Grid	2569	\$ 6,059	\$ 159	\$ 6,218	\$ 208
NYSEG	416	\$ 6,189	\$ 41	\$ 6,230	\$ 11
O&R	636	\$ 14,223	\$ 4	\$ 14,227	\$ -
RG&E	357	\$ 5,783	\$ 61	\$ 5,843	\$ 92

Figure 2 - DCFC Average Cost Data per kW

Utility	No. Plugs	COSTS PER KW			
		Customer-Side Make-Ready	Utility-Side Make Ready	Make-Ready Program Costs	New Business Costs
CHGE	68	\$ 533.83	\$ -	\$ 533.83	\$ 9.95
Con Edison	227	\$ 888.65	\$ 4.61	\$ 893.25	\$ 32.82
National Grid	223	\$ 324.91	\$ 22.61	\$ 347.52	\$ 21.85
NYSEG	48	\$ 448.04	\$ 27.24	\$ 475.29	\$ 26.83
O&R	49	\$ 690.95	\$ -	\$ 690.95	\$ 4.90
RG&E	15	\$ 715.92	\$ 32.08	\$ 748.00	\$ 28.51
UPSTATE	630	\$ 597.74	\$ 12.94	\$ 565.26	\$ 20.41

Staff observed several trends in the historical data. First, most of the charger sites participating in the Make-Ready Program to date have no or minimal utility-side make-ready costs, and no or minimal New Business costs. Staff is unsure of whether the utility-side make-ready and new business costs per plug will remain low in the future – sites participating in the Make-Ready Program to date may have self-selected areas where there is little to no utility-side make-ready work necessary, and similarly low to no new business costs. Staff generally understands, based on conversations with developers and utilities, that future charging sites are likely to require a higher amount of utility-side make-ready work and new business costs.

Second, Staff found that for L2 chargers, costs were reasonably similar between most of the upstate utilities – i.e., Central Hudson, National Grid, NYSEG, and RG&E – however, while O&R had been grouped with the other upstate utilities in the Make-Ready Order, the costs to date demonstrate that it should instead be grouped with Con Edison for development of L2 budgets. That is, Staff recommends that the L2 per-plug costs used to determine budgets for Central Hudson, National Grid, NYSEG, and RG&E be based on the average costs among those utilities, and similar computations for Con Edison and O&R be made based on the average costs of those utilities. Third, Staff examined the DCFC cost data and found that there were significant differences between each utility, and therefore recommends that the DCFC per-plug costs used to determine budgets for each utility should be based on each utility's individual cost data. The recommendations related to these second and third observations are provided below.

Figure 3 - Level 2 per-plug Average Costs used for developing budgets

Utility Group	No. Plugs-weighted Average Costs per Plug			
	Customer-Side Make-Ready	Utility-Side Make-Ready	Total Make-Ready Costs	New Business
Upstate (CHGE, NMPC, NYSEG, RG&E)	\$ 6,280	\$ 116	\$ 6,396	\$ 165
Downstate (CE + O&R)	\$ 15,343	\$ 129	\$ 15,472	\$ 120

Figure 4 - DCFC per-150 kW plug average costs used for developing budgets

Utility	Costs per 150 kW Plug			
	Customer-Side Make-Ready	Utility-Side Make Ready	Make-Ready Program Costs	New Business Costs
CHGE	\$ 80,075	\$ -	\$ 80,075	\$ 1,492
Con Edison	\$ 133,297	\$ 691	\$ 133,988	\$ 4,922
National Grid	\$ 48,736	\$ 3,392	\$ 52,128	\$ 3,278
NYSEG	\$ 67,207	\$ 4,086	\$ 71,293	\$ 4,025
O&R	\$ 103,642	\$ -	\$ 103,642	\$ 735
RG&E	\$ 107,388	\$ 4,812	\$ 112,200	\$ 4,277
UPSTATE	\$ 65,083	\$ 2,350	\$ 67,433	\$ 2,942

Next, Staff updated the anticipated plug totals relied on in the Make-Ready Order. The process Staff used to update the plug forecast for 2025 is described in the “Updated Plug Projections” section of the Whitepaper. As shown in Figure 5, using the updated NREL forecast results in significantly fewer public and workplace L2 plugs at each utility. The updated NREL forecast assumed specific levels of L2 installations in MUDs, a category of plugs that was not included in the original forecast used to inform the targets in the Make-Ready Order. The introduction of MUD plugs results in a significant increase in the total quantity of L2 plugs in Con Edison. While the updated NREL forecast identified a reduced need for L2 plugs at all utilities except for Con Edison, it also identified a significantly increased need for DCFC plugs at each utility.

Figure 3 - Comparison of number of plugs needed by 2025 between the updated NREL forecast and MUD screen relative to the Make-Ready Order

Utility	2025 Goals from Updated NREL Model (Midpoint Plug Forecast)					Make-Ready Order Plugs				Δ NREL (Midpoint) - MR Order				
	MUD L2	Workplace L2	Public L2	Total L2	DCFC	Workplace L2	Public L2	Total L2	DCFC	MUD	Workplace L2	Public L2	Total L2	DCFC
CHGE	1,004	861	574	2,439	416	2,091	1,113	3,204	69	1,004	(1,062)	(708)	(765)	347
CECONY	36,553	4,050	2,700	43,304	3,157	12,776	5,763	18,539	457	36,553	(7,073)	(4,716)	24,765	2,700
NMPC	3,308	3,273	2,182	8,763	1,329	10,105	5,623	15,728	504	3,308	(6,164)	(4,109)	(6,965)	825
NYSEG	1,967	1,407	938	4,312	594	5,821	3,458	9,279	250	1,967	(4,160)	(2,773)	(4,967)	344
O&R	1,184	643	429	2,257	340	1,765	1,080	2,845	71	1,184	(1,064)	(709)	(588)	269
RG&E	335	1,341	894	2,571	466	2,659	1,519	4,178	149	335	(1,166)	(777)	(1,607)	317

After accounting for the revised per plug L2 and per kW DCFC costs observed from the Make-Ready Program and the updated NREL forecast, Staff developed several recommendations to appropriately manage the cost increase of the program. Staff proposes that the public tier incentive levels for the downstate utilities (Con Edison and O&R) be reduced from 90% to 75%

of the eligible costs. This change is in part, informed by the strong demand for the public tier programs administered by the downstate utilities, where the pipeline of applications exceeds the original 2025 targets for DCFC plugs and the midpoint targets for L2 plugs. While the DCFC pipelines appear to be stronger than the L2 pipelines for the downstate utilities, Staff also notes that the proposed budget includes a significant upward adjustment to the baseline costs for L2 plugs, from \$11,298 per plug in Con Edison and \$6,000 per plug in O&R in the current budget to \$15,472 for the downstate utilities in Staff’s proposed budget update.

While the overall need for L2 plugs is predicted to decrease when compared to the current Make-Ready Program budget, the updated NREL forecast introduced an assumed level of L2 installations in MUDs by 2025. As discussed earlier in this section, adding this new category of L2 plugs results in a net increase to the total L2s in Con Edison. While the original intent of this program was to incentivize public charging infrastructure, Staff recognizes the importance of expanding access to charging in MUDs. Staff also notes that the Commission made the partial tier incentives available to access restricted MUDs in the Make-Ready Order, and a change in the eligibility for MUDs could lead to a chilling effect to the growing market. For these reasons, Staff proposes a continuation of the MUD program using the partial tier incentive level. However, Staff also proposes to cap the proposed MUD budget at 75 percent of the assumed MUD L2 deployments in the NREL forecast for the upstate utilities (CHGE, NMPC, NYSEG and RG&E) and 50 percent of the MUD L2 deployments for the downstate utilities. The net effect of the proposed changes to the L2 plug targets is a decrease in the L2 plug targets compared to the current program; however, the revised targets do require continued investment in the L2 market for each utility, as is shown in Figure 6.

Figure 6 4 - Incremental plugs needed based on NREL’s analysis¹²⁶ with Revised Plug Targets

Utility	Completed and Committed Plugs		Incremental Plugs Needed by 2025	
	L2	DCFC	L2	DCFC
CHGE	498	68	1,690	348
CECONY	7,999	227	17,028	2,930
NMPC	2,569	223	5,367	1,106
NYSEG	416	48	3,405	546
O&R	636	49	1,029	291
RG&E	357	15	2,130	451
Total	12,475	630	30,647	5,672

The updated DAC budget is supplemented by \$25,000,000 for a micromobility make-ready program and an additional \$30,000,000 for the MHD Make-Ready Pilot (as described in “Disadvantaged Communities” and “Medium- and Heavy-Duty Make-Ready Pilot Program”

¹²⁶ Incremental increase in plugs refers to additional installations above Completed and Committed, adjusted to account for the proposed L2 MUD budget

sections of the Whitepaper). The final proposed budget is \$1,108,597,912 with a DAC allocation of 35.6% of the budget (not including admin and futureproofing costs). The incremental budget increase is \$407,603,062 relative to the Make-Ready Order budget of \$700,994,850 statewide.

Figure 7 5 - Final Midpoint Review Proposed Budget

	DAC Make-Ready Order	Make-Ready Order Total	DAC Midpoint	Midpoint Total	Committed Budget DAC	Committed Budget Total	Incremental DAC	Incremental Total
DCFC Make-Ready	\$ 18,941,149	\$ 94,705,747	\$ 117,221,991	\$ 503,348,547	\$ 7,195,837	\$ 35,068,445	\$ 98,280,842	\$ 408,642,800
L2 Make-Ready	\$ 77,155,574	\$ 385,777,871	\$ 56,431,165	\$ 282,155,825	\$ 42,295,206	\$ 156,993,612	\$ (20,724,409)	\$ (103,622,046)
MDHD Pilot	\$ 15,000,000	\$ 15,000,000	\$ 45,000,000	\$ 45,000,000	\$ 15,000,000	\$ 15,000,000	\$ 30,000,000	\$ 30,000,000
Transit	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ -	\$ -
Transportation Prizes	\$ 85,000,000	\$ 85,000,000	\$ 85,000,000	\$ 85,000,000	\$ 85,000,000	\$ 85,000,000	\$ -	\$ -
Future Proofing	\$ -	\$ 38,438,689	\$ -	\$ 40,267,884	\$ 575,667	\$ 38,438,689	\$ -	\$ 1,829,195
Admin & FAS	\$ -	\$ 72,072,543	\$ -	\$ 117,825,656	\$ 7,423,656	\$ 72,072,543	\$ -	\$ 45,753,113
Micromobility	\$ -	\$ -	\$ 25,000,000	\$ 25,000,000	\$ -	\$ -	\$ 25,000,000	\$ 25,000,000
Grand Total	\$ 206,096,724	\$ 700,994,850	\$ 338,653,156	\$ 1,108,597,912	\$ 167,490,366	\$ 412,573,289	\$ 132,556,433	\$ 407,603,062