EV Light-Duty Make-Ready Program

Program Workshop
December 16, 2020
Agenda

• Welcome + Introductions – Vicki Kuo, Vice President of Energy Efficiency and Distributed Resource Planning
• EV Team: Overview of Make-Ready Program
• Energy Services: Overview of service request process and timelines
• Engineering Design
• Q&A
EV Team Introductions

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Meeting Logistics

• **Recording**: Please be aware that this meeting will be recorded.

• **Questions**: Please type your questions into the chat box and we will address them all together at the end of each presentation. Attendees will be muted until the Q&A.

• This slide deck will be provided to all attendees registered through Eventbrite.
Transportation electrification is critical to the achievement of ambitious New York Climate Goals

*Build-out of EV charging infrastructure is key to spurring EV adoption*

- **Transportation accounts for 36% of all greenhouse gas emissions statewide**
- **Range anxiety is the leading barrier to light-duty EV adoption**
- **Light-duty make-ready program will support the development of widespread and visible EV charging**

[\% of drivers who consider factor to be a purchase barrier]

<table>
<thead>
<tr>
<th>Factor</th>
<th>[%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Range anxiety&quot;</td>
<td></td>
</tr>
<tr>
<td>Running out of power</td>
<td>58</td>
</tr>
<tr>
<td>Low availability of charging stations</td>
<td>49</td>
</tr>
<tr>
<td>Initial vehicle costs</td>
<td>47</td>
</tr>
<tr>
<td>Cost to service and repair the engine</td>
<td>37</td>
</tr>
<tr>
<td>Not enough variety in models</td>
<td>22</td>
</tr>
<tr>
<td>Not enough performance capability</td>
<td>20</td>
</tr>
<tr>
<td>Risk of overwhelming electric grid</td>
<td>14</td>
</tr>
</tbody>
</table>
Con Edison Light-Duty Make-Ready Program Overview

As Authorized in NY PSC July 16, 2020 Order

Make-Ready Program Funding

• $234M in incentive funds for customer and utility side work to provide service to L2 and DCFC chargers in NYC and Westchester

5-Year Program Start Date: July 16, 2020

• Any project not under construction as of that date is eligible

Program Plug Goals (2025)

• 18,539 L2 plugs
• 457 DCFC plugs
Con Edison’s Make Ready Program provides incentives for utility-side and customer-side work

Program Scope

<table>
<thead>
<tr>
<th>Utility-side Investment</th>
<th>Customer Side Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility owned Utility manages construction</td>
<td>Customer owned Customer manages construction</td>
</tr>
</tbody>
</table>

- Incremental New business
- Make-Ready ("MR") components
- Developer costs

Point of entry:
- Distribution above and under-ground
- Distribution transformer & pad
- EDF, CIAC and Accommodation
- Meter
- Customer transformer and pad
- Trenching
- Panel and pre-wiring for charger
- Charger, pedestal equipment and installation
The incentive structure provides ‘up to’ a certain level of incentive based on various criteria.

<table>
<thead>
<tr>
<th>Criteria Component</th>
<th>Up to 50%</th>
<th>Up to 90%</th>
<th>Up to 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Non-publicly accessible sites (includes workplace, multifamily, and privately-owned pay-to-park lots)</td>
<td>Publicly accessible sites (includes municipal paid parking, free parking in pay-to-park lots)</td>
<td></td>
</tr>
<tr>
<td>Plug Type</td>
<td>Proprietary plugs (e.g., Tesla)</td>
<td>Non-proprietary (e.g., SAE J) OR co-location (must have equal number simultaneous non-proprietary)</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>Proprietary plugs (e.g., CHAdeMo, Tesla)</td>
<td>Non-proprietary (e.g. CCS) OR co-location (must have equal number simultaneous non-proprietary)</td>
<td></td>
</tr>
<tr>
<td>DCFC</td>
<td>Multi-unit dwellings within one mile</td>
<td>Publicly accessible sites within one mile</td>
<td></td>
</tr>
</tbody>
</table>
## Additional eligibility requirements to participate in MRP

| Approved Contractor | Customer-side work must be completed by an Approved Contractor  
|                     | To become an Approved Contractor, interested entities must complete and submit a Participating Contractor Application, available at jointutilitiesofny.org |
| Participant Application Submittal | Any customer-side party (e.g., developer, site host, approved contractor) can submit the Participant application  
|                     | The Participant that signs the program agreement takes on reporting and other responsibilities |
| Station Size | Station sizes must be a minimum of 2 plugs and maximum of 10 plugs (DCFC only)  
|                     | Stations with 2 charging plugs cannot make up more than 50% of the program plugs incentivized  
|                     | DCFC stations with greater than 10 plugs must seek pre-approval from Con Edison based on grid upgrades required |
There are operational requirements for Participants

| DCFC Plug Operating Requirements | • DCFC plugs **must be operational 95 percent of the time** (annually)  
|                                | • DCFC charging **stations must be operational 99 percent of the time** (annually), with a minimum of 50 percent of the plugs considered to be “up” at all times |

| Operation Period               | • All charging stations in the EV Make-Ready Program must **operate for a minimum of five years** |

| Ownership Changes             | • **Ownership of EV charging stations may change** or stations may be upgraded during the five year term, as long as the number of plugs and the capacity of the station does not decrease, and the site continues to meet all performance and reporting obligations of the Program |
The EV MRP has a five-year quarterly reporting requirement

Aggregated data will be shared with the Joint Utilities and Department of Public Service

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Plug and Charging Session</th>
<th>Financial Information</th>
<th>Utility Energy and Billing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who Provides Data</td>
<td>Participant to 3rd-party consultant</td>
<td>Participant to 3rd-party consultant</td>
<td>Utility</td>
</tr>
<tr>
<td>Data Requirements</td>
<td>• the number of sessions daily</td>
<td>• infrastructure and equipment costs</td>
<td>Utility system and billing information for each EV charging station, including:</td>
</tr>
<tr>
<td></td>
<td>• start and stop times of each charge</td>
<td>• fee structure (e.g., cost per kWh, cost per session)</td>
<td>• 15-minute interval data</td>
</tr>
<tr>
<td></td>
<td>• the amount of time each vehicle is plugged in per session</td>
<td>• charging revenues derived</td>
<td>• load profiles for charging stations for the top ten annual demand days</td>
</tr>
<tr>
<td></td>
<td>• peak kW per charging session</td>
<td>• operating costs, which should separate energy-related costs and non-energy related costs</td>
<td>• utility bills, which should differentiate by delivery service-related costs and energy-related costs</td>
</tr>
<tr>
<td></td>
<td>• kWh per charging session</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• plug outage information</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Participant Support Tools: EV load capacity maps show network transformer capacity and voltage
Participant Support Tools: EV capacity maps also show areas within 1 mile of a Disadvantaged Community

Disadvantaged communities include areas with low- and moderate-income residents and environmental justice areas.
Make ready Incentives can be layered with other NY State incentive offerings

- **L2 Charger Incentive**
  - NYSERDA ChargeReady program: $4,000 L2 incentive

- **Public DCFC Operating Incentives**
  - Con Edison Business Incentive Rate discounts
  - Con Edison Annual Per-Plug Incentive

- **Off-Peak Charging Incentive Program**
  - Con Edison SmartCharge New York managed charging program
The initial phase of the program has a two-step application process.

1. **Submit Program Application (Power Clerk)**
2. **Preliminary Program Approval**
3. **Submit Service Application (Project Center)**
4. **Project Review, Design, Engineering**
   - **Initial Incentive Determination**
   - **Sign Program Agreement**
   - **Customer Side Construction**
   - **Utility Side Construction & Energization**
5. **Work Verification**
6. **Submit Invoices and Final Project Documentation**
7. **Incentive Processing and Payment**
8. **Continued Reporting**

**Responsible Party**
- Con Edison Team
- Participant
Top 10 questions about the Make-Ready Program

1. How long will it take to get my eligibility letter? Less than two weeks.
2. How long will it take to get my service ruling? In approximately thirty days.
3. Are design, permitting, and project management costs included in Make-Ready? Yes.
5. My station is in a pay-for-parking garage that lets EVs in at no charge. What incentive tier does this qualify for? Up to 90%.
6. Can I have a site with both L2s and DCFCs? Yes.
7. I am an approved contractor. Do each of my sub-contractors have to be approved? No.
8. If my site has parking dedicated for visitors, is that considered public? No.
9. If I have valet parking, is that considered public? If it is a free service, yes.
10. It looks like my site might be in a disadvantaged community, but it’s hard to tell. How do I check? You can do an address search on our EV load capacity maps.
Program Resources

Make Ready Program [Website]

- Program application
- Participant guide
- Approved contractor list
- Approved contractor application
- Capacity and Disadvantaged Community area maps

EV Team

- EVMRP@coned.com

Electric Vehicle Make-Ready Program

Reduce the upfront costs of installing charging stations for light-duty electric vehicles.

LEARN MORE
Questions?
EV Installation Process

Distributed Energy Services
Energy Services Team Introductions

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Robert Klopf
Manager
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Customer Project Manager(s)

Customer Project Manager(s)

Customer Project Manager(s)
EV Installation Process

- Project Review & Service Determination
- Project Application
- Service Energization
- Construction
Project Application:

Apply EV Make Ready Program via Power Clerk
Apply Service Request via Project Center
## Create New Service Request

### Table:

<table>
<thead>
<tr>
<th>Case</th>
<th>Customer Name</th>
<th>Service Address</th>
<th>Request Type</th>
<th>Service Type</th>
<th>Building Type</th>
<th>Utility Type</th>
<th>Status</th>
<th>Representative</th>
<th>Action</th>
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<tbody>
<tr>
<td>MC-48581</td>
<td>Jonathan Greenlinger</td>
<td>1015 BRONX RIVER AVE</td>
<td>Permanent Service</td>
<td>New</td>
<td>Commercial</td>
<td>Electric</td>
<td>Design</td>
<td>Min Kivak</td>
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<td>123-32 MERRICK BLVD, C</td>
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<td>Electric</td>
<td>Design</td>
<td>Christopher Scant</td>
<td></td>
</tr>
</tbody>
</table>

### Diagram:

The diagram shows a user interface for creating new service requests. It includes fields for customer name, service address, request type, service type, building type, utility type, status, and representative. The interface also includes options for creating new requests and viewing announcements.
Electric Vehicle Charging Station Equipment
Additional Documents:

- Make Ready Program Application Review Letter
- Letter of Authorization
- Site Plan
- One Line Diagram
- Load Letter
- EV Charging Station Equipment Cut Sheet
Project Review and Service Determination

Energy Services reviews the Service Request
Engineering performs the Service Determination study

• Existing Service Adequate, No Additional Work
• Existing Service Adequate, Request Additional Meters
• Existing Service Adequate, Request a New POE
• Service Not Adequate:
  – Reinforce Existing Service
  – Request New Service
Electric Vehicle Customer Project Flow

Service Adequate

10 Days
Application Received
- File application via Project Center
- Submit required documents
- Includes detailed work description

30 Days
Service Determination
- Review requirements
- Perform Service Determination
- Service Adequate

0 Days
Energization
- Service is interconnected to existing Con Edison service

Case Close-out
- No further work required by Con Edison after service to customer is complete
- Verify customer account(s)
Electric Vehicle Customer Project Flow
Service Adequate – New POE

10 Days
Application Received
- File application via Project Center
- Submit required documents
- Include detailed work description

30 Days
Service Layout
- Review requirements
- Determine POE location
- Perform Service Determination – New POE

90 Days
Sub-Surface Construction
- Construction to begin after permits are obtained
- New POE to be installed
- EV chargers to be installed

45 Days
Energization
- Service is energized from Con Edison utility (30 days)
- New meter set after final inspection (15 days)

15 Days
Case Close-out
- No further work required by Con Edison after meter is set
- Verify customer account(s)
Electric Vehicle Customer Project Flow

Service Not Adequate – Service Reinforcement

Application Received
- File application via Project Center
- Submit required documents
- Includes detailed work description

Service Layout
- Review requirements
- Determine POE location
- Perform Service Determination – Service Not Adequate (Requires service reinforcement)

Sub-Surface Construction
- Construction to begin after permits are obtained
- Establish new service
- EV chargers to be installed

Energization
- Service is interconnected to Con Edison utility (30 days)
- New meter set after final inspection (15 days)

Case Close-out
- No further work required by Con Edison after meter is set
- Verify customer account(s)
Electric Vehicle Customer Project Flow
Service Not Adequate – Service Reinforcement (New POE)

Application Received
- File application via Project Center
- Submit required documents
- Includes detailed work description

Service Layout
- Review requirements
- Determine POE location
- Perform Service Determination – Service Not Adequate (Requires service reinforcement)

Sub-Surface Construction
- Construction to begin after permits are obtained
- Establish new service
- EV chargers to be installed

Energization
- Service is interconnected to Con Edison utility (Feeder pickup)
  will require additional time, 30 days per feeder)
- New meter set after final inspection (15 days)

Case Close-out
- No further work required by Con Edison after meter is set
- Verify customer account(s)
Additional considerations

**Load requirements**

- How much power is needed
- Load is not proportional

**Geographic**

- Embargos (IE: NYC Holiday embargo)
- Moratoriums (IE: system reliability concerns)
- Construction complications (IE: high traffic areas may prove challenging for permitting)

**Environmental**

- Existing soil conditions
- Additional permitting requirements
Additional references

Con Edison blue book
• Governs all applicable specifications for service work such as:
  – Property line manhole sizing
  – Metering requirements
  – Service requirements
  – Has a library of specifications for customer use

Con Edison rates and tariffs

We are always here to help!!!!
Questions?
Engineering Design Criteria

Customer Engineering
Electric System Overview

Generating Station → Step-Up Transformer → Transmission Substation → Area Substation → Non-Network

Network

Area Substation

Step-Up Transformer

Generating Station
Design Criteria Areas
New Business Process

Service Request

Rulings

Construction Layouts

Field Crews
Existing System

XFR2
FDR: 2

XFR1
FDR: 1

160 KVA
Existing System

XFR2
FDR: 2
N: 33%
2nd: 91%

XFR1
FDR: 1
N: 38%
2nd: 93%

160 KVA

Adequate Service
Overloaded Mains
New Service
Load Added

Adequate Service
Overloaded Mains
New Service

N:95%
FDR:2
XFR2

N:95%
FDR:1
XFR1

N:51%
2nd:138%

N:51%
2nd:137%

N:56%
2nd:160%

N:56%
2nd:188%

1056 KVA
(896 KVA Additional)

896 KVA
1056 KVA
Design Options

Option A
- Two Transformers
- One section of secondary reinforcement

Option B
- One Transformer
- Three sections of secondary reinforcement
Option A: Two Transformers

XFR1
FDR: 1

XFR2
FDR: 2

1056 KVA

Adequate Service
Overloaded Mains
New Service

SERVICE TAKEOFF

DESIgn OPTION A

10 sets
8 sets

STREET TIES

conEdison
Option A : Two Transformers

- XFR2
  - FDR: 2
  - N: 26%

- XFR1
  - FDR: 1
  - N: 31%

- 1050 KVA

- Overloaded Mains
  - 1st: 151%
  - 2nd: 69%
  - 3rd: 31%

- New Service
  - 1st: 49%
  - 2nd: 48%

- Adequate Service
  - 1st: 5%
  - 2nd: 23%
  - 3rd: 15%
Option B: One Transformer

XFR2
FDR: 2

XFR1
FDR: 1

1056 KVA

Adequate Service
Overloaded Mains
New Service

DESIGN OPTION B
Design Options

Option A
- Two Transformers
- One section of secondary reinforcement

Option B
- One Transformer
- Three sections of secondary reinforcement

Selected
Questions?
Thank You!