KEEGAN WERLIN LLP

ATTORNEYS AT LAW
99 HIGH STREET, SUITE 2900
BOSTON, MASSACHUSETTS 02110

(617) 951-1400

TELECOPIER:
(617) 951-1354

November 22, 2021

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

Re: Petition of NSTAR Electric Company d/b/a Eversource Energy for Approval of Phase II Electric Vehicle Infrastructure Program and Electric Vehicle Demand Charge Alternative Proposal – D.P.U. 21-90

Dear Secretary Marini:

On behalf of NSTAR Electric Company d/b/a Eversource Energy ("Company"), enclosed for filing are the Company's responses to the Third Set of Information Requests issued by the Office of the Attorney General in the above-referenced docket.

Thank you for your attention to this matter. Please contact me with any questions.

Sincerely,

Matthew S. Stern, Esq.

Enclosures
cc: Scott Seigal, Esq. – Hearing Officer
D.P.U. 21-90 Service List

Information Request:

Reference Exhibit ES-KB-1. Provide the location of all Phase I residential installations. Provide the average income in the zip code or census tract of each Phase 1 residential installation.

Response:

The Company's Phase I Program did not include a Residential segment component.

Information Request:

Reference Exhibit ES-KB-1 at 15, lines 3-13. What percentage of new car purchases need to be electric in order to achieve over one million LDVs by 2030?

Response:

The percentage of new vehicles that are EVs required to reach one million LDVs by 2030 depends on the sales growth trajectory for EVs between today and 2030 and overall growth in the number of vehicles in the Commonwealth. The Commonwealth's interim Clean Energy and Climate Plan (CECP) for 2030 estimated approximately 50 percent of new vehicle sales would need to be zero emissions by 2030 to reach between 750,000 and one million zero emissions vehicles on the road.[1] As discussed in Exhibit ES-KB-1 at 14, "in 2020, EVs were roughly 3.0% of new vehicle sales in Massachusetts."

[1] "Even with anticipated incremental increases in the fuel efficiency of ICEVs over the next decade to achieve 45% [greenhouse gas emissions reductions] in 2030, Massachusetts will need to deploy 750,000 to one million ZEVs in the next decade, representing approximately 17% of the projected light-duty fleet in 2030. In order to achieve this scale of deployment, sales of new ZEVs must increase annually throughout the 2020s, reaching about 50% of all new LDV sales by 2030." *Massachusetts Interim Clean Energy and Climate Plan for 2030*, Dec. 30, 2020, at 21.

Information Request:

Reference Exhibit ES-KB-1 at 23, lines 13-15. Provide the light-duty ZEV MOU forecast and describe all assumptions and provide all calculations behind the Company's analysis of expected customer eligibility and participation.

Response:

Refer to Exhibit ES-RDC-2 Rows 33-35 on "WP1_ZEV MOU-based forecast_p2" for the light-duty ZEV MOU forecast.

Please refer to the Company's response to Information Request CEP-1-7 for an explanation of the expected customer eligibility and participation levels.

Information Request:

Reference Exhibit ES-KB-1 at 29, lines 24-26 to 30, lines 1-13. Provide the Company's and any moderator's minutes and notes from the referenced meetings.

Response:

As detailed in Exhibit ES-KB-9, over the past two years the Company coordinated with and engaged a variety of stakeholders to inform the proposed Phase II Program. Please see the Company's response to Information Request AG-2-8 for Company's outreach to environmental justice communities ("EJCs"), and Information Request AG-2-9 for Company's coordination with state entities. Additionally, Attachment AG 3-4(a) provides meeting notes from stakeholder meetings.

These meetings initially covered the Company's progress and lessons learned from the Phase I Program and then were focused on discussing the Phase II Program proposal and gathering feedback throughout the development process. While formal meeting minutes were not taken during these conversations, the notes in the attachment were used internally to track feedback and topics discussed. Attachments AG 3-4(b), AG-3-4(c), AG 3-4(d), and AG 3-4(e) include the slide decks that were shared during these meetings throughout the year.

Stakeholder	Attendees	Eversource Participants	Date	Feedback or Comments	P2 suggestions
Tesla	David Noseworthy, others (list not available)	Robin Kebernick, Shakir Iqbal, Dave Ferrante, Akhil Punnoose, Russel Johnson, Dalia Nunes, Juan Martinez Irene Debernardo, Ed Finelli, Barry Lashley, Steve Casey, Sam Woolard, Ken Rice, James Cater, Sean Tully, Martin Bowen, Willard Green, Paul Owen, Peter Barsamian, Gordon Belcher,	12/19/19	• Existing Tesla Charging infrastructure/overview • Tesla market share/expected growth • Tesla design/construction process and related items • Tesla programmatic outlooks/improvements • Planning for 2020 Discussion surrounding the design / commissioning process and looking for creative solutions to streamline	
EnelX	David Funk, David Rodriguez, Erika Swanson, Christina Merullo	Kevin Boughan	2/6/20	Overview of Enel X's preliminary concepts for ACTNow School eBuses Public Transit Other Discussion of concepts V1G V2G, including interconnection process Make Ready Program Daily Dispatch and/or other utility incentives	Initial thoughts on providing managed charging options more widely
Electrify America	Robert Barrosa, Aaron Young	James Cater	4/3/20	Discussion of open projects and path forward on DCFC in general	Ability to accommodate high power DCFC

Greenlots	Annie Gilleo	Kevin Boughan, Brian Morris	4/9/20	Discussion of MA program in general, initial thoughts on P2 filing	Generally supportive of structure
FreeWire	Ethan Sprague	James Cater	5/6/20	Freewire develops DCFC charging stations with integrated battery to relieve grid load during charging and to be able to be deployed in places where we can't get 277/480 service, or 3 phase service.	
MA EEA	Dan Gatti	Catherine Finneran, Kevin Boughan	5/8/20	Checking in about new roles, updates on MA P1 programs, Dan's vision for MA- focus on fleets	Interested in a stronger focus on fleets
Union of Concerned Scientists	Samantha Houston	Catherine Finneran, James Cater, Kevin Boughan	5/26/20	Discussion of MA program in general, initial thoughts on P2 filing	Generally supportive of structure
Greenlots	Annie Gilleo	Kevin Boughan, Brian Morris	7/2/20	"General Check-In"; "Level-setting on make-ready availability across Eversource territory: what funding remains and what is the timeline/expectation around new program development/implementation?	
EVgo	Colin Murchie, Carine Dumit, Isabelle Riu	Kevin Boughan, Brian Morris	8/12/20	Massachusetts (Rates) Connecticut (Make-ready proposal and rates)"	Likes CT EV Rate Rider, supportive of Demand Charge alternative in MA
NRDC	Kathy Harris, Luke Tonachel	Catherine Finneran, Kevin Boughan, James Cater	8/20/20	General Check-in on EV programs	
EEA	Dan Gatti	Catherine Finneran, Kevin Boughan, James Cater		Further discussions on EV initiatives in MA: -Introduction and Program updates from Eversource -Debrief on discussion for MOR-EV expansion to MD/HD oData collection and dissemination oNecessary electric and charging infrastructure to support program -Other Program initiatives at the State	

Chargepoint	Kevin Miller	Kevin Boughan, Brian Morris	9/30/20	General Check-in on EV programs, initial thoughts on P2 initiatives	Generally supportive of direction
Chargepoint	Kevin Miller	Kevin Boughan, Brian Morris	10/14/20	Plans to file for extension on P1	
NRDC	Kathy Harris, Luke Tonachel	Catherine Finneran, James Cater, Kevin Boughan	10/20/20	General check-in on EV programs in all three jurisdictions	Initial thoughts on EV rates
MBTA	Scott Hamwey, Scott Steven Belanger, Steven Greg Boehner, William Charrette, William Wolfgang, Andrew Brennan	Brian Morris, James Cater, Mark Rooney, Pam Reilly, Sean Tully, Elizabeth Toner	1/5/21	Eversource Check In - North Cambridge Battery Electric Bus conversion General discussion on depot conversions	Initial thoughts on inclusion of fleet electrification programs, how they might be applicable Large power needs a concern
NRDC	Kathy Harris, Max Baumhefner, S Parks	Catherine Finneran, Kevin Boughan, James Cater, Brian Morris	1/14/21	Eversource check in on program status, program development Discussion of potential alignment on EV principles Discussion of NRDC rate principles for EVs	
	Rishi Reddi, Dan Gatti, Caroline Higley	NG team and Eversource team	1/21/21	Dan and Caroline have begun drafting their 2021 Transportation Policy Priorities. Here are the ones they highlighted: 1. **Incentives/ programs targeted to low-income/high mileage drivers** for TNCs (increased vehicle rebates, rental opportunities)- highlighted a need for residential make-ready support, as Lyft has agreed to pay for the L2 chargers for their drivers. 2. **LMI vehicle incentives**- vehicle rebates for new and used	

				vehicles, point of sale rebates 3. **Residential programs** are a priority- they support universal residential access and want to see us able to expand our residential offerings 4. **MHD vehicles** are a high priority- noted that the MOR-EV program will not be successful if our utility offerings (FAS, infrastructure support) aren't available 5. **DCFC needs to be sustainable -**they want to see programs, incentives, rates in place that will accelerate a sustainable DCFC network Rishi Reddi provided some key updates and opportunities for coordination on the EJC front: • Her office is developing an EJC contact list, which she will share with us • EEA has developed an internal department EJC task force (DPU has 2 member representatives) • The state is developing an EJC strategy (draft will come out mid-summer, final end of the year). As a part of this, DPU will include an EJC assessment of all their programs.	

				• Legislative updates- Proposed changes to the state's EJC definition were included in the recent Climate Bill that was vetoed. Their hope is to refine the EJC definition to reduce the # of census blocks that are included to ensure resources are directed to the communities that are disproportionately impacted and have higher % of POC and low-income families.	
EVgo	Carine Dumant, Eldar Sakebaev	Kevin Boughan, Brian Morris	2/3/21	Discussion of MA rate design	Supportive of concept, really likes the CT Rate Rider approach Key to getting DCFC installed, ongoing costs of ownership too onerous with the demand charges
MBTA	Scott Hawley, Greg Boehner, William Wolfgang	Brian Morris, Kevin Boughan, Pam Reilly	2/26/21	MBTA North Cambridge BEB Charging Needs – Eversource Further discussion about depot electrification	Long term planning will be a key component of any large fleet deployment Fleet advisory takes years, as does system planning
NRDC	Kathy Harris, Max Baumhefner	Catherine Finneran, Kevin Boughan, Brian Morris	3/15/21	Deep dive discussion in to EV rates	
The Energy Consortium	TEC attendees (list unavailable)	Jennifer Schilling, David Olivier, Umair Zia, Lavelle Freeman, Stuart Hollis, Kevin Boughan, Juan Martinez	4/9/21	Power Quality Initiatives, Grid Modernization and Other Updates Kevin Boughan presented on considerations for the MA P2 program: **Continuation of Successful Make-Ready Infrastructure**	Discussed the importance of having an available solution for primary metered customers to be included in the Make-Ready program. The P1 requirements do not allow for

				Program for Level 2 and DCFC ▪ Public Spaces (e.g. municipal lots, state facilities), Workplaces, Multi-Unit Dwellings, Destinations **EVSE Incentives** ▪ Rebates for a portion of EVSE equipment to incentivize more ports per site **Incentives for Primary Metered (Campus) Customers** ▪ Rebates for customer owned equipment that does not connect directly to Eversource distribution system **Fleet Engagement Advisory** ▪ Support for light, medium and heavy-duty fleet operators considering electrification **Potential expansion of Residential Managed Charging** ▪ Encourage highly efficient, smart, charging infrastructure to enable managed charging benefits As required by Transportation Bill, will file a tariff or program utilizing ***alternatives to traditional demand-based rate structures*** to facilitate fast charging for light-duty vehicles, heavier-duty vehicles, and fleet vehicles	deployments. Solution in P2 appreciated

NRDC	Kathy Harris, Max Baumhefner	Catherine Finneran, James Cater, Kevin Boughan, Brian Morris	4/13/21	NRDC shared presentation on Utility Transportation Electrification Best Practices Deploy Charging Infrastructure Strategically Residences Workplaces Public Fast-Charging Public Long Dwell Increase Access for an Equitable EV Market and Improve Local Air Quality Manage Load and Maximize Fuel Cost Savings Foster Competition Educate Customers	Need to consider additional MD/HD electrification Support for additional make ready for DCFC Multi unit dwellings, additional outreach Pass-through price signals Ensure equity is at the forefront of programs
DOER	Jamie Tosches Joanna Troy Amy McGuire, Will Lauwers, Colin Carroll, Maggie McCarey, John Mirandette, Sarah McDaniel, Rob Hoagland, Emily Powers, Michele Broussard, Jerrylyn Huckabee	Ryan West, Jennifer Schilling, Kevin Boughan	4/16/21	Meeting to do a deeper dive into some of the topics including the demonstration projects, hosting capacity efforts, and AMI. Also looking to hear a bit more about EVs. Discussion about the 2.0 new program considerations	Generally supportive of all the new program areas
Ford	David McCreadie	Tilak Subrahmanian, Roger Kranenburg, Mike Goldman, Brian Morris, Kevin Boughan	5/21/21	Meeting to discuss Ford's electrification plans Managed charging options	Very supportive of telematics Managed charging a key to controlling EV load introduced to the system going forward
EVgo	Carine Dumit	Kevin Boughan, Brian Morris	6/11/21	2.0 Plan development	Supportive of the general structure Would like more details on rate development

Highland Electric	Duncan McIntyre, Sam Sinkler, Richard Dimatteo	Kevin Boughan, Brian Morris	6/18/21	Discussion of Eversource EV make ready, rates, and interconnection processes Owner/operator fleets vs Third party operated fleets Number of potential school bus opportunities V2G opportunities	Effort to locate potential school bus fleet operators especially in EJCs
Greenlots	Annie Gilleo	Kevin Boughan, Brian Morris	6/25/21	2.0 Plan development Greenlots provided their thoughts on the potential for utility ownership in certain situations	
Public Session	Multiple Attendees	Eversource, Unitil, and National Grid representatives	7/12/21	Review of final proposal	
MA Zero Emissions Vehicle Commission	Multiple Attendees	Kevin Boughan	8 Meetings from 5/17/18 to 5/5/21	Meeting minutes available at https://www.mass.gov/service-details/zero-emission-vehicle-zev-commission	Continuous feedback on Make-Ready and other electric transportation issues from multiple stakeholders
MassCEC	Ariel Horowitz, Jade Lu, Rhys Webb	Kevin Boughan, Steve Casey	Recurring monthly since 2018	Continuous feedback on EV programs and other electric transportation issues	

Eversource EV Infrastructure Program: Next Phase Considerations

Continuation of Successful Make-Ready Infrastructure Program for Level 2 and DCFC

- Public Spaces (e.g. municipal lots, state facilities), Workplaces, Multi-Unit Dwellings, Destinations

EVSE Incentives

- Rebates for a portion of EVSE equipment to incentivize more ports per site

Incentives for Primary Metered (Campus) Customers

- Rebates for customer owned equipment that does not connect directly to Eversource distribution system

Fleet Engagement Advisory

- Support for light, medium and heavy-duty fleet operators considering electrification

Potential expansion of Residential Managed Charging

- Encourage highly efficient, smart, charging infrastructure to enable managed charging benefits

Related Filing

As required by Transportation Bill, will file a tariff or program utilizing ***alternatives to traditional demand-based rate structures*** to facilitate fast charging for light-duty vehicles, heavier-duty vehicles, and fleet vehicles

EVERSOURCE

Power Quality Initiatives

Grid Modernization and Other Updates

TEC Presentation

April 9, 2021

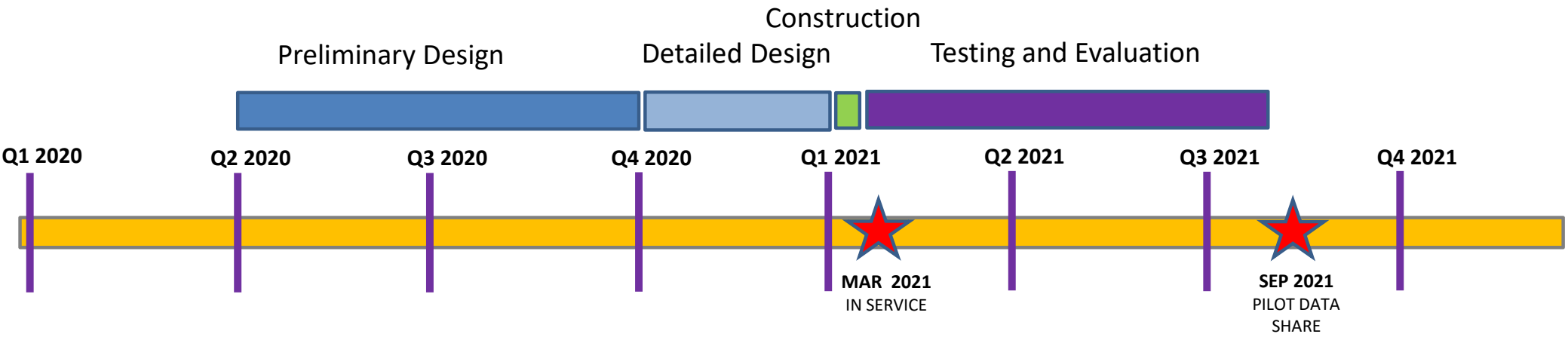
EVERSOURCE

Discussion Topics

- Substation Power Quality Monitoring STA 819 Demonstration
  - Technology overview
  - Implementation description
  - System capabilities
  - Plan for information sharing
- Grid Modernization 2.0 Planning
  - Regulatory schedule
  - Power quality
  - Electric Vehicles
- Next Steps

EVERSOURCE

Substation Power Quality Monitoring Project



- Monitoring devices provide continuous measurement of voltage and current on a sub-second basis
  - Improvement over microprocessor relay technology that has limited event recording capabilities of approximately 0.5 seconds
- Data gathered by this advanced monitoring system allows for rapid post event analysis and evaluation by Eversource to confirm correct protection system operations and to develop solutions to prolonged voltage dip issues affecting customers
- Event data can also be shared with customers to better evaluate the response of their protection, generation, and building system response to events that occur on the system

Project Scope

SMART Block technology has been deployed on 34 feeders (39 devices) at STA 819

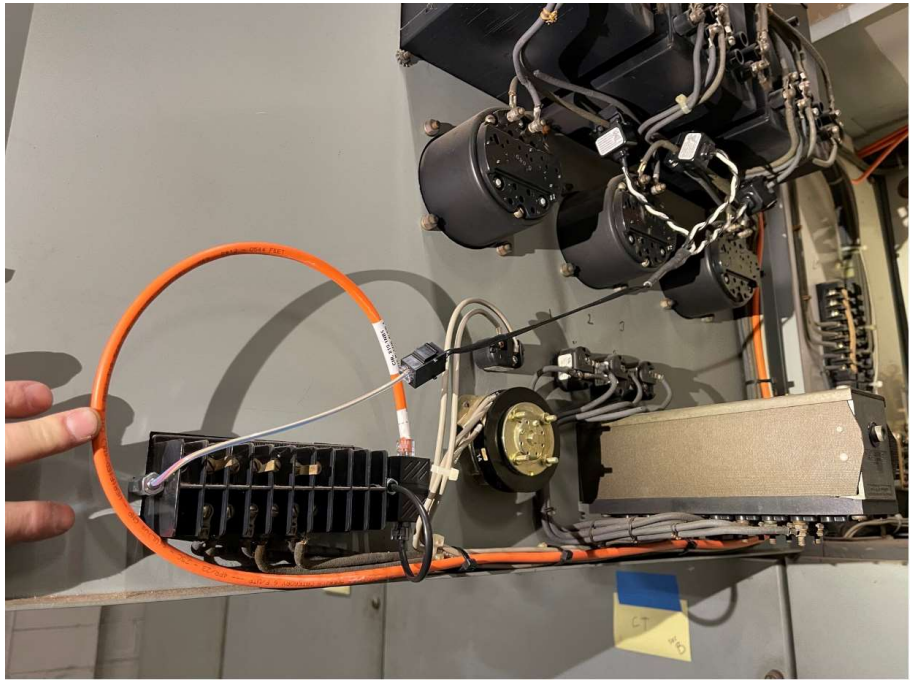
Switchgear Lineup with SMART Block Devices Installed

SMART Block Device Powered

Installation Details

Relative ease of installation is a benefit of SMART Block technology

Panel Rear View Post Installation

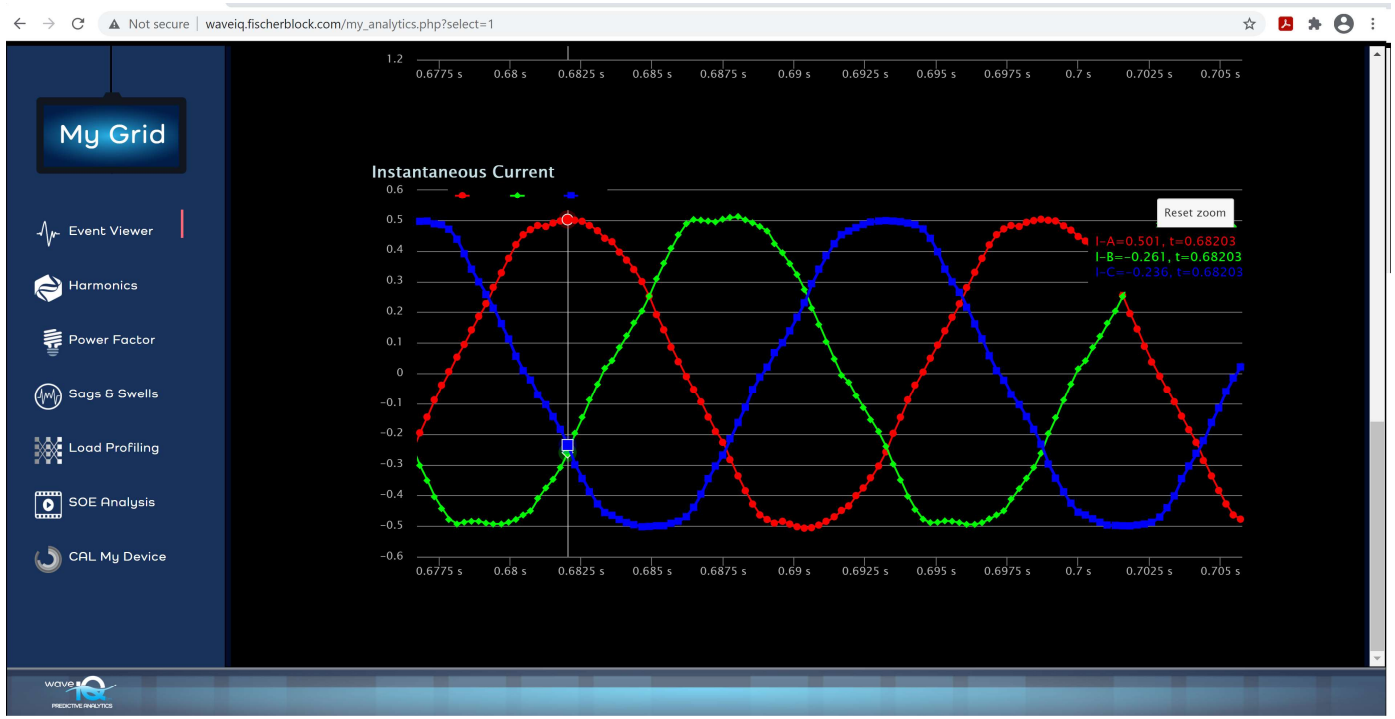


SMART Block Installation

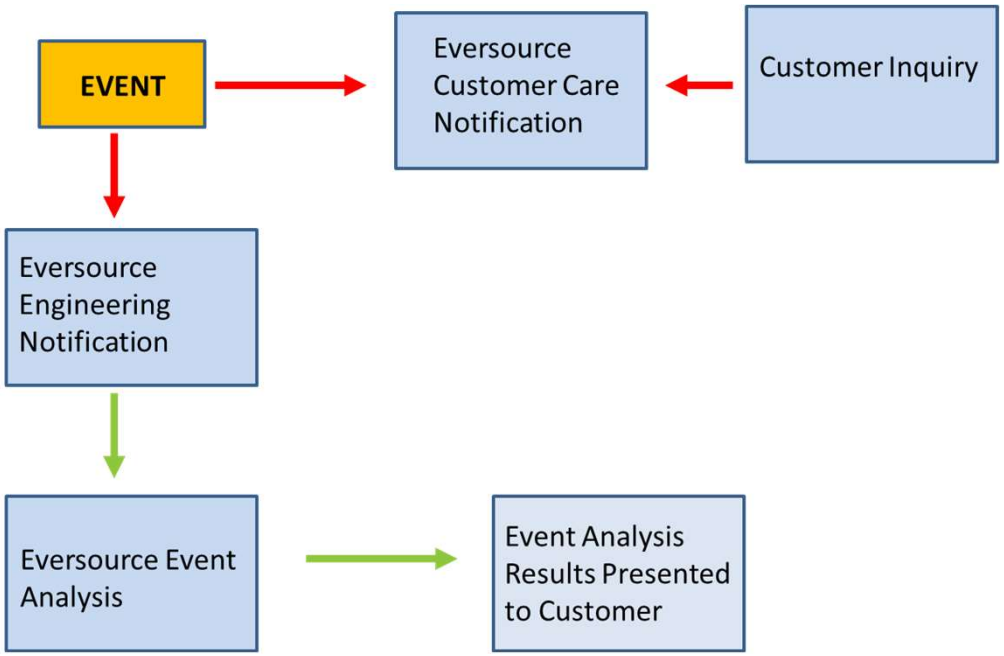
Technology Capabilities

Eversource engineering will have remote access to detailed event data and the ability to produce files to share information in readily-accessible files

Waveform Graph (comtrade file shown in WaveIQ Software)



Proposed Communications Process



Sample Notification E-Mail

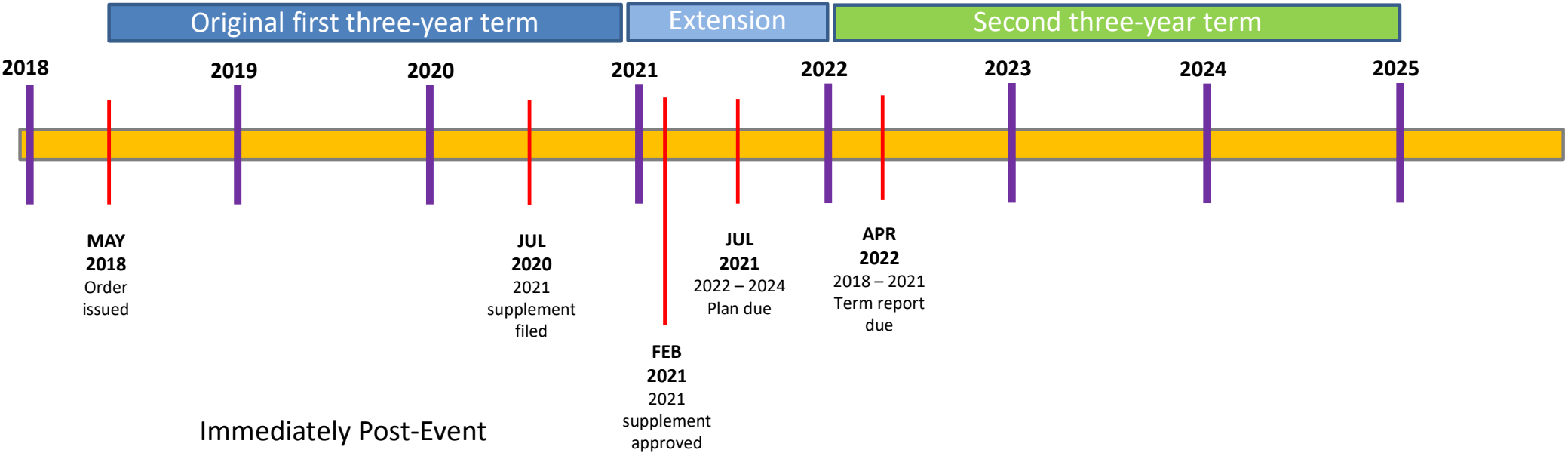
Trigger threshold has been exceeded, details below:

Capture date: 2021-3-11 19:39:31
SMART Block® ID: 70B3D580B082
Region: West
Substation: Cedar Creek
Xfr: xfr2
Bus: bus 2
Circuit: circuit 5
Phase: A

Trigger type: VRMSLO
Trigger setpoint: 308.000000 Volts
Actual level: 0.058713655918837

Grid Modernization Regulatory Process

- Eversource will reach the limit of its budget authority for the original three-year 2018 – 2020 term this year
- MA DPU extended the original term to include 2021, requiring a supplemental filing for 2021
- The 2022 – 2024 plan is due in July 2021



Substation Power Quality Expansion Opportunities

- Number of C&I customers with sensitive loads
- Feeders with identified historical power quality issues
- High solar penetration
- Ties with stations that have monitoring requirements

Eversource EV Infrastructure Program: Next Phase Considerations

Continuation of Successful Make-Ready Infrastructure Program for Level 2 and DCFC

- Public Spaces (e.g. municipal lots, state facilities), Workplaces, Multi-Unit Dwellings, Destinations

EVSE Incentives

- Rebates for a portion of EVSE equipment to incentivize more ports per site

Incentives for Primary Metered (Campus) Customers

- Rebates for customer owned equipment that does not connect directly to Eversource distribution system

Fleet Engagement Advisory

- Support for light, medium and heavy-duty fleet operators considering electrification

Potential expansion of Residential Managed Charging

- Encourage highly efficient, smart, charging infrastructure to enable managed charging benefits

Related Filing

As required by Transportation Bill, will file a tariff or program utilizing ***alternatives to traditional demand-based rate structures*** to facilitate fast charging for light-duty vehicles, heavier-duty vehicles, and fleet vehicles

Next Steps

- Complete evaluation of STA 819 monitoring technology
- Finalize communications process with customer input
- Define scope and budget for July 2021 Grid Modernization filing

Electric Vehicle Program & Demand Charge Alternative

Unitil EVERSOURCE ENERGY nationalgrid

July 12, 2021

Supporting State Goals

Transportation is the single biggest source of GHG emissions in MA and a leading cause of air pollution.

- The Utilities look to align with state policies and commitments and through our programs support the Commonwealth's ZEV goals, CECP targets, and a net-zero future by 2050.
- We look to collaborate and expand our stakeholder partnerships to leverage existing and future efforts.

Unitil EVERSOURCE ENERGY nationalgrid

D.P.U. 20-69-A

- **Demand charge alternative proposals** will be submitted with the Infrastructure proposals (id. at 42).
- The **Companies shall coordinate** the development of their EV proposals (id. at 43).
- The Companies must **identify a timeline and approach to transition all proposed demand charge alternatives to the future demand charge rate designs** that will be enabled through the full deployment of advanced metering functionality (id.).
- Further increase the accessibility of electric vehicle chargers in **environmental justice communities** (id. at 46).
- **Program proposals should not be duplicative** of other electric vehicle charging infrastructure build-out incentive programs offered in the Commonwealth (id.).
- Each company must fully **coordinate and streamline its electric vehicle charging incentive offerings** (id at 49).
- Each companies' EV proposal will be due on July 14, 2021 (id.).

Unitil EVERSOURCE ENERGY nationalgrid

Core EV Program Components

- Public and Workplace Make-Ready Offerings
- Residential Offerings
- Fleet Offerings
- Demand Charge Alternatives

Unitil EVERSOURCE ENERGY nationalgrid

Public and Workplace Make Ready Offerings

Make-Ready Overview:	UTILITY-SIDE INFRASTRUCTURE	CUSTOMER-SIDE INFRASTRUCTURE	EVSE HARDWARE	OTHER SOFT COSTS
Component Example	• Distribution Network • Transformers • Meters • Conductor	• Panel • Conductor • Boring • Trenching • Conduit	• Charging station • Network equipment	• Networking • Data • Maint • Assoc. Fees

Public	L2	100%	100%	50%	$480/port*
	DCFC	100%	100%	$40K	
Workplace	L2	100%	100%	50%	n/a
EJC	L2	100%	100%	100%	$480/port*
	DCFC	100%	100%	$80K	

*Networking required for public L2 and DCFC (with $480/port networking rebate for Municipal L2, EJC L2, and MUD L2

EVERSOURCE ENERGY nationalgrid

Residential Offerings

Make-Ready Overview:	UTILITY-SIDE INFRASTRUCTURE	CUSTOMER-SIDE INFRASTRUCTURE	EVSE HARDWARE	OTHER SOFT COSTS
Component Example	• Distribution Network • Transformers • Meters • Conductor	• Panel • Conductor • Boring • Trenching • Conduit	• Charging station • Network equipment	• Networking • Data • Maint • Assoc. Fees

Large MUD (5+ units)	L2	100%	100%	50%	$480/port*
	EJC	100%	100%	100%	

*Networking rebate for MUD L2

		Wiring Upgrade 240V	Charger Rebate L2
Single Fam 1 units		Up to $700	Up to $300
Duplexes 2-4 units		Up to $1,400	Up to $300
LI/EJC	1	←	Up to $1,700 →
	2-4		Up to $2,700

EVERSOURCE ENERGY nationalgrid

Fleet Offerings

- Fleet make-ready support (aligned with public and workplace make-ready)
- Fleet Assessment Services
- Online Fleet Electrification Planning Tools

EVERSOURCE ENERGY nationalgrid

Workforce Development and Electrician Training

- Co-sponsored initiatives between National Grid, Eversource, and Unitil.
- Propose to create workforce development program to facilitate new EV workforce entrants, targeting underrepresented groups. Expect 75 participants.
- Propose to train existing electricians about commercial and residential EV infrastructure installation and utility programs. Expect 1,000+ trainees.

Unitil EVERSOURCE ENERGY nationalgrid

Unique Offerings- Unitil

- First phase of EV program for Unitil
- Opt-In Time of Use (TOU) rate for residential EV charging
- Up to $700 EVSE installation rebate and $300 rebate for qualifying smart charging EVSE devices for 1-4 unit residential customers on the EV TOU rate
- For income qualified EV TOU customers living in 1-4 unit dwellings, rebates covering 100% of the installation and procurement cost for qualifying smart charging EVSE devices (up to $1,700)
- Utility-side and customer-side make ready for public charging

Unitil

Unique Offerings- National Grid

- DCFC Make-Ready: Proprietary plugs or networks will receive 100% utility side; 50% customer-side make-ready support, up to 65% for 'mixed-plug' sites or if in EJC. No EVSE rebates.
- Utility-owned Pole Mounted Chargers: up to 225 in 10 communities
- 300 School Bus Rebates for EJCs
- DCFC commitment in up to 10 EJCs (with potential for utility ownership)
- Off-Peak Charging Rebates:
  - Propose to expand program to include up to 1,000 Commercial Vehicles.
  - Proposed to allow participants to opt-in to utility-controlled ‘flexible scheduling’ to maximize rebates.
  - Propose to extend program one year through 2025, to align with rest of Phase 3 effort.

nationalgrid

Unique Offerings- Eversource

- DCFC Charging Hubs in EJCs
- EJC Car Sharing Pilot
- Make-Ready pilot for MD-HD Fleets serving or located in EJCs

Demand Charge Alternative

D.P.U. 20-69-A provided guidance on Section 29 of the Transportation Act

- Under Section 29, each electric distribution company (EDC) is required to file at least one proposed commercial tariff or program for Department review using alternatives to traditional demand-based rate structures to facilitate faster charging for light-duty, heavier-duty, and fleet electric vehicles.
- D.P.U. 20-69-A offered further guidance by asking the EDCs to consider:
    1) Converting kW-based charges to kWh-based charges;
    2) Off-peak charging demand charge rebates or discounts;
    3) Sliding scale demand charges based on the load factor of the electric vehicle charging site.

Unitil EVERSOURCE ENERGY nationalgrid

A limited term alternative rate offering will be proposed

- The EDCs will be proposing a limited term alternative rate offering that will be open to enrollment for nine years from the date of approval with conclusion in the tenth year.
- The EDCs will evaluate whether the program needs to be extended based on the state of the electric vehicle charging market at that time.
- At the conclusion of the limited term offering, customers would be returned to the otherwise applicable traditional rate offering.

Unitil EVERSOURCE ENERGY nationalgrid

Eligibility

- National Grid:
  - Available to all new and existing separately metered DCFC and L2 EVSE customers on the General Service Demand Rate G-2 (average use will exceed 10,000 kWh/month, but not exceed 200 kW of Demand) and the General Service Time-of-Use Rate G-3 (>200 kW of Demand).
- Eversource
  - Available on consolidated basis for separately metered, small (up to 200 kW) and large (greater than 200 kW) commercial EV charging.
- Unitil
  - Available to all new and existing separately metered DCFC and L2 EVSE customers on Regular General Delivery Service GD-2 (consistently greater than or equal to 4 kW or greater than or equal to 850 kWh per month) and Large General Delivery Service GD-3 (generally greater than or equal to 120,000 kWh per month).

Eligible EV Accounts will be offered a sliding scale demand charge

- Offered in response to directives from D.P.U. 20-69-A
- Current traditional general service rates will apply if utilization is greater than 15 percent
- Demand charge discounts will be applied based on load factor and a sliding scale
- Annual evaluations to determine rate applicability

Load Factor Threshold	Enrollment Years	Demand Charge Discount
None	1	100%
LF <= 5%	2 to 9	100%
5% < LF <= 10%	2 to 9	75%
10% < LF <= 15%	2 to 9	50%
LF > 15%	2 to 9	0%

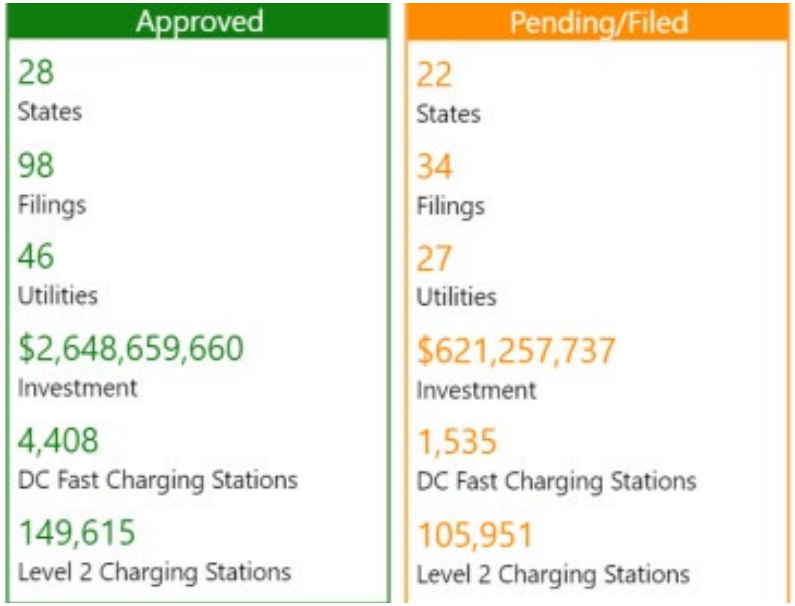
Unitil EVERSOURCE ENERGY nationalgrid

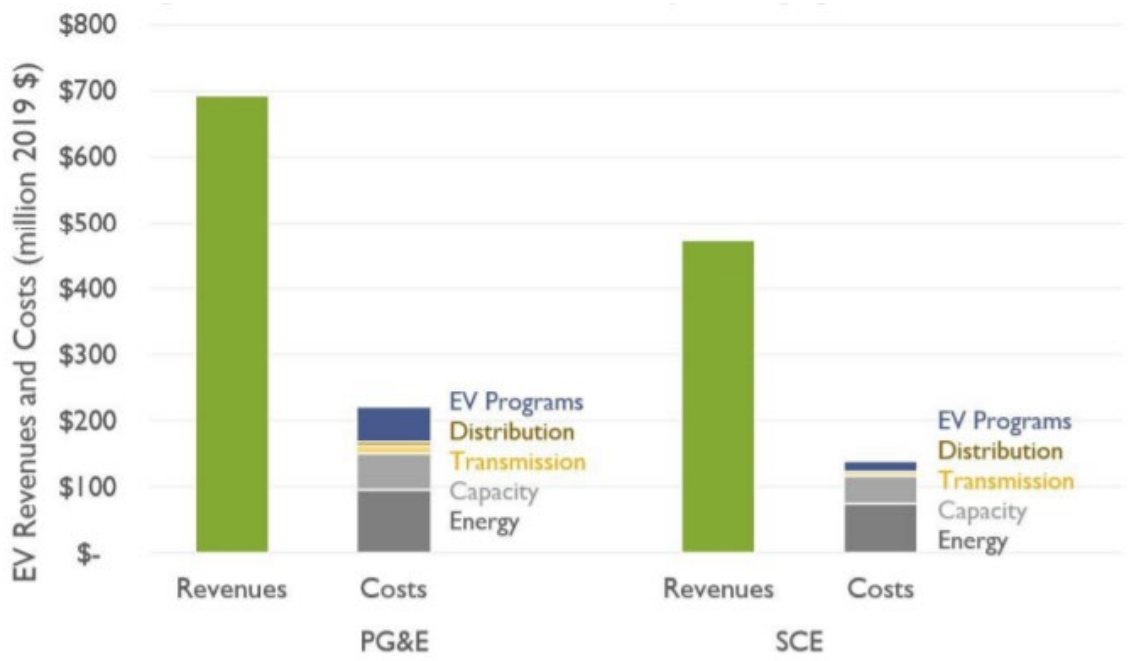
UTILITY TRANSPORTATION ELECTRIFICATION BEST PRACTICES

April 14, 2021

National Lens

- Almost $3B of investments have been approved for utility EV programs, nearly $800M of which is in underserved/low-income communities
- MA needs programs that match the scale and scope of the challenge





EVs Are Driving Rates Down

- Between 2012 and 2019, in the two utility service territories with the most EVs in the United States, EV customers have contributed more than $800 million in net-revenue to the body of utility customers (even after accounting for the costs of EV programs recovered in rates).

A Portfolio Approach

- Deploy Charging Infrastructure Strategically
  - Residences
  - Workplaces
  - Public Fast-Charging
  - Public Long Dwell
- Increase Access for an Equitable EV Market and Improve Local Air Quality
- Manage Load and Maximize Fuel Cost Savings
- Foster Competition
- Educate Customers

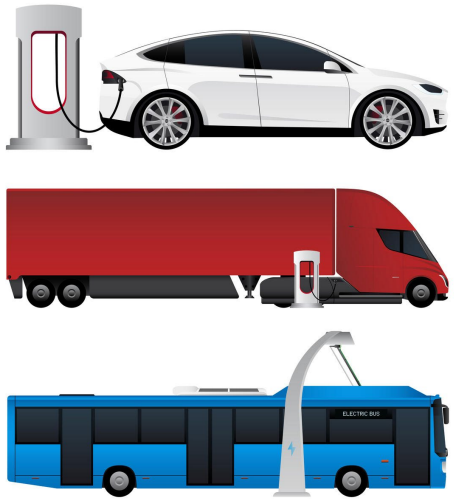
Moving Forward

- Need to consider additional M&HDV electrification
- Support for make-ready for additional DCFC
- Multi-unit dwellings (additional outreach)
- Ensure the people who decide when to charge see price signals
- Centering equity

M&HDV Electrification

- MA has a goal of 100% electric truck and bus sales by 2050
- Need to consider rates that make sense for low-utilization, high-power applications
- Rates should:
  - Work to reduce costs for all customers;
  - Be easy to understand and predictable;
  - Designed with end users in mind;
  - Time-varying volumetric rates preferable to demand charges;
  - Generally, avoid non-coincident peak demand charges;
  - Recover marginal costs rather than embedded costs.
  - Ensure users see price signals.

SDG&E Commercial and Industrial Rate



- Replaces demand charges with smaller, more predictable monthly subscription fees
- Bills now determined primarily by TOU charges
- Recovers only marginal costs, phases in legacy costs overtime
- Fleets save 20-50% on monthly bills

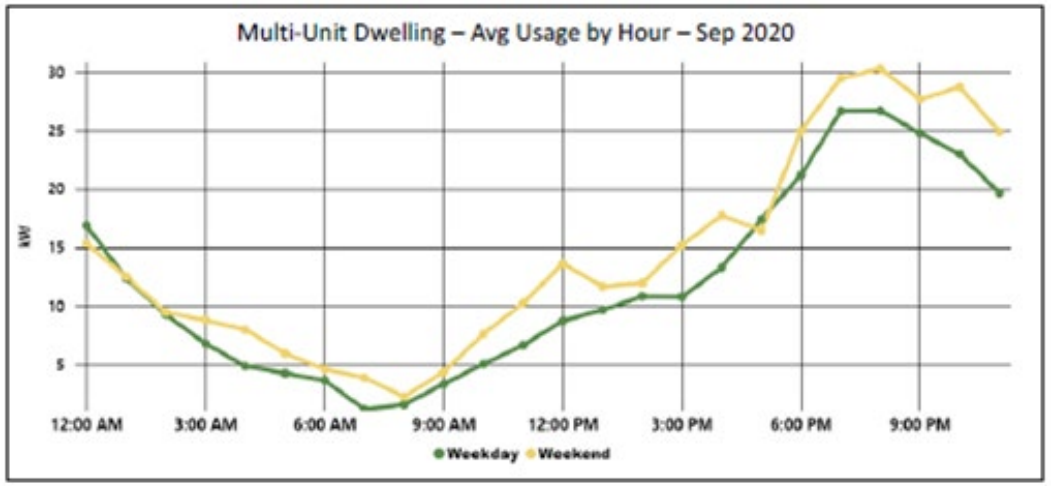
Additional Make-Ready for DCFC

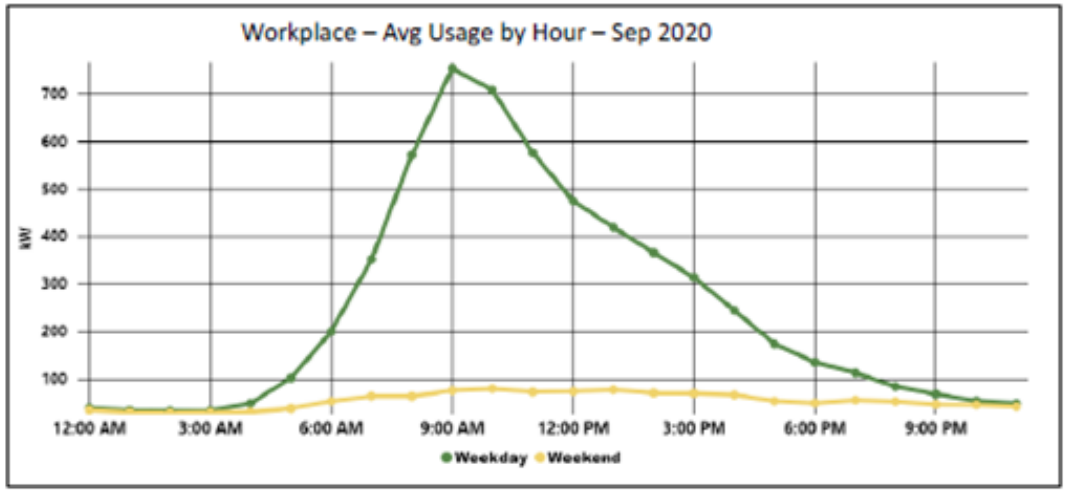
- Massachusetts will need over 1,619 DCFC
  - Need utility make-ready support
  - Help to fill the gaps
- Examples:
  - $701 M New York Make-Ready Program
    - Included $15 M&HDV make-ready pilot
  - New Jersey Utilities
    - Make-Ready Programs

Multi-Unit Dwellings

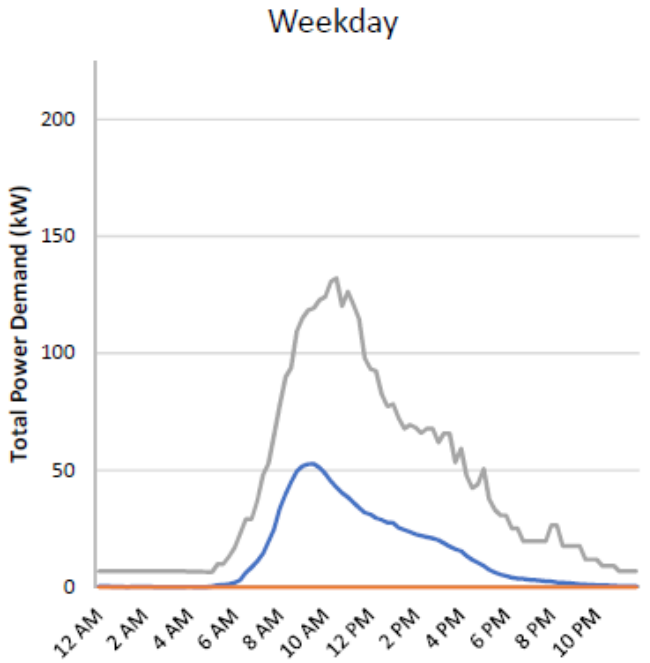
- Ensure sure *all* residents have access to charging at home
- Southern California Edison found that utility ownership/ turn-key solutions was needed to increase access at MUDs
- Make sure they see price signals

When drivers don't see price-signals

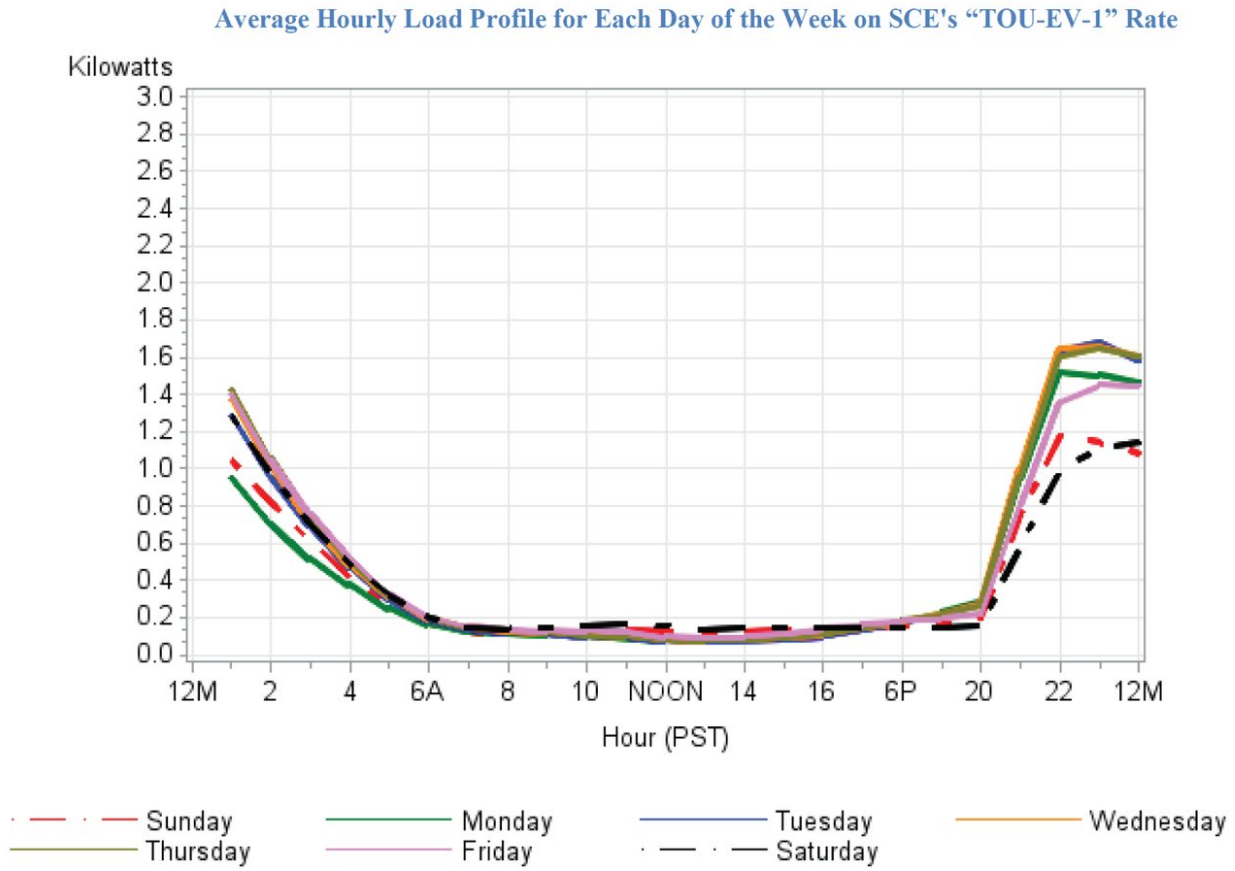




Consistent with Eversource Data



When drivers see price-signals….



Make Price Signals the Default Arrangement

"Establishing a default arrangement that site hosts pass through TOU price signals to drivers would promote charging in a manner that is consistent with grid conditions, offer the opportunity for drivers to realize fuel cost savings, and preserve flexibility to accommodate site host operational needs."

Final Thoughts

- Need to consider additional M&HDV electrification
- Support for make-ready for additional DCFC
- Multi-unit dwellings (additional outreach)
- Pass-through price signals
- Ensure equity is at the forefront of programs

THANK YOU

KATHY HARRIS
EASTERN CLEAN VEHICLES AND FUELS ADVOCATE
KHARRIS@NRDC.ORG

Information Request:

Reference Exhibit ES-KB-1 at 55, lines 11-12. Describe how customers qualify for the low-income discount rate, how they enroll in the rate, how many and what percentage of customers are on the rate, and what portion of these customers overlap the customers located in EJCs.

Response:

M.D.P.U. 8C, Rate R-2, sets forth the eligibility information for non-heating, low-income customers. The special provisions section states that Customers are eligible for the low-income discount rate upon verification of eligibility or receipt of any means-tested public benefit, for which their eligibility does not exceed 200 percent of the federal poverty level based on a household's gross income. The rate is available to residential customers and the bill must be in the applicant's name. Customers who qualify for the rate will be required to re-certify annually.

In order to apply for the discount rate, customers must complete a Discount Rate application as well as provide any required supporting eligibility documentation.

Eversource MA currently has 137,258 residential electric customers on a low income (R-2/R-4) rate or 11.2% of all residential customers.

The Company cannot readily identify the number of low-income customers located in EJCs.

Information Request:

Reference Exhibit ES-KB-1 at 38 line 1 to 39 line 12.

a. Please identify each and every policy goal and outcome the Company is attempting to achieve with the Phase III Program. For example, but not limited to, goals such as net zero emissions and affordable electrification, and outcomes such as robust load management and cost-effective EV (and DER) integration.
b. Explain what information each individual metric will convey about the Company's performance to a typical customer and to the regulator. Explain how each metric informs the regulator of the Company's performance.
c. Are the proposed metrics intended to help inform the Company's performance with respect to achievement of policy goals and outcomes? For each metric, explain what policy goal (e.g., net zero emissions and affordable electricity) and/or outcome (e.g., robust load management and efficient DER integration) the metric is intended to inform progress on. If a metric is not tied to a policy goal or outcome nor used to inform progress on said goal or outcome, explain why it is important to report the metric.

Response:

a. The Company proposed the Phase II Program to support two primary policy objectives, 1) support the statewide light-duty ZEV MOU target of 300,000 EVs in 2025, and the statewide medium and heavy-duty ZEV MOU target of 30 percent of new sales by 2030; and 2) support the transportation emissions reductions necessary for the State to achieve decarbonization targets compliant with the Global Warming Solutions Act ("GWSA"). Additionally, the Company has emphasized other priorities including- equitable access to clean transportation benefits through targeted EJC offerings. Finally, the Company is pursuing cost-effective vehicle-grid integration throughout its offerings.

b. The following table outlines each proposed metric, a description of the information conveyed, and an explanation of the metric relation to performance:

Metric	Description	Relation to Performance
Total number of charging sites developed;	A count of the number of customer sites that have installed charging stations through the program	Provides a number of customer sites relative to budgeted estimates

Total number of ports installed by port type by market segment	A count of the number of Level 2 and DCFC ports installed, and how ports are distributed by customer segment	Provides a count of ports by type and customer segment relative to budgeted estimates
Program financial support provided to DCFC stations	A sum of program funding provided to sites installing DCFC ports	Provides a sum of program funding provided to DCFC sites relative to budgeted estimates
Program financial support provided to stations in EJCs	A sum of program funding provided to sites located in EJCs	Provides a sum of program funding provided to EJC sites relative to budgeted estimates, and equity targets
Total number of participants in the Workforce Development and Electrician training.	A count of number of participants in the Workforce Development and Electrician training programs	Provides a count relative to participation targets
EVSE utilization (e.g., kWh delivered per port per year)	A measure of the kWh dispensed at ports installed through the program	Provides a measure of the utilization of ports installed through the program
CO2 emissions avoided from EVs relative to ICE vehicles	A calculated number based on the kWh dispensed from ports installed through the program	A measure of the direct avoided emissions as a result of program installed ports
Total number of Residential Charger Rebates distributed	A count of Residential Charger Rebates distributed	Provides a count relative to budgeted estimates and targets
Total number of Residential Make-Ready Rebates distributed	A count of Residential Make-Ready Rebates distributed	Provides a count relative to budgeted estimates and targets
Total number of Residential LI/EJC Offerings distributed	A count of Residential LI/EJC Offerings distributed	Provides a count relative to budgeted estimates and targets
Number of MD-HD ports deployed and vehicles electrified	A count of the number of MD-HD ports deployed and vehicles electrified	Provides a count relative to budgeted estimates and targets

Number of car sharing vehicles supported	A count of the number of car sharing vehicles supported	Provides a count relative to budgeted estimates and targets

c. The metrics were developed to report on the progress of the EV charging infrastructure programs, which were proposed to support EV adoption and GHG emissions reductions.

The following table lists each metric and how it relates to the policy goals outlined in part "a".

Metric	Relevance to Policy Objective
Total number of charging sites developed;	EV adoption: The limited availability of publicly available, workplace and MUD charging stations has been identified as a barrier to EV adoption (Exhibit ES-KB-1 pages 20-21)
Total number of ports installed by port type by market segment	EV adoption: The limited availability of publicly available, workplace and MUD charging stations has been identified as a barrier to EV adoption (Exhibit ES-KB-1 pages 20-21)
Program financial support provided to DCFC stations	EV Adoption: EVI-Pro-Lite tool quantifies the need for DCFC installations to support the states ZEV MOU goals (Exhibit ES-KB-1 page 42)
Program financial support provided to stations in EJCs	The Company was directed by the Department of Public Utilities in D.P.U. 20-69-A (page 45-46) to increase accessibility of electric vehicles in EJCs
Total number of participants in the Workforce Development and Electrician training.	EV Adoption: qualified electricians will be necessary to facilitate the transition to equitable electrified transportation (Exhibit ES-KB-1 pages 75-76)
EVSE utilization (e.g., kWh delivered per port per year)	GHG Emissions Reduction: A direct measure of the kWh dispensed at ports installed through the program
CO2 emissions avoided from EVs relative to ICE vehicles	GHG Emissions Reduction: A calculated number based on the kWh dispensed from ports installed through the program
Total number of Residential Charger Rebates distributed	Reducing the equipment costs of managed charging capable L2 EVSE enables beneficial load management
Total number of Residential Make-Ready Rebates distributed	EV Adoption: to enable ubiquitous at-home charging for the Company's residential customers to accelerate EV (particularly BEV) ownership (Exhibit ES-KB-1, page 48)

Total number of Residential LI/EJC Offerings distributed	The Company was directed by the Department of Public Utilities in D.P.U. 20-69-A (page 45-46) to increase accessibility of electric vehicles in EJCs
Number of MD-HD ports deployed and vehicles electrified	The Company was directed by the Department of Public Utilities in D.P.U. 20-69-A (page 45-46) to increase accessibility of electric vehicles in EJCs
Number of car sharing vehicles supported	The Company was directed by the Department of Public Utilities in D.P.U. 20-69-A (page 45-46) to increase accessibility of electric vehicles in EJCs

Information Request:

Reference Exhibit ES-KB-1 at 38 line 1 to 39 line 12.

a. Explain whether the Company has conducted any research on best practices for developing performance metrics and incentives.
b. Is the Company aware of the performance metrics and incentives processes that have taken place in Minnesota, Rhode Island, and/or Hawaii? If so, explain how the process proposed in this docket differs.
c. Should performance metrics be tied directly to policy outcomes, such as cost-effective EV (or DER) integration and robust load management? If not, explain the purpose of performance metrics and support your position with industry literature.

Response:

The Company has proposed a set of program implementation metrics with no incentives tied to their achievement in Exhibit ES-KB-1 at 38, line 1 to 39, line 12. The Company has also proposed a set of performance incentive mechanisms ("PIMs") in Exhibit ES-KB-1 at 79, lines 3-9. The program implementation metrics and the PIMs are separate and distinct, with different purposes.

a. The Company has conducted research on best practices for developing PIMs specifically, but not on program implementation metrics. The Company is aware that National Grid's Rhode Island affiliate commissioned a white paper by The Brattle Group in 2020 on best practices for PIM development.[1]

b. The Company is aware of PIM *methodologies, principles,* or *criteria* used by various state regulators, especially in Rhode Island and Massachusetts, but also in other jurisdictions. The Company has not proposed PIM *processes* and therefore has not studied *processes.* The Company uses its own *internal* process for PIM development in preparation for filings where PIMs are relevant tools.

c. Yes, performance metrics with incentives should be tied to public policy goals. The Department has indicated that PIMs should be tied to, among other things, "public policy goals". In its Order on D.P.U. 18-150, at 120-122, the Department provided its standard of review for evaluating PIM proposals, stating, "Thus, the Department finds that in order to be

[1] See RIPUC Docket No. 4943, Exhibit A, February 28, 2020.
http://www.ripuc.ri.gov/eventsactions/docket/4943-NGrid-Comments%202-28-2020.pdf

considered on its design merits, a PIM must first be found to meet the threshold principles that (1) it advances specific public policy goals and (2) the affected activity is clearly outside a distribution company's public service obligations."

Information Request:

Reference Exhibit ES-KB-1 at 40, lines 9-10. Explain how the Company will measure progress toward achieving the stated goal of providing "sufficient charging options away from home" (i.e., with what metrics).

Response:

The Company will measure its progress toward achieving the stated goal of providing sufficient charging options away from home by measuring its deployments in ports in the following categories: Public L2, Workplace L2, and Public DCFC.

The Company assesses the geographic balance of EVSE locations to determine if there are underserved areas. The Company plans to work with partners, stakeholders, and communities to determine an appropriate metric for measuring gaps in the charging network.

Information Request:

Reference Exhibit ES-KB-1 at 44, lines 17-19. Provide the amount of the DCFC EVSE rebate, the total amount of the limited rebate program, a description of how the rebate was structured and any eligibility criteria. Provide all available rebate program materials.

Response:

Exhibit ES-KN-1 at 44, lines 17-19 is referring to the MassEVIP Direct Current Fast Charging (DCFC) Program. The Company therefore understands this Information Request to be seeking information about the MassEVIP DCFC Program. For details on the MassEVIP DCFC Program Requirements please refer to https://www.mass.gov/doc/massevip-direct-current-fast-charging-requirements/download?_ga=2.208631442.1016982229.1636580054-827724391.1635774291

Information Request:

Reference Exhibit ES-KB-1 at 45, table at line 2. Explain how the Company determined each of these EVSE rebate levels, including number of ports, percentages of installed costs, dollar values per port. and max incentives. Provide all workpapers in a live, unlocked Excel spreadsheet with all links and formula intact. If any rebate calculation involved Company assumptions, provide justification for those assumptions, include supporting evidence from prior Company EV programs or relevant industry literature.

Response:

The Company aligned with National Grid on its EVSE incentives in order to provide a more uniform customer make-ready experience across jurisdictions within the Commonwealth.

The incentives for Level 2 EVSE at EJC sites were set in order to cover 100-percent of the costs of the installation, a continuation of the Phase I Program incentive structure.

For customers installing Level 2 EVSE at non-EJC sites, the Company in Phase I observed an average of four to five ports installed per site.

For non-municipal customers, the Company has proposed to provide an incentive to cover up to 50% of the cost of Level 2 EVSE after the fourth port, in order to incentivize site hosts to fully utilize the electrical infrastructure installed, while still requiring a customer cost contribution. Municipal customers, who installed fewer (3) ports on average, were given slightly more EVSE incentives. Refer to Attachment AG-1-1-3 for a list of ports installed by site.

The DCFC incentives were structured to encourage developers and site hosts to install up to 10 DCFC per site. The public, non-EJC incentive of $40,000/port is sufficient to cover over 50-percent and up to 100-percent of most available DCFC ports. In order to support EJCs to have 100-percent of the costs of the installation covered, an additional DCFC EVSE rebate level is being proposed to encourage installation of 150 kW chargers and above at $80,000/port, or the approximate cost of those chargers.

For more explanation on the rationalization for covering the cost of DCFC at these levels, please see the Company's responses to Information Request CLF-1-2.

Information Request:

Reference Exhibit ES-KB-1 at 46, lines 1-8.

a. Explain the reasoning for the Company's proposal to require networking for all L2 and DCFC chargers.
b. Describe the charging data the Company intends to collect from networked chargers and how each data point will be leveraged for future program design and current program refinements.
c. Explain whether the Company will require networked chargers to be compliant with open standards, such as the Open Charge Point Protocol (OCPP). Provide any analysis the Company has done on the costs and benefits of supporting open networks and interoperability under the Company's EV Program.
d. Detail the steps a site host would have to take to comply with the proposed networking requirement.
e. Detail the networking fees faced by site hosts, including fee level, exactly what these fees cover, and how they are incurred.
f. Explain how the Company calculated the networking stipend and what it is intended to cover, including why the Company chose to support 4 years. Provide all calculations in workpapers in a live, unlocked Excel spreadsheet with all links and formula intact.

Response:

a. The Company is requiring networking for all L2 and DCFC chargers in order to: 1) collect charging data for planning of future programs; 2) to ensure a uniform customer experience with regard to searching for EVSE via apps like PlugShare; and 3) to encourage the use of queuing notifications for efficient charging session turnover. Additionally, having networked stations will enable the Company to potentially pursue managed charging programs for public and workplace chargers in the future.

b. The Company anticipates requiring charging data for reporting by public and workplace L2 EVSE, and public DCFC. The specific data requirements may either be similar to what is currently required for its Phase I Program, please see Attachment AG-3-11, or as defined by the Company at a later date. By collecting interval charging data, the Company can create EV charging load profiles which will help the Company to understand charging patterns in order to support the development of effective managed charging programs for public and workplace chargers. Additionally, this data can be used for better system planning regarding EV load growth on feeders.

c. The Company will continue to require networked chargers to be OpenADR certified and OCPP compliant. OpenADR will enable future managed charging programs, and OCPP compliance ensures that site hosts will easily be able to swap EVSE networks if a site host's EVSE network goes out of business.

d. In the Company's Phase I Program, customers comply with the networking requirement by sending a file electronically to the Company or its authorized data collection vendor within five calendar days following the end of each month, showing all data outlined in Attachment AG-3-11 for charging stations deployed for the prior monthly period. The Company anticipates the same requirements for its Phase II Program.

e. The Company has seen annual prices for networking that range from approximately $120/year/port to over $300/year/port for networking subscription plans. These fees cover the chargers being connected via a hardwired, cellular, or Wi-Fi network to a network back-office which can allow for communication with the charger, remote monitoring and control, electronic payment, and data collection.

f. Many site hosts have expressed concern over the cost of networking. The Company decided to provide a stipend that was equivalent to the least expensive networking option at the time of designing the Phase II Program. The Company decided to support four years' worth of networking fees as that is the duration of the Phase II Program.

Appendix – Equipment Usage Data Requirements

Report Format for EVSE Manufacturers and Network Integrators:

Within five (5) calendar days following the end of each month, Contractor shall electronically send Eversource a CSV file showing all transactions of all charging stations deployed by Contractor pursuant to the Program for the prior monthly period.

Each record shall include:

Session Data	
Field Name	**Description**
SessionID	Unique identification number of the charging session
VendorID	Unique identification number of the vendor provided by Eversource
LocationID	Unique identification number of the site provided by Eversource
EVSEID	Unique identification number of the EVSE
PortID	Unique identification number of the port
EVSEModelNbr	EVSE's manufacturer model number approved by Eversource
EVSENbrOfPorts	Number of ports on the EVSE
ChargeStartDateTime	Charge start date and time
ChargeEndDateTime	Charge end date and time
ChargeDuration	Charge duration; the time of power being provided to EV
SessionStartDateTime	Session (connection) start date and time; when port is connected to the EV
SessionEndDateTime	Session (connection) end date and time; when port is disconnected from the EV
SessionConnectionTime	Session (connection) duration; the time the charge port is physically connected to the EV
ChargeKWH	Energy (kWh) usage per session
ChargeMaxDemandKW	Peak demand (kW) per session

	Persistent Peak demand (kw) (optional)
ChargeAverageDemandKW	Average demand (kW) per session
SessionSaleAmount	Fees charged to end user
VehicleMake	User's vehicle make (optional)
VehicleModel	User's vehicle model (optional)
UserID	Anonymous user ID (optional)

Interval Data	
Field Name	**Description**
IntervalID	Unique identification number of the charging 15-minute interval
SessionID	Unique identification number of the charging session that includes the interval
VendorID	Unique identification number of the vendor provided by Eversource
LocationID	Unique identification number of the site provided by Eversource
EVSEID	Unique identification number of the EVSE
PortID	Unique identification number of the port
ChargeIntervalStartDateTime	Interval start date and time
ChargeIntervalEndDateTime	Interval end date and time
ChargeKWH	Energy (kWh) usage per interval
ChargeMaxDemandKW	Peak demand (kW) per interval
ChargeAverageDemandKW	Average demand (kW) per interval

Information Request:

Reference Exhibit ES-KB-1. Provide the Company's line extension policies applicable to distribution system upgrades triggered by EV charging infrastructure, including equations for determining cost shares. Provide all relevant workpapers in live, unlocked Excel spreadsheet with all links and formula intact,

Response:

Please refer to Attachment AG-3-12 for the Company's line extension policies and cost share requirements.

NSTAR ELECTRIC COMPANY
d/b/a EVERSOURCE ENERGY

M.D.P.U. No. 3A
Cancels M.D.P.U. No. 3

Appendix B-3

Page 1 of 9

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

Appendix B - Line Extension Policy
Commercial - Industrial

I. Applicability

This Policy applies to single-phase or three-phase Line Extensions necessary to serve all Commercial and Industrial Customers (herein referred to as the "Customer"), including Commercial and Industrial developments. The Company will install, own, operate, and maintain an electric distribution system ("System") in accordance with the several provisions of this Policy.

The Customer shall be obligated to furnish to the Company reasonable security and assurances that the premises will be serviced on a permanent basis prior to construction of any Line Extension, and nothing contained herein shall be construed to mean that the Company will extend its lines subject to the following provisions under any and all conditions.

II. Definitions

When used within this Policy, the following terms shall have the meaning stated herein:

"Application" shall mean a writing in form and substance acceptable to the Company wherein the Company is requested to extend its facilities in accordance with the several provisions of this Policy.

"Individual Customer" shall refer to an individual commercial or industrial Customer served by a Line Extension.

"Developer" shall mean the agent or agents of the non-residential real estate development to be served by a Line Extension which is the subject of this Policy. Such agent or agents shall be authorized to enter into a Line Extension Agreement with the Company.

"Development" shall mean a non-residential real estate development such as privately owned parcels of land, shopping complexes, condominiums, apartment buildings, schools, churches, mobile home parks, townhouses, public buildings and other commercial or industrial developments.

"Line Extension" shall mean an extension of the Company's overhead or underground electric distribution facilities within its franchise territory.

"Non-Electrical Facilities" shall refer to but not be limited to the transformer foundations, vaults, manholes, hand-holes and duct systems installed with appropriate pull lines ready for the installation of primary and secondary cables and associated equipment.

"Overhead Line Extension" shall mean an extension of at least one wooden pole and a section of wire from

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

the Company's existing overhead System.

"Overhead and Underground Line Extension Agreement" shall mean an agreement in form and substance which outlines the Company's and the Individual Customer's or Developer's rights and responsibilities.

"Private Property" is normally referred to as the "Customer's Property" and shall include Developments as described herein. For Line Extensions to Individual Customers, the Line Extension on the Customer's property may also be referred to as the "service" to the Individual Customer's facility. When referring to Developments, Private Property shall mean a parcel or tract of land owned by an individual or group of Customers. Additionally, traveled ways, access roads, and roads that are not defined by metes and bounds or recorded as such in the Registry of Deeds are considered Private Property.

"Public Ways" shall mean streets, roads, and ways that are recorded in the Registry of Deeds, defined by metes and bounds, and are available for use by the general public. Such ways may be owned by the state or a municipality, or they may be privately owned by Customer(s). Similarly defined and recorded rights-of-ways located on or across Private Property may also be acceptable for the purpose of the Company to install, own, and maintain a Line Extension.

"Standards for Overhead Construction" shall refer to the Company's construction standards, as amended from time to time, to reflect the Company's requirements for construction of overhead facilities.

"Standards for Underground Construction" shall refer to the Company's construction standards, as amended from time to time, to reflect the Company's requirements for construction of underground facilities.

"Underground Line Extension" shall mean an underground extension from the Company's existing electric distribution system.

III. Construction of Facilities

A. Line Extensions on Public Ways

1. Overhead Line Extensions

a. Design - The Company shall design such Overhead Line Extensions on Public Ways.

b. Installation - When the Company has been requested to install overhead facilities to serve an Overhead Line Extension for an Individual Customer or a Development, the Company will install all facilities within Public Ways. The Company will install facilities necessary to furnish electric service to the Individual Customer or each lot within the Development, including, but not limited

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

to, Line Extensions or modifications to existing facilities of the Company which may be necessary, in the Company's sole reasonable judgment, to serve the Individual Customer or Development.

c. Ownership - All Overhead Line Extensions on Public Ways shall become the property of the Company whether or not built with a contribution-in-aid-of-construction from an Individual Customer or Developer.

d. Maintenance - The Company shall maintain such Overhead Line Extensions on all Public Ways.

e. Tree Trimming, Removal, and Blasting - All tree trimming, removal of existing facilities, and blasting, in or along state and municipally owned Public Ways, where required to serve an Individual Customer or Development, shall be performed by the Company, and will be considered a component of the cost of the Overhead Line Extension.

2. Underground Line Extensions

a. Design - The Company shall design such Underground Line Extensions within Public Ways.

b. Installation - The Company will install all facilities within state and municipally owned Public Ways.

c. Ownership - The Company shall own such Underground Line Extensions within the state and municipally owned Public Ways.

d. Maintenance - The Company shall maintain such Underground Line Extensions within state and municipally owned Public Ways.

e. Tree Trimming, Removal, and Blasting - All tree trimming, removal of existing facilities, and blasting, in or along state and municipally owned Public Ways, where required to serve an Individual Customer or Development, shall be performed by the Company, and will be considered a component of the cost of the Overhead Line Extension.

B. Line Extensions on Private Property

1. Overhead Line Extensions

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

a. Design - The Company shall design such Overhead Line Extensions from Company facilities to serve an Individual Customer or to serve each lot within the Development.

b. Installation - The Company may install such Overhead Line Extension from Company facilities to serve the individual Customer or, within the Development, to serve each lot in accordance with the Company's Standards for Overhead Construction. The Company will install facilities necessary to furnish electric service to serve the Individual Customer or each lot within the Development, including, but not limited to, Line Extensions or modifications to existing facilities of the Company which may be necessary, in the Company's sole reasonable judgment, to serve the Individual Customer or the Development.

An Individual Customer or Developer in the Cambridge and South Shore, Cape Code & Martha's Vineyard service area may elect to install overhead facilities. Such Individual Customer or Developer, at its cost, shall employ a qualified contractor, approved in advance by the Company, to install all primary and secondary wires, poles, guys and anchors and their associated appurtenances in accordance with the Company's material and construction specifications for Overhead Construction.

c. Ownership - The Company shall own such overhead services from Company facilities to serve the Individual Customer or each lot within the Development in accordance with the Company's Standards for Overhead Construction.

Where the Individual Customer or Developer in the Cambridge and South Shore, Cape Code & Martha's Vineyard service areas has elected to install overhead facilities, and the Individual Customer or Developer, at its cost, has elected to install all primary wires, poles, guys and anchors and their associated appurtenances, ownership of such line must be transferred to the Company following the Company's inspection and acceptance prior to being energized. Where such line is transferred to the Company, the Developer shall grant directly to the Company a warranty that all of the Developer materials and workmanship meet the Company specifications and shall be free from defects in materials and workmanship for a period of five (5) years from the date the System is energized.

d. Maintenance - The Company shall maintain such overhead services from Company facilities to serve the Individual Customer or to each lot where (i) the Company has installed such overhead services or (ii) the Individual Customer or Developer has installed such overhead service and transferred such service to the Company in accordance with the requirements of Section c above.

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

e. Tree Trimming, Removal, and Blasting - All tree trimming, removal of existing facilities, and blasting, where required, on the Individual Customer's property or in the Development, shall be the responsibility of the Customer or Developer.

2. Underground Line Extensions

a. Design - The Company shall design such Underground Line Extensions from Company facilities to serve an Individual Customer or to serve each lot within the Development whether installed by the Company or by the Individual Customer or Developer.

b. Installation - For all underground installations on Private Property or within new Developments, the Individual Customer or Developer, at its cost, shall employ a qualified contractor to install the Non-Electrical Facilities portion of the system and to perform the necessary excavation and backfilling in accordance with Company's Standards for Underground Construction. The Company will install facilities necessary to furnish electric service to serve the Individual Customer or the Development, including, but not limited to, Line Extensions or modifications to existing facilities of the Company which may be necessary, in the Company's sole reasonable judgment, to serve the Individual Customer or Development.

Where the Company has been requested to install underground facilities to serve an Individual Customer or to serve a Development, the Company shall provide and install the primary cables and associated devices and appurtenances in the Non-Electric Facilities supplied by the Individual Customer or Developer.

An Individual Customer or Developer in the Cambridge and South Shore, Cape Code & Martha's Vineyard service areas who has elected to install underground facilities will:

(1) Obtain the primary cable and associated devices and appurtenances from the Company; or

(2) Purchase the primary cable and associated devices and appurtenances, in accordance with Company specifications.

and

(3) Such Individual Customer or Developer will employ a qualified contractor, approved in advance by the Company, to install and terminate

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

such primary cable in the Individual Customer or Developer's facilities in accordance with the Company material and construction specifications contained in the Standards for Underground Construction.

Where the Individual Customer receives service at primary voltage, the Company will install all Company-owned facilities on Private Property. The Individual Customer will have responsibility for the installation of all Customer-owned facilities.

c. Ownership - The Individual Customer or Developer shall turn ownership of the primary conduit system and cable, excluding the service conduit and cable, to the Company following inspection and acceptance of the primary conduit system by the Company. The Company shall own such underground facilities where (i) the Company has installed the facilities or (ii) the Individual Customer or Developer has installed the facilities in accordance with Section b above and has transferred title of the installed facilities to the Company following inspection and acceptance by the Company and at no cost to the Company free of all encumbrances.

Where the Individual Customer receives service at Primary Voltage, the Company may own certain facilities or portions of facilities necessary to terminate, control and meter its primary distribution system circuits feeding the Individual Customer.

d. Maintenance - The Company will maintain Underground Facilities where (i) the Company has installed such facilities, or (ii) the Customer or Developer has installed such facilities as designed by the Company and has constructed such facilities in accordance with the Company's Standards for Underground Construction, and the Individual Customer or Developer has transferred ownership of the facilities to the Company in accordance with Section c above.

Where the Individual Customer or Developer has not transferred ownership of the underground facilities to the Company, the Individual Customer or Developer shall be responsible for maintaining such facilities. The Individual Customer or Developer shall maintain all secondary facilities on private property at the Customer's expense.

The Company shall maintain all Company-owned equipment.

e. Tree Trimming, Removal, and Blasting - All tree trimming, removal of existing facilities, and blasting, where required, on the Individual Customer's property or in the Development shall be performed by the Individual Customer or the Developer.

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

IV. Individual Customer or Developer Responsibilities

The Individual Customer or Developer shall be responsible for the following:

A. Easements - The Individual Customer or Developer will obtain and furnish, without charge to the Company, clear title to all easements in grant form and substance satisfactory to the Company for locating and maintaining the System on private property, including but not limited to the right to trim trees as the Company may deem necessary. The initial trim is to be performed by the Individual Customer or Developer. In the event any lots are sold prior to the granting or proper receiving of easements to the Company, no work will be done by the Company until the Individual Customer or Developer obtains such easements for and at no cost to the Company. The Company will prepare the easement form for the Individual Customer or Developer.

B. Plans - The Individual Customer shall provide the Company with a complete set of plans clearly showing all recorded rights of way, defined by metes and bounds and recorded as such in the Registry of Deeds, as the Company may deem necessary.

C. The Developer shall furnish the Company with a plan of the proposed Development ("Development Plan"). Such Development Plan shall be furnished at no cost to the Company, shall have been properly approved by the municipality and shall have been properly recorded and/or registered at the appropriate Registry of Deeds prior to the start of any construction by the Company. Such Development Plan shall show all development boundaries, lots and lot boundaries as well as the traveled ways and the location and boundaries of any structure, facility or improvement (whether existing or planned) within said Development and the locations of all areas and structures which are to be individually furnished electric service by the Company.

D. Code Compliance - The Developer or Individual Customer shall design and construct such installations to meet or exceed all applicable laws, regulations and codes, and ensure that the Line Extension has received all required approvals prior to the line being energized by the Company.

E. Electric wires and cables and other utility and communications facilities may be installed in the same trench line or in common duct banks, if appropriate, under conditions mutually acceptable to the utilities involved and in conformance with all applicable laws, regulations and codes and utility specifications.

F. Information and Requirements for Electric Service Booklet - In addition to the provisions set forth within this Policy, service to the Individual Customer or Developer is subject to the requirements set forth within the Company's printed Information and Requirements for Electric Service.

G. Permits and Approvals - The Individual Customer or Developer shall have taken any and all

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

requisite action and obtained any and all requisite permits and approvals (including, without limitation, thereto, zoning and land use or subdivision approval and any environmental permits and approvals) from all local, state and federal authorities asserting jurisdiction over the project.

V. Payment Required

A. Revenue - For the purposes of this Policy, the term "Revenue" shall mean the estimated distribution revenue expected to be collected by the Company from the commercial and industrial customer(s) taking permanent service under the Line Extension pursuant to the terms of the Company's generally available rate schedules for retail delivery service, excluding revenue attributable to the Company's Transition Charges, Transmission Charges, Supplier Services Charges, Energy Efficiency Charge, and Renewables Charge, and other reconciling charges as listed in the Company's Summary Rate Schedule.

B. Estimated Cost of Construction - The Cost of Construction shall mean the estimated cost of facilities provided by the Company to furnish electric service to the Individual Customer or each lot within the Development. This includes but is not limited to, the cost of any Line Extensions or modifications to existing facilities of the Company which may be necessary, in the Company's sole reasonable judgment, to serve the Development. The cost will be determined by applying the Company's current cost schedule of new construction installation costs. Constructed facilities jointly owned with other utilities will be adjusted accordingly.

C. Charge Formula – For line extensions in the Public Way, the Individual Customer or Developer will pay to the Company a Contribution equal to the sum of (1) the Company's Cost of Construction in excess, if any, of 3.6 times the estimated annual Revenue and (2) the Tax Liability Charge. For all construction beyond the allowances specified in this tariff, the Individual or Customer or Developer will be required to contribute the excess costs.

D. Taxes - The Company may be subject to tax liabilities on any contributions-in-aid-of-construction or material and labor supplied by the Individual Customer or Developer pursuant to the IRS Tax Code revision of 1986. This Tax Liability Charge, if any, shall be paid in full by the Customer prior to the start of any construction.

E. Method of Payment - The Contribution, shall be paid to the Company in good funds, in full and in advance of construction work to be performed by the Company.

F. Refunds – The Customer has the option to request the Company to perform a one-time recalculation of the Contribution using actual distribution revenue to determine if a refund of all or a portion of the original payment is warranted. The request for the one-time review may be made at any time one to three years after commencement of delivery of electricity. In no event shall the aggregate amount of any such refund to the Customer exceed the amount of the Contribution. In addition,

TERMS AND CONDITIONS - DISTRIBUTION SERVICE

the Company shall no pay interest on any Contribution, whether or not subsequently refunded to the Customer.

VI. Construction Moratorium

The Company is willing to provide service installations on a year-round basis, subject to restrictions imposed by municipalities or under applicable laws, regulations, ordinances, bylaws, permits or approvals.

VII. Line Extension Agreement

The Company may require the Individual Customer or Developer to sign an agreement setting forth the terms of this Policy and any other terms that the Company deems are reasonably necessary in connection with the installation of the Line Extension, provided that such terms are not inconsistent with the terms expressed in this Policy. The Company, at its sole discretion, may refuse the request for a Line Extension if the appropriate rights, permits and easements cannot be obtained or if applicable laws, regulations, codes, bylaws, ordinances and utility standards cannot be satisfied.

Information Request:

Reference Exhibit ES-KB-1 at 62, lines 15-17. Explain whether the Company currently supports the use of EV Energy Management Systems (EV EMS) by customers in any of the Company's other jurisdictions. For each example, explain how the Company incentivizes customers to adopt EV EMS when installing EV charging infrastructure.

Response:

In the Company's Phase I Program, solutions that incorporate EV EMS are eligible for the standard make-ready and EVSE incentives available through the program. The Company does not offer incentives above and beyond the standard incentives for EV EMS solutions.

The Company has not implemented EV infrastructure programs in any other jurisdiction to date.

Information Request:

Reference Exhibit ES-KB-1 at 27 line 4 to 29 line 24. Provide all original surveys and survey responses or other direct stakeholder feedback that informed the referenced lessons.

Response:

The referenced lessons learned from the Phase I Program are primarily the result of internal Company experience in program implementation, and do not rely on original surveys or direct stakeholder feedback, outside of feedback obtained from site hosts and potential site hosts through the regular site host recruitment process.

One lesson learned was informed by publicly available market research, on Exhibit ES-KB-1, page 29 lines 22-23: "The originally identified EV adoption barriers of upfront cost of EVs, lack of 22 available charging infrastructure and EV range remain today." Please refer to Exhibit ES-KB-1, page 20, lines 10-12, and the accompanying footnote.

Information Request:

Reference Exhibit ES-KB-1 at 45, lines 8-12. Explain how the Company estimated that 100 Phase I Make-Ready sites would partake, and why that would likely yield 300 incremental L2 ports. Provide all supporting calculations and justification for any Company assumptions. Has the Company calculated whether these potential sites are the most effective use of rebate dollars? How does the Company plan to notify these Phase I customers of this offer?

Response:

The Company expects that through the end of 2021, the Phase I Program will have supported the installation of EV infrastructure at approximately 475 customer sites, of which approximately 400 will have capacity to install more charging ports.

The Company determined that these rebate dollars were necessary to maximize the utilization of electrical infrastructure already installed, and to ensure that customers who installed charging ports in the Phase I Program without the benefit of EVSE rebates from the Company were afforded the same opportunity as customers in the Phase II Program.

The Company made a reasonable estimate that approximately 25 percent of its Phase I Program customers would partake in the available EVSE rebate in the Phase II Program.

Phase I Program customers, who have the electrical infrastructure available to support more charging ports would be an effective use of rebate dollars, as no additional supporting funding would be necessary to effectuate the charging station deployment.

Given the limited pool of Phase I Program customers available for this offer, the Company will leverage existing relationships and communication channels to notify eligible customers.