

State and Local Climate and Energy Program

# Electrification in the Urban Environment: Making Room for Express Delivery

March 8, 2022 | 2 PM Eastern

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## Today's Agenda

- Introduction Andrea Denny and Jessica Daniels, U.S. Environmental Protection Agency (EPA)
- Electrification in the Urban Environment: Making Room for Urban Delivery Denise Kearns, U.S. EPA SmartWay
- Electric Vehicle (EV) Charging Programs Susan McSherry and Mark Simon, New York City Department of Transportation (NYCDOT)
- Con Edison Electric Vehicle Initiatives Britt Reichborn-Kjennerud, Con Edison
- Question and Answer Session

The views expressed by speakers on this webinar are solely those of the participants and EPA does not endorse any products or commercial services mentioned in this webinar.



## and Energy Program

### **Andrea Denny**

# State and Local Climate and Energy Program U.S. EPA

### **Jessica Daniels**

Office of Transportation and Air Quality (OTAQ) U.S. EPA

## U.S. EPA's State and Local Climate and Energy Program

- We offer free tools, data and technical expertise about energy strategies, including energy efficiency, renewable energy and other emerging technologies, to help state, local and tribal governments achieve their environmental, energy and economic objectives
- Access these resources at: <u>www.epa.gov/statelocalenergy</u>
- Electrification Webinar Series
  - Get notifications by subscribing to our newsletter:
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  - Past Webinars:
    - www.epa.gov/statelocalenergy/state-local-and-tribal-webinar-series

## **Select Electrification Resources**

- Electrification Toolfinder: screen tools and resources to evaluate environmental and economic benefits of electrification programs www.epa.gov/statelocalenergy/tool-finder-local-government-clean-energy-initiatives
- Avoided Emissions and geneRation Tool (AVERT): quantifies the emissions benefits of energy efficiency and renewables <u>www.epa.gov/avert</u>
- Co-Benefits Risk Assessment Health Impacts Screening and MappingTool (COBRA): calculates health impacts of emissions changes and their economic value <u>www.epa.gov/cobra</u>
- ENERGY STAR Electric Vehicle Chargers: offers guidance on how to identify and procure Energy Star certified charging equipment <u>www.energystar.gov/products/other/ev\_chargers</u>









## U.S. EPA's State, Local, and Tribal Transportation Resources

- EPA's OTAQ protects human health and the environment by reducing air pollution and greenhouse gases from mobile sources and the fuels that power them, advancing clean fuels and technology, and encouraging business practices and travel choices that minimize emissions.
- We help state, local, and tribal governments achieve their environmental and other objectives by providing expertise on:
  - State Implementation Plans
  - Transportation Conformity
  - Vehicle Emissions Inspection & Maintenance and state fuel programs
  - Travel Efficiency and Greenhouse Gas (GHG) Planning
  - MOtor Vehicle Emission Simulator (MOVES), Calculators, and Tools
- Access these resources at the State and Local Transportation Resources page: <u>www.epa.gov/state-and-local-transportation</u>



## **OTAQ's Voluntary Programs and Initiatives**

- Clean Diesel Program To reduce diesel emissions that impact public health
  - Includes grants and rebates under the Diesel Emissions Reduction Act (DERA)
  - www.epa.gov/cleandiesel
- Ports Initiative To improve environmental performance near ports
  - www.epa.gov/ports-initiative
- SmartWay To advance sustainable transportation supply chains
  - www.epa.gov/smartway

## Clean School Bus Program

Building a Better America with the 2021 Bipartisan Infrastructure Law

#### www.epa.gov/cleanschoolbus

## **Transportation Trends**

- EPA Automotive Trends Report
  - Public information about new light-duty vehicle greenhouse gas emissions, fuel economy data, technology data, and auto manufacturers' performance in meeting the agency's GHG emissions standards
  - www.epa.gov/automotive-trends
- EPA Green Vehicle Guide
  - Learn more about emerging options in transportation like zero emission vehicles (ZEVs), shared mobility, and self-driving cars
  - www.epa.gov/greenvehicles



## **Contact Information**

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## Are you working with commercial fleets in your community?

- We work with commercial fleets
- We are launching a program to work with commercial fleets
- We are considering a program to work with commercial fleets
- We are not considering a program to work with commercial fleets
- Other (enter in Q&A box)



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## Electrification in the Urban Environment: Making Room for Urban Delivery

**Denise Kearns** U.S. EPA



## Electrification in the Urban Environment: Making Room for Urban Delivery



## Today's Discussion

- Transportation, freight delivery emissions
- Environmental, health and economic impacts
- Vehicle Electrification
  - Light duty
  - Heavy/medium-duty commercial vehicles (HD/MD)
- On the horizon: transformation
- EPA SmartWay





## **Transportation Emissions**



#### TOTAL NATIONAL NOX EMISSIONS BY SECTOR, 2018

Transportation Stationary Source Industrial Processes Waste Disposal and Recycling Other



Source: U.S. Environmental Protection Agency

- Largest source of nitrogen oxide (NOx) emissions (~60%)
- Largest source of GHG emissions (29%)
- Source of particulate matter and other harmful emissions

## Freight Emissions

- In the transportation sector, onroad HD/MD trucks account for around 50% of NOx emissions and nearly ¼ of GHG emissions
- Among onroad HD/MD trucks:
  - Heavy-duty, line haul trucks account for around 60% of NOx emissions; around 65% of GHG emissions
  - Vocational vehicles account for around 20% of GHG emissions
  - Delivery and service vehicles account for around 15% of GHG emissions





## Criteria pollutants and health effects





Health Effects of Air Pollution

Freight hubs, like ports, warehouse districts, and other transportation centers are a significant source of transport emissions.

These hubs and corridors are often near or adjacent to disadvantaged, low-income communities.

SO<sub>2</sub>: Sulfur dioxide PM: Particulate matter O<sub>3</sub>: Ozone VOC: Volatile organic compound PAHs: Polycyclic aromatic hydrocarbons

COPD: Chronic obstructive pulmonary disease

By 2050, 89% of the U.S. population is projected to live in urban areas, where pollution-related health conditions are more common.

Source: United Nations Population Division, World Urbanization Prospects

#### Increasing greenhouse gases may exacerbate severity of extreme weather events





This map denotes the approximate location for each of the 20 separate billion-dollar weather and climate disasters that impacted the United States in 2021

## **Commercial Vehicle Electrification**

- Existing electrification programs focus on passenger cars
- Increasing research, development and growth in commercial vehicle electrification
  - Freight emissions growing at faster rate than emissions from passenger vehicles
  - Freight industry seeks to lower fuel costs, improve efficiency, reduce emissions
  - Significant investment in commercial electric vehicles

Source: CALSTART, Zeroing in on Zero-Emission Trucks

> 140,000 pending commercial batteryelectric vehicle (CBEV) orders

> 145 zero-emission truck models

cargo/delivery vans ~ 75% of deployments



## Package and service delivery vehicles



- Class 2b 6 vehicle class (Gross vehicle weight rating (GVWR) 8,501-26,000 pounds (lbs.))
- Low daily vehicle range
  - < 100 miles</p>
  - 0.5 5.2-kilowatt hour (kWh)
  - Level 2 (L2) charger
- E-commerce growth in package delivery and other local, on-demand services
- Can help reduce air emissions, especially in urban areas







## Package and service delivery fleet orders, investment





- 2040 net-zero emission carbon goal
- 20% stake in Rivian
- 100,000 Rivian vans slated for delivery by 2030
- Collaboration with Stellantis



- 2050 net-zero GHG emission goal
- 60% of global fleet running on clean electricity (80,000 vehicles) by 2030



Carbon neutral by 2050 10,000 Arrival Generation 2 electric delivery vehicles slated for delivery Collaboration with the New York State Energy Research and Development Authority (NYSERDA) and Unique Electric Solutions

Source: Public news and information



- Carbon neutral by 2040
- 50% of global pickup and delivery (PUD) fleet purchases electric by 2025; 100% of all purchases by 2030

## Transformation





#### **WE CAN DO BIG THINGS**



EPA SmartWay

- Public-private partnership
- Raise awareness around emission and sustainability benefits of freight efficiency
- Collaboration
- Well-established platform for reporting transportation/freight emissions
- Save fuel, money, and the environment

SmartWay Heavy-Duty Truck Electrification Resource Page







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# What are your community's biggest barriers to working with commercial fleets (multiple answer)?

- Staff availability or capacity
- Lack of interest from constituents
- Lack of interest from commercial businesses
- Public misperceptions of electric vehicles
- Limited financial resources
- Other (enter in Q&A box)



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## **EV Charging Programs**

#### **Susan McSherry and Mark Simon**

New York City Department of Transportation



## **EV Charging Programs**

March 2022



#### **Infrastructure Challenges**

Making New York EV ready

New York City will need a vast ecosystem of fast and curbside charging to allow for the electrification of private vehicles and last mile freight delivery.

The numbers may vary but the bottom line is a need for thousands of charge points. Direct current (DC) fast charging, workplace, curbside, garage, box stores, existing gasoline stations.

NYC will work to make this possible. This could be owning the charging, making land available, local laws or public-private partnerships.



#### NYC Clean Trucks Program Emissions Reductions Results to Date - Trucks

This program provides subsidies for Electric and other clean Technology trucks. The NYC Clean Trucks Program and the Hunts Point Clean Trucks Program (HPCTP) have reduced significant levels of  $NO_x$ ,  $PM_{2.5}$ , hydrocarbons (HC), and carbon (CO) annually when compared to the emissions profile of the older, diesel-fueled vehicles that were replaced.

Annual Results (short tons)	NOx	PM2.5	нс	со	Fuel (Gallons)
Amount Reduced Per Year	398.04	23.22	28.65	109.25	636,267

#### **Truck Replacements, Retrofits, and Scrappage**

As of December 31, 2021, the NYC Clean Trucks Program and HPCTP have achieved the above emission reductions through 627 truck replacements, 6 exhaust retrofits, and the voluntary scrappage of 24 trucks.

Notes:

- 1) 1 short ton = 2,000 lbs.
- 2) Emission reductions are calculated using the U.S. EPA's Diesel Emissions Quantifier (DEQ)
- 3) <u>https://www.nycctp.com/</u>

## **Garages & Lots**

## **Direct Current Fast Charging (DCFC) Phase 1 - Status**

#### What is here.

3 x 50kW DC Chargers 1 X 150 kW DC Charger 5 AC 6.6 kW chargers.

What can they do?

50 kW = 100 miles of range in 30 minutes.
150 kW = 150 miles of range in 15 minutes.
6.6. kW = 25 miles of range per hour.

#### Schedule

- Completion: September 2021 Delancey;
- November 2021 Court Square



## **DCFC Phase 1 - Charger Performance**

- How it works. Customers are charged \$0.35 per kWh. Customers are not charged for the first 14/22 kW of power to compensate for the customer paying for the time in the parking garage.
- Utilization continues to trend up steadily.
- Avg. session length:
  - o Delancey-Essex (DE) 55 min.
  - Court Square (CS) 35 min.

Looking to create a discounted charging program for taxi's and for-hire vehicles (FHV)



## **Future DCFC Installations**

#### Phase 2: Five Additional Hubs (One per Borough)

- Contract being registered for two hubs Bronx and Brooklyn. Targeting completion in 2022.
- Three more sites in contractual process. Anticipate construction starting in late 2022.
- Expect long lead times (8 months +) on chargers due to high demand, chip shortages and the world.

#### Phase 3: New York Power Authority's (NYPA) EVolve NY Program

- NYPA expressed interest in 5+ DOT lots and garages as part of their EVolve NY Program.
- We are working with NYPA on an agreement to allow this work to take place.

**Federal Fast Charging Funding.** Federal Highway Administration has \$5 billion in funding to support the development of fast charging. DOT is working with NY State to identify sites and projects that would qualify for Federal funding in the Metro area. There will be additional funds via competitive solicitation.

#### **Queensboro Hall**

- DOT building a new 600 space garage and Queensboro Hall.
- Phase 1 will include 31 Level 2, 3 DCFC (3X75kW)
- Phase 2 expansion will at 90 more level 2 and at least 4 more DC fast chargers of 75kW 150kW

## Curbside Charging



## **Status**

As of the end of February, chargers are inservice at 29 sites.

- 86/100 public chargers active. •
- 12/20 City Fleet chargers installed; to be • energized when demonstration agreement amendment is registered.

#### **Preliminary Utilization**

On the whole, utilization continues to trend up, though more rapidly at sites that were already doing well. Current sites with greatest use:

- West 93<sup>rd</sup> (45%) 0
- Court St (51%) 0
- Prospect Park West (42%) 0

As of January, 10 sites (28 chargers) had utilization rates < 5%.

#### Enforcement

- 62+ complaints on PlugShare across several locations.
- As of January 26<sup>th</sup>, 890+ tickets issued. ٠



## **Thank You!**

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## **Con Edison Electric Vehicle Initiatives**

## Britt Reichborn-Kjennerud Con Edison

#### **Con Edison Electric Vehicle Initiative Overview**

Offering

Currently Active In Development

#### **Achievement Through 2021**

Upfront Infrastructure Incentives	<ul> <li>\$250M PowerReady electric vehicle infrastructure incentive program launched in July 2020; program target of 457 DCFC and 18,539 L2 by 2025 for light-duty vehicles</li> <li>Medium- and heavy-duty electric vehicle pilot infrastructure incentive program</li> </ul>	<ul> <li>242 L2 and 42 DCFC PowerReady plugs installed</li> <li>Largest universal fast-charging station in the USA at 25-plug Revel DCFC superhub</li> </ul>
Operating Incentives	<ul> <li>SmartCharge New York managed charging program</li> <li>DC fast charger per-plug incentive program</li> </ul>	<ul> <li>SmartCharge NY enrollment amongst the highest nationally with 15% of light-duty EVs (4,200 cars) and 30 buses</li> </ul>
Innovation	<ul> <li>School bus vehicle-to-grid demonstration project</li> <li>NYC curbside demonstration project</li> </ul>	<ul> <li>Successful EV school bus operation in White Plains</li> <li>Over 80 curbside charging plugs installed in NYC</li> </ul>
Customer Education	Fleet Assessment Service	<ul> <li>Starting work with Metropolitan Transportation Authority (MTA), NYC Housing Authority (NYCHA), Bee Line and others</li> </ul>



# **Con Edison's PowerReady EV Infrastructure Incentive Program**

As Authorized in New York Public Service Commission (PSC) July 16, 2020 Order

#### PowerReady Make-Ready Program Funding

 \$234M in incentive funds for customer and utility side work to bring 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

PowerReady Program | <u>www.coned.com/en/our-energy-future/technology-innovation/electric-vehicles/power-ready-program</u> Program Email | <u>EVMRP@coned.com</u>



#### **Con Edison's PowerReady Program provides upfront incentives for both utility-side and customer-side work**





## **Medium Heavy Duty Make-Ready Pilot Program**

- Incentives cover up to 85% of the utility-side costs, available through 2022
  - Incentives available for DCFC chargers used for fleet vehicles
  - Incentives capped at \$1.2 million per participant initially but more funds per participant may be available.
- Eligible costs include traditional distribution infrastructure such as step-down transformers, overhead service lines, and utility meters.
- Incentives can be stacked with <u>NYSERDA's</u> <u>Truck Voucher Incentive Program</u> or with <u>NYC Clean Trucks</u> for select NYC locations
  - www.nyserda.ny.gov/All-Programs/Programs/Truck-Voucher-Program
  - www.nycctp.com/





## **SmartCharge NY Operating Incentives**

The **SmartCharge NY** program provides off-peak charging incentives to any Light-Duty and Medium & Heavy-Duty electric fleets that charge in the Con Edison service area.

Participating vehicles earn unlimited off-the bill cash rewards, including enrollment bonus of \$150 if installing a FREE connected car device, as well as monthly per vehicle and per kWh rewards.

Charging can be monitored with a variety of technologies: **connected car device**, **onboard telematics**, **networked charging stations or submetering** 

#### SmartCharge New York

Unlock valuable charging and driving data with a FREE and easy to install C2 device. Plus, **earn up to \$1,000** per year for each vehicle.



Medium- & Heavy-Duty Fleets			Light-Duty Fleets			
•	\$0.0221 per kWh for off-peak charging (all days 12 midnight – 8 am, year-round)	•	\$5 per vehicle per month for charging in the Con Edison service area			
•	\$250 per vehicle per month (June – September) for avoiding charging during a Con Edison four-hour weekday "Commercial System Relief Program" time window, specified for each network	•	<ul> <li>\$20 per vehicle per month for no summer-peak charging (weekdays 2 pm – 6 pm, June– September)</li> <li>\$0.10 per kWh for off-peak charging (all days 12 midnight – 8 am, year-round)</li> </ul>			

SmartCharge New York Program | www.smartchargerewards.com/smartchargenewyork/

Program Email | EVprograms@coned.com



#### Please be sure to reach out to your local utility as soon as you begin planning your electrification transition!

Learn about any incentive programs or support tools available and request service to meet your load needs



Con Edison Fleet Assessment Service helps you understand the grid capacity where you operate, how to plan for any upgrades, and what electric rates may be best for you.

Con Edison will help you plan your transition to electric vehicles and make sure you have reliable electric infrastructure

Please submit requests for new or upgraded electric service for your charging stations as early as possible so we can

• Truck operators and other medium- and heavy-duty fleet owners looking to install charging stations to electrify their fleet • Groups that are either already participating or plan to participate in NYSERDA's Truck Voucher Incentive Program or

#### Step 1. LOG IN to our Building & Remodeling Project Center.

Use your existing credentials or create a new profile for your business.

Step 2. CREATE a service request. Select "Existing Service" even if you are asking for a new service. At the bottom of the "New Service Request Types" page, click "Electric vehicle supply equipment (charging station/equipment)."

#### Step 3. ATTACH the following required documents:

- i. Letter of Authorization (if you are applying on behalf of a customer)
- ii. Site Plan (including the location of any proposed new service, if applicable)
- iii. One Line Diagram
- iv Load Letter
- v. EV Charging Station Equipment Cut Sheets

## Thank you!

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## **Question and Answer Session**

#### **Connect with the State and Local Climate and Energy Program**

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