# EV Charging Load and Infrastructure Forecasting Technical Conference

Presented by the Joint Utilities of New York
with PSEG-LI/LIPA and in coordination with DPS Staff

December 10, 2021

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

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# Agenda and Housekeeping

| TOPIC | PRESENTER | TIME |
|---|---|---|
| **Introduction and Overview** | Cliff Baratta | 10:00-10:15am |
| **Utility-Specific Forecasts** | | 10:15-11:15am |
| Central Hudson | John Borchert | |
| Con Edison | Cliff Baratta | |
| Orange & Rockland | Andrew Farrell | |
| National Grid | Matthew Cloud | |
| NYSEG/RG&E | Scott Bochenek | |
| **PSEG-LI/LIPA EV Planning** | Rachel Lane | 11:15-11:30am |
| **Joint Utilities Stakeholder Feedback Session** | John Borchert | 11:30-12:00pm |

**Reminders**

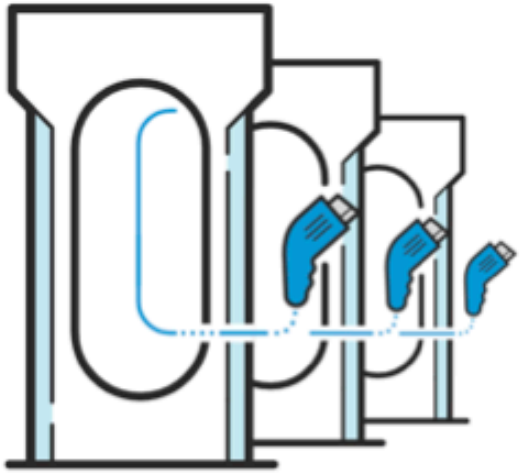
- Please remain muted
- Use raise-hand function if you would like to speak
- Use chat function to add comments and ask questions in addition
- This session is being recorded
- Presentation materials will be posted on DMM and jointutilitiesofny.org following the session
- Please email info@jointutilitiesofny.org for more information following this session

# Make-Ready Order Overview

As Authorized in NY PSC July 16, 2020 Order*

**EV Make-Ready Program Funding**

- $601M program including incentives for customer and utility side work to provide service to L2 and DCFC chargers



**5-Year Program Start Date: July 16, 2020**

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

**Program Plug Goals (2025)**

- 53,773 L2 plugs
- 1,500 DCFC plugs

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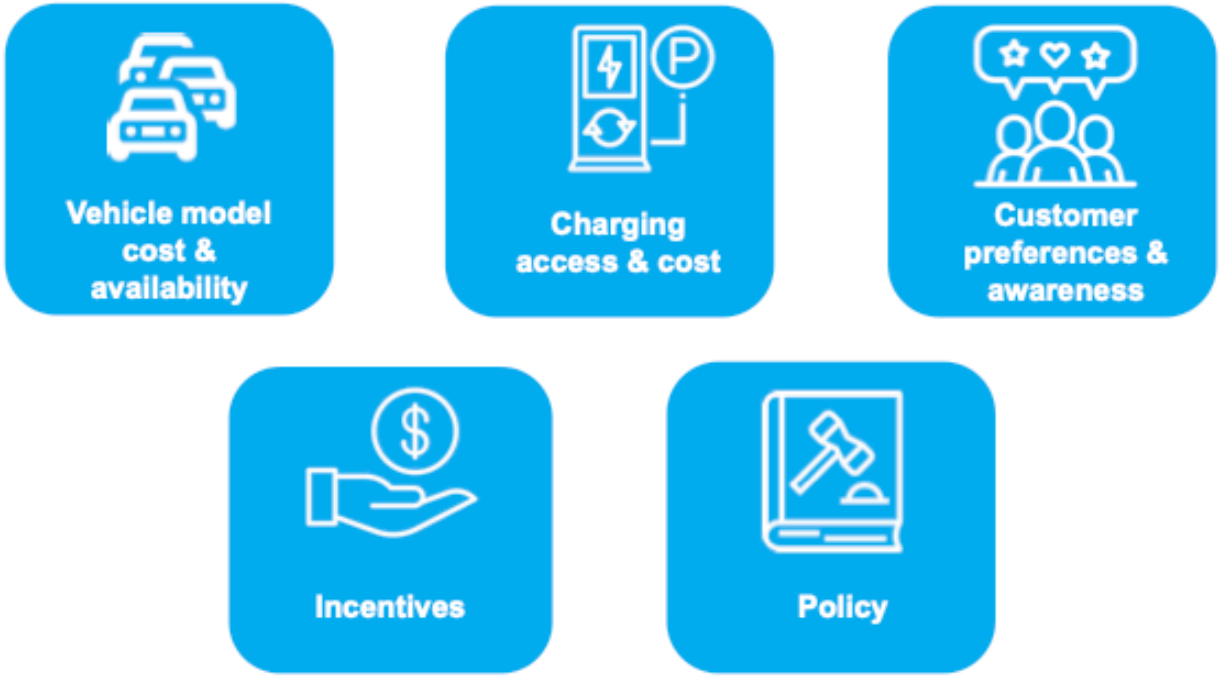
*CASE 18-E-0138 - Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure.

# Drivers of EV Adoption

**Many factors and market forces impact EV adoption that affect future load scenarios for the utility**



# Overview of EV Forecasting

- EV Forecasts are one of many elements of load forecasting
  - Component of utilities' planning processes
  - Prime objective is to maintain a reliable and safe electric grid
  - Load modifiers, such as EVs and new construction (+), energy efficiency and DG (-)
- EV forecasting approaches across the JU have many similarities and some differences

**EV load forecasting is intended to:**

- Determine the energy and peak load contribution across the service territory
- Serve as an infrastructure planning tool
- Understand market trends

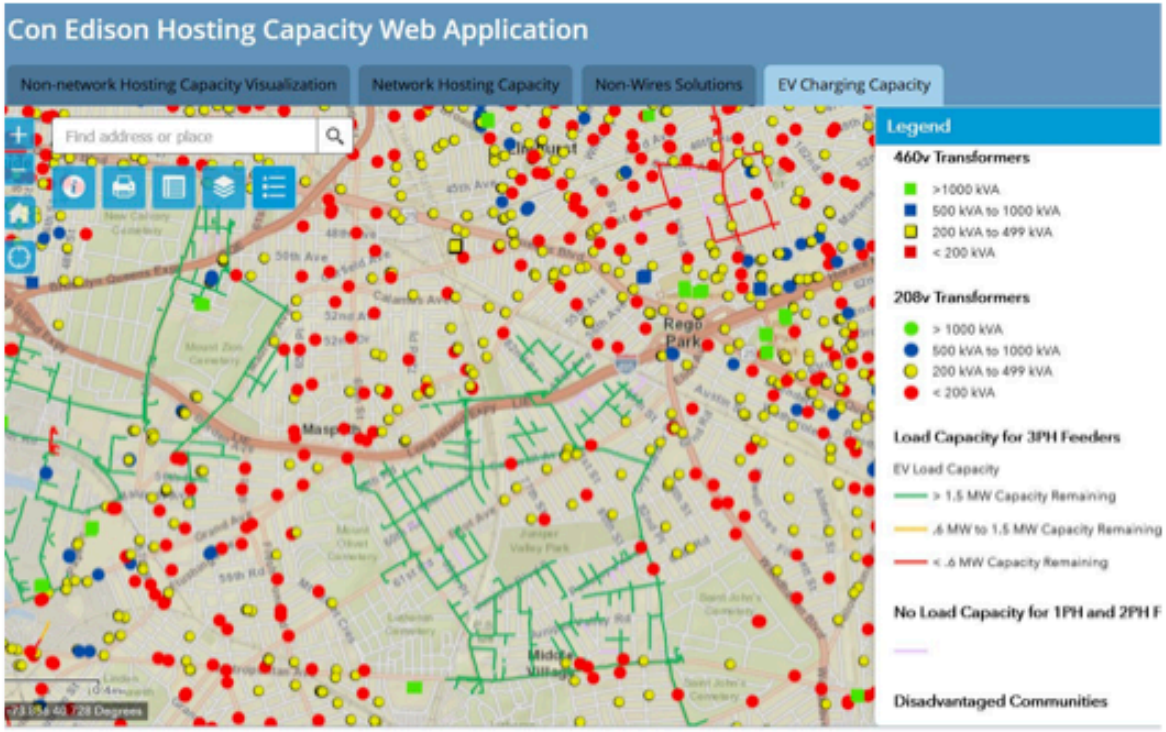
**EV load forecasting is not intended to:**

- Serve as a siting tool
- Identify site-specific grid upgrades
- Measure headroom on service transformers and cables
- Replace formal engineering studies

# Existing Planning Resources

- Utilities have resources available today to help customers and developers select EV project sites that are well-suited for EV charging based on existing system capacity
- **Capacity maps**
  - Separate from load forecasts
  - Capacity on transformers, feeders, three-phase service

| Links to JU Hosting Capacity Maps |
|---|
| Central Hudson |
| Con Edison |
| National Grid |
| NYSEG/RGE |
| Orange & Rockland |
| **JU Distribution System Implementation Plans (DSIPs)** |



# Central Hudson

Presenter: John Borchert

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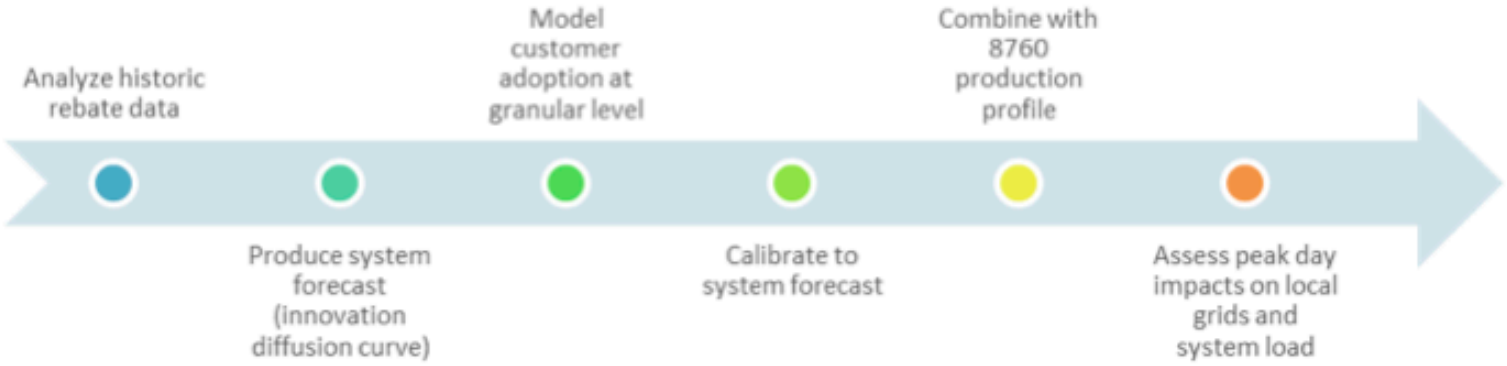
# EV Forecasting Methodology

- The primary goal of the forecast is to ensure that electric supply remains reliable.
- Our EV forecast is primarily an electric vehicle energy and demand forecast and is performed in conjunction with our system forecast.
- The EV forecast is trying to determine what the energy and peak load impacts may be across the service territory, down to the substation level.
- For Central Hudson, this included primarily light duty vehicle home and public charging.

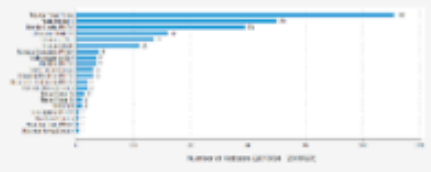


# Key Assumptions and Inputs

People. Power. Possibilities. Central Hudson A FORTIS COMPANY

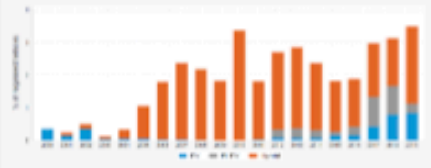
## 1. Key Drivers & Data

- 11M vehicle registration records in NY
- Vehicle stock and churn in Central Hudson territory
- Charging station locations and types
- Costs and incentives



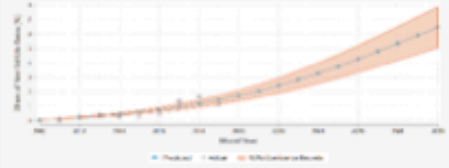
## 2. Analyze Historical Data

- Use NHTSA VIN decoder API to extract details about vehicle
- Assess adoption patterns over time
- Assess geographic concentration
- Assess relationship between hybrid and EV adoption



## 3. Produce System Forecast

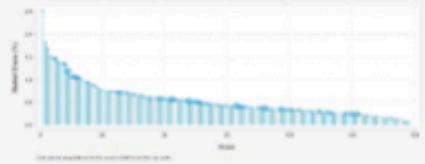
- Use innovation diffusion curves with uncertainty (bass curves)
- Apply to EVs over time
- Scenario 1: actual adoption
- Scenario 2: 2x growth
- Scenario 3 (pressure test): 5% Share of 2M EV state target



# Key Assumptions and Inputs

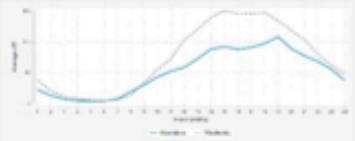
## 4. Granular Adoption

- Map home charging forecasts and charging station forecasts to substations



## 5. 8760 Load Shapes

- Weekday & weekend shapes
- Home charging load shape from EPRI data
- Charging station load shape from actual charging stations in Central Hudson territory

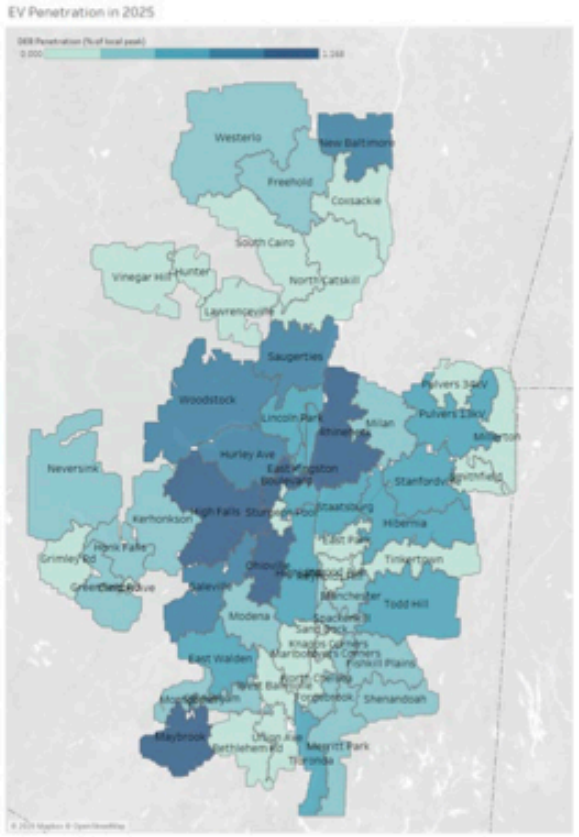


## 6. Peak Day Impacts

- Output is location-specific forecasts and local peak coincidence factors

# Forecast Results and Challenges

- Under the three cases run for EV adoption, the peak load impacts in 2030 were as follows:
  - Base Case – 19,000 vehicles, 10 MW peak impact
  - 2x Case – 38,000 vehicles, 20 MW peak impact
  - Pressure Case – 100,000 vehicles, 54 MW peak
- Highest hourly loads were overnight, as much as 2.5 times higher than the loads during system peak.
- Even at the pressure case, these EV loads were not driving distribution area upgrades.
- Forecasting Gaps and Challenges are:
  - Accurate at home and charging station load curves
  - MDHD and Fleet granular forecasting
  - DCFC location forecasting
  - Impact of mandates on adoption rates



# Con Edison and Orange & Rockland

Presenters: Cliff Baratta and Andrew Farrell

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# Future Integration of Forecasts and the Make-Ready Program

**Transportation electrification loads are large…**

- More than 90 MW overall expected by 2025 for CECONY, and over 10MW for O&R
- Concentrated loads, considering market evolution towards higher powered hubs and larger installations

**… and come onto the system fast**

- Unlike buildings that take years to plan and construct, EV charging stations take months

**Planning to make grid investments "on time" for readiness**

→ Advanced build-out where modeling demonstrates construction to be no-regrets

→ Foresight into long timeline service upgrades, especially where infrastructure is constrained

**Collaboration with business and stakeholders**

→ Agreement on defining 'no-regrets moves'

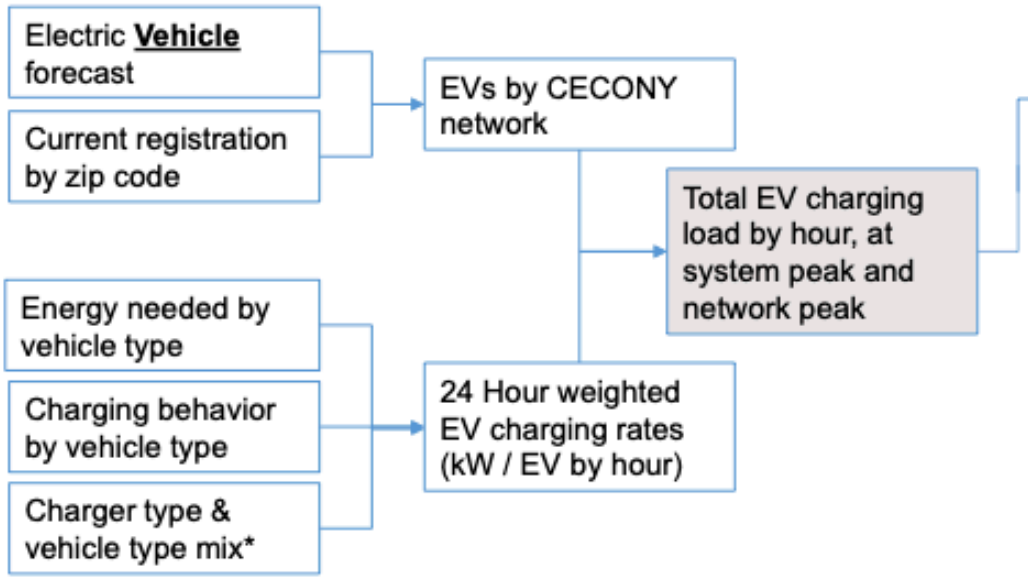
→ Understand locations and likelihoods of future growth prior to "load letter"

→ Development of regulatory construct to accommodate build-out mid rate-period

# EV Forecasting Methodology

## Light Duty EV Forecasting methodology

- Goal: estimate future load growth from EV charging *by network and by hour* to measure demand on the grid at peak times




## Distribution System Planning

System Forecasting at the System & Network Level

- Summer peak loads are weather adjusted on an annual basis
- New Business Load and Load Modifiers (DER, Building Electrification, **EV**, EE, DR) are added
- Annual Forecast is used to model system constraints & Produce Distribution Plan at Area Station Level

Forecast & Modeling Produce Load Relief Plans

- 10 & 20-Year Area Station Load Relief Plan
- Primary and Secondary Feeder Reinforcement typically for following summer peak

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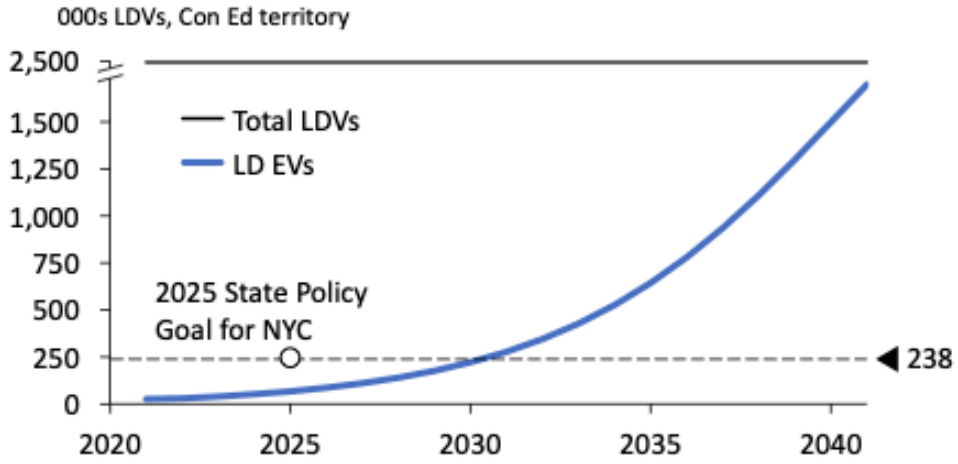
*Includes expected use of L1 vs. L2; DCFC forecasted separately using Make Ready pipeline

# Key Assumptions and Inputs

## LD EV Adoption




- Scenarios customized for CECONY territory by EPRI
- Account for existing state & local policies, federal tax credits, fuel & electricity prices, fleet turnover etc…
  - NYS law requires 100% of new registrations to be ZEVs by 2035
  - Expect fully electric LD fleet (2.4M) by 2050

## Other Key Assumptions

**Light Duty (LD)**

- Charging patterns:
  - Time spent at home on L1 charger vs. work or public L2
  - DCFC based on PowerReady (PR) pipeline of stations
- Geographic allocation of EVs to EV charging load
  - Based on current registrations by zip code
  - Growth is based on LD EV forecast and limited by total registered LDVs (electric and ICE)

**Medium- and Heavy-Duty (MDHD)**

- Load from commercial fleets concentrated in IBZs*, while muni fleets (e.g. MTA) are more dispersed to serve local populations
- EV adoption slower through 2030 and steeper ramp to 2040
  - 2030: up to 10% for transit buses and utility trucks
  - 2040: up to 100% for same categories
- Charging patterns: forecast assumes unmanaged scenario, which has impact on peak

*IBZ =Industrial Business Zone

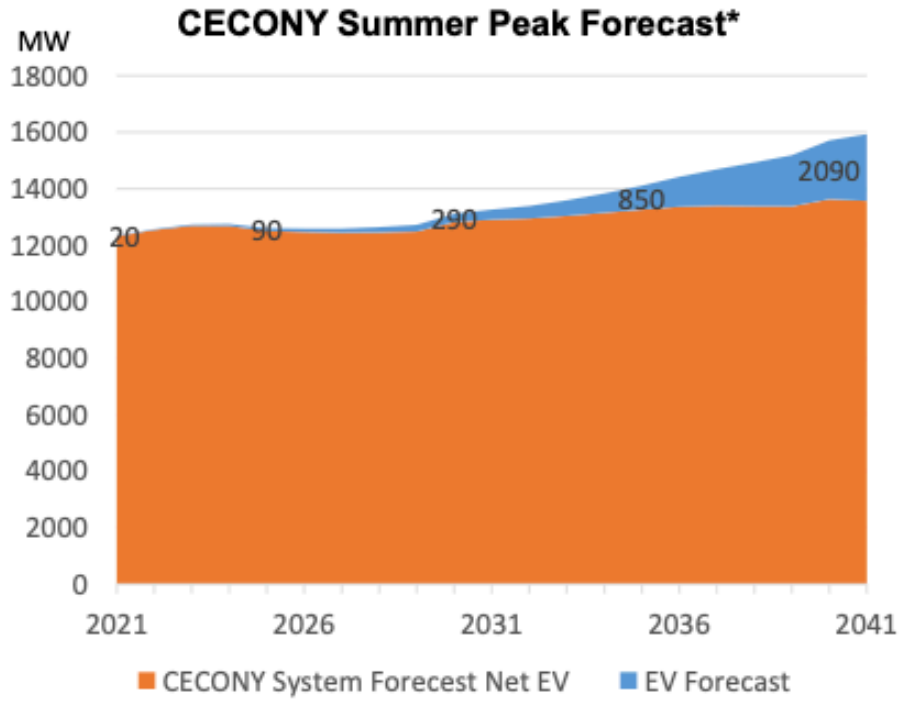
# Forecast Results

## Trends

- Load growth accelerates in 2030s
- Largest load growth outside Manhattan
  - More vehicles, land for parking and charging
  - Major networks: Flushing, Jamaica (Q);Richmond Hill, Crown Heights (BK); NE Bronx, SE Bronx (BX)
- Hyper-local high loads create near-term feeder and transformer constraints along with medium-term substation constraints

## Future Refinement

- Regional growth and geographic distribution, beyond using current registrations
- Link forecast to PR pipeline, future MDHD program
- Utilize AMI data for actual charging behavior to develop load curve assumptions




| | 2021 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|
| EV % of total load | 0.2% | 1% | 2% | 6% | 15% |

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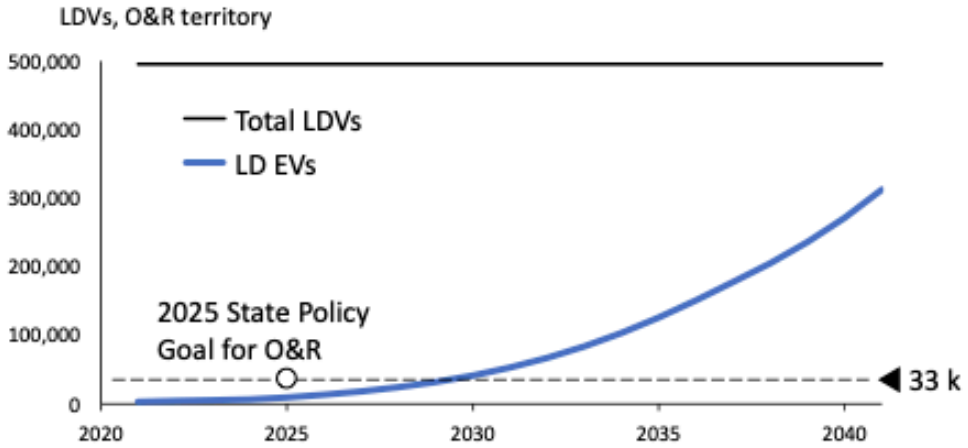
*Values rounded

# Key Assumptions and Inputs

## LD EV Adoption




- Scenarios customized for O&R territory by EPRI
- Account for existing state & local policies, federal tax credits, fuel & electricity prices, fleet turnover etc…
  - NYS law requires 100% of new registrations to be ZEVs by 2035
  - Expect fully electric LD fleet (0.5M) by 2050

## Other Key Assumptions

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- Load from commercial fleets concentrated in commercial areas, while muni fleets are more dispersed to serve local populations
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# Forecast Results

## Trends

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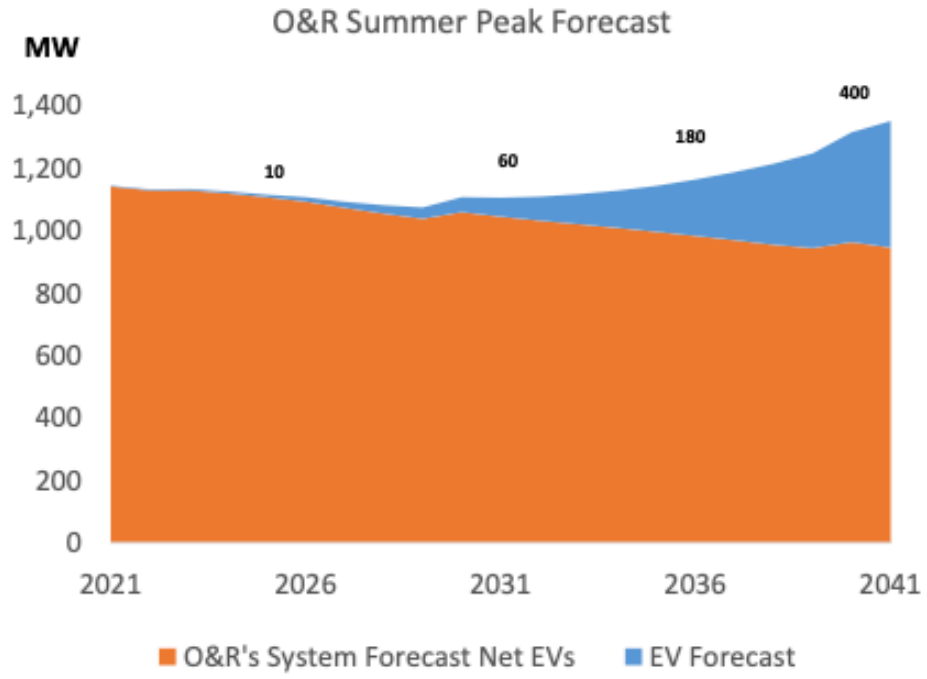


| | 2021 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|
| **EV % of total load** | 0.2% | 0.8% | 4.4% | 13% | 27% |

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*Values rounded



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# National Grid

Presenter: Matthew Cloud

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# EV Forecasting Methodology

**System Level Forecast**

Top Down

- Informs planning of high voltage transmission system
- Geographically broad across service territory
- Governs Feeder Level forecast

**Light Duty VIO**
- BNEF Forecast
- State Targets
- Vehicle registrations
- BEV and PHEV ratios
- High, Base, Low cases

**MHDV VIO**
- BNEF Forecast
- State Targets
- Vehicle registration data
- High, Base cases

**Charge Profiles**
- Two LDV (weekend/day)
- E-Bus
- Medium-duty
- Heavy-duty
- Weather adjusted

**Load Allocation**
- LDV & MHDV load allocated across system zones by historical EV share

**Forecasts produced with geospatial and temporal granularity to inform proactive system planning and maintain reliable service**

Bottom Up

**Feeder Level Forecast**

- Informs planning of medium voltage distribution system
- Geographically specific to individual feeders

**Light Duty VIO**
- All input used for System Level
- GIS data

**Residential Propensity**
- Socio-economic data
- Traffic analysis
- Energy use & size

**Public Propensity**
- Commute characteristics
- Parcel use & type
- Existing charging
- Building footprint

**Charger Allocation**
- L1, L2 & DCFC
- Charger count increases with EV forecast
- Hourly profile

**Load Aggregation**
- Feeder
- Zip Code
- Substation
- Combined with other DER

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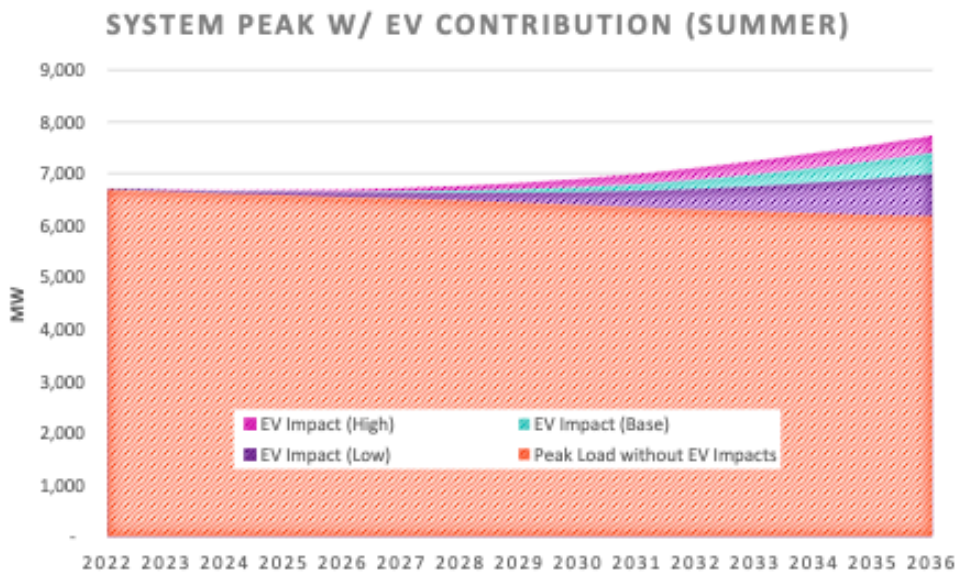
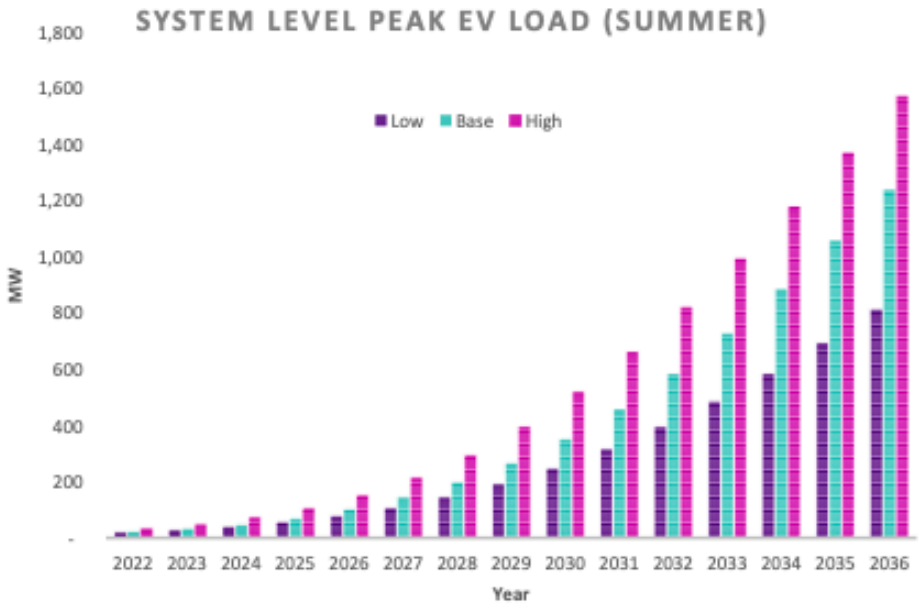
BNEF: Bloomberg New Energy Finance. VIO: Vehicle in Operation. LDV: Light Duty Vehicle.
MHDV: Medium & Heavy-Duty Vehicle. BEV: Battery Electric Vehicle. PHEV: Plug-in Hybrid Electric Vehicle

# EV Forecast Results – System Level

- System Level EV Forecast Results
  - Estimated summer EV peak of 66 MWs by 2025 and 349 MWs by 2030 for Base adoption scenario
  - Contribution to summer system peak estimated to be 1.0% in 2025 and 5.4% by 2030 for Base adoption scenario
- Works in Progress / Challenges
  - Inclusion of managed charging profiles where applicable

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# EV Forecast Results – Feeder Level

- Works in Progress / Challenges
  - Improving spatial accuracy
  - Adding Medium & Heavy Duty / LDV fleets
  - Inclusion of managed charging profiles where applicable


Example Feeder Level EV charger forecast for a residential feeder in 2025

# EV Forecasting Evolution

Forecasts produced with geospatial and temporal specificity to inform ***proactive*** system planning and maintain reliable service

**EV charging loads can be large**

>3MW observed for larger DCFC sites

**EV charging can be clustered**

Fleets often cluster in areas adjacent to major travel corridors

**EV chargers can be constructed quickly**

Charger installs can take months, grid infrastructure can take years

## Opportunities

- **Utility/Stakeholder partnerships to provide short/long-term vision for electrification**
- **Proactive, cost-effective infrastructure investment in no-regrets locations prior to Service Request(s)**
- **Coordinated state level engagement to inform comprehensive system planning**

# NYSEG and RG&E

Presenter: Scott Bochenek

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# EV Forecasting Methodology

- **Goal of company's forecast**
  - To provide an out-of-model adjustment for EVs as part of the overall load forecast
  - To identify specific locations that may experience higher levels of EV adoption associated load growth for system planning consideration
- **What is the forecast trying to determine?**
  - Identifies estimated light-duty EV charging peak load contribution at the system, zip code, and circuit levels
- **Does this forecast include MHDV? DCFC?**
  - Includes assumed load from DCFC as a portion of the overall charging load
  - Does not forecast specific DCFC sites
  - Does not currently include MHDV or impacts from large fleets

# Key Assumptions and Inputs

- 3 EV adoption scenarios (low, medium, high) 3 EV peak load contribution scenarios (low, medium, high)
  - Provides a total of 9 EV load growth scenarios through 2030
- **High adoption** assumes state goals of 850k EVs by 2025 and 2m by 2030
- **Medium adoption** assumes ZEV compliance which

  requires 15% of sales to be EV by 2025 (421k EVs) increasing to 30% by 2030 (1.5m EVs)
- **Low adoption** assumes 50% of the ZEV compliance scenario
- **High load** assumes 2 kW of peak contribution per EV
- **Medium load** assumes 1.3 kW of peak contribution per EV (*similar to EVI-Pro Lite Mode*)
- **Low load** assumes 0.43 kW of peak contribution per EV

- We are using the **medium adoption** and **medium load** contribution for our forecast

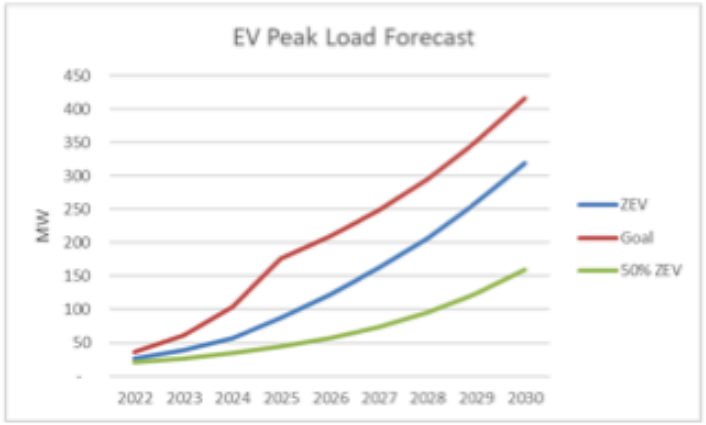
# Forecast Results

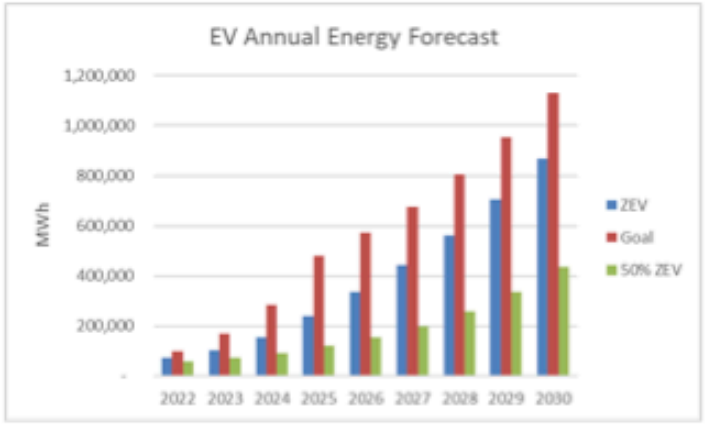
**Results:**

- 88 MW by 2025 and 319 MW by 2030
  - 1.8% of current peak load by 2025 and 6.6% by 2030
- Allocating forecast to zip codes based on current EV registrations and then to circuits based on customer count on each circuit within each zip code

**Future Improvements:**

- Working on methodology for MHDV both at an aggregate level, assessing site specific analysis
- Considering how to account for potential large single DCFC site loads
- Evaluating other forecasting methodologies as part of Future Grid Projects



# Questions?

# PSEG-LI / LIPA

Presenter: Rachel Lane




# EV Planning Presentation

RACHEL LANE
PROGRAM MANAGER, ELECTRIC VEHICLES
PSEG LONG ISLAND

*DEC 2021*

PSEG LONG ISLAND
*We make things work for you.*

## Public Charging Make Ready

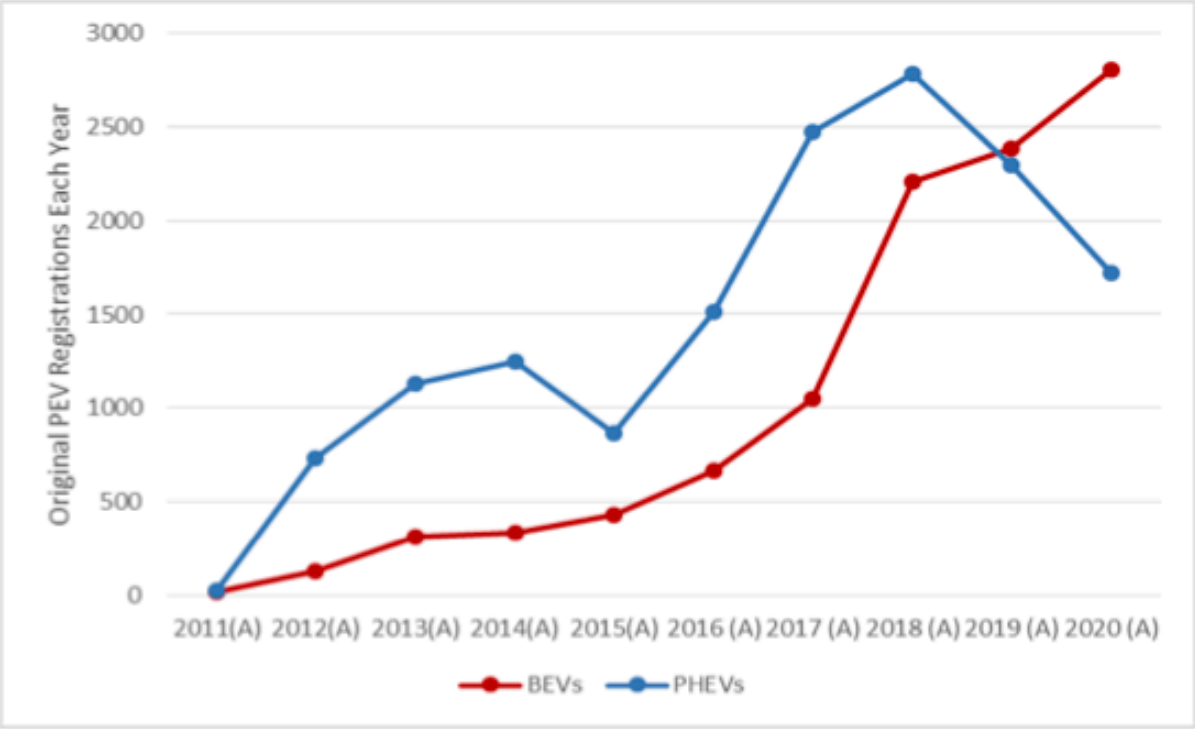
- Study Performed by Gabel Associates
  *"A Make-Ready Program for Light-Duty Vehicles on Long Island"*
- Included as Appendix to 2021 Utility 2.0 Filing
- http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=45709
- Four Main Focus Areas
  - Number of Ports and Locations Needed to Meet State EV Penetration Goals for 2025
  - General Distribution of Location and Quantity of Ports Needed by Area
  - Optimum Business Model to Achieve Study's Findings
  - Estimated Budget Necessary to Accomplish – Estimated from Cost Factors for Each Port and Location Type

## Focus Area – Port Quantity

- Utilized NREL's EVI-Pro Lite Tool For Findings
  - 2 Other models investigated- Pro Lite outputs reflected mid point results between other models
  - Same Tool Used By DPS Order
- Model Based Upon Schedule of EV Adoption Necessary to Meet State Goal of 850,000 EVs = 178,500 Registered EVs on Long Island By End of 2025
- Most Model Assumptions Consistent with DPS Order
- Model Inputs
  - 91%BEV/9%PHEV Split in 2025
  - 77% of Owners Assumed to Charge at Home

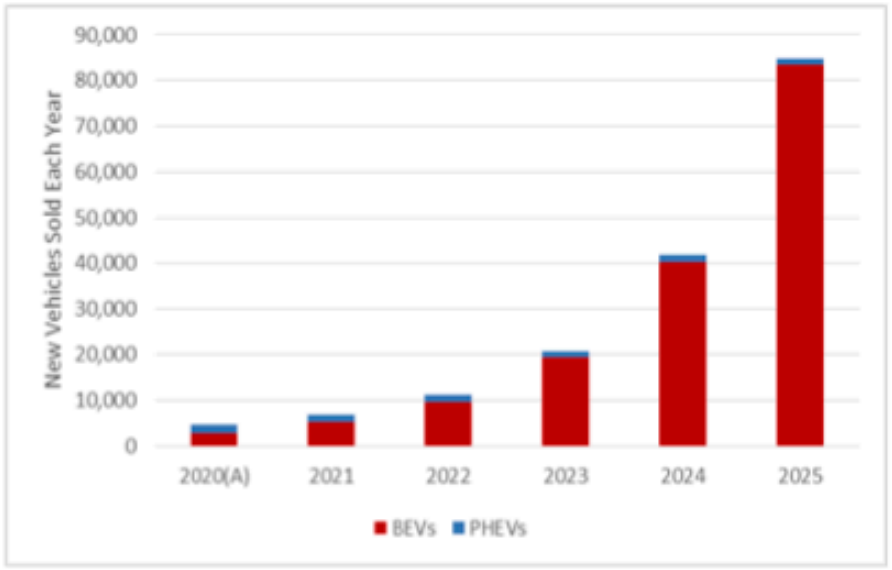
# Focus Area – Port Quantity – Model Inputs

- Historical EV Penetration on Long Island



# Focus Area – Port Quantity – Model Inputs

- Projection of the Adoption Required to Achieve Long Island's Share of the State Goals by 2025, Aligned with Sale Trends on Long Island



# Focus Area – Port Quantity – Model Inputs

- Historical and Projected Trend of PHEV Sales as % of Annual PEV Sales

# Focus Area – Port Numbers

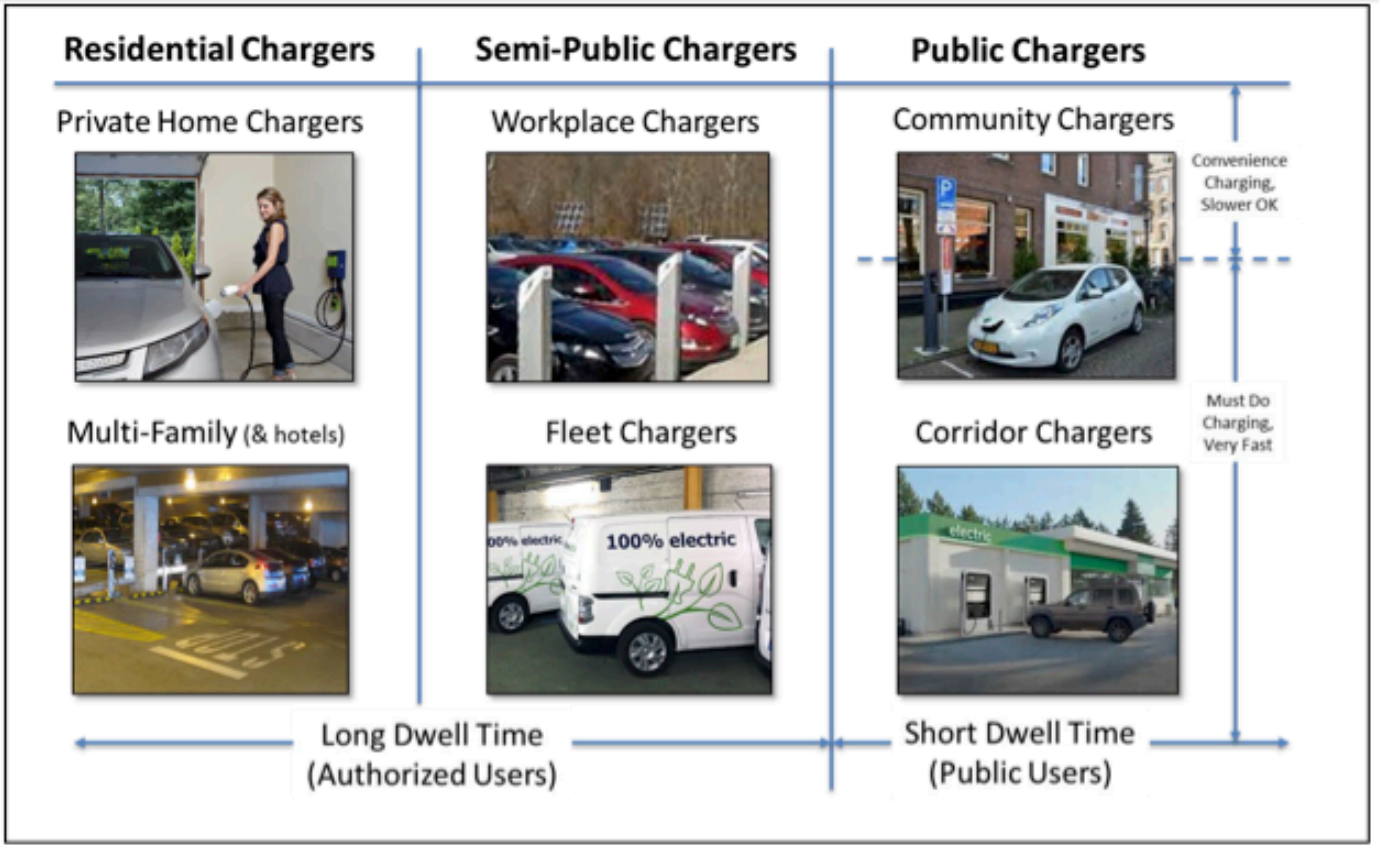
- When Factoring In Existing Chargers, Total Required New Chargers

| | Total | Corridor | Com - Gen. Use | Com - LI/EJ | Com - Dest. |
|---|---|---|---|---|---|
| Total New DCFC Locations: | 130 | 54 | 59 | 14 | 3 |
| Total New DCFC Ports: | 498 | 270 | 177 | 42 | 9 |

| | Total | Workplace L2 | Public-L2 | LI/EJ - L2 |
|---|---|---|---|---|
| Total New L2 Locations: | 708 | 467 | 209 | 32 |
| Total New L2 Ports: | 4,247 | 2,803 | 1,254 | 190 |

- Distribution Breakdown Detailed on Subsequent Slides

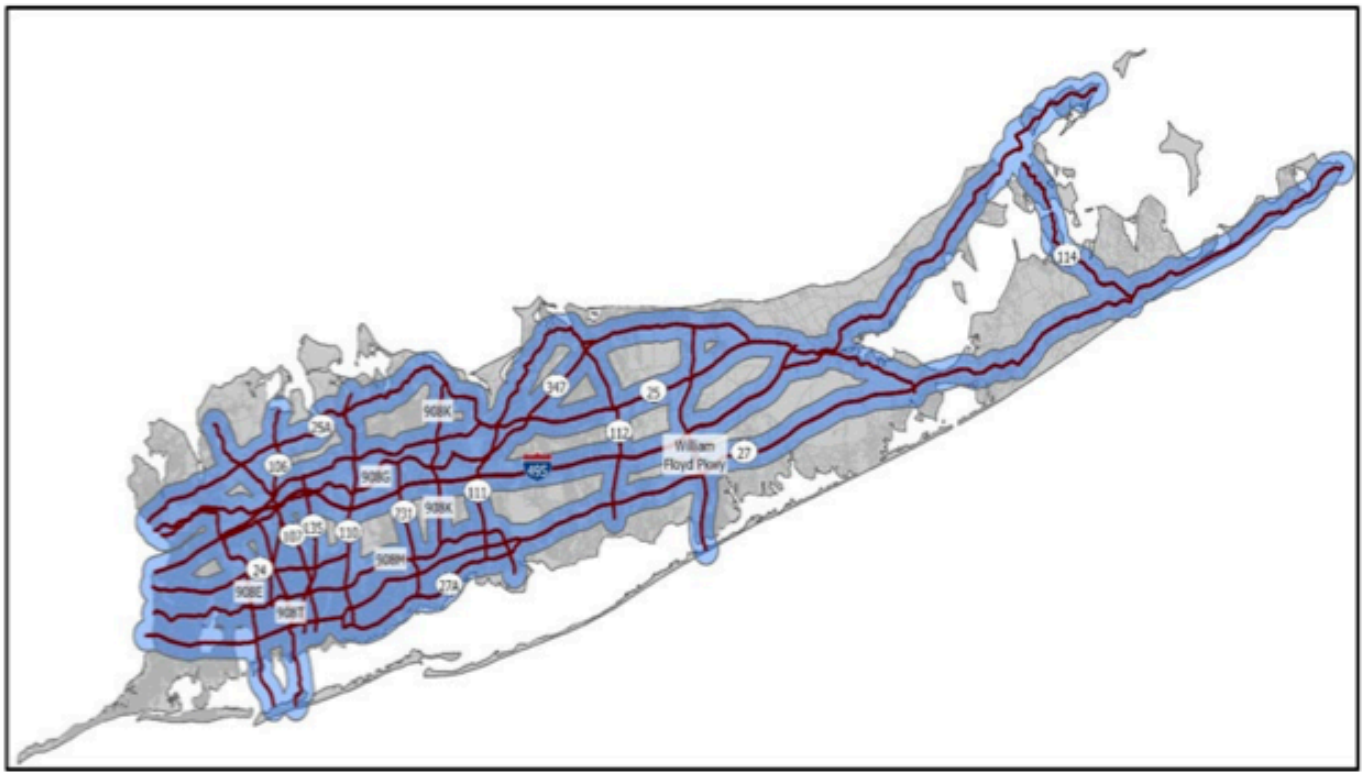
# Focus Area – Distribution - Types of Chargers Needed



# Focus Area – Distribution – Reasons for Distribution

- Reduce Concerns About Range Anxiety
- Benefit Ratepayers Across the Territory, Ensuring Equitable Return on Investment
- Optimal Geographic Distribution – Set of Targets
  - **Corridor Chargers**: Typical installations between 4 and 6 ports per location, an average of 5 ports/location.
  - **Community Chargers**: Typical installations between 2 and 4 ports per location, and average of 3 ports/location.
  - **L2 Chargers** (including public L2, workplace L2, and L2 in multi-family settings or those designed to serve LI/EJ communities): an average of 6 ports per location. Note that for L2 chargers in these non-residential settings, the installation of dual-port chargers is common. The assumption of six ports per location therefore reflects an average of three L2 chargers, consistent with locations that typically install between two and four chargers per site.
  - **Corridor vs Community Split:** 60% of the required DCFC ports are assumed to be at corridor locations, while 40% are at community locations. The study explored multiple variations of this allocation balance, and settled on the 60/40 split to allow reasonable coverage of the high travel roadways supported by the corridor locations

# Focus Area – Distribution - Corridor Locations within 1 mile



# Focus Area – Distribution – Targeted Corridor Distribution

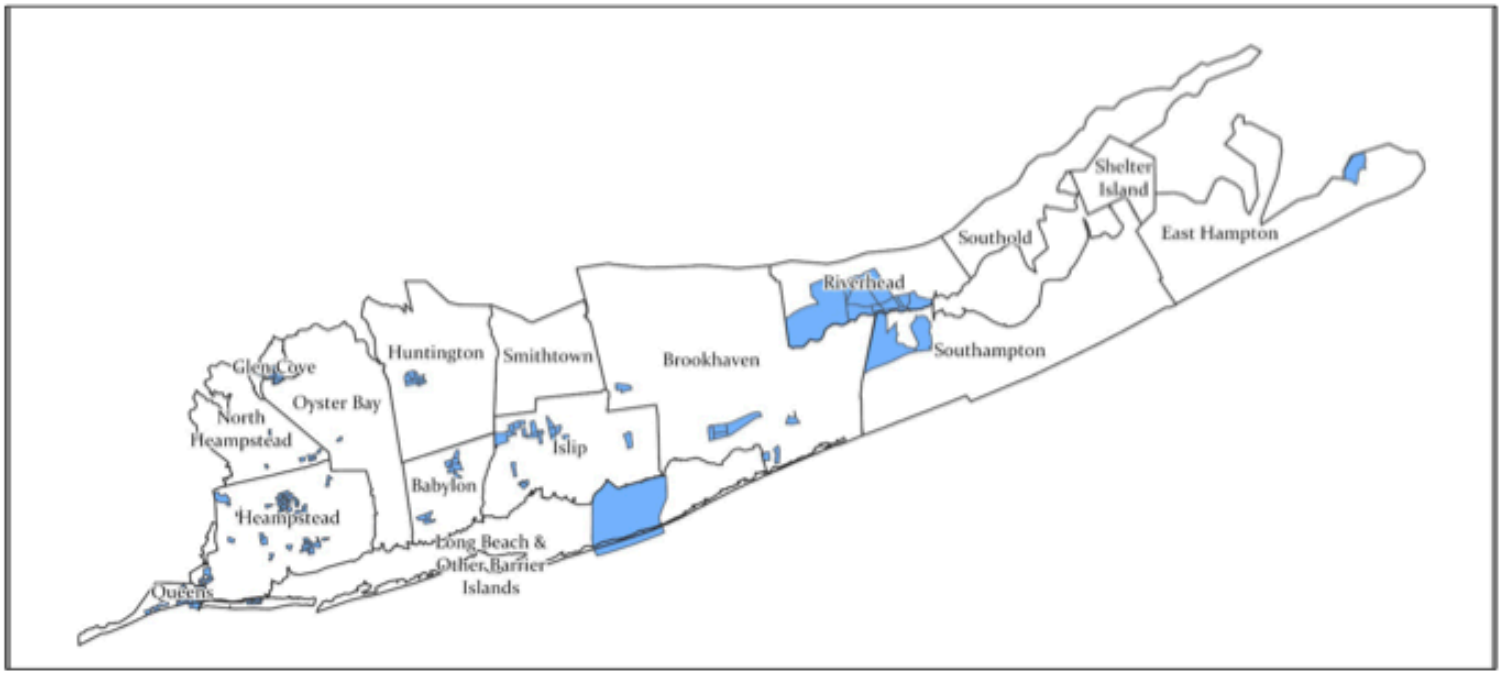
| Corridor Roads | | Locations Rqd | Existing Locations | New Locations | New Plugs |
|---|---|---|---|---|---|
| Long Island Expressway | I495 | 10 | 3 | 7 | 35 |
| LIE Service Road (North) | 906B | 0 | 0 | 0 | 0 |
| LIE Service Road (South) | 906A | 0 | 0 | 0 | 0 |
| Sunrise Highway (and service roads) | NY27 | 8 | 4 | 4 | 20 |
| Southern State Parkway | 908M | 3 | 0 | 3 | 15 |
| Northern State Parkway | 908G | 3 | 0 | 3 | 15 |
| Jericho Turnpike | NY25 | 8 | 1 | 7 | 35 |
| Northern Boulevard | NY25A | 5 | 0 | 5 | 25 |
| Hempstead Turnpike | NY24 | 2 | 0 | 2 | 10 |
| Merrick Road, Montauk Highway | NY27A | 2 | 0 | 2 | 10 |
| Nesconset Highway | NY347 | 2 | 0 | 2 | 10 |
| Meadowbrook State Parkway | 908E | 2 | 0 | 2 | 10 |
| Wantagh State Parkway | 908T | 2 | 0 | 2 | 10 |
| Seaford–Oyster Bay Expressway | NY135 | 2 | 0 | 2 | 10 |
| NY110 | NY110 | 2 | 0 | 2 | 10 |
| 908K | 908K | 2 | 0 | 2 | 10 |
| NY114 | NY114 | 1 | 0 | 1 | 5 |
| Medford Avenue, Patchogue Road | NY112 | 1 | 0 | 1 | 5 |
| William-Floyd Parkway | CR46 | 1 | 0 | 1 | 5 |
| NY111 | NY111 | 1 | 0 | 1 | 5 |
| Babylon–Northport Expressway, Deer Park Avenue | NY231 | 1 | 0 | 1 | 5 |
| NY106 | NY106 | 2 | 0 | 2 | 10 |
| NY107 | NY107 | 2 | 0 | 2 | 10 |
| **Total** | | **62** | **8** | **54** | **270** |

- Similar Charts Included in the Study Show Breakdowns by Charger Type, Community Type, and Location

## Focus Area – Distribution – Community Areas

- Community Areas Were Analyzed By:
  - General Purpose – DCFC Used by Drivers Near Where They Live and Work
  - LI/EJ Community – Supports the Needs of Drivers in LI/EJ Communities, Many Living in Multi-Family Settings
  - Destination Sites – Beaches
- Model Considered Per Area as Fraction of LI:
  - Vehicle Ownership %
  - Residential and Non-residential Customer Account %
  - Geographical Size %

# Focus Area – Distribution - Disadvantaged/Environmental Justice Communities



# Focus Area – Business Models – Incentive Tiers to Encourage Distribution

| Port Type | 100% Tier | 90% Tier | 50% Tier | Cap Amount |
|---|---|---|---|---|
| DCFC Corridor | - 4+ ports simultaneously operable, each delivering 150kW or higher<br>And<br>- All ports CCS or CHAdeMO<br>And<br>- Future-proofed infrastructure | - Simultaneously CCS/CHAdeMO ports are less than 150kW<br>Or<br>- Proprietary ports matched one-for-one w/ CCS or CHAdeMO of equal or higher power | Proprietary plugs that meet all other requirements but are not one-for-one matched | - $529,302<br>- 2MW |
| DCFC Community | - Location w/in 1 mile of EJ/LI boundary<br>And<br>- CCS or CHAdeMO ports | - CCS/CHAdeMO ports not w/in 1 mile of EJ/LI boundary<br>Or<br>- Proprietary ports matched one-for-one w/ CCS or CHAdeMO of equal or higher power | Proprietary plugs that meet all other requirements but are not one-for-one matched | - $205,623<br>- 2MW |
| Level 2 | - J1772 plugs<br>- Location w/in EJ/LI boundary or sufficiently close to EJ/LI community to directly support needs of those residents | - J1772 not within EJ/LI boundary, but available exclusively for public use<br>Or<br>- Proprietary ports matched one-for-one w/J1772 of equal or higher power | - Proprietary plugs that meet all other requirements but are not one-for-one matched<br>Or<br>- J1772 plugs that are not available for public use, but for a more limited set of authorized users (workplace, non EJ/LI multi-family, etc) | - $30,366<br>- 100kW |

## Focus Area - Business Models Investigated

- **Cash Rebate:** Incentives are paid to customers in a single lump-sum. (Rest of State).
- **Lease:** Make-ready is constructed and owned by the utility, and the customer leases that make-ready for a fixed term at a rate that is net of incentives due, at the end of which ownership is transferred to the customer.
- **Purchase:** Make-ready is constructed and owned by the utility, and the customer make a single lump-sum payment equivalent to a lease payment (net of incentives due), and after a fixed term ownership is transferred to the customer.
- **Hybrid:** A combination program in which simple cash rebates are paid for smaller projects, and the lease program is used for large projects.

# Focus Area – Business Models

- Hybrid Model Allows For Capitalization of DCFC Customer Equipment While Issues Rebates on L2 Customer Equipment
  - Capitalization of Large Scale DCFC Minimized Ratepayer Impact by Reducing O&M Costs Generated by Cash Rebates
  - Requires Support From Multiple Departments for Origination Activities of Leases and Easements

# Questions?

# JU Stakeholder Feedback Session

Moderator: John Borchert, Central Hudson

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# Definition of Strategic Locations

The Make-Ready Program Order (page 118) differentiated "Strategic Locations" as a distinct element in addition to capacity mapping and load forecasting:

1. Load Serving Capacity
2. EV Charging Infrastructure Forecast
3. **Strategic Locations**

**What does it mean to be a Strategic Location?**

# Considerations for Strategic Locations

- The definition of Strategic Locations may vary by any of the example criteria below, which is surely not comprehensive.
- *What are the key inputs to the definition of Strategic Locations?*

| Category | Profile A | Profile B | Profile C |
|---|---|---|---|
| **Use Case** | Daily charging | Destination/Relieving Range Anxiety | On-the-go charging |
| **Charger type** | L2 | DCFC | DCFC |
| **Users** | Private drivers with limited home charging | Fleets/Commercial, Travelers | Ridehailing, fleets, private drivers with limited home charging |
| **Location** | Urban | Rural | Urban |
| **Site Type** | Public, workplace, multifamily | Underserved areas, thruways | DACs, fleet locations, charging hubs |
| **Access Point** | Surface streets in dense commercial or residential areas | Adjacent to Highways | Proximity to city centers |

# What role can each stakeholder play in developing Strategic Locations?


- Educating the market
- Providing planning resources
- Marketing and outreach
- Incentivizing strategic locations
- Etc.

# Thank You! Next Steps…

- Midpoint Review of JU Make-Ready Program will be another opportunity for Stakeholders to provide feedback starting in October 2022.
- Please contact the Joint Utilities at info@jointutilitiesofny.org with any questions and comments regarding EV load forecasting or visit jointutilitiesofny.org for more information on the EV Make-Ready Program and to find the JU stakeholder newsletter.
- Contact PSEG-LI/LIPA for more information on EV programs at PSEG-LI-EVMakeReady@pseg.com.