



**NY Power  
Authority**

# **Electric Transportation Program**

**Clean Energy Business and Market Development**

**November 1, 2018**

# Overview

- Importance of Electric Transportation
- EV Terminology
- EV Trends
- NYS policies
- NYPA Programs
- Funding Sources

# Importance of Electric Transportation

- Transportation represents 27% of all energy use in the USA
- This is roughly equivalent to the amount of energy used in all commercial, residential and industrial buildings combined
- The transportation sector is nearly devoid of fuel diversity, with over 94% of the energy coming from petroleum
- This lack of diversity is an economic security risk
- By electrifying transportation, vehicle emissions can gradually improve as the grid becomes cleaner and more efficient

# Importance of Electric Transportation

Figure ES.1. REGIONAL GLOBAL WARMING EMISSIONS RATINGS FOR ELECTRIC VEHICLES

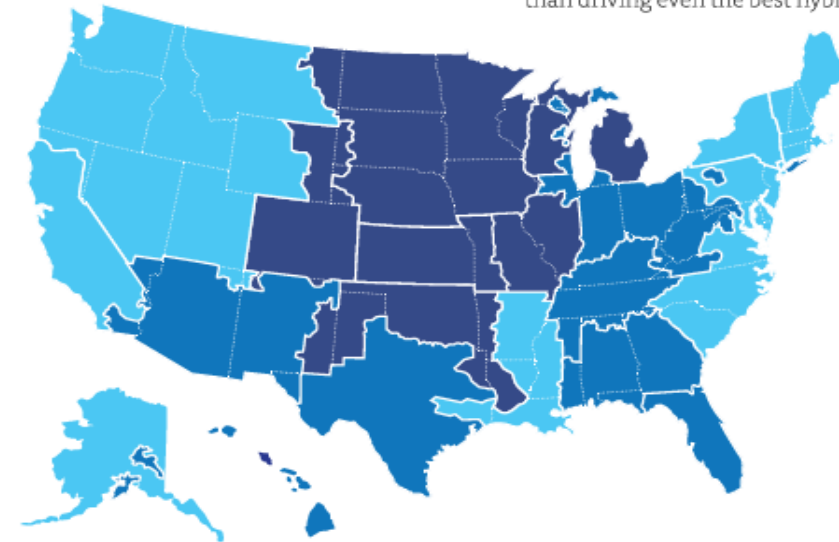
Nearly **half** of Americans live in **BEST** regions where charging an EV on the electricity grid emits **less** global warming pollution than driving even the best hybrids.

## Union of Concerned Scientists

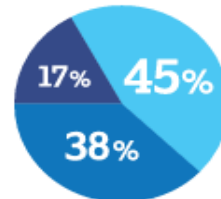
NYUP= Upstate NY: 191 mpge  
**Best in the USA!**

NYCW = Westchester: 89 mpge

NYLI = Long Island: 50 mpge



**U.S. Population (%)**  
 in each region category



How do the global warming emissions of electric vehicles compare with gasoline vehicles in your region?



← Dirtiest electricity grid (High emissions) | Cleanest electricity grid (Low emissions) →

An EV charged in the given region produces emissions equivalent to a gasoline vehicle with a fuel economy rating of:

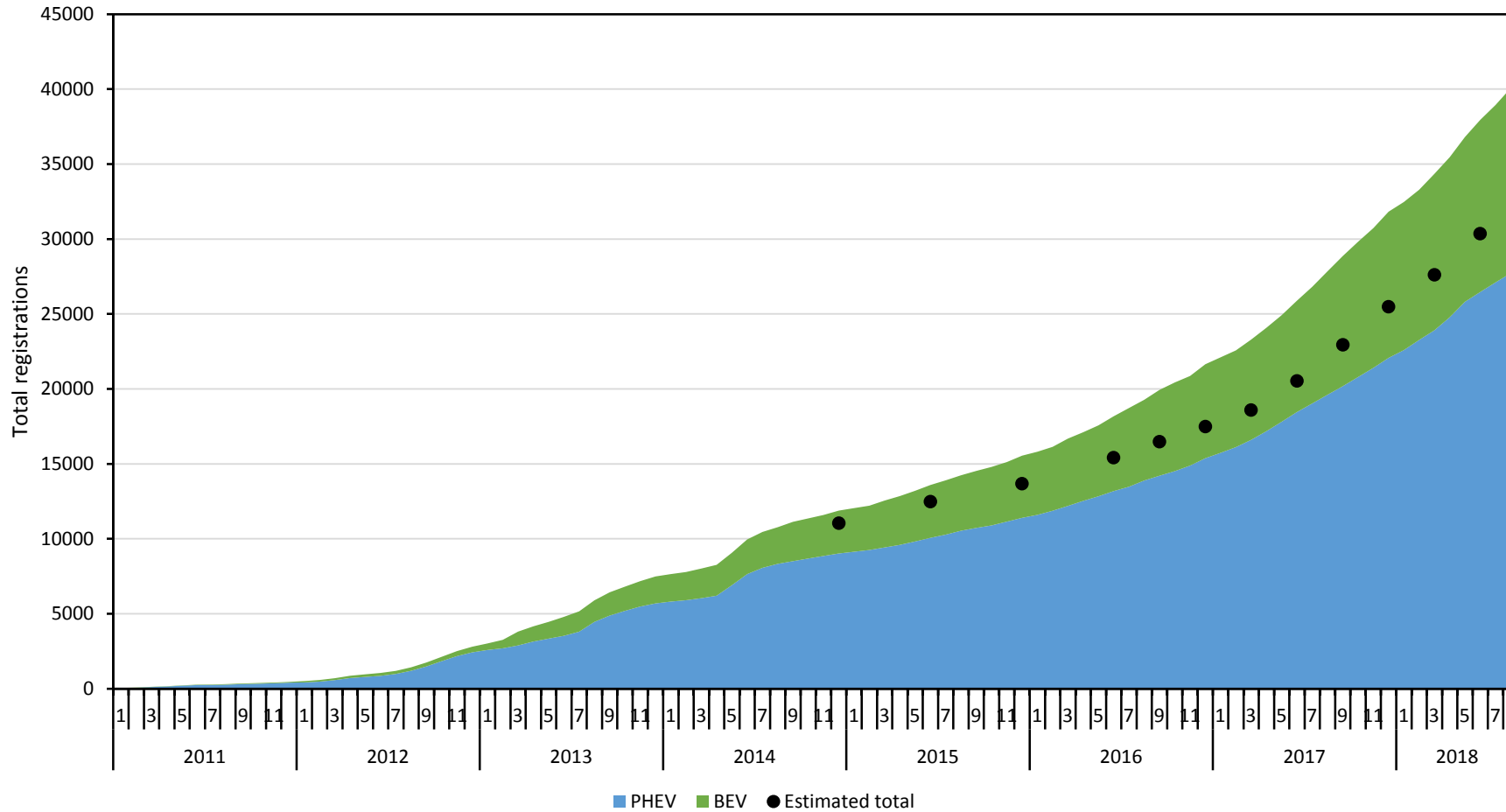


The sources of electricity generation vary by region, meaning the global warming benefits of owning an electric vehicle depend on the electricity grid where it is charged.

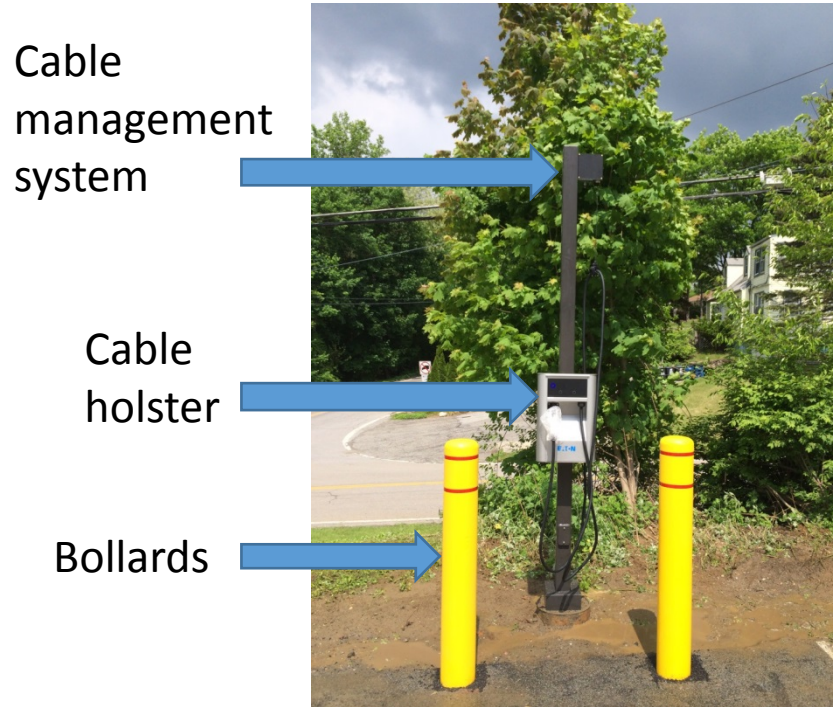
# EV Terminology

- The vehicles
  - HEV – hybrid – not an “EV”
  - PHEV – plug-in hybrid
  - BEV – battery electric vehicle
- The charging stations
  - EVSE – electric vehicle supply equipment
  - Level 1 – 120 Volt, 1.5 kW, >12 hours
  - Level 2 – 208 Volt, 6-7 kW, 4-8 hours
  - Level 3 or “DCFC” – 480 Volt, 50 kW+, 30 minutes
  - Networked and non-networked

# Growth of Registered Electric Vehicles in New York



# NYPA Public Charging Installation



# State Policies

- ZEV Mandate
  - 2025: 850,000 PEVs in New York
- De-carbonization
  - 40% by 2030 and 80% by 2050
  - Transportation: 34% and growing, while electricity carbon intensity is shrinking
- Renewable generation
  - 50% by 2030
  - Nearly double the current percentage
  - Currently it is largely NYPA hydro, but solar and wind will make up most of the difference





# Charge NY 2.0

Initiative to accelerate the growth of the electric vehicle market in New York State.

- Collaboration between NYPA, NYSERDA, and NYS DEC
- Goal of reaching 10,000 charging stations by 2021
- Charge NY 1.0 was launched in 2013 with goal of 3,000 charging stations across NY by 2018.
  - Currently over 2,500+ charging stations installed, close to meeting 2018 goal.

# NYPA: Electric Transportation Program



## Program Goals

- Support the development and demonstration of electric-drive vehicles
  - **Plug-in electric vehicles and charging infrastructure**
    - **Plug-in hybrid and battery electric vehicles**
  - **Hybrid-electric vehicles**
- Provide project management services and technical and financial support to customers for vehicle demonstrations

## Program Status

- Since 1995 NYPA has partnered with customers and stakeholders to place over 1,200 electric-drive vehicles in service around the state
- Vehicles include trucks, buses, vans, passenger cars, low-speed vehicles and off-road equipment
- Vehicles have traveled over 11 million miles

# NYPA's ET Program (recent past)

- 100 L2 EVSE in public locations
  - Zero cost pilot sponsored by NYPA/NYSERDA
  - Airports, train stations and municipal parking lots
  - Technical support/data analysis conducted by EPRI
- 4 DCFC (50 kW) on NYS Thruway
  - Zero cost pilot sponsored by NYPA and Nissan
  - Travel plazas between NYC and Albany



# NYPA's ET Program (present)

- NYPA managed EVSE deployments
- 300 L2 EVSE
  - Municipal sites: NYSERDA and DEC grants cover up to \$4k and \$8k respectively
  - Workplace sites: NYSERDA grant covers hardware/software costs
- 23 DCFC (150 kW) with Thruway – NYC to Buffalo
  - Project also includes multiple L2 commuter lots



# NYPA's ET Program (present)

- Airport GSE: 120 DCFC ports with JetBlue at JFK
- Electric transit bus pilot
  - EPRI study on scalability of EVSE
  - Ten bus pilot
    - 5 Proterra buses with 440 kWh – Brooklyn/Queens
    - 5 New Flyer buses with 150 kWh – Manhattan
    - On street (350 kW) vs. in depot (50 kW)



# EVoive NY

- NYPA allocated \$250 million through 2025 to address key infrastructure and market gaps to accelerate the adoption of EVs.
- \$40 million committed for 1<sup>st</sup> phase through end of 2019.
  - 200 DC Fast Chargers that will be NYPA owned
  - Airport Fast Chargers at JFK
  - EV Model Communities: targets our municipal utilities, will look at new business models and smart charging technologies

# VW Settlement

## Appendix C: Electrify America

VW will be investing \$2 billion nationwide in Zero Emission Vehicle (ZEV) projects over a ten-year period.

- L2 EVSEs located at workplaces, public parking lots, and multifamily dwellings.
- DCFC interstate corridor network.
- Brand-neutral public outreach and education

## Appendix D: Clean Transportation NY Plan

New York State received \$127 million for NOx reduction projects.

- 1/3 of funding going to diesel replacement projects and 2/3 to electric transportation projects. Primary focus is on heavy-duty vehicles, like electric buses.
- NYPA will work with public entities to implement projects that fall under Appendix D.

# NYSERDA - Drive Clean Rebate and Outreach Initiative

- \$70M total towards the growth of the EV Market.
- \$15M will support improving consumer awareness of electric cars, installing more EV infrastructure, and other efforts to put more EVs on the road.
- \$55M dedicate to point-of-sale rebates up to \$2,000 towards the purchase of a PHEV or a BEV
  - Open to all New York State residents and government entities
  - NYSERDA rebate is stackable with other grant programs





# NYSERDA - Charge Ready NY

- Open to both public and private organizations to install Level 2 EV charging stations
  - At public parking facilities, workplaces, and multifamily apartment buildings
- Rebates of up to \$4,000 per charging port installed.



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# Thank You

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