



## Workplace Charging Program and Initiatives

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# **NYPA: Who We Are**

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- **Largest state public power organization in the United States**
- **Uses no taxpayer funds in its operations**
- **Provide wholesale power supplier throughout New York State and neighboring states as required by law**
- **Provide, in the form of generation and market power purchases, about 25% of New York State's electricity**
- **2011 Generation: 28.1 million MWh, 78% hydro; 22% fossil**
- **Transmission lines: more than 1,400 circuit miles: 115kV, 230kV, 345kV and 765kV**



# 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 1,300 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 Considerations and Key Factors in Deciding to Launch an Employee Workplace Charging Program

- Is NYPA authorized to institute this kind of program?
- How will it be funded?
- Do the employees have to pay for the electricity? If so how do we bill them?
  - A committee was formed from different departments of the Power Authority to discuss these questions
    - Legal Department
    - Ethics
    - HR
    - Payroll
    - Sustainability



## NYPA's Workplace Charging Pilot Program

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*Employee charging stations installed at the Authority's White Plains office*

- NYPA joined the US DOE's Workplace Charging Challenge
- Launched a pilot program
- Three parking spaces
- Budget under \$10,000 for 3 level 1 (120V) hardwired charging stations and electric meters
- Broadcast email
- Payroll deduction of \$15 per month
- Average monthly electric use per employee: 120 kWh
- Positive employee feedback

# National Drive Electric Week NYPA Employee Plug-In Car Show



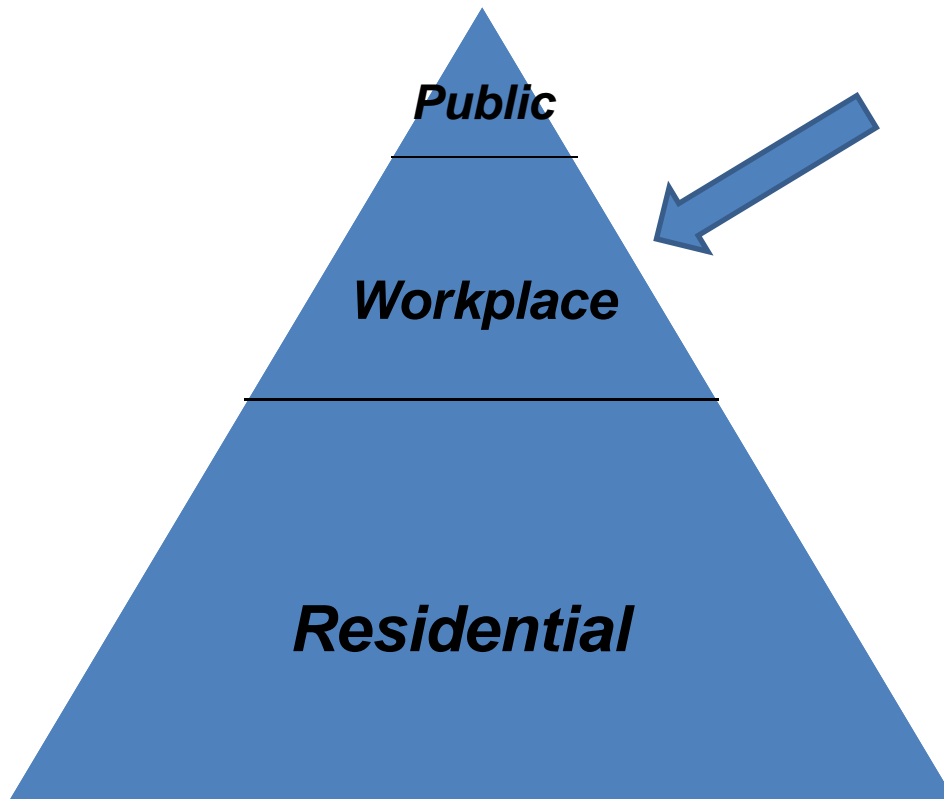


# NYPA Plug-In Fleet Vehicles



# Charging Patterns

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- The 80/20 rule: Where do cars have their longest dwell times?
- Urban issue: Home charging may not be possible. This raises the importance of workplace charging and rapid charging
- Workplace charging is far more cost efficient than rapid charging
- Employers can offer workplace charging to enhance their sustainability efforts, provide an employee benefit, and earn LEED certification points
- Employers can join the US DOE's Workplace Charging Challenge



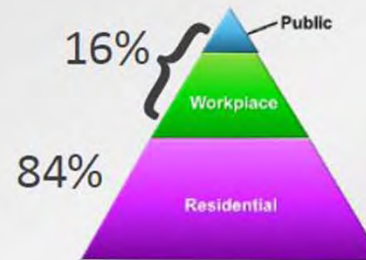
# EV Drivers charge mostly at home and at work

## Home vs. Work vs. Public Charging

- Overall EV drivers:

Study Period 1/1/2012 – 12/31/2013

- 84% of all charging events are at home
- 16% not at home

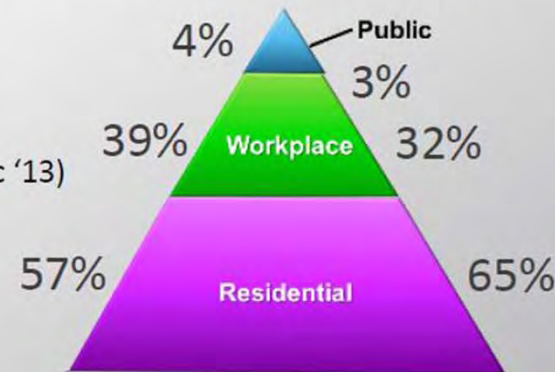


- When workplace charging is available to an EV driver:

(96 Volts with access to workplace charging Jan '13 – Dec '13)

- 57% of charging events are at home
- 39% at work
- 4% at other locations (e.g. public)

Volt data      Leaf data



(707 Leafs with access to workplace charging Jan '12 – Dec '13)

- 65% of charging events are at home
- 32% at work
- 3% at other locations (e.g. public)



**Residential and workplace charging provide the vast majority of all charging.**

Source: John Smart, INEL, EV Project; Link to all reports = <http://avt.inel.gov/librarybydate.shtml>

# Is it really cleaner?

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.

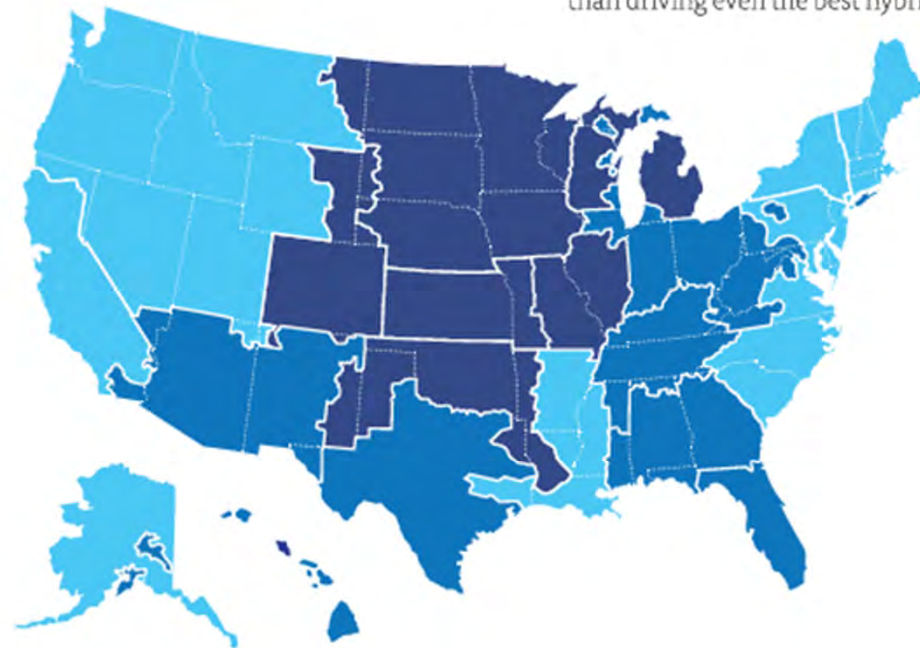
Union of Concerned Scientists

NPCC = Upstate NY: 115 mpge

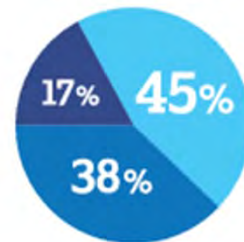
**Best in the USA!**

NYCW = Westchester: 84 mpge

NYLI = Long Island: 41 mpge



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

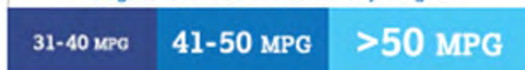


How do the global warming emissions of electric vehicles compare with gasoline vehicles in your region?



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

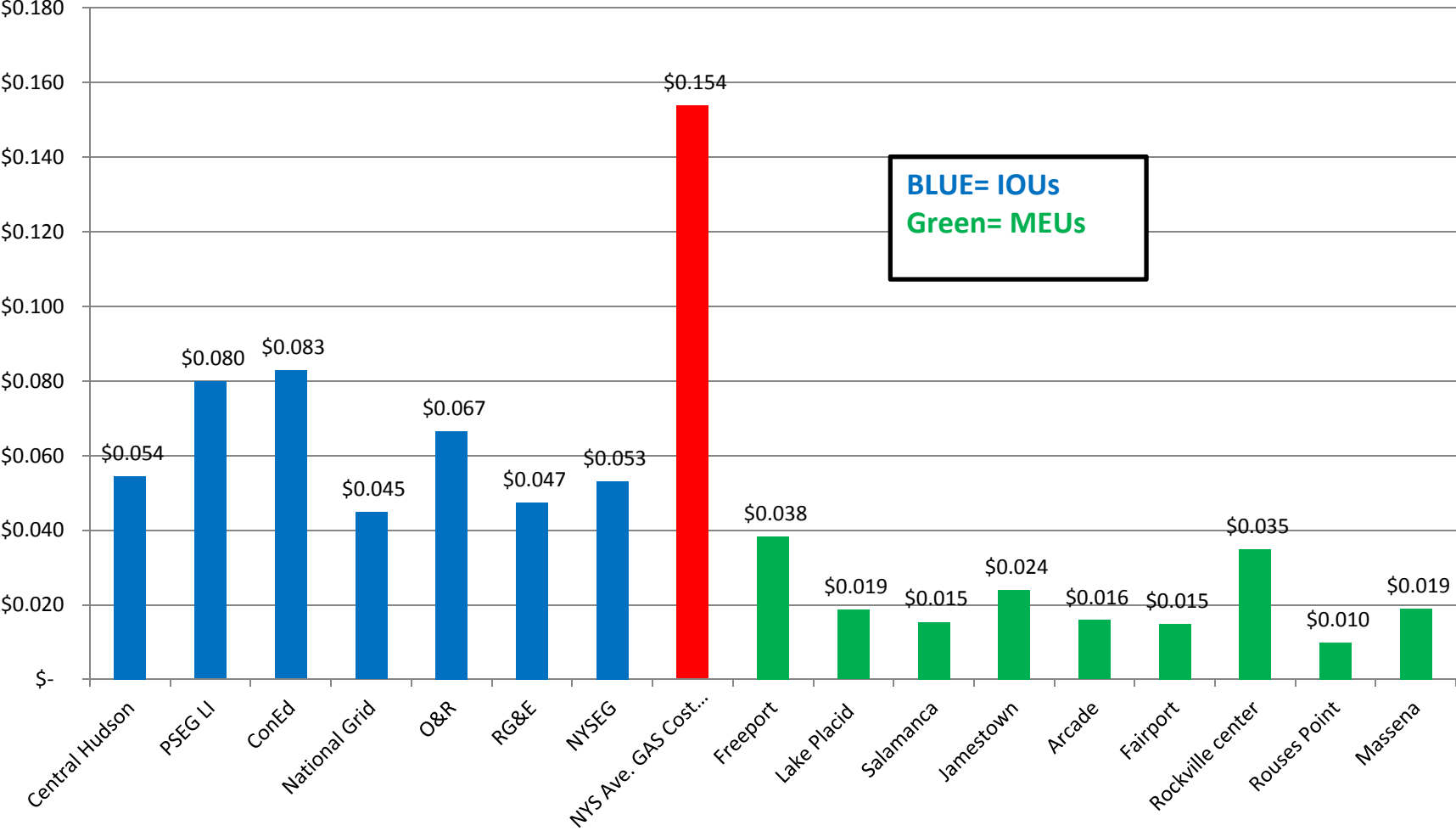
An EV charged in the given region produces emissions equivalent to a gasoline vehicle with a fuel economy rating of:



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.

# Working With NYPA Customers To Go Electric

## Cost Per Mile Electric Vehicles Vs. Conventional Gas Vehicles





# Charge NY Program

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## Background

- Announced in the Governor's 2013 State of the State Address
- Leadership role in developing the State's adoption of electric vehicles
- Support a fleet of over 40,000 electric vehicles in New York State by providing over 3,000 public and workplace charging stations
- Joint NYPA / NYSERDA program

## Charge NY Program



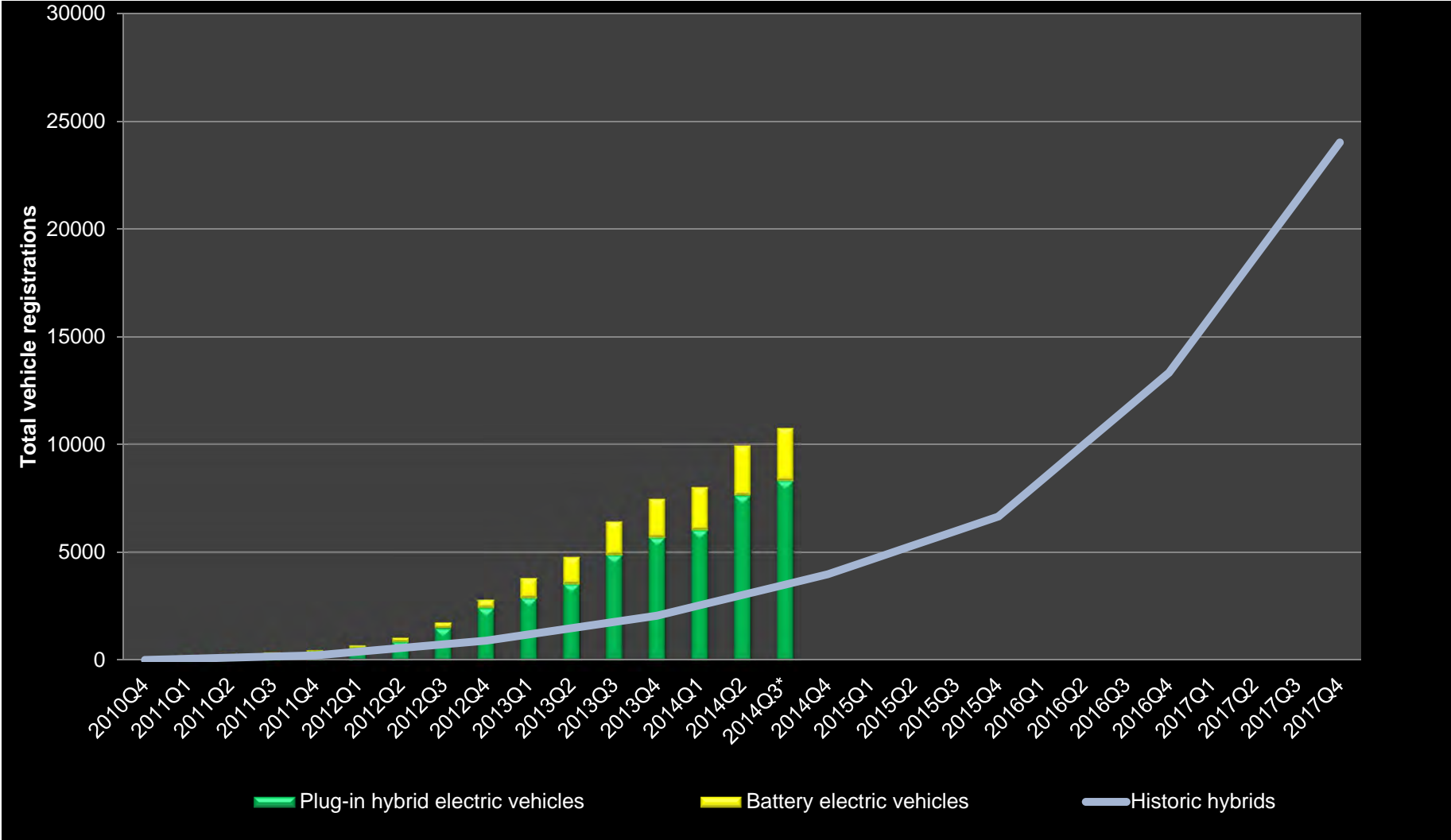
*Public charging stations will be installed at train stations, airports and municipal parking lots throughout New York State*



NYPA's portion of Charge NY will fund research and project activities in four main areas:

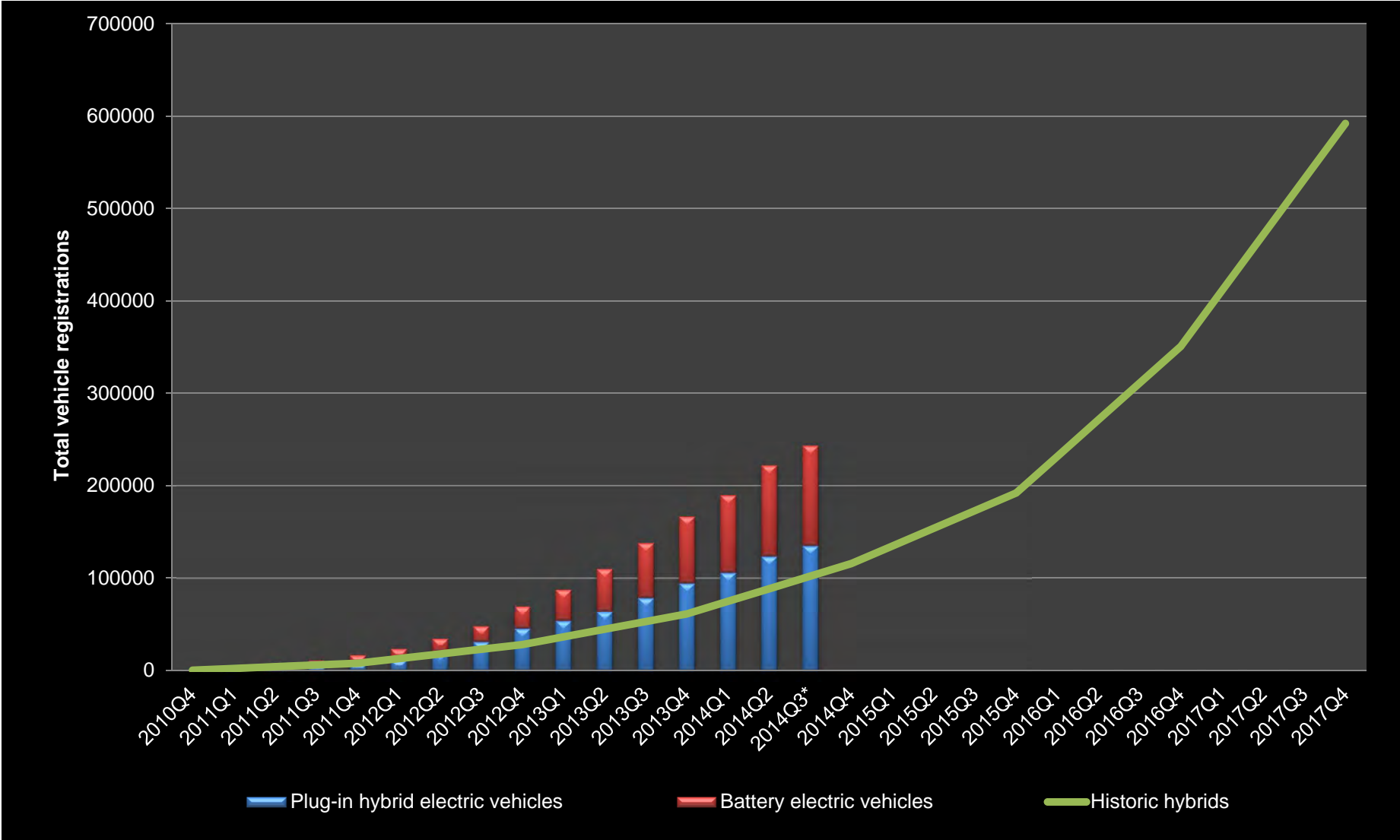
- Public and workplace charging deployment
- Rapid charging equipment deployment
- Charging equipment research and development
- Public outreach and education
- State Zero-Emission Vehicle Program (ZEV)
  - In October 2013 Eight States (CA, NY, MA, CT, MD, OR RI ,VT) created a multi state compact to put 3.3. Million ZEV's on the road by 2025.

# New York State Plug-In Numbers





# National Plug-In Numbers





**New York Power  
Authority**

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Generating more than electricity

Thank You