



State of The State: Electric Vehicles

Atlantic County Utilities Authority

September 26, 2023

Kassandra Damblu

Who we are:

A diverse group of aligned interests

What we do:

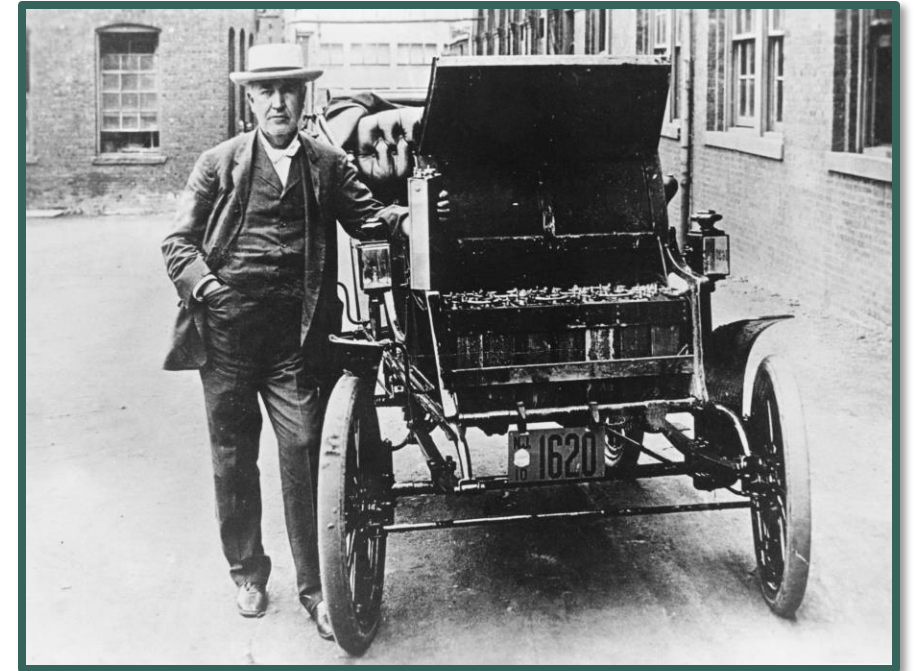
- Accelerate and expand EV adoption in New Jersey
 - Develop and promote programs and policies

How we do it:

- Research necessary to inform programs and policies
- Diverse coalition with a unified voice for advocacy

State-based approach:

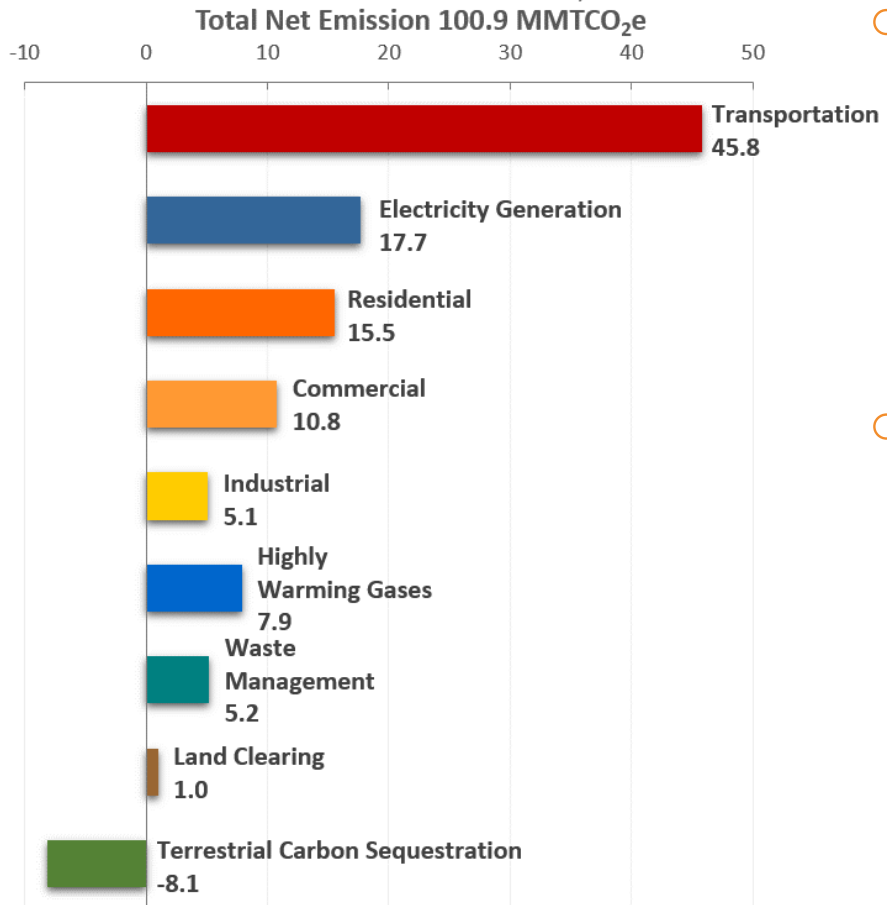
Local market participants, for local action, based on local conditions



Electric Vehicles 101

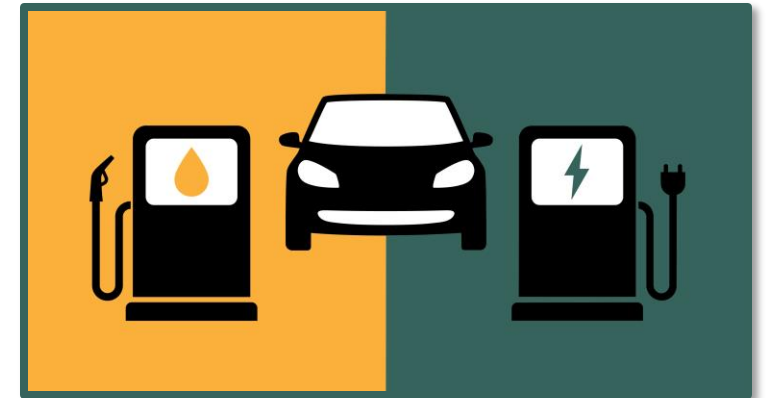
- ❑ Why Are EVs Important?
- ❑ What Are They?
- ❑ How Are Electric Vehicles “Fueled”?
- ❑ State of the State: EVs

Estimated NJ Greenhouse Gas Emissions, 2015,
(in million metric tons CO₂ equivalent, MMTCO₂e)



○ Benefits for EV Owners

- Lower maintenance costs
- Lower “fuel” costs
- Convenient to own
- High-tech; high-performance



○ Benefits for Society

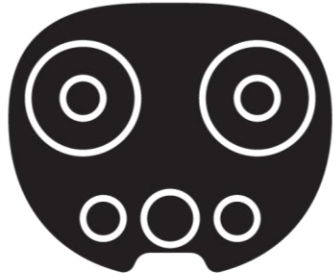
- Lower energy costs for all ratepayers
- Can be incorporated into strategies that strengthen the grid
- Reduced greenhouse gas emissions help slow climate change
- Reduced pollution of air, water, and soil
- Improved public health
- Increased energy security
- Lower noise

Electric Vehicles “101”

Common acronyms in Electric Vehicles (EV) discussion:

- **BEV** (Battery Electric Vehicles)
 - “All electric”: Battery only (no fuel)
 - Large batteries produce substantial all-electric range (typically, **250-300 miles**)
 - Increasingly dominating the market
- **PHEV** (Plug-in Hybrid Electric Vehicles)
 - Operate using a battery OR traditional fuel
 - Small batteries provide relatively limited all-electric range (typically, about **30 miles**) before “kicking over” to fuel
 - NOT a traditional hybrid (like a Toyota Prius)
 - Increasingly being displaced by BEV
- **PEV** (Plug-in Electric Vehicles)
 - Any vehicle with a plug (charged using external power source)
 - BEV + PHEV = PEV (or “EV” for short)
- **ICE** (Internal Combustion Engine)
 - Traditionally fueled vehicles





NACS (Tesla)

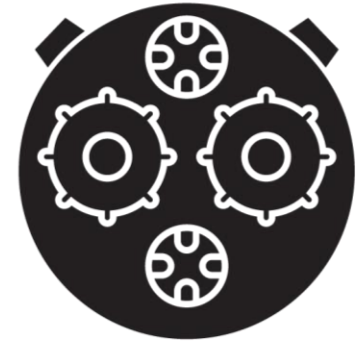
Currently only Tesla EV have native NACS

Other OEM's have recently announced the shift to NACS
(will become dominant standard)



CCS

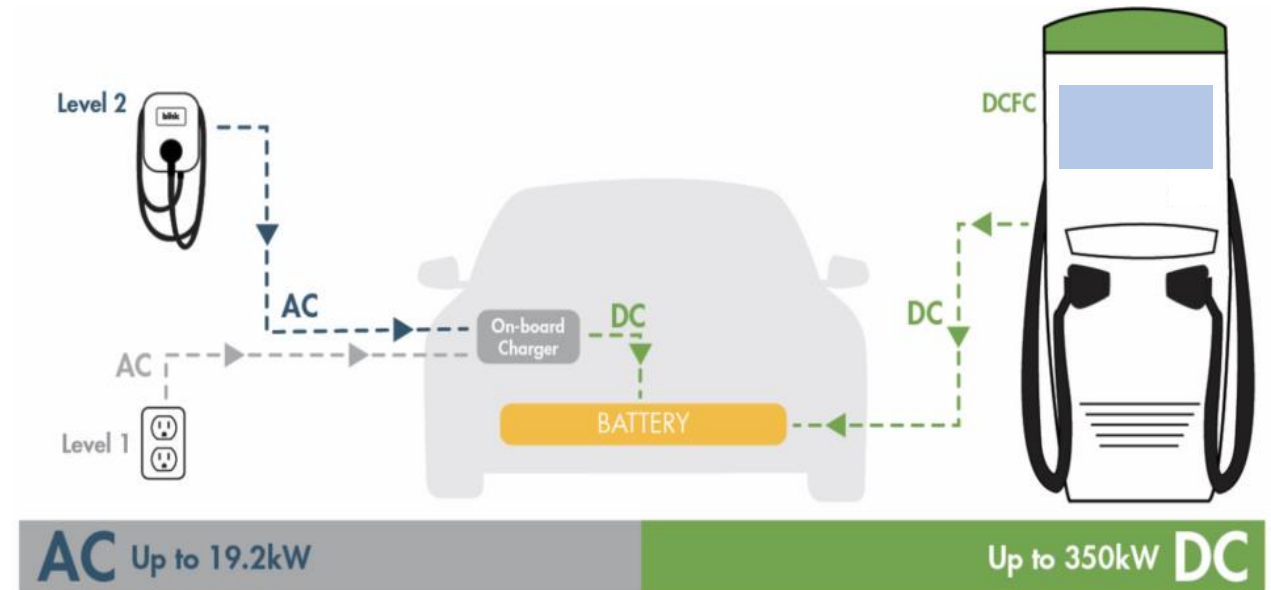
Currently the dominant standard for all non-Tesla EV
(Tesla can currently charge at CCS chargers with an adaptor)



CHAdeMO

Just two major US EV use this standard
(Nissan LEAF & Mitsubishi Outlander PHEV)

- **L1 (Level 1)**
 - Uses a standard household plug
 - Insufficient to fully charge modern BEV (~5 miles of range per hour)
- **L2 (Level 2)**
 - Typically charges a PEV in 5-6 hours (~24-40 miles of range per hour)
 - Suitable for overnight or “long-dwell”
- **DCFC (Level 3, “Fast Chargers”)**
 - Typically charges a PEV in 15-45 minutes (~50-150 miles of range in 15 minutes)
 - Range of power levels available
 - Most effectively reduce “range anxiety”



○ **New Jersey's Electric Vehicle Law**

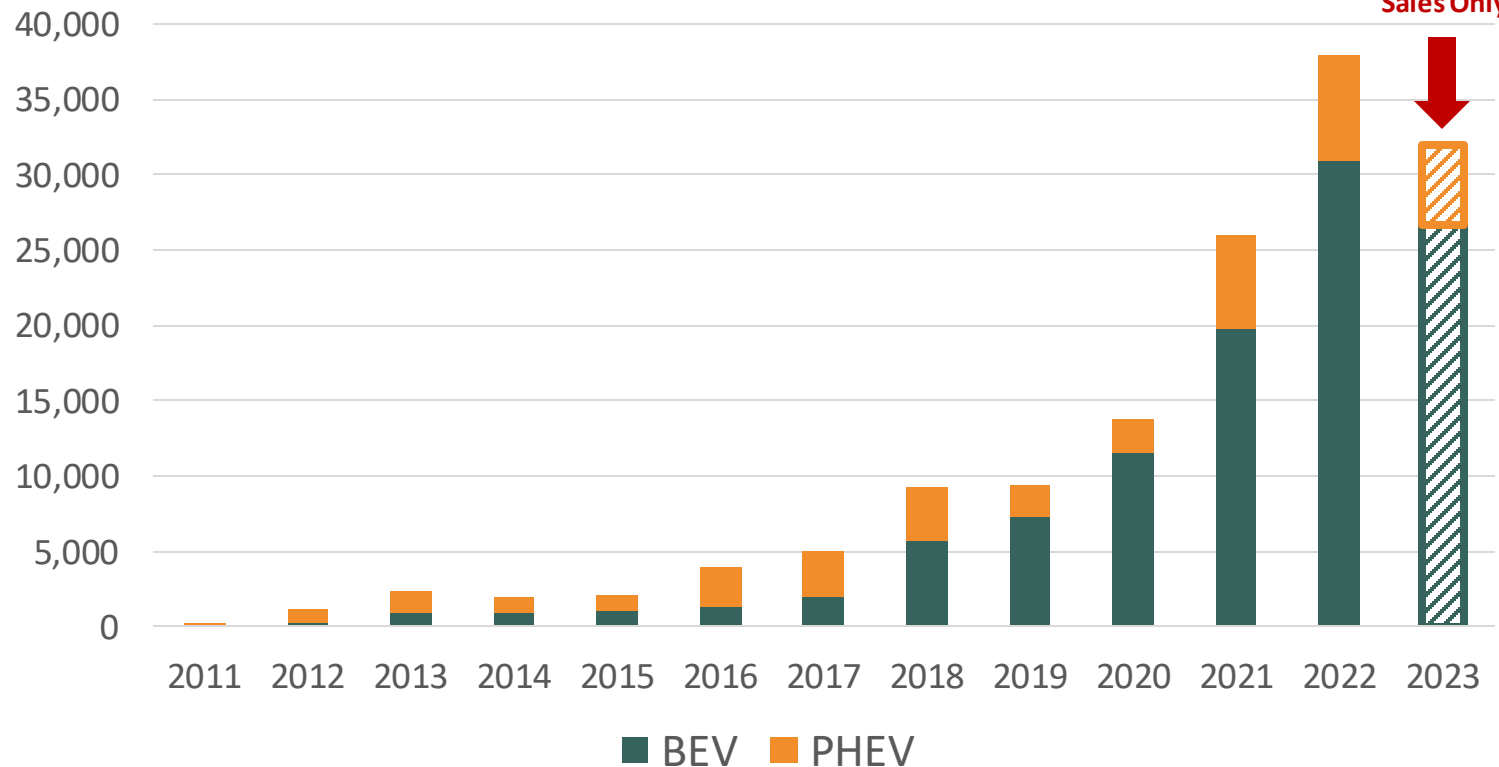
- 330,000 Plug-in EV by 2025; 2 million by 2035
- 85% of all vehicles sold EV by 2040
- 400 Fast Chargers at 200 locations by 2025
- 1,000 Level 2 Chargers by 2025

○ **Advanced Clean Cars II Rule**

- Increases the percentage of LDV EV sales required, ramping up to 100% LDV EV sales in 2035



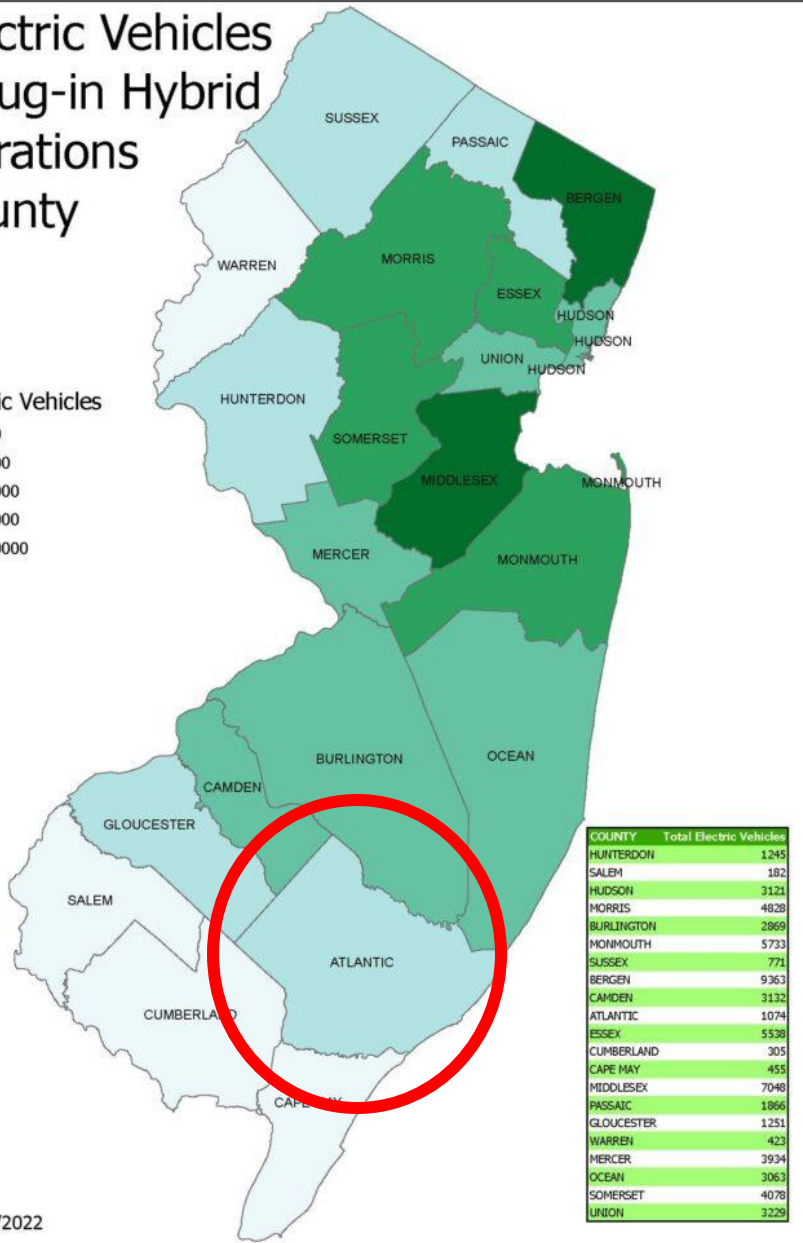
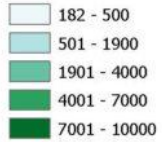
PEV Sales in New Jersey



- EV accounted for nearly **10%** of all vehicle sales in NJ in 2022 (up from 5% in 2021)
- EV account for almost **13%** of all vehicle sales in NJ in 2023 (YTD)
- As of June 2023, there are **~128k EV on the road** in NJ (~2% of vehicles)
- The **first half** of 2023 saw **33,806** EV sold (37,993 sold in **all** of 2022)

NJ Electric Vehicles and Plug-in Hybrid Registrations by County

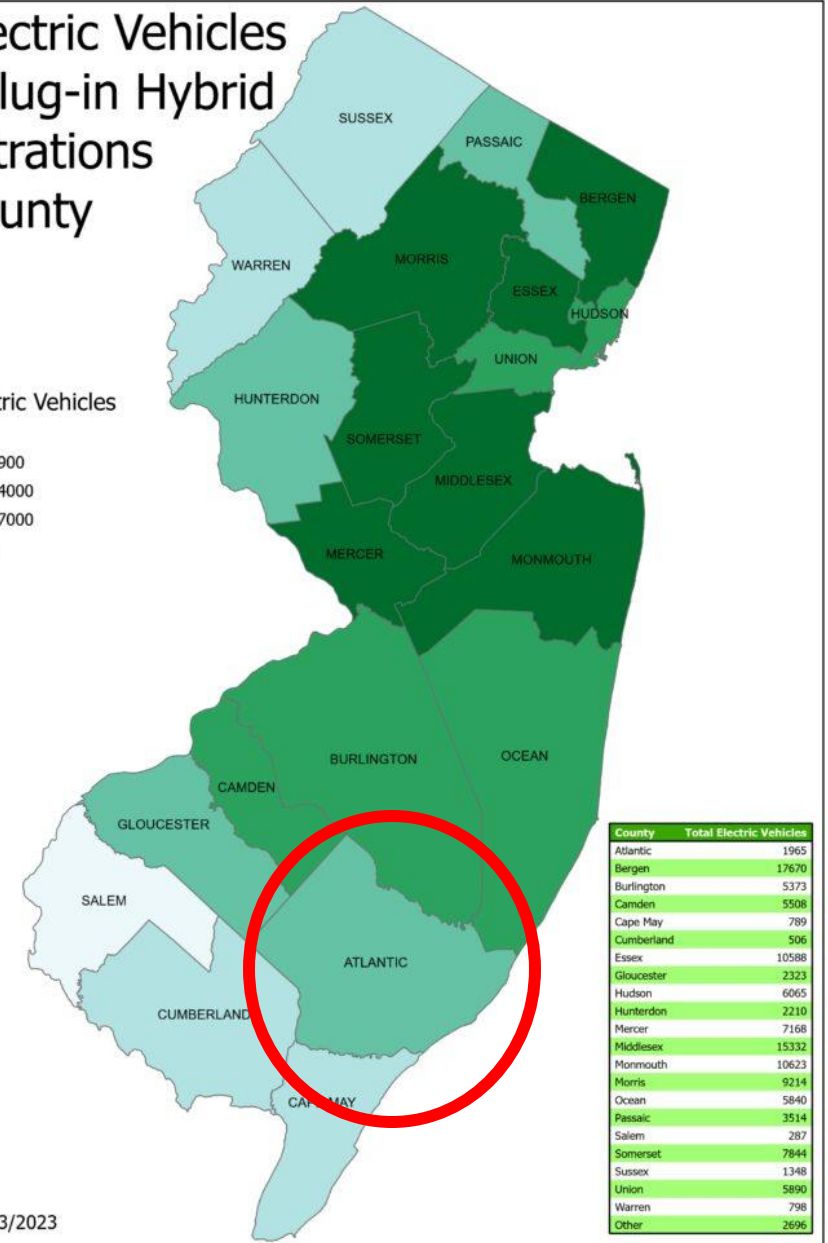
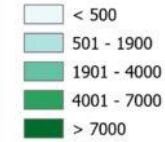
Total Electric Vehicles



UPDATED: 4/21/2022

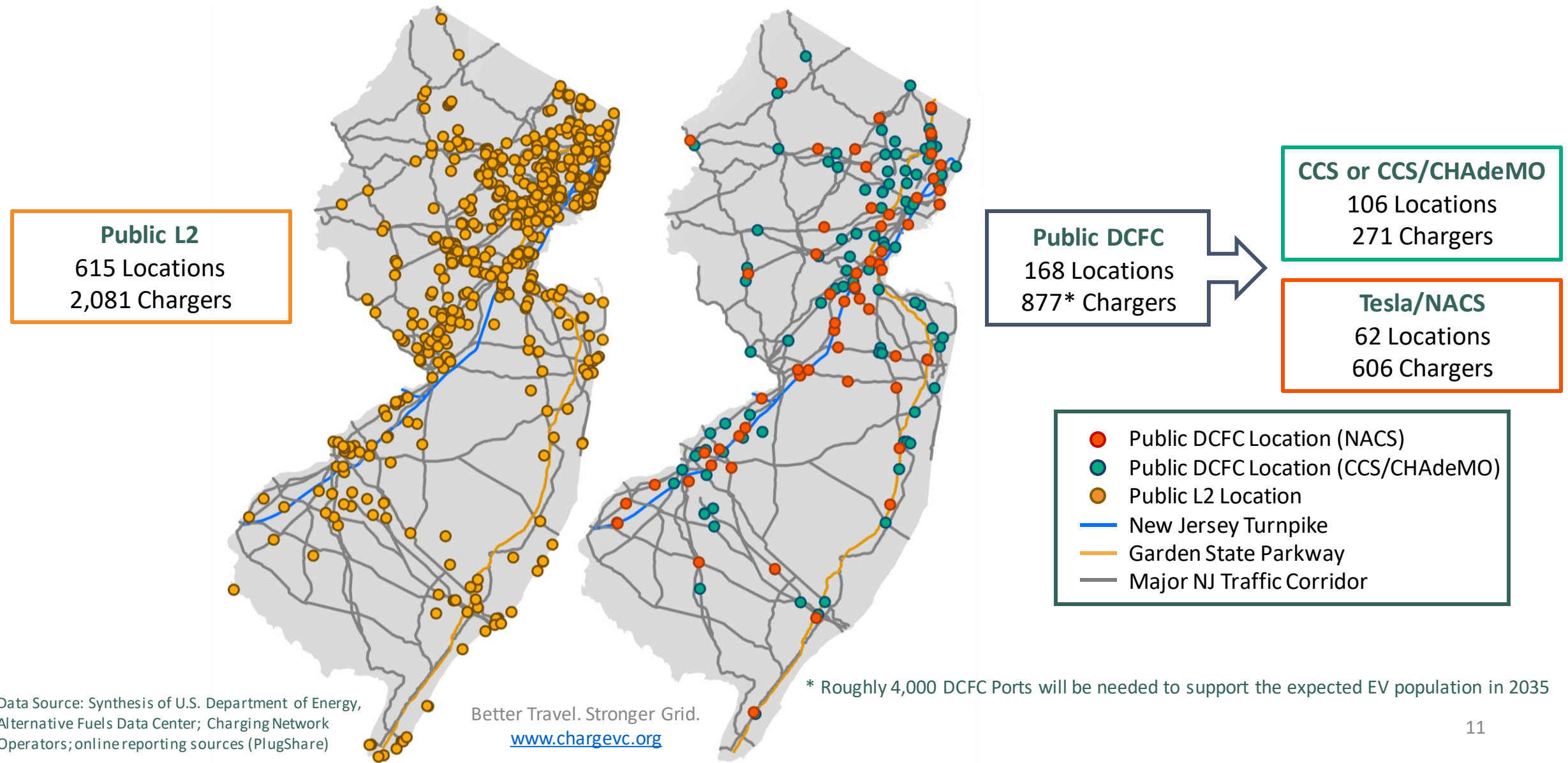
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Total Electric Vehicles



UPDATED: 8/23/2023

Public Charging in New Jersey



Data Source: Synthesis of U.S. Department of Energy, Alternative Fuels Data Center; Charging Network Operators; online reporting sources (PlugShare)

* Roughly 4,000 DCFC Ports will be needed to support the expected EV population in 2035

Key EV Incentives in New Jersey

Incentive	Vehicle	Charger	Make-Ready Infrastructure
Federal: IRS: EV and Charger Tax Credits	✓	✓	
Federal: NJ DOT: NEVI Formula Program		✓	
NJ BPU: Charge Up NJ Vehicle Rebate & Charger Program, EV Tourism Incentive, Multi-unit Charging, MHDV Charging	✓	✓	
NJ DEP: It Pay\$ to Plug In Program		✓	
NJ EDA: MHDV Zero Emissions Incentive Pilot Program (ZIP)	✓		
NJ State Sales Tax Exemption	✓		
Federal and State Electric School Bus Programs	✓		
NJ Utilities*: Residential, Multifamily, and DCFC Incentives			✓
NJ Utilities: Specialized Rates to Reduce Charging Costs			✓

- Big commitments by global OEMS
 - General Motors, Honda, Mercedes-Benz, and Nissan have committed to being 100% electric
- Significant consumer interest
 - 71% of Americans expressed some level of interest in buying or leasing an EV in 2022.

GET INVOLVED WITH CHARGEVC

ChargEVC-NJ is a not-for-profit coalition of diverse stakeholders working together to advocate for transportation electrification in New Jersey.

www.chargevc.org

info@chargevc.org