

2021 NEW JERSEY

SUSTAINABILITY SUMMIT



Join the EVolution!

May 20, 2021



Announcements



- June 6 – municipal certification deadline
- FREE technical assistance for one community to develop a Water Story (sustainablejersey.com/grants)
- \$75,000 in grants for resiliency & environmental stewardship projects in Atlantic City Electric territory (sustainablejersey.com/grants)



Speakers



EV 101 for Municipalities

Rob Graff, Office of Energy and Climate Change Initiatives, DVRPC

Permitting and Incentives for EV Charging

Andrea Friedman, Supervisor, Electric Vehicle Programs, NJ DEP

Utility Incentives and EV Incentives

Cathleen Lewis

E-mobility Programs Manager, Division of Clean Energy, NJBPU

PROGRAM UNDERWRITERS



SUMMIT SPONSORS





More Sustainability Summit events to come!



- List of Summit events with registration - **bit.ly/SustainabilitySummit21**
- Recordings of Summit events – *will be posted by 5/28.* **www.sustainablejersey.com > Resources > Presentations > Sustainability Summit**



EV 101 for Municipalities (and other fleets)

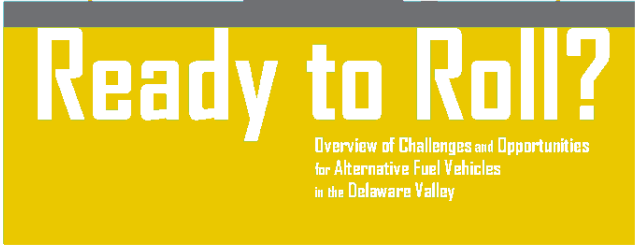
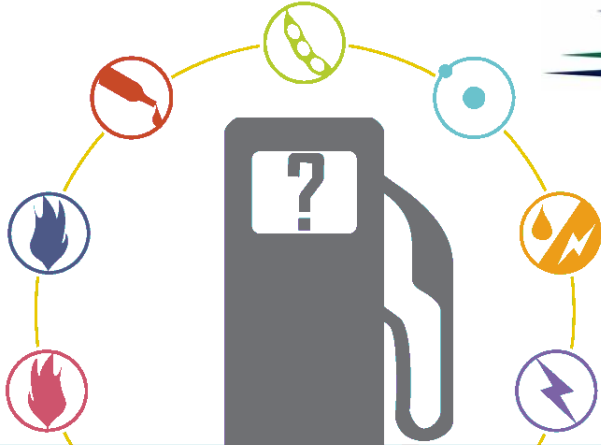
Join the EVolution!
Sustainable Jersey
May 20, 2021

*Robert Graff, Manager
Office of Energy and Climate Change Initiatives
rgraff@dvrpc.org*

The Delaware Valley Regional Planning Commission (DVRPC)

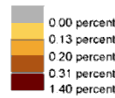


- Metropolitan Planning Organization (MPO) for the Philadelphia region, created in 1965
- Bi-state (PA/NJ), nine counties
- Board made up of representatives of the counties, major cities, key state agencies, Governors' representatives
- Staff of over 120

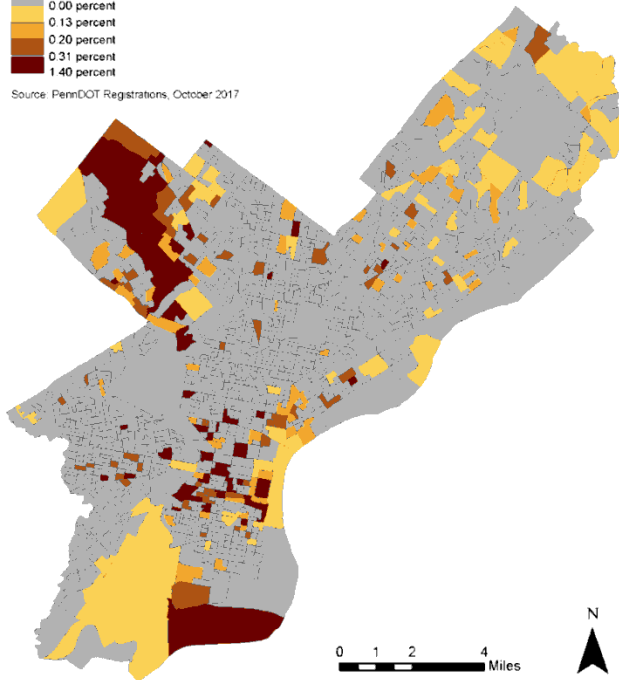


Percentage of PEVs in Philadelphia

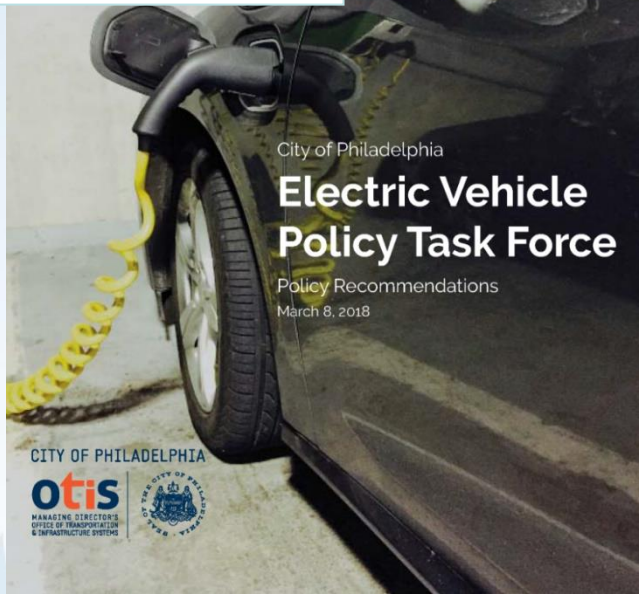
Percentage PEV by Block Group



Source: PennDOT Registrations, October 2017



Volume I: Planning and Policy Recommendations
June 2013



Two EV Resources for the Region

- **Electric Vehicle Resource Kit for Municipalities (Fleets)**
 - www.dvrpc.org/EnergyClimate/AlternativeFuelVehicles/EVMuniResource
- **Planning for Electric Vehicles – Mapping Vehicle Distribution and Workplace Charging Demand**
 - <https://tinyurl.com/DVRPC-EV-Toolkit>

www.dvrpc.org/EnergyClimate

Electric Vehicle Resource Kit for Municipalities (Fleets)

- Intended to help the user answer "What should my municipality do about electric vehicles?"
- Written specifically for municipal managers in Pennsylvania and New Jersey, with a focus on the Greater Philadelphia region.
- The information is likely to be useful to other users: businesses, fleet managers, and potential EV owners.

Sections Currently in the Resource Kit

- **Where are Electric Vehicles Now and Where Will they Be?**
- **EVs 101 — Introduction to Electric Vehicles**
- **Incorporating PEVs Into A Municipal Fleet**
- **Determining the First Vehicle to Replace with a PEV**
- **Selection and Placement of PEV Chargers**
- **Resources to Purchase PEVs and Charging Equipment**
- **Contacts For Assistance**
- **Municipal PEV and Charging Equipment Case Studies**

www.dvrpc.org/EnergyClimate/AlternativeFuelVehicles/EVMuniResource

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Main EV Types

Overlapping, sometimes inconsistent usage

- PEV: Plug-In Electric Vehicle
 - BEV: Battery Electric Vehicle
 - Also known as All Electric Vehicle (AEV)
 - PHEV: Plug-In Hybrid Electric Vehicle
- HEV: Hybrid Electric Vehicle
- FCEV: Fuel Cell Electric Vehicle, runs on H₂ Fuel Cell
- ZEV: Zero Emissions Vehicle

EV Charging Technologies

Level 1 Charging

Level 2 Charging

DC Fast Charging



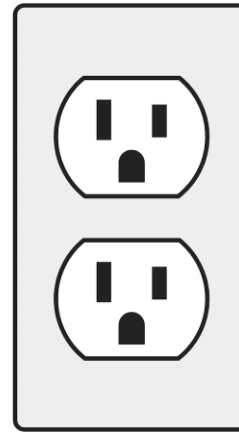
EV Charging Technologies

Level 1 Charging: 120V / 1400W

- About what a powerful hair dryer uses
- Adds 2-5 miles of range in an hour

Level 2 Charging

DC Fast Charging



EV Charging Technologies

Level 1 Charging: 120V /
1400W

Level 2 Charging: 240V /
7700W

- Like an electric stove with all burners and oven on
- Adds 10-20 miles of range in an hour

DC Fast Charging



EV Charging Technologies

Level 1 Charging: 120V /
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Level 2 Charging: 240V /
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DC Fast Charging: 480+V /
50,000 to 120,000W or more

- Like a commercial building
- Adds 60 to 80 miles of range in 20 minutes



EV Charging Technologies

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DC Fast Charging: 480+V / 50,000 to 120,000W or more

- Like a commercial building
- Adds 60 to 80 miles of range in 20 minutes

Note: Gasoline pump adds ~250 mile of range per minute.



The EV world is changing fast

New vehicle types: Pickup trucks, SUVs, commercial vans

Battery energy density increasing, price decreasing

- Longer ranges
- Lower prices

More public funding may be coming.

Total Cost of Ownership (TCO) likely to flip to EVs over next few years.

Used vehicles are starting to appear on the market

Many opportunities in goods movement world.

If it's in print, it may already be out of date.

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Which Vehicle to Choose as a Pilot?

- Want it to be a success!
- Light-duty Sedan
- More miles, the more savings
 - Balanced, particularly for first vehicle, with criticality
- Used regularly
- Parked at the same location overnight every day
- Parked at a building with easy installation of charger
- BEV vs. PHEV: Lean to BEV to get experience

Evaluate your fleet!

DRVE tool : Dashboard for Rapid Vehicle Electrification

- Free Microsoft Excel-based tool (Excel 2016 or later)
- Easily import all fleet vehicles using VINs
- Compare current fleet with electric vehicle alternatives
- Includes financial and environmental analysis of light-, medium-, and heavy-duty vehicle fleet procurements
- Total cost of ownership basis
- Well-to-wheels emissions for regional electrical grid.
- Easiest way to find: Google “DRVE tool” (and confirm)

DVRPC is happy to help you with this!



Thank you!

Rob Graff
rgraff@dvrpc.org



STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

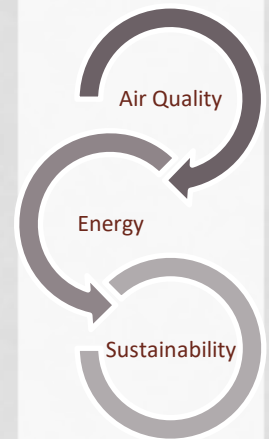


DIVISION OF AIR QUALITY

AIR QUALITY, ENERGY, AND SUSTAINABILITY


Join the Evolution!

2021 SUSTAINABILITY SUMMIT 5/20/21



Andrea Friedman, Supervisor – Electric Vehicle Programs
NJDEP Division of Air Quality

On the agenda today:

- 
1. Incentives for EVs and charging infrastructure
 2. Zoning & permitting for EV charging projects

FLYER:

EV resources for local government



Includes:

- Incentives
- Procurement Tools
- Policy & Planning Support
- Sustainable Jersey Resources
- Resources for Residents

Download from
www.drivegreen.nj.gov/localresources.pdf

It Pay\$ to Plug In

DEP's Grant Program for EV Charging Stations

Up to \$4,000 per port for **Level 2** chargers at **public places, multi-family homes, and workplaces (including fleets)**

First-come first-served. We are accepting applications now.

Apply online:

www.drivegreen.nj.gov/plugin.html



It Pay\$ to Plug In

Up to \$200,000 per location for public fast chargers



Competitive solicitation. Stay tuned for future funding rounds.

Electric Shared Mobility Program Grants

Funding for electric shared mobility projects like electric car sharing and ride hailing services.

Programs that benefit overburdened communities will be prioritized.

*Competitive solicitation.
Stay tuned for future
funding rounds.*



Jersey City's new public ride-share service with VIA hits the road
One of 15 vehicles part of the City's new public ride-share service.

Medium & Heavy-Duty Vehicle Electrification Grants



DEP grants to replace old diesel vehicles & equipment with electric.

Examples: school buses, transit buses, garbage trucks, delivery trucks, port trucks and equipment. Includes associated charging equipment.

Overburdened communities will be prioritized.

Competitive solicitation. Stay tuned for future funding rounds.

NJ ZIP

NJEDA's Zero Emission Incentive Program



Voucher program for zero-emission medium duty vehicles in the greater Camden and greater Newark areas

\$25,000 - \$100,000

For businesses and institutions (including local governments and schools)

Info and application: www.njeda.com/njzip

Charge Up New Jersey

Receive an incentive of
up to **\$5,000** when you
purchase or lease a
new electric vehicle!

[Apply](#)

Up to \$5,000 rebate when you buy or lease a new electric car
Best in the nation EV incentive program

www.chargeup.njcleanenergy.com

Zoning and permitting for EV charging infrastructure



**Legislation: A2108 / S3233
passed out of committee 5/12**

Key provisions for EV charging infrastructure:

- Zoning and permitting standards
- # of required chargers or charger-ready parking spaces for:
 - new construction with parking lots/garages
 - new multi-family homes with 5 or more units
- Model ordinance to be published by DCA



Zoning and permitting provisions



- Application that is ***solely*** for installation of EVSE or make-ready parking spaces ***shall be*** considered **permitted accessory use and permitted accessory structure** in all zoning or use districts and ***shall not*** require a variance.
- It also ***shall not*** be subject to review based on parking requirements.
- Application for EVSE or make-ready parking spaces at ***existing*** buildings ***shall not be*** subject to site plan approval; ***shall not*** require variance; and ***shall*** be approved through issuance of zoning permit.
- Parking space with EVSE or make-ready ***shall*** count as at least 2 parking spaces.

Requirements for chargers and make-ready parking places at new construction

- Application involving **new multi-family buildings** with ≥ 5 units:
 - Immediately: 15% of parking spaces shall be make-ready and 1/3 of those shall have EVSE installed;
 - Within 3 years: install EVSE in an additional 1/3 of the original 15%
 - Within 6 years: install EVSE in the final 1/3 of the original 15%.
 - Overall, at least 5% of EVSE must be accessible for people with disabilities
 - Can install EVSE at a faster pace
- Application involving **new garage or parking lot**:

# of parking spaces	# of make-ready or EVSE required
≤ 50	1
51-75	2
76-100	3
101-150	4
> 150	4%

Model Ordinance

- DCA shall publish **model ordinance** in 30 days that shall include provisions of this bill.
- Shall address **sightline, installation and setback requirements** and other **health- and safety-related specs** for EVSE & make-ready parking spaces
- Shall be effective in each municipality.
- Municipality may encourage (but not require) additional make-ready or EVSE.

**Additional
support for
local
governments**



Visit our Website for more EV info

Your choice to drive electric improves New Jersey's air quality and helps slow climate change.

drive green new jersey



Vehicle Basics

Between all of the different acronyms, it's easy to get confused. Here we have a basic breakdown of the main types of electric vehicles that either plug in or have no harmful tailpipe emissions.



Charging

There are many options when it comes to charging your electric vehicle. This information will reveal the types of charging stations, where to find one, information on the cleanliness of the NJ grid, and charging resources.



Incentives to Drive Green

There are many different federal and state incentives to make the transition easier. Explore Electric Vehicle Affordability with calculators that determines your personal cost. "It Pays to Plug In", provides grants to offset the cost of electric vehicle charging stations.



Policy Initiatives

Learn about the policy initiatives New Jersey is developing to support the electrification of the transportation sector to meet State's 2050 greenhouse gas goal.

www.drivegreen.nj.gov

Follow us on social media



Instagram drivecleannj



Facebook NJDEPAQES



Twitter @NewJerseyDEP

Join our listserv for updates and funding announcements

www.state.nj.us/dep/stopthesoot/sts-listserv.htm

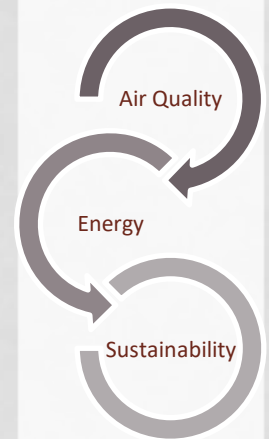


STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Contact me at:

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Supervisor, Electric Vehicle Programs
New Jersey Department of Environmental Protection
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NJBPU: Driving EV Adoption

SUSTAINABLE JERSEY
SUMMIT
MAY 20, 2021

Year 1 Program Summary

330,000 EVs by
2025

The Charge Up New Jersey post-purchase incentive program is driving Electric Vehicle (EV) adoption in New Jersey.

New Jersey residents received up to \$5,000 for the purchase or lease of a new EV in the state.



**OVER 7,699
NEW EVs
ON THE ROAD**
\$36.8 MILLION IN
INCENTIVES APPROVED



New Jersey's
cleanenergy
program™
njcleanenergy.com



Approved Funding: \$36,800,000 | Approved # of Incentives: 7,699

Charge Up New Jersey — Year One

Charge Up New Jersey — Year Two



Point of Sale Program



Incentive-Essential

Year One

- Plug-In Electric or Plug-In Hybrid Vehicle
- Must be purchased or leased in the State of New Jersey
- Must be registered in NJ to a NJ licensed driver
- MSRP must be less than \$55,000
- \$25/emile up to \$5,000
- Post-Purchase Incentive
- Purchased between January 17, 2020 – December 15, 2020

Proposed Year Two *

- Plug-In Electric or Plug-In Hybrid Vehicle
- Must be purchased or leased in the State of New Jersey
- Must be registered in NJ to a NJ licensed driver
- MSRP must be less than \$55,000
- \$25/emile up to \$5,000 for vehicles with MSRP under \$45,000
- \$25/emile up to \$2,000 for vehicles with MSRP between \$45,000-\$55,000
- Point-of-Sale Incentive
- Purchased after the FY22 launch until funding is exhausted

May 18th NJBPU released a Straw Proposal outlining the Year 2 Incentives. A stakeholder meeting will be held on May 27th at 10 am, comments are due on June 2, 2021.

Public Charging



- Utility Filings
 - Make Ready Incentives



- Fast Charging
 - PSEG - 1200
 - ACE - 100



- Level 2
 - PSEG - 3500
 - ACE - 1500+

Types of Charging



- Public Fast Charging



- Residential Charging



- Public L2 Charging
 - Community
 - Workplace
 - Multi Unit Dwellings

Clean Fleet Program

- Electric vehicles are now included on the State Purchasing Contract under Award T0099
- Clean Fleet Electric Vehicle Incentive Program
 - Designed to encourage local and state governments to add EVs to their fleet
 - \$4,000 per battery electric vehicle (maximum of 2); and
 - \$1,500 for one Level-Two EV charging station
- Grants awarded on rolling basis until June 2021, or until funding expended
- Vehicles purchased from December 2019 - June 2021 are eligible
- Questions? **EV.programs@bpu.nj.gov**

More Information

Cathleen Lewis

E-Mobility Programs Manager

Cathleen.Lewis@nj.bpu.gov

Visit

NJCleanEnergy.com

Newsletter

NJCleanEnergy.com/NEWSLETTER

Listservs

NJCleanEnergy.com/LISTSERVS

@NJCleanEnergy



Fleet Actions

Fleet Inventory

- Evaluate current vehicle use
- Fleet planning exercise

Purchase Alternative Fuel Vehicles

- Code enforcement vehicles
- Police vehicle fleet
- Light and heavy duty trucks

Sustainable Fleets

(Sustainable Jersey for Schools)



Runnemede's new EV and EV Chargers!



Actions Supporting Adoption of EVs in the Community



Public EV Charging Infrastructure

Make Your Town EV Friendly

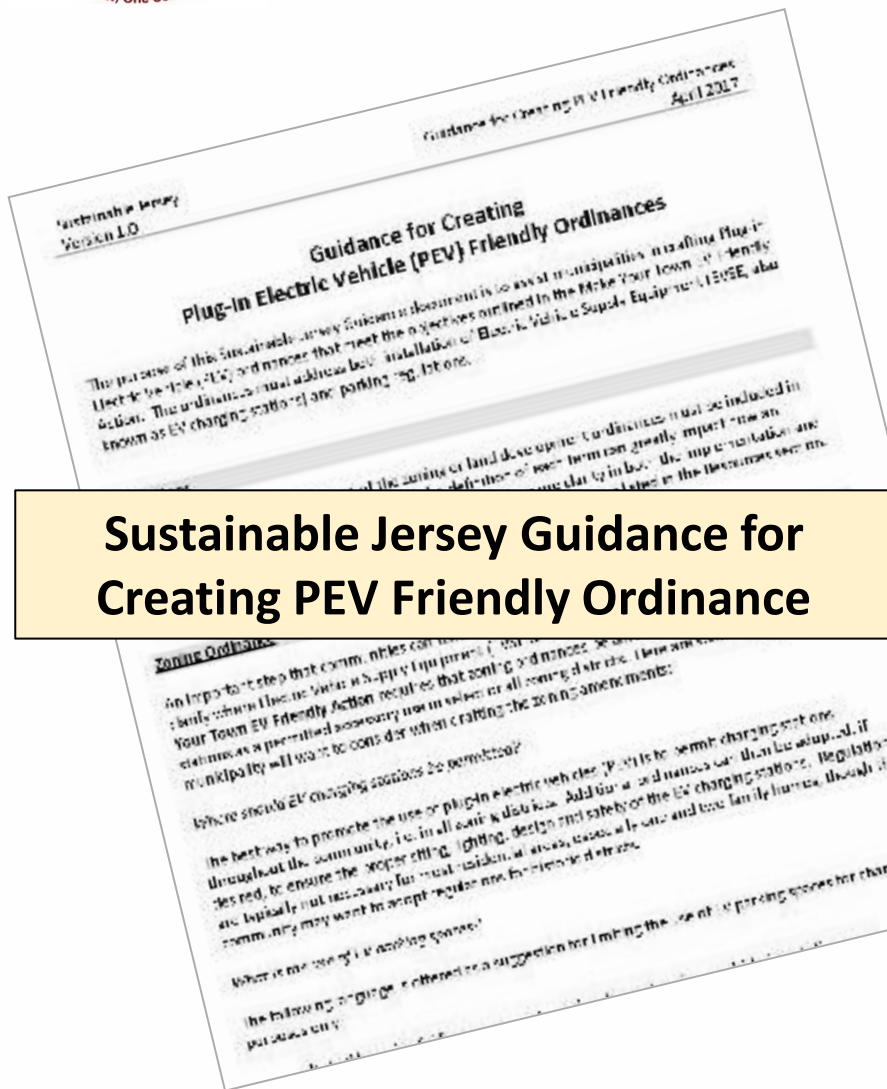
- Zoning Ordinance
- Parking Ordinance
- First responder training
- EV Outreach
 - Local Employers
 - Multi-family Dwellings



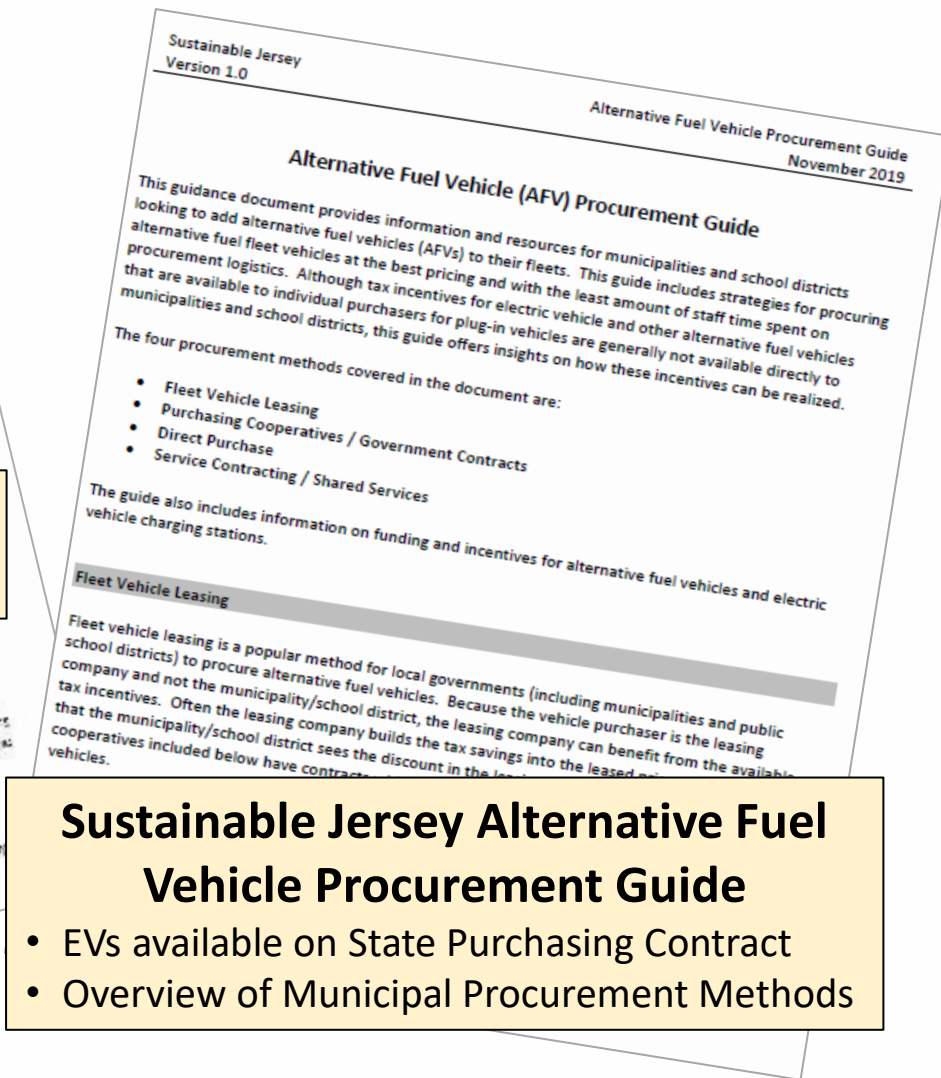
Ribbon Cutting Ceremony: Secaucus unveils new EV charging station



Municipal EV Resources



Sustainable Jersey Guidance for Creating PEV Friendly Ordinance



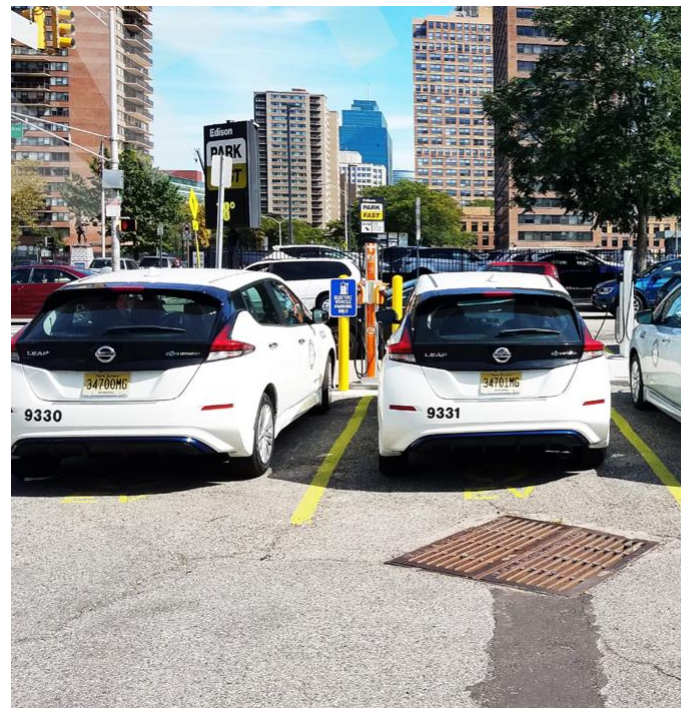
Sustainable Jersey Alternative Fuel Vehicle Procurement Guide

- EVs available on State Purchasing Contract
- Overview of Municipal Procurement Methods

Minimizing EVSE Costs

EVSE Unit Selection

- Select unit with minimum features needed
 - Level 1 vs. level 2
 - Networked vs. non-networked
- Wall mounted EVSE minimizes cost
- Dual port EVSE unit minimizes cost per port
- Size EVSE unit to fit available electrical capacity



List adapted from the U.S. Department of Energy's Report,
Costs Associated With Non-Residential Electric Vehicle Supply Equipment
https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf

Additional resource on EVSE costs
Rocky Mountain Institute, 2019
Reducing EV Charging Infrastructure Costs
<https://rmi.org/insight/reducing-ev-charging-infrastructure-costs/>

Electric Vehicles in Jersey City's Fleet
From Jersey City Climate Action Plan
<https://jccclimateaction.konveio.com/ceap?document=1&outline-name=Transportation%0D>

Minimizing EVSE Costs

Location

Select meter first, then parking spaces

Locate EVSE unit near electrical service

Minimize the trenching distance



Minimizing EVSE Costs



Electrical meter and switch servicing Level 2 EVSE.
Photo from Don Karner.

https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf

Long Term Planning

Contact utility early to discuss

- Planned meters and infrastructure
- Demand charges
- Incentives

Consider possible EVSE when doing electrical work

Plan EVSE for new facilities



Questions?



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