Million$ Available Now to Fund the EV Revolution in Your NJ Community

Hogan Dwyer, Sustainable Jersey
Andrea Friedman, NJ Department of Environmental Protection
Mark Warner, ChargEVC
Zoom Participation

- Raising your hand in the chat
- Interacting/providing resources in the chat
- Participating in our discussion poll
- Using the reaction function
Upcoming Events

More info on our website sustainablejersey.com

Sustainable Energy Communities webinar

June 17th, 1-2:30pm
https://attendee.gotowebinar.com/register/1321163683238199824

Adding EVs to Your Municipal Fleet and Community webinar

June 24th, 1-2:30pm
https://attendee.gotowebinar.com/register/5217858180778615821
Sustainable Jersey Energy Efficiency Outreach Toolkit Trainings

Bringing Energy Efficiency to Your Town — Everything We Know About Having Successful Outreach Campaigns

Residential Energy Efficiency Outreach Trainings

- June 2, 2:00 – 3:30 PM, NJ Natural Gas Territory
- June 3, 6:30 – 8:00 PM, for all NJ municipalities
- June 4, 2:00 – 3:30 PM, South Jersey Gas Territory

Commercial Energy Efficiency Outreach Trainings

- June 11, 1:00 – 2:30 PM, for all NJ municipalities

Toolkits include ‘Plug and play’ outreach collateral and best practices for successful outreach campaigns.
Sustainable Jersey Grants

More info on our website sustainablejersey.com

Sustainable Communities Grant Program

• Resiliency or Environmental Stewardship
• Municipalities in Atlantic City Electric territory
• Applications accepted until July 16, 2020
• https://www.sustainablejersey.com/grants/sustainable-communities-cycle/
# Sustainable Jersey Energy Actions

<table>
<thead>
<tr>
<th>Operations</th>
<th>Community Energy Use</th>
</tr>
</thead>
</table>
| **Energy Efficiency** | • Energy Tracking and Management  
• Energy Efficiency for Municipal Facilities |
| **Renewable Energy** | • On-Site Solar Energy  
• On-Site Geothermal  
• On-Site Wind Energy  
• Purchase Renewable Energy |
| **Alternative Fuel Vehicles (AFVs)** | • Fleet Inventory  
• Meet Target for Green Fleets  
• Purchase AFVs  
• Sustainable Fleets |
| **Community Energy Use** | • Residential Energy Efficiency Outreach  
• Commercial Energy Efficiency Outreach |
| **Energy Efficiency** | • Community Choice Aggregation (R-GEA)  
• Make Your Town Solar Friendly  
• Community-Led Solar Initiatives |
| **Alternative Fuel Vehicles (AFVs)** | • Make Your Town EV Friendly  
• Public EV Charging Infrastructure |
Sustainable Jersey Supporters & Sponsors

Program Underwriters

Grants Program

Corporate Sponsors

PLATINUM

GOLD

SILVER

BRONZE
Today’s Presenters

Mark Warner
Vice President, Gable Associates
ChargEVC
mark@gabelassociates.com

Andrea Friedman
Supervisor, Electric Vehicle Programs
NJ Department of Environmental Protection
Andrea.Friedman@dep.nj.gov
Introduction To Electric Vehicles In New Jersey, and NJ DEP Incentives For Public Charging

May 26, 2020

Mark Warner
Vice-President
Gabel Associates
732-296-0770
## Electric Vehicles - Why Now?

### 15 Battery Electric Vehicles From 11 Manufacturers

**Table: Battery Electric Vehicles Comparison**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>Date Released</th>
<th>Price After Tax (KRW)</th>
<th>Battery Range (Km)</th>
<th>EPA 100 Mile Range (Km)</th>
<th>0-60 acceleration (sec)</th>
<th>Top Speed (mph)</th>
<th>Peak Power (kW)</th>
<th>EPA Energy consumption combined (city/highway)</th>
<th>Weight (lbs)</th>
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<tbody>
<tr>
<td>Audi</td>
<td>e-tron</td>
<td>2019</td>
<td>55,000</td>
<td>408</td>
<td>402</td>
<td>6.6</td>
<td>145</td>
<td>222</td>
<td>11.6/7.3</td>
<td>4,000</td>
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<tr>
<td>BMW</td>
<td>i3 (2018)</td>
<td>2018</td>
<td>36,500</td>
<td>330</td>
<td>309</td>
<td>6.3</td>
<td>143</td>
<td>227</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>BMW</td>
<td>i8 (2014)</td>
<td>2014</td>
<td>156,000</td>
<td>300</td>
<td>265</td>
<td>4.4</td>
<td>155</td>
<td>258</td>
<td>11.9/7.4</td>
<td>2,900</td>
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<tr>
<td>Chevrolet</td>
<td>Bolt EV (2017)</td>
<td>2017</td>
<td>36,000</td>
<td>384</td>
<td>373</td>
<td>6.5</td>
<td>140</td>
<td>249</td>
<td>11.9/7.4</td>
<td>3,700</td>
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<tr>
<td>Fiat</td>
<td>500e (2019)</td>
<td>2019</td>
<td>36,900</td>
<td>268</td>
<td>259</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
<td>11.9/7.4</td>
<td>3,100</td>
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<tr>
<td>Honda</td>
<td>Clarity Electric</td>
<td>2019</td>
<td>33,500</td>
<td>430</td>
<td>422</td>
<td>6.5</td>
<td>140</td>
<td>253</td>
<td>11.9/7.4</td>
<td>2,900</td>
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<tr>
<td>Hyundai</td>
<td>Kona Electric</td>
<td>2019</td>
<td>30,300</td>
<td>500</td>
<td>480</td>
<td>6.9</td>
<td>140</td>
<td>244</td>
<td>11.9/7.4</td>
<td>3,300</td>
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<tr>
<td>Kia</td>
<td>Stinger EV (2019)</td>
<td>2019</td>
<td>37,900</td>
<td>425</td>
<td>417</td>
<td>6.7</td>
<td>140</td>
<td>247</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>Lincoln</td>
<td>Aviator (2020)</td>
<td>2020</td>
<td>56,000</td>
<td>400</td>
<td>390</td>
<td>6.5</td>
<td>140</td>
<td>247</td>
<td>11.9/7.4</td>
<td>3,400</td>
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<tr>
<td>Nissan</td>
<td>LEAF (3rd Gen)</td>
<td>2018</td>
<td>34,900</td>
<td>300</td>
<td>280</td>
<td>6.9</td>
<td>140</td>
<td>244</td>
<td>11.9/7.4</td>
<td>2,900</td>
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<tr>
<td>Nissan</td>
<td>LEAF e+ (3rd Gen)</td>
<td>2018</td>
<td>35,800</td>
<td>320</td>
<td>301</td>
<td>6.9</td>
<td>140</td>
<td>244</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>Nissan</td>
<td>LEAF+ (3rd Gen)</td>
<td>2018</td>
<td>38,000</td>
<td>350</td>
<td>329</td>
<td>6.9</td>
<td>140</td>
<td>244</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>Renault</td>
<td>Koleos (2020)</td>
<td>2020</td>
<td>36,000</td>
<td>370</td>
<td>350</td>
<td>6.9</td>
<td>140</td>
<td>244</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>Stellantis</td>
<td>LG Chem (2023)</td>
<td>2023</td>
<td>39,000</td>
<td>400</td>
<td>380</td>
<td>6.9</td>
<td>140</td>
<td>244</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>Toyota</td>
<td>Prius Plug-in</td>
<td>2018</td>
<td>35,500</td>
<td>250</td>
<td>230</td>
<td>6.9</td>
<td>140</td>
<td>244</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>Volvo</td>
<td>XC90 T8 Twin Engine</td>
<td>2019</td>
<td>60,000</td>
<td>470</td>
<td>450</td>
<td>6.5</td>
<td>140</td>
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<td>11.9/7.4</td>
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<tr>
<td>Volvo</td>
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<td>64,000</td>
<td>510</td>
<td>490</td>
<td>6.5</td>
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<tr>
<td>Volvo</td>
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<td>68,000</td>
<td>550</td>
<td>530</td>
<td>6.5</td>
<td>140</td>
<td>249</td>
<td>11.9/7.4</td>
<td>3,000</td>
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</tbody>
</table>

### 24 Plug-In Hybrids From 15 Manufacturers

**Table: Plug-In Hybrid (PHEV & EREV) Car Comparisons**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>Date Released</th>
<th>Price After Tax (KRW)</th>
<th>Battery Range (Km)</th>
<th>EPA 100 Mile Range (Km)</th>
<th>0-60 acceleration (sec)</th>
<th>Top Speed (mph)</th>
<th>Peak Power (kW)</th>
<th>EPA Energy consumption combined (city/highway)</th>
<th>Weight (lbs)</th>
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<tr>
<td>BMW</td>
<td>330e Performance</td>
<td>2019</td>
<td>55,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
<td>11.9/7.4</td>
<td>3,000</td>
</tr>
<tr>
<td>BMW</td>
<td>330e xDrive (Performance)</td>
<td>2019</td>
<td>59,500</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>BMW</td>
<td>X5 eDrive (Performance)</td>
<td>2019</td>
<td>66,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
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<td>3,000</td>
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<tr>
<td>BMW</td>
<td>X3 (390i)</td>
<td>2019</td>
<td>50,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
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<td>11.9/7.4</td>
<td>3,000</td>
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<tr>
<td>BMW</td>
<td>X1 (390i)</td>
<td>2019</td>
<td>45,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
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<td>11.9/7.4</td>
<td>3,000</td>
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<td>i8 Plug-in Hybrid</td>
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<td>156,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
<td>11.9/7.4</td>
<td>3,000</td>
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<td>Ioniq Plug-in</td>
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<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
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</tr>
<tr>
<td>Hyundai</td>
<td>Ioniq Electric</td>
<td>2019</td>
<td>52,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
<td>11.9/7.4</td>
<td>3,000</td>
</tr>
<tr>
<td>Toyota</td>
<td>RAV4 Plug-in Hybrid</td>
<td>2019</td>
<td>50,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
<td>11.9/7.4</td>
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<td>RAV4 Plug-in Hybrid</td>
<td>2019</td>
<td>52,000</td>
<td>300</td>
<td>250</td>
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<td>250</td>
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<td>RAV4 Plug-in Hybrid</td>
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<td>3,000</td>
</tr>
<tr>
<td>Toyota</td>
<td>RAV4 Plug-in Hybrid</td>
<td>2019</td>
<td>62,000</td>
<td>300</td>
<td>250</td>
<td>6.9</td>
<td>140</td>
<td>227</td>
<td>11.9/7.4</td>
<td>3,000</td>
</tr>
</tbody>
</table>

**Order Over 30,000 EVs In NJ At The End Of 2019**
# Electric Vehicles Benefits

## Benefit/Cost Ratio: 2.19

**NET Benefits:** $11.3B  
(Societal Cost Test, Thru 2035)

- Vehicle “Fuel” Savings  
  (fueling costs cut in half)
- Lower Electricity Costs  
  (dilution and other effects)
- Reduced Air Pollution  
  (electric miles ~80% cleaner)

<table>
<thead>
<tr>
<th></th>
<th>EV Owner</th>
<th>Utility Customer</th>
<th>Society At Large</th>
<th>Total Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(statewide)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| $1,440 In Fuel Savings Per Year | | | | $7.5B  
  (Two Evs, 2018) |
| $12% Lower Electricity Costs | | | | $1.9B  
  (Average Usage, 2035) |
| 17,611 Fewer Pounds Of CO2/Yr | | | | $2.5B  
  (Present Value, Thru 2035) |

## Benefits Increase Strongly With Adoption, Faster EV Growth Means Bigger/Faster Benefits

(Goto [www.chargevc.org](http://www.chargevc.org) to see full study report)
New Jersey EV Law

• Signed Into Law In January, 2020
• One Of The Most Progressive EV Statutes In The Country

• Key Provisions:
  – Sets vehicle adoption goals (light duty): 330K by 2025, 2M by 2035
  – Authorizes a $300M Vehicle Rebate Program – one of the strongest in the country
  – Requires the State to set similar medium/heavy-duty goals by YE 2020
  – Reinforces The Roles Of DEP, BPU, EDA In the “Partnership To Plugin”
  – Aggressive goals for the electrification of state vehicles
  – Transition New Jersey Transit buses to “zero emission”

  – Sets Goals For Charging Infrastructure
    • At Least 400 Fast Chargers At 200 Locations
    • Corridor locations: very high power chargers along main roads
    • Community locations: high power chargers “near home and work”
    • Other low power chargers in key settings (multifamily, hotels, public, etc)
    • Public charging stations can sell electricity by the kwhr

• Key Need: High Power Fast Charging To Address “Range Anxiety”
While Most EV Charging Happens At Home, Many Drivers Will Still Need A Public Charge Occasionally.

Those “Public Charges” Need To Be Widely Available, Convenient, And FAST To Address Critical Range Anxiety Adoption Barriers.

New Direct Current Fast Chargers (DCFC) Can Fill A Typical EV-Battery To ~80% In <20 Min

Developing A Public DCFC Network Is One Of The Most Impactful Initiatives For Encouraging Widespread EV Adoption.
Public DCFC Hosting

Preferred Hosting Sites For Public DCFC:

1) The best projects are in a high traffic area along a major road, can provide nearby amenities, and are accessible.

2) Potential Host Sites:
   - Retail locations, malls, restaurants
   - Rest stops and service areas
   - Public parking areas
   - Municipal/County sites

3) Numerous Business Models and Partnership Structures Possible.

Potential Municipal Role

Municipal Role In Public Fast Charging:

1) Serve As Site Host In Municipality-Controlled Parking Areas
2) Encourage Local Private Site Hosts For Economic Development Reasons
3) Facilitating Siting and Permitting
4) Community Awareness Building

These DCFC Facilities Are Significant Projects, But The New DEP Incentive Program Will Cover Most (if not all) Of The Capital Investment, And Fees Can Be Collected From EV-Dragers For Usage.

Sponsoring Public EV-Chargers Is A Sustainable Jersey Action! (Worth 15 Points, Counts Toward Gold Certification)
Municipal Procurement

NOTE: DEP Incentive Application Deadline – June 22, 2020

• Municipal Projects Can Be Developed Through A Typical RFP Process

OR

• Members Of SourceWell (or similar aggregate buying groups) Can Secure The Needed Solution Through That Program:
  – DCFC Equipment
  – Networking, Software, And Billing Services
  – Installation (usually by electrical contractor)

• Questions: Mark@gabelassociates.com
FUNDING THE ELECTRIC VEHICLE REVOLUTION

SUSTAINABLE JERSEY 5/26/20

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

$45 million for electric vehicles and charging infrastructure

Deadline to apply: June 22, 2020
Eligible projects:

1. EV charging stations (priority: public fast chargers)
2. Heavy duty electric vehicles/equipment (priority: EJ communities)
3. Electric shared mobility programs (priority: EJ communities)

Apply at state.nj.us/dep/vw/submit.html
It Pay$ to Plug In
NJDEP’s Grant Program for EV Charging Stations

NEW!!!
Up to $200,000 per location for public DC fast chargers along major roadways.

Up to $4,000 per port for Level 2 chargers at public places, workplaces (including fleets), multi-family homes, and shared mobility. Up to $750 per port for Level 1 chargers.
It Pay$ to Plug In
NJDEP’s Grant Program for EV Charging Stations

Public DC Fast Chargers

Level 1/Level 2 Chargers
Applications considered on a first come, first served basis.

Apply at drivegreen.nj.gov/plugin.html
NJDEP’s New Public Fast Charger Incentive

Eligibility, selection criteria, and reimbursement amounts
Eligible Locations

• Located along a designated major travel corridor
  Toll roads       US highway
  Interstates     NJ state highway

• Within 1 mile driving distance from an exit or intersection

• No existing DC Fast Charging stations at the site
Eligible Projects

• Must install at least 2 charging stations at same location
  • You can install more, but we’ll only pay you for two.

• Minimum 150 kilowatts (kW) per charging station

• Available exclusively to the general public

• User-friendly: Well lit, open 24/7, accept credit cards, display pricing information

• Each charging station must have a CCS connector and a CHAdeMO connector
Selection Criteria
How we will rank DCFC proposals if we are oversubscribed

• DC Fast Charging Suitability Score
  • Proximity to amenities (restaurants, retail, etc.)
  • Traffic volume
  • Population density

• At least 25 miles apart

• Fill a coverage gap (“charging deserts”)
The map shows:
- Existing and planned DCFC locations that are compliant with the EV law for "Corridor Location"
- 25 mile buffer
- Eligible roadways
- Suitability scores

Map, eligible roads, suitability scores at
www.drivegreen.nj.gov/dg-partnership-to-plugin.html

Interactive map coming soon.
Close-up: Suitability Scores

Darker green = higher suitability score
Reimbursement Amounts and Eligible Costs

• Maximum grant is $200,000 per site
  • On government-owned property: 100% up to maximum
  • On private property: 80% up to maximum

• Eligible costs: purchase, installation, maintenance agreement (up to 5 years), network subscription (up to 5 years)
Process

• Must meet public procurement requirements (3 quotes)

• DEP must approve your application and execute a grant agreement with you before you spend any money.

• Install within 12 months (DCFC) or 9 months (Level 1 or 2)

• Receive reimbursement after installation is complete.
For Details and Application Materials

It Pay$ to Plug In – NJ’s Electric Vehicle Charging Grants

www.drivegreen.nj.gov/plugin.html

Maps, eligible roads, suitability scores

www.drivegreen.nj.gov/dg-partnership-to-plugin.html

Send questions to NJDEP Bureau of Mobile Sources
Drivegreen@dep.nj.gov
Volkswagen Settlement: Final Solicitation

$7.6 million  Electric vehicle charging stations

$37.2 million  Electric heavy-duty vehicles & equipment
Environmental Justice Communities (diesel replacements only): School buses, garbage trucks, delivery trucks, transit buses, port trucks and equipment, airport ground support equipment

Electric shared mobility projects (car share, ride hailing, etc) in Environmental Justice Communities

Details and application materials at [www.state.nj.us/dep/vw/](http://www.state.nj.us/dep/vw/)
Visit the DEP EV website for more info

Electric vehicle basics
All about charging
Choosing an EV
Choosing an EV
Charging station locator
How much will I save?
Maps and data
Grants & incentives
Multistate initiatives
Join our listserv

www.drivegreen.nj.gov
Contact me at:

Andrea Friedman
Supervisor, Electric Vehicle Programs
New Jersey Department of Environmental Protection
Andrea.Friedman@dep.nj.gov

www.drivegreen.nj.gov