Alternative Fuel Vehicles for Municipalities & Schools

Sustainable Jersey Webinar
January 11, 2018
Webinar Speakers

• Nancy Quirk, Energy Program Manager
  Sustainable Jersey

• Peg Hanna, Assistant Director
  Air Monitoring and Mobile Sources
  NJDEP, Division of Air Quality

• Michelle McCutcheon-Schour,
  Senior Transportation Analyst
  Vermont Energy Investment Corporation (VEIC)

• Brian Platt, Director
  Jersey City Office of Innovation
Sustainable Jersey Sponsors

**Program Underwriters**
- The Geraldine R. Dodge Foundation
- New Jersey's Clean Energy Program
- SURdna

**Grants Program Underwriters**
- PSEG
- Gardinier Environmental Fund

**Corporate Sponsors**
- **Platinum**
  - South Jersey Gas
  - New Jersey Natural Gas
  - PSEG
- **Gold**
  - NMJ Insurance Group
- **Silver**
  - Bayside Family of Companies
- **Bronze**
  - Greener by Design
  - Elizabethtown Gas

**Other Sponsors**
- TESLA
- AT&T
- Covanta
- American Water
Operations and Management: Fleet Actions

• Fleet Inventory Action
  – Evaluate current vehicle use
  – Fleet planning exercise

• Meet Target for Green Fleets
  – Average fleet fuel efficiency of 35 mpg OR
  – Achieve 20% reduction in fuel use within 4 years

• Purchase Alternative Fuel Vehicles Action
  – Hybrid
  – CNG
  – Propane (LPG)
  – Electric
  – Ethanol

http://www.hyattsville.org/733/Electric-Police-Vehicles
Make Your Town Electric Vehicle Friendly Action

• Required activities
  – Zoning ordinance -- EV charging stations as accessory use
  – Ordinance -- design standards for EVSE parking spaces
  – Training for local officials

• Outreach activities (must do ONE)
  – Incentive for pre-wiring for EV charging station
  – Awareness event
  – Commitment from 3 local partners for workplace chargers
  – Commitment from 3 local partners for multi-family chargers
Public EV Charging Infrastructure Action

• Required elements
  – Municipality instrumental in the project
  – Publicly available
  – Listed on “public directory”
  – Signage/Promotion of Charging Stations

• Charging station may be:
  – Located on private property
  – Owned and operated by a local nonprofit
Workplace EV Charging: *It Pays to Plug In*

- NJ DEP and NJ BPU grant program
- Workplace charging stations (public, private, educational, government)
  - Up to $250 per Level 1 Charger
  - Up to $5,000 per Level 2 Charger
- First come, first served

drivegreen.nj.gov/programs.html
Electric Vehicle Infrastructure Stakeholder Process

- NJBPU is conducting an EV infrastructure stakeholder process and welcomes public input.
- Next EV Infrastructure Stakeholder Meeting
  - January 22, 2018
  - 10 AM-12 Noon
  - NJBPU Office: 44 South Clinton Avenue, Trenton

- All public comments for the stakeholder process have been posted here: http://www.bpu.state.nj.us/bpu/agenda/stakeholdercomments.html
- To submit comments or to be placed on the distribution list, please email: evstakeholder.group@bpu.nj.gov
NJ BPU CNG Vehicle Grant Program

• The program will help fund CNG powered vehicles Class 5 through Class 8
• Application window closes at noon on April 2, 2018

• For further detail:  
  http://www.nj.gov/bpu/commercial/cng.html

• Submit applications or inquiries to:  
  BPU.CNGVehicleGrant@BPU.NJ.Gov
Funding clean air solutions in your community

New Jersey Department of Environmental Protection
Division of Air Quality
Vehicles Contribute to Ozone Pollution

Draft 2017 NOx Emissions in New Jersey

- On-Road Mobile Sources: 42%
- Non-Road Mobile Sources: 29%
- Area Sources: 20%
- Non-Electric Generation Point Sources: 5%
- Electricity Generation: 4%

Total 131,847 tons per year

Source: Draft MARAMA 2017 BETA2 Regional Modeling Inventory
Ozone (Smog) Health Effects

Healthy airway

Inflamed airway due to ozone inhalation

Ozone Health Effects

- Decreases lung function
- Coughing and chest pain
- Increases susceptibility to respiratory infections
- Permanent damage to lungs
- Promotes allergic reactions
- Death
Diesel emissions pose greatest risk of all air toxics in NJ

Diesel Particulate Matter – 91%
2011 Predicted Health Risk from Diesel Particulate in New Jersey*

Maximum predicted risk is 1,981 in a million

Source Contribution
On-Road - 37%
Nonroad - 63%

*Based on the 2011 National-scale Air Toxics Assessment (NATA)
Volkswagen Settlement (in billions)

- Zero Emission Vehicle Investment, $2
- Mitigation Trust, $3
- Vehicle Buyback & Modifications, $11
Eligible Vehicle Classes/Equipment

1. **Class 4-8 Local Freight Trucks, Port Drayage Trucks** MY 2009 and older
2. **Class 4-8 School, Shuttle or Transit Bus** MY 2009 and older
3. **Switcher Locomotives**
4. **Ferries/Tugboats**
5. **Airport Ground Support Equipment, forklifts & port cargo handling equipment**
6. **Ocean Going Vessels Shorepower**
EV charging also eligible

• Electric vehicle charging stations or hydrogen filling stations

• Also remember: It Pay$ to Plug In

www.drivegreen.nj.gov/programs.html
Funding amounts

• Up to 100% if repower/replace a government owned vehicle with diesel, CNG, propane, hybrid or all electric
  • Associated charging infrastructure is eligible expense
  • Vehicle being replaced must be scrapped.

• Up to 100% to purchase, install and maintain light duty EV charging stations that are publicly accessible at government owned property

• 25-33% to purchase, install and maintain hydrogen fueling stations available to public
VW Mitigation Actions and Electric Vehicle Technology

Michelle McCutcheon-Schour, VEIC
Transportation Efficiency

January 11, 2018
Agenda
1. About VEIC
2. Why Electric
3. Electric Vehicle Opportunities with Volkswagen Funding
4. Resources
VEIC
A mission driven non-profit.

Since 1986 reducing the economic and environmental costs of energy use.
About VEIC

- Comprehensive approaches, high-impact results
- Team focused on transportation
- National and international clients
- Program design and evaluation
- Transformative policy, advocacy, and research
- Clients: government agencies, regulators, utilities, foundations, and advocates
Why Electric?

Electrification is critical strategy for reducing transportation emissions

- Zero tailpipe emission
- Electric grid continues to get cleaner
- Improves health
- Improves equity

Other Benefits

- Keeps money local
- Fuel security benefits
- Lower operating costs

Source: Draft MARAMA 2017 BETA2 Regional Modeling Inventory
VW Settlement: An Opportunity to Electrify Transportation

• Heavy Duty Diesel Vehicles can last 30 years or more

• 30 years of purchasing diesel fuel

• 30 years of diesel emissions

Photo courtesy EPA Wikimedia Commons
Electric Vehicle Opportunities with Volkswagen Funding
Technology Highlight: Electric School Buses

- School buses eligible for 100% funding through the trust (including infrastructure)
- Developing and maturing market
  - Current models available include Type A and Type C.
  - Type D models will be available in late 2018/early 2019
- VEIC Case Studies –
  - Massachusetts Electric School Bus pilot project
  - Vermont Electric School Bus feasibility study
Technology Highlight: Electric Transit Vehicles

- Relatively mature market
  - Successfully deployed across the country
  - Multiple models available from Build Your Dream Motors (BYD), Proterra, Gillig, New Flyer, Nova Bus, and Complete Coach Works
- Charging can be done on route or at depots.
- Lower fueling and maintenance costs.
- VEIC Case Studies
  - Martha Vineyard’s Transit Authority
  - Green Mountain Transit
  - UVM
  - Advance Transit
Electric Vehicle Technology Operational Benefits & Challenges

- Compared to diesel, electric vehicles have a higher purchase price but lower operational costs.
  - Fuel cost stability & savings
  - Reliability & lower maintenance costs

- New fueling practices and infrastructure
- Mechanical training

Average electric price over the last 18 years.

Source: Alt Fuels Data Center
Deploying Electric Vehicles: Keys to Success

- Engage external and internal partners early including your utility and facility director.
- Understand your electric bill and plan for charging accordingly.
- During the planning process include key staff including mechanics and drivers.
- Create a charging and operation plan.
- Take a close look at the manufacture agreement including the battery warranty and training support.
- Understand your route needs and purchase battery size accordingly.
Other Resources

- VEIC’s Electric School Bus Page – www.veic.org/eschoolbus
- NASEO Volkswagen Settlement Toolkit - http://www.naseo.org/volkswagen-settlement
Case Study: Electric Car Charging Stations in Jersey City

Brian Platt
Director, Jersey City Office of Innovation
BPlatt@jcnj.org

@BrianDavidPlatt  @briandavidplatt
Rationale for Electric Car Charging Stations

1. Growing demand
   - Citywide focus on energy efficiency (government and citizens)
   - Residents already purchasing electric vehicles
   - Local developers and property owners installing infrastructure on private property

2. Expanded accessibility
   - Electric cars are becoming more accessible and available
   - More new funding sources (e.g. VW Settlement Funds)

3. Infrastructure is missing link
   - Limited in-home charging options for those using on-street parking
   - No existing infrastructure for municipal vehicles

NOTE: Upstream energy delivery still depends on fossil fuels
Existing pilot project on 1\textsuperscript{st} Street in Jersey City

Greenspot Project, 148-160 First Street Jersey City, NJ

- Project managed locally by Greenspot
- 10 charging stations (9 level 2, 1 DC fast)
- Networked charging stations provided by Chargepoint
- Currently utilizing 4 Maven (Chevy Volt) electric cars for car sharing
- Privately installed and maintained by developer
Electric Car Charging Infrastructure Process Overview

1. Community engagement and feedback
   - Is there a desire/need? If so what and where?

2. Electric Car Charging Parking Zone
   - Reserved parking only for actively charging vehicles
   - Distributed throughout all communities

3. Identify appropriate locations
   - Car sharing? Solar panels? Cost/revenue sharing?

4. Other ancillary benefits/services/revenues

5. RFP for charging station infrastructure
   - To be released in February 2018
In September and November 2015, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) alleged that Volkswagen had secretly installed defeat devices – software designed to cheat emissions test and deceive federal and state regulators – in certain Volkswagen, Audi and Porsche-branded turbocharged direct injection diesel vehicles. The defeat device renders the subject vehicles’ emissions controls inoperable unless the vehicles are undergoing emissions testing. It was only by installing the defeat device that Volkswagen was able to obtain Certificates of Conformity from USEPA and Executive Orders from CARB; in reality, these vehicles emit oxides of nitrogen (NOx) up to 40 times the USEPA-permitted limit.

On October 25, 2016 and May 17, 2017, two Partial Consent Decrees were approved between the United States, California, and the defendants (Volkswagen Corporation and its subsidiaries). The purpose of the Decrees is to address installation and use of emissions control defeat device software. The use of the defeat devices has resulted in increased emissions of NOx in New Jersey and throughout the United States. NOx significantly contributes to the formation of ground level ozone which negatively impacts the respiratory system and cardiovascular health. One of the goals of the Partial Consent Decrees is to offset the excess NOx emissions.

The Partial Consent Decrees establish an Environmental Mitigation Trust (“Trust”) which will provide funds to all fifty states, the District of Columbia, Puerto Rico and federally recognized tribes, to implement actions to counter the air quality impacts of the excess NOx emissions resulting from the use of the defeat devices. The initial allocation amount to the State of New Jersey is approximately $72.2 million.
To enter information electronically use Adobe Reader

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<th>CONTACT INFORMATION</th>
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<tbody>
<tr>
<td>Organization Name</td>
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<td>Organization Address</td>
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<td>City, State Zip Code</td>
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<td>Contact Person</td>
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**PROJECT NAME**

**PROJECT CATEGORY OR CATEGORIES** (choose from 1-9 in “Eligible Projects” section above)

1  2  3  4  5  6  7  8  9

3  6

**PROJECT PRIORITY**

Priority # ___ of ___ proposals

If submitting more than one proposal, what is the sponsor’s priority of this proposal?

**PROJECT BUDGET**

Provide total estimated project budget, include source and amount of cost share if applicable.

Due January 31
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<thead>
<tr>
<th>PROJECT DESCRIPTION (Briefly describe the project by completing the following questions)</th>
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<tr>
<td>Geographic area where emissions reductions will occur?</td>
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<td>Estimated size of population benefitting from the emission reductions?</td>
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<td>Estimated useful life of the project?</td>
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<td>Number of engines/vehicles/vessels/equipment included in the project?</td>
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<tr>
<td>Estimated emission benefits should be expressed in tons per year (TPY) of emission reduced for NOx and for PM 2.5 over the lifetime of the project. Identify methodology used.</td>
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<tr>
<td>Estimated NOx benefits?</td>
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<td>Methodology Used?</td>
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<tr>
<td>Particulate matter (PM 2.5) benefits?</td>
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<tr>
<td>Methodology Used?</td>
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<tr>
<td>Will the project benefit one or more communities that are disproportionately impacted by air pollution? If so, please describe.</td>
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Project partners, if any?
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<th>Question</th>
<th>Answer</th>
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<tr>
<td>Explain how the project will provide cost effective and technically</td>
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<tr>
<td>feasible emission reductions. Cost effectiveness should be expressed</td>
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<td>in dollars per ton per year of emissions reduced for NOx and PM 2.5.</td>
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<td>Estimated timeframe for implementation? Include a project timeline that</td>
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<td>identifies start and end dates, as well as the timeframe for key</td>
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<td>milestones.</td>
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<td>Demonstrated success in implementing similar projects?</td>
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<td>If your proposed project involves alternative fuels, provide a</td>
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<td>demonstration of current or future plans to provide adequate refueling</td>
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<td>infrastructure.</td>
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<td>Has your organization been approved to receive and expend any other</td>
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<td>grant funds related to this project? If so, please provide details.</td>
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Questions?

Peg Hanna, Asst Director
NJDEP Division of Air Quality
Peg.Hanna@dep.nj.gov
vwcomments@dep.nj.gov (preferred)

(609) 292-7953
PSEG Sponsored Grant Opportunities

The PSEG Foundation is contributing $300,000 to support the Sustainable Jersey Small Grants Program for municipalities and schools. Funding supports efforts to implement projects that help municipalities and schools gain points needed for Sustainable Jersey certification and make progress toward a sustainable future.

**SCHOOL GRANTS:** Deadline February 9th

**MUNICIPAL GRANTS:** Deadline February 28th

Project based and capacity building grants available from $2,000 - $20,000
Sustainable Jersey Training & Upcoming Certification Deadlines

MUNICIPALITIES:
Upcoming Webinars:
“Moving Up to Silver Certification” January 31st 1-2pm
“Stay in the Game! Strategize Your Recertification” February 7th 1-2pm
“Making a Game Plan for Getting Certified” February 21st 1-2pm

SCHOOLS:
1st Certification Application Deadline: Friday, January 19th
New Jersey Mayors Climate Summit

February 3, 2018
Rutgers Bloustein School of Planning and Public Policy
New Brunswick, NJ

• Hosts:
  • Mayor Phil Kramer, Franklin Twp
  • Mayor Bruce A. Harris, Chatham Borough
  • Sustainable Jersey
  • New Jersey League of Conservation Voters Education Fund
  • Rutgers University Bloustein School of Planning & Public Policy

REGISTER
Atlantic/Cape May HUB Event

SHARING positive ENERGY

Wednesday, February 21, 2018
6 to 8 PM
NJM Insurance Group
840 12th Street
Hammonton, NJ

RSVP: bit.ly/ACMEnergy
Sustainable Jersey Support

• Technical Support
  – Samantha McGraw: 609-771-2938; info@sustainablejersey.com

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