LION ELECTRIC

State of New Jersey
Department of Environmental Protection

Project Solicitation

LION

New Jersey Volkswagen Environmental Mitigation Trust Program

STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Project Solicitation

RE: Hanover Park Regional High School District DOE – Electric School Bus Project

Hanover Park Regional High School District BOE
75 Mount Pleasant Ave, East Hanover, NJ, 07936

To whom this may concern,

Hanover Park Regional High School District DOE appreciates the opportunity to present our response for the grant funding opportunity with the New Jersey Volkswagen Environmental Mitigation Trust Program for a chance to be selected for ten (10) all-electric Type C school buses. Hanover Park is responding to this Project Solicitation with the hope to accelerate adoption and deployments of zero-emissions vehicles in New Jersey and improve the lives of our students, faculty as well as citizens of New Jersey state.

The Hanover Park Regional High School District consists of two high schools – Hanover Park and Whippany Park. The district is located in Morris County, 25 miles west of Newark in the greater New York metropolitan area. Although predominantly residential in character, the district includes a number of major corporations and research laboratories as well as many retail businesses. Hanover Park opened in 1956 and serves the Townships of East Hanover and Florham Park. In 2013 the Hanover Park Regional High School District was named a National District of Character by the Character Education Partnership (Character.org) and received a re-designation in 2018. Hanover Park was also designated as a State School of Character by the New Jersey Alliance for Social and Emotional Character Development (NJASECD), and currently serves as a North Regional Network School.

For the deployment of our all-electric school buses, Hanover Park Regional High School District DOE will be partnering with the Lion Electric Co. (Lion) to service the region of Morris County. As a member of the East Hanover board of Education, which partners with the Florham Board of Education, one bus would operate on a four-tiered system, servicing students K-12. In total, one bus would transport up to 200 students per day. In addition to being used for day-to-day transportation, the buses would also be used for extra-curricular activities.

To date, our partner the Lion Electric Co. has over 300 electric school buses deployed in North America, with 6,000,000 proven and driven miles on its current batteries, electric components and heavy-duty chassis as well as all the associated performance data. Designing, building and delivering electric heavy-duty vehicles is something Lion does daily; their experience and success transfers to Hanover Park Regional High School District DOE by way of measurable performance, real-life client references, 100% on-time deliveries and way beyond the "early adopter" experience.

Hanover Park Regional High School District DOE strongly supports the Volkswagen Project Solicitation and thanks the New Jersey Department of Environmental Projection for its work to date on zero-emission vehicle implementation. We hope that our response will successfully demonstrate that Hanover Park Regional High School District DOE and Lion can fulfill New Jersey's goals by delivering and operating quality, zero-emission vehicles in a short amount of time.

We look forward to working with the New Jersey Department of Environmental Projection to implement this project.

Sincerely,

Chris Bluett
Director of Transportation
Hanover Park Regional High School District DOE

State of New Jersey
Department of Environmental Protection

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. McCABE
Commissioner

PROJECT PROPOSAL

OVERALL GOAL

The State of New Jersey, as a beneficiary of the Trust established pursuant to the national Volkswagen settlement, intends to use its allocation from the mitigation trust to efficiently implement projects that reduce oxides of nitrogen (NOx) emissions in a cost effective and technically feasible manner. The implemented projects must meet the criteria of the Consent Decree. New Jersey is issuing this solicitation for project ideas to ensure a broad range of project ideas are considered.

NJDEP anticipates primarily funding pilot electrification projects, including the replacement of heavy-duty vehicles/engines such as buses, trucks, and non-road equipment in urban areas disproportionately impacted by diesel emissions, as well as electric vehicle charging/fueling infrastructure installation in strategic locations across the state.

Submissions must contain all the information outlined in the "Project Proposals" section of this document.

ELIGIBLE PROJECTS

A general summary is below. Click here for comprehensive list and associated definitions.

Source Category	Emission Reduction Strategy	Allowed Expenditure Amount
1. Class 8 local freight trucks & port drayage trucks	Repower and replacement	Up to 40% for repower with diesel or alternative fuel or up to 75% (up to 100% if government owned) for repower with electric. Electric charging infrastructure costs are an eligible expense. Up to 25% for replacement with diesel or alternative fuel or up to 75% (up to 100% if government owned) for electric replacement. Electric charging infrastructure costs are an eligible expense.
2. Class 4-8 school bus, shuttle bus or transit bus	Repower and replacement	Same as row 1
3. Freight switching locomotives	Repower and replacement	Same as row 1
4. Ferries/Tugs	Repower	Same as row 1
5. Oceangoing vessels	Shorepower	Up to 25% for shore side infrastructure if non-government owned (up to 100% if government owned)

Source Category	Emission Reduction Strategy	Allowed Expenditure Amount
6. Class 4-7 local freight trucks	Repower and replacement	Same as row 1.
7. Airport ground support equipment	Repower and replacement	Up to 75% to repower or replace with electric (100% if government owned). Electric charging infrastructure costs are an eligible expense.
8. Forklifts and Port Cargo Handling Equipment	Repower and replacement	Up to 75% to repower or replace with electric (100% if government owned). Electric charging infrastructure costs are an eligible expense.
9. Electric vehicle charging stations or hydrogen fueling stations for light duty vehicles only		Up to 100% to purchase, install and maintain infrastructure if available to public at *government owned* property. Up to 80% to purchase, install and maintain infrastructure if available to public at *non-government owned* property. Up to 60% to purchase, install and maintain infrastructure at a workplace or multi-unit dwelling that is not available to the general public. Up to 33% to purchase, install and maintain infrastructure for publicly available hydrogen dispensing that is high volume or 25% for lower volume.

PROJECT PROPOSALS (Open with Adobe Reader)

Electronic submittals are preferred and should be sent to VWComments@dep.nj.gov, however paper submittals will also be accepted and should be sent to:

NJDEP
Division of Air Quality
Mail code 401-02E
Trenton, NJ 08625-0420
Attn: VW Settlement

All proposals must contain the following information; incomplete applications will not be considered. If your project is selected, you may be contacted for additional detailed information. Send questions to VWComments@dep.nj.gov

To enter information electronically, use Adobe Reader

CONTACT INFORMATION

Applicant Name	Hanover Park Regional High School District BOE
Applicant Address	75 Mount Pleasant Ave
City, State, Zip Code	East Hanover, New Jersey, 07936
Contact Person	Chris Bluett
Title/Position	Director of Transportation
Phone	(973) 887-4505
E-mail	cbluett@hpreg.org
Owner Name	Hanover Park Regional High School District BOE
Owner Address	75 Mount Pleasant Ave
City, State, Zip Code	East Hanover, New Jersey, 07936
Contact Person	Chris Bluett
Title/Position	Director of Transportation
Phone	(973) 887-4505
E-mail	cbluett@hpreg.org

PROJECT NAME	Hanover Park Regional High School District BOE - Electric School Bus Project

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

1 ☐ **2** ■ **3** ☐ **4** ☐ **5** ☐ **6** ☐ **7** ☐ **8** ☐ **9** ☐

PROJECT PRIORITY Priority # 1 of 1 proposals
If submitting more than one proposal, what is the sponsor's priority of this proposal?

NOTE FOR CATEGORY 9 PROPOSALS

If your proposal is for Category 9 (Light Duty Zero Emission Vehicle Supply Equipment), follow these instructions:

Electric Vehicle stations: Do not complete this form. Instead, go to *It Pay$ to Plug In* – NJDEP's Electric Vehicle Charging Grants Program, and apply for a Charging Grant. Volkswagen funds for charging stations will be administered through *It Pay$ to Plug In*.

Hydrogen fuel cell vehicle supply equipment: Complete all of the questions on this form.

PROJECT BUDGET
Provide total estimated project budget, include source, amount of cost share, and administrative costs if applicable:
The amount of grant request is 100%.
The total estimated project budget will be $4,173,020.00, for the purchase of 10 all-electric school buses, 10 charging stations, and the cost of the charging infrastructure installation.

PROJECT DESCRIPTION (Briefly describe the project by completing the following questions)

The Hanover Park Regional High School District BOE Electric School Bus Project will see 10 diesel school buses, from our current fleet, scrapped and rendered inoperable. These school buses will then be replaced with 10 all-electric, zero-emission, Type C school buses from The Lion Electric Co. For the purposes of this application we have included the necessary information for each vehicle that we will be scrapping on a separate PDF page further down in the application. Below you will find the information for 1/10 buses that we will be scrapping.

Geographic area where emissions reductions will occur? Morris County

Estimated size of population benefitting from the emission reductions? 491,000

Estimated useful life of the project? minimum of 15 years

Number of engines/vehicles/vessels/equipment included in the project? ten (10) all-electric school buses

DEP will be modeling emission benefits for all projects. Please provide the necessary information below:

Model Year Bluebird C-7, 2004

Horsepower 210

Annual hours of use 1,080

Annual amount of fuel used 2,500

Will the project benefit one or more communities that are disproportionately impacted by air pollution? If so, please describe?

The project will benefit the following communities: East Hanover, Florham Park, and Hanover Township. Although the air quality in the State of New Jersey has improved, it still ranks among the worst in the nation because of high concentrations of ground-level ozone pollution, according to the American Lung Association. In 2017 Morris County was ranked as the last of 11 counties, in New Jersey that have the worst air pollution levels. We were given an "F" grade and had 10 unhealthy "orange alert" days, those in which the air quality is considered unhealthy for children, active adults, and anyone with asthma or other respiratory ailments. To this day, our "F" grade still stands, and we had a total of 10 "orange alert" days in 2019. Looking at the report card that the American Lung Association published for Morris County, we have approximatively 104,322 children under the age of 18, and of this group 7,559 of these children suffer from pediatric asthma.

Only shovel ready projects will be considered. Please list project partners.

The following project partners will be involved in this project: Hanover Park Regional High School District BOE, The Lion Electric Co. - original equipment manufacturer, Clipper Creek - electric vehicle charging infrastructure vendor, and The Lion Electric Co. licensed dealer - H.K. Truck Center.

Estimated timeframe for implementation? Include a project timeline that identifies start and end dates, as well as the timeline for key milestones.

Project Period // We will take possession of our vehicles 180 days after our purchase order has been emitted to The Lion Electric Co. licensed dealer for the purchase of ten (10) Lion C all-electric school buses. Lion is committed to deliver quality products as quickly as possible based on the grant response.

Demonstrated success in implementing similar projects?

As these will be our first zero-emission vehicles we are very confident in our equipment manufacturer, The Lion Electric Co., capabilities and proven delivery record in implementing and demonstrating success with similar projects.

Lion has deployed over 300 electric school buses, with more than six million miles of service and counting, including leading the world's largest deployment of zero-emission school buses in the US. They are global leaders in commercializing zero-emission heavy-duty vehicles and the only manufacturer to have proven capable of Vehicle-to-Grid. Lion is in a unique position to have operating data and a history of advancing technology as other OEM's are just beginning their zero-emission journey. Students across America ride Lion buses safely to-and-from school when it is in session. Lion is the most experienced in the deployment of heavy-duty electric vehicles field from infrastructure support, to service, to on-time delivery.

If your proposed project involves alternative fuels, provide a demonstration of current or future plans to provide adequate refueling infrastructure.

We are currently only operating diesel and gasoline school buses, and so these vehicles will be our first zero-emission options. We do not currently have adequate charging infrastructure to power the new all-electric buses and will therefore request funding support from the Department of Environmental Protection to purchase and install these units. As per the project requirement, we will scrap ten (10) diesel school buses and replace them with ten (10) all-electric school buses, we have plans to install ten (10) charging infrastructure stations so that the buses will have access to the required electricity they need.

To note, the project budget presented in this proposal includes the following estimated costs: charging station unit, as well as the costs to install the charging station infrastructure. Through the help of our project partners, they have provided us with these estimations for the purposes of this application. However, we are aware that based on our utility and the site we would choose for the placement of the charging stations, these numbers could vary. Should the New Jersey Department of Environmental Protection award a grant to us for this project we would like to include all of these costs in the funds allocated to us.

Has your organization been approved to receive and expend any other grant funds related to this project? If so, please provide details.

We will solely apply for this funding opportunity to replace our diesel vehicles with all-electric school buses.

Please provide any additional information that supports this project.

These zero-emission school buses will fit perfectly into our daily operations because they will mimic what the scrapped diesel buses would have accomplished but without the extra fumes and incurred costs. The buses will charge overnight during non-peak hours as well as mid-day, in-between service for about four hours, therefore reducing our operational costs.

During a pre-COVID-19 school year one bus would travel around 85 miles and would be in operation roughly six hours per day. Understanding that changes may be coming to the 2020-2021 school year, we are confident that the Lion buses we would like to purchase factor in potential changes to the established school day and will go above and beyond our needs.

The utilization of these new school buses will also reduce our maintenance costs by about 60% and our energy cost up to 80%, based on our preliminary evaluation. This is since the buses have no fuel, no transmission and very few moving parts. With the help of the New Jersey Department of Environmental Protection, our return on investment will occur in a minimal timeframe while allowing us to significantly reduce greenhouse gas emissions while providing economic and environmental benefits to our community. In fact, one bus will reduce the amount of CO_2 in the air by approximately 25 tons per year and will also reduce the noise pollution in the area.

As we are a school district that operates our vehicles year-round, the diesel school buses that are currently in use contribute to the air pollution in our community, and to the number of "orange alert" days in the county, which typically fall in June and September. That being said, we wish to see this number drastically reduced and are committed to the electrification of our fleet. Our hope is that with the purchase of these buses, we will one day have little to none unhealthy air days.

Two additional pages have been provided as supplemental space to answer any of the questions above.

Supplemental Page 1

We have chosen to partner with The Lion Electric Co. licensed dealer in the state of New Jersey, to bring ten purpose built all-electric Lion school buses to our community, thus ensuring zero emissions throughout the state. Lion builds their own chassis, body, battery packs and design their own proprietary operating software. The buses are not retrofitted diesel vehicles, they are born to be electric.

Investing in a Lion vehicle will allow us to track our progress by calculating our average consumption through the smart charging system, and collect data through the onboard telematic touchscreen, which is unique to Lion vehicles. The operator will simply select their charging preferences through the screen to maximize charging efficiency. The onboard touch screen will serve many purposes to our operators: it registers power usage, driving efficiency through the driving interface, maintenance interface, battery state, charging interface, parameters, smart charge, and preheat. All information on the onboard touchscreen is recorded and can be extracted as a report on a regular basis to perform multiple analyses and to understand each electric bus efficiency and cost.

The vehicles are also equipped with electronic modules that monitor and record data from various systems, including the motor, batteries, braking, and electrical systems. The electronic modules record information about various driving and vehicle conditions, including braking, acceleration, trip and other related information regarding the vehicle. These modules record information about the vehicle's features such as charging events and status, the enabling/disabling of various systems, diagnostic trouble codes, VIN, speed, direction, and location.

The success of the project will be enhanced by the number of miles driven per year on the all-electric buses. The more we will use the buses, the more we will save and the better it will be for our environment and community. We will be the grantee of this grant and will operate the buses daily while analyzing the reports generated by the vehicles.

In most cases, electric school buses are new for school districts and training is necessary to help bridge the knowledge gap from diesel to electric. To ensure that our operators are comfortable using the new all-electric school bus, they will take part in the Lion Academy Training Program. The training program will be available to a wide range of stakeholders, and most importantly our transportation professionals. The training curriculum will be extremely detailed and can last up to six hours to ensure that all parties are comfortable working on the buses once they are delivered and operational. The interactive classes cover various topics such as safety, troubleshooting, electric chargers, EV components, maintenance, repairs, warranty work, driver tips, accessories, etc.

Conclusion//

As leaders in manufacturing and deploying zero-emission school buses and charging infrastructure equipment, The Lion Electric Co., their licensed dealer, and Clipper Creek, are poised to immediately support the Hanover Park Regional High School District BOE in our desire to scrap old, polluting diesel buses and replace them with zero-emission all-electric school buses, along with the necessary charging.

Having a shared goal of improving air quality and the health of children in all communities is what best aligns us and our project partners. Not only do our partners value focus on safety and reliability, but also the health of the communities we serve. They have invested early and deeply to develop a zero-emission technology that supports the communities in which we serve and live.

With help from the Department of Environmental Protection this program will help us to permanently remove the previously mentioned highly pollutant diesel vehicles that are currently operating in our fleet, which our students, faculty and community are presently exposed to. Additionally, it will give us the opportunity to pave the way for other educational institutions to join the electrification movement.

We would like to thank the Department of Environmental Protection in the State of New Jersey for allowing us to submit a project proposal for the Volkswagen settlement funds. We look forward to working with this Department so that we may be able to provide a healthy breathing environment to students, faculty and the communities we serve.

Fleet Spreadsheet

See attached

Hanover Park Regional High School District BOE
New Jersey Department of Environmental Protection - Volkswagen Mitigation Application
Fleet Spreadsheet

Existing Vehicle					Replacement Vehicle				
Vehicle Number	Model Year	Horsepower	Annual Hours	Annual Fuel	Replacement Model Year	Replacement Fuel Type	Replacement Cost	Charging Infrastructure	Funding Request
1	2004	210	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
2	2004	210	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
3	2004	210	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
4	2004	210	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
5	2005	210	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
6	2006	210	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
7	2007	190	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
8	2007	190	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
9	2007	190	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
10	2007	190	1,080	2,500 gallons	2021	All-electric	$ 407,302.00	$ 10,000.00	$ 417,302.00
						Totals:	**$ 4,073,020.00**	**$ 100,000.00**	**$ 4,173,020.00**