



**NEW JERSEY CHAPTER**  
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## **BUYERS GUIDE TO PURCHASING ELECTRIC SCHOOL BUSES**

There are numerous ways to purchase electric school buses for school districts that operate their own school bus fleet.

Options include purchasing outright, financing a purchase over a number of years (typically 5 with an option to buy or sell at the end of the financing period), or turnkey lease or subscription services. Districts can negotiate various leasing or financing arrangements by working with their dealers.

When purchasing an electric school bus, other costs to consider are the purchase of charging stations and energy management systems (EMS) and hiring an electrical contractor to install the charging stations and connect the service to the utility.

### **PURCHASE v. LEASE**

Buses can be procured outright using a combination of district funds and grants from the state. These buses can be purchased directly by the district from the manufacturers or local dealers, or through contracts negotiated by buying cooperatives such as the Hunterdon County Educational Services Commission (HCESC) or the Educational Service Commission of NJ (ESCNJ).

Buying through the ESC's is easier and less time consuming, in that the District does not need to go through a separate bid process. However, this limits the District to a single bus manufacturer, and prices for buses purchased through the ESC may be higher than the District can obtain in direct negotiation with the manufacturer and dealer. For example, HCESC's offerings provides for a 25% discount from list, but offers a bulk purchase discount of only \$100/bus when two buses or more electric school buses are purchased.

Putting out a bid for a generic bus may allow for price competition between different manufacturers, but obviously is more time consuming and resource intensive for the District.

In either case, the District is advised to bundle the buses, charging stations, and EMS as a package; this will ensure that the three components are compatible with each other.

The District should also rely on the dealer to recommend an electrical contractor who has the right technical expertise and experience with installing the charging stations and high voltage utility hook-ups. The contractor will work with the local utility to bring the necessary high voltage service to your bus yard, and help determine how to do so in a way that facilitates future expansion at the lowest cost.

The manufacturer or dealer should also provide all necessary training for bus operators, maintainers, maintenance supervisors, and local emergency response personnel.

As with any large purchase, a maintenance contract, including a spare parts inventory, is advised.

## **SUBSCRIPTION SERVICES**

There are firms that provide turnkey subscription deals. For example, Montgomery County in Maryland recently announced a 10 year deal to acquire 326 electric school buses using this model.

In these arrangements, a private company will design the system; purchase the vehicles, the charging stations, and appropriate energy management software; hire an electrical subcontractor; interface with the utility company; install the charging stations and complete all the necessary hookups, training, and software configuration. Regularly scheduled and routine maintenance is also included in these contracts. One company will even contract back with the school district for routine and scheduled maintenance work, ensuring that existing maintenance staff continues to be employed by the district; school bus drivers remain district employees.

Liability insurance continues to be the responsibility of the district.

Each of the companies providing these services has a different billing procedure; these are described later in this document.

For contracts that envision replacing the entire fleet of buses, their purchase will typically be phased in over the 10 year term of the lease.

Districts need to do a thorough evaluation of the life cycle costs and benefits of entering into a turnkey lease deal compared to outright purchase, paying particular attention to what happens at the end of the contract term. If the district does not renew the contract, the ownership of all vehicles, charging stations and energy management systems remains with the lessor. The district should ensure that the contract clearly defines the options for continuing operations at the end of the contract term.

## **ENERGY MANAGEMENT SYSTEMS**

Energy Management Systems are a critical component of the electric school bus procurement process. This software manages the charging process to ensure that buses are charged at the appropriate times to minimize demand and peak power surcharges, thus holding down electricity costs. EMS can also manage Vehicle 2 Grid or Vehicle 2 Building systems, in which excess power stored in the bus battery can be resold to the utility company or used to power air conditioning or lighting systems in the school buildings. These systems are typically third party products that the manufacturer or lessor will bundle with the buses and charging stations to ensure total compatibility.

## **UTILITY CONNECTIONS**

Unfortunately, connections to the local utility company are often a major roadblock to putting electric school buses into service. A fleet of electric school buses require higher voltage service than is typically delivered to a bus facility, and due to recent Covid related supply chain issues, there may be a long wait time for the necessary service to be delivered.

Your electrical contractor, in conjunction with your dealer, can help define how much power capacity the utility needs to deliver. As demand charges are based on peak capacity, it may be wise to slowly scale up the power capacity as you build your fleet.

## V2G and V2B EXPLAINED

V2G stands for Vehicle to Grid, and V2B stands for Vehicle to Building, two ways in which stored electricity in the bus's battery can be used to obtain additional revenue or to reduce the use of utility electricity in school buildings. In these scenarios, the electric charging station is configured to allow bi-directional flow of power to and from the vehicle and either the utility grid (V2G) or the school campus (V2B).

Buses that are fully charged and sitting idle in the bus yard can be programmed to feed their stored energy back to grid, in which case the school district earns revenue from the utility or sees a reduced payment to the subscription company. In a V2B arrangement, the energy is fed back to the district's building(s) to help run air conditioning, lighting and other electrical loads, thereby reducing the amount of electricity purchased from the local utility company.

The buses' batteries are then recharged prior to being placed into route service.

If the district intends to employ V2G or V2B, this should be specified when the charging stations are purchased, as the charging stations need to be designed for bi-directional power flow.

**DISCLAIMER:** The Sierra Club New Jersey Chapter neither endorses nor recommends any specific products, manufacturers, dealers, lessors or purchase arrangements. The following list of companies is provided for informational purposes only. The NJ Sierra Club is solely responsible for the content of this document. While we have attempted to confirm and verify all information, school districts should contact the appropriate companies and sales reps for current updates to their offerings.

# ELECTRIC SCHOOL BUS MANUFACTURERS AND DEALERS

## THOMAS BUILT BUSES

**Dealer: Brandon Lewis** Mobile # 908-509-4287  
**Electric Vehicle and Business Development Specialist**

**H.A. DeHart & Sons, Inc.** Office: 856-845-2800  
311 Crown Point Road Fax # [856-845-2461](tel:856-845-2461)  
Thorofare, NJ 08086

[brandon@hadehart.com](mailto:brandon@hadehart.com)  
[www.hadehart.com](http://www.hadehart.com)  
[www.thomasbusnj.com](http://www.thomasbusnj.com)

Thomas Built Buses may be purchased through the Hunterdon County Educational Services Commission Co-op. Thomas Built offers numerous leasing and financing options.

## BLUE BIRD BUSES

**Dealer: Richard Weber Jr.** Mobile: 908-202-2317  
**Electric Vehicle, Truck and Commercial Bus Sales**

**Hoover Truck & Bus Centers** Office: 973-347-4210  
149 Gold Mine Road Fax: 973-347-0170  
Flanders, N. J. 07836

[r.weberjr@hoovertruckcenters.com](mailto:r.weberjr@hoovertruckcenters.com)  
[Heavy Duty Truck and School Bus Dealer - Hoover Truck and Bus Centers](http://www.hoovertruckcenters.com)  
[Home \(blue-bird.com\)](http://www.blue-bird.com)

Blue Bird Electric School Buses are expected to be added to the ESCNJ list of contracts in the first quarter of 2022. Blue Bird does not offer lease or financing opportunities, but does offer a subscription service (see next section.)

## LION ELECTRIC BUSES

**Dealer:**        **Henry Knabe**  
                      General Manager

One number dialing: 908-427-4332 x 505

**H.K. Truck Center**  
2624-A Hamilton Blvd  
South Plainfield, NJ 07080

Office: 908-754-3330

[henryk@hktruck.com](mailto:henryk@hktruck.com)

[info@hktruck.com](mailto:info@hktruck.com)

[Lion Electric - HK Truck Center](#)

[The Lion Electric Co. | Electric School Bus](#)

Lion Electric buses are not available at either of the state's buying cooperatives. Lion partners with a 3<sup>rd</sup> party finance group to provide lease and finance options. The company also has a Grant Team to assist customers with identifying and applying for grant funding opportunities, and will help design and configure your charging infrastructure.

# ELECTRIC SCHOOL BUS SUBSCRIPTION SERVICES

## HIGHLAND ELECTRIC ADVISORS

Highland Energy Advisors sells what they call a “subscription service” in which they will provide a total package of buses, charging stations, EMS, and manage the integration with the utility company on a per bus annual charge. The usual contract term is 10 years. Highland retains ownership of all equipment at the end of the lease period unless other arrangements are negotiated. Payments are based on the number of buses in service.

**Contact:**      **Barry Bambo**  
Mid Atlantic Regional Business Manager

**Highland Electric Fleet**  
200 Cummins Center, Suite 273-D  
Beverly, MA 01915                      Mobile: 973-508-6451

[barry@highlandfleets.com](mailto:barry@highlandfleets.com)  
[Home | Highland \(highlandfleets.com\)](#)

## BLUE BIRD BUSES

Blue Bird offers turnkey a subscription service in partnership with InCharge Energy. Similar to Highland Electric, they will survey your property and design, purchase, install and configure your electric bus fleet. Depending on how the contract is structured, the payments are based on either on vehicle miles traveled or Kwh usage within the billing period. The typical time frame is 10 years. At the end, the district or contract bus company can buy back the equipment for continued use or continue the contract.

**Dealer:**      **Richard Weber Jr.**  
Electric Vehicle, Truck and Commercial Bus Sales

**Hoover Truck & Bus Centers**      Office: 973-347-4210  
149 Gold Mine Road                      Fax: 973-347-0170  
Flanders, N. J. 07836                      Mobile: 908-202-2317

[r.weberjr@hoovertruckcenters.com](mailto:r.weberjr@hoovertruckcenters.com)  
[Heavy Duty Truck and School Bus Dealer - Hoover Truck and Bus Centers](#)  
[Home \(blue-bird.com\)](#)

**Both companies offer grant writing support for state and federal grants.**

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