K-12 SCHOOLS: E-MOBILITY SOLUTIONS

Driving Toward the E-Bus Transition

A Turnkey Approach to Financially Viable Zero-Emission Transportation

Why Move to Zero-Emission Vehicles?

Zero-emission buses are the future of K-12 transportation. They reduce air and noise pollution for both students and the broader community. They minimize energy costs per mile traveled. And for many school districts, the time is right to move to alternative energy.

Total cost of ownership (TCO) calculations make electric buses very attractive compared with their diesel counterparts. E-buses do have a higher list price, but their fuel and maintenance costs are much lower. Moreover, a plethora of local, state, and federal grants and incentives that are currently available can reduce prices so dramatically that even the up-front capital expenditure (CapEx) may end up being lower for an e-bus.

In California, $2 billion in Low Carbon Fuel Standard (LCFS) credits have been earmarked to replace gasoline-and diesel-powered vehicles and systems with those that run on alternative fuels. This is only the tip of the iceberg. Together, California's utilities, community choice aggregation organizations (CCAs), and local governments offer over 130 additional incentives for zero-emission buses.

Such programs can cover a large proportion of the purchase price for e-buses and charging equipment. However, they will not last forever. Each agency that offers grants or incentives has a limited amount available, and early-moving districts are quickly taking those funds.

Planning the Move

District administrators considering embarking on this path should start by conducting an operational needs and feasibility study. This includes analyzing regular bus routes, schedules, and long-haul student travel for sports or other events.

Today's electric vehicles and supportive infrastructure have addressed the limitations of earlier models and systems. Some electric buses now have ranges of more than 300 miles, and fast-charging capabilities are reducing the amount of time spent at charging stations. Still, administrators planning a transition to electric buses will need to consider how charging infrastructure can be efficiently scaled to meet immediate and future needs. When rolling out new infrastructure in phases, strategies for optimizing simultaneous operation of the incoming e-buses and the legacy bus portfolio are also a consideration.

Quantifying the various financial and environmental effects of different charging-infrastructure options is key to building a sustainable solution. What would be the TCO implications of using solar energy to power charging stations? How might energy storage help with transportation financials? To what degree can the costs of different charging options be offset by government sustainability programs? What utility rate plan options are available, and how do they affect costs? What reporting will be required once the e-mobility solution is in place? Does the district need "smart charging" infrastructure that provides insights into bus and charging-station performance?

"Just planning for a transition to an electric fleet is a daunting task when you think of all the variables involved. ENGIE helped us put a plan together we could afford – covering everything from bus infrastructure and technology to funding sources. They turned a challenge into a real opportunity for our district."

– Lindsey Danner, Aquatics and Energy Manager, Grossmont Union High School District

ENGIE Streamlines the Transition

While the benefits of moving to zero-emission buses are clear, the path forward may not be. Optimization of e-bus infrastructure requires a deep understanding of available options. Some district administrators find the planning and implementation processes to be overwhelming. **That is where a partner like ENGIE comes in.**

OUR TURNKEY SOLUTION SUPPORTS SCHOOL DISTRICTS IN:

PLANNING. ENGIE's expertise streamlines the needs assessment and solution design processes. We help districts work through:

- Analysis of current fleet and operational requirements, fleet transition study,
- Design of optimized charging infrastructure, feasibility study for on-site energy generation and storage,
- TCO estimates, and deployment timeline.

PROCUREMENT. ENGIE works only with approved technology providers. Each of our partners has passed a rigorous selection process that evaluates its technology, reliability, purchase cost, maintenance, long-term operations costs, and after-sale support.

FINANCING & GRANT APPLICATIONS. ENGIE supports multiple approaches to financing. One option is up-front purchase of all equipment. For districts that choose this approach, ENGIE assists with locating applicable grants and incentives, and helps present external financing options. A second option is a capital lease, which eliminates the CapEx outflows. The third option is "transportation as a service," in which ENGIE provides both buses and infrastructure elements for a predetermined monthly operating expense.

PROJECT MANAGEMENT. Throughout the transition, ENGIE can manage the details, easing the burden on district administrators and busy operations managers. Our team works collaboratively with district leaders on every aspect of the project, taking into account current district fleets, long-term operational needs, and appropriate state-of-the-art technologies. We also set up reporting tools for ongoing oversight of system health and performance.

COMMUNITY ENGAGEMENT. ENGIE helps districts build community buy-in. A successful transition to alternative-energy buses requires district staff, bus drivers, students, and community members to be on board with the transition. ENGIE's decades of experience inform our guidance on effective communication and engagement with each of these groups. Moreover, ENGIE can often offer academic collaborations during deployment, in which student interns gain real-world experience in the design and installation of alternative-energy solutions.

DEPLOYMENT & SUPPORT. Experts in electric vehicles and alternative energy, ENGIE staff streamline installation and maintenance of the infrastructure required to transition to e-bus transportation. Moreover, the turnkey ENGIE solution provides a single point of accountability for district administrators.

K-12 districts have an unprecedented opportunity to improve their bus fleet sustainability, including TCO. Currently available incentives and impending government requirements make this the right time to begin. And ENGIE's energy and e-bus expertise reduce the burden on district administrators, while also helping them to make decisions that minimize the long-term operational costs of their infrastructure.

Ask your ENGIE representative for a free evaluation of your district's e-transportation potential.

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