DEUSA Fleet Success Stories: Washington County Schools, TN

Location: Jonesborough, Tennessee
Fleet type: Electric school buses

Narrative: The East Tennessee Clean Fuels Coalition (ETCF) started working with Washington County Schools (WCS) in 2018. Chief Operations Officer Dr. Jarrod Adams and his team - with support from the school board and Washington County Government - created a vision of becoming a leader in the use of alternative fuel school buses in Tennessee, with propane and electric school buses in focus. ETCF provided grant-directional and some fuel-choice advice during their journey. WCS operates 45 buses to safely transport over 8,000 students across 16 schools in Washington County, Tennessee.

WCS learned of the EPA "DERA" (Diesel Emissions Reduction Act) funding program and its state-administered allotment of those funds. That funding in Tennessee is managed through the "Reducing Diesel Emissions for a Healthier Tennessee" Program, or "RDE4HT" for short (www.RDE4HT.info). The Program annually awards a total of roughly $350,000 to fleets across the state that apply, and has been managed for the Tennessee Department of Environment and Conservation (TDEC) by ETCF for nearly a decade. Pursuing an electric school bus was not an option due to the limited amount of funds that might be won with an award (DERA rules allow a maximum award of 45% of total new bus cost for diesel-replacement vehicles that have no tailpipe). During their first application in 2019 (for the 2019-2020 funding year), they sought assistance to purchase five propane school buses and won just over $100k to offset costs for the procurement of those buses, thereby starting their alt-fuel school bus program. Those buses went into use in 2020, and WCS again applied for RDE4HT funding (for six propane school buses) in late 2020 that they put in service in 2021, expanding their alt-fuel program. WCs also pursued funding in subsequent rounds of RDE4HT funding and twice won further funds to add more propane buses to their fleet - now up to 17, or roughly one-third of the entire bus fleet.

Following a similar timeline, in 2018 Tennessee's Volkswagen (VW) Diesel Settlement funding round for replacement school buses was released by the TDEC Office of Energy Programs. While handling its due diligence for that funding towards acquiring an electric school bus, WCS was able to pull together a partnership that included BrightRidge, the local electric utility, and the Tennessee Valley Authority (TVA) to submit for funding for one electric school bus. They were awarded funding in 2019 and started the process of purchasing an electric school bus. In summer 2021, they held an unveiling event and showed a wide variety of attending media and interested parties Tennessee first electric school bus! Shown on the next page are BrightRidge and TVA officials, alongside Dr. Adams (center). The acquired electric school bus is a Lion C, the Lion Electric Company's type-C school bus offering. The photos on these pages are from that unveiling event in June 2021.

In the 2022 EPA Clean School Bus Rebate Program funding opportunity, Dr. Adams and WCS applied to acquire three more electric school buses but did not win in that lottery-style funding opportunity. While they did not win, they are planning to pursue more electric school buses as funding opportunities become available.

Outputs & Outcomes: The outputs from WCS' efforts include the obvious acquisition of one electric school bus and many propane buses. More importantly, quantifiable emissions reductions in both criteria reductions as well as greenhouse gases (GHGs) are occurring, with the latter being on the order of 60–70% for the electric school bus - a huge reduction compared to diesel - thanks to the TVA grid in Tennessee in 2022 being 60% carbon free. As relates to outcomes:

1. Students who ride WCS' cleaner school buses are exposed to less particulate matter, nitrogen oxides, and other direct-health emissions of concern. Additionally, students see electric and propane-powered school buses in action. In some cases, students learn about how the buses work.
2. The WCS bus maintenance team is learning new ways to fuel school buses and how to maintain cleaner-fuel buses, while not needing to maintain diesel emissions control technologies. This is arming them with the tools and experience to help lead an advanced alt-fuel school bus fleet.
3. Bus drivers are learning to drive non-diesel school buses with different torque curves and regenerative braking systems. They too are gaining valuable experience that can be shared with other drivers both in the WCS' system and to other school district drivers.
4. Nearby citizens have seen articles about WCS' program (many media outlets attended some of the multiple unveiling events that they have held) and are hearing about districts proactively seeking non-diesel school buses both for the student-riders health and for the wallets of districts.

Best Practices & Lessons Learned:
Newer school bus OEMs may not be aware that requirements for school buses can vary substantially by state. Districts looking to acquire new electric buses should thoroughly check the specs on electric school buses to ensure that they meet that state's requirements. Additionally, inquire early as to the thoroughness of the training program that that OEM provides to be clear on the operational, technology, maintenance, and charging information that will be provided. Last but not least, always bring your local electric utility into the conversation as soon as possible if your fleet plans to acquire EVs, especially if they are medium- or heavy-duty vehicles.