

San Diego Clean Cities Regional Coalition, E-School Bus Lunch and Learn Event Report

Overview of Cajon Valley's Electrification Efforts

Cajon Valley is one of the early adopters of electric school buses in the San Diego County region. The district currently operates 42 non-electric school buses and 8 electric buses, with three additional electric buses on order. Cajon Valley is also participating in a Vehicle-to-Grid (V2G) pilot project that includes six 60kW DC fast charging (DCFC) V2G stations. Thanks to extensive incentive support, the district's vehicles cost approximately \$75,000 each, and its charging infrastructure was fully funded by Nuve and SDG&E.

Challenges Faced by Cajon Valley

Cajon Valley emphasized that without the external incentives, from HVIP and EPA/DERA, electrification would not have been feasible. The high upfront investment would have been too much for the district. Additionally, vehicle performance and reliability posed challenges. The district's fleet includes both Lion Electric and Blue Bird buses. Lion Electric buses have been more reliable, likely due to the manufacturer's longer experience with electrification. However, Lion Electric's recent bankruptcy and shift in operations to Canada have led to longer wait times for servicing. On the other hand, Blue Bird buses have faced significant reliability issues, with one bus requiring extensive repairs. The Blue Bird vehicle was returned to the manufacturer in June 2024 and was not returned to the district until January 2025, adding to the complications of reliability.

Fuel costs also presented unexpected challenges. A cost analysis comparing diesel and electricity expenditures from 2019 to the present revealed that expenses for the two fuels were closely aligned. This result was a surprise against the initial expectation that electricity would provide significant cost savings.

Lessons from Energetics: Opportunities for Implementation

Energetics highlighted several considerations for districts when integrating electric buses into their fleet. One such opportunity involves leveraging additional battery power from electric buses to reduce peak building energy consumption. Peak shaving can help lower costs during periods of high electricity rates. Furthermore, successful fleet electrification

requires effective collaboration across all school district departments, including transportation, finance, and facilities. All groups need to communicate frequently to ensure cost saving and fuel consumption are being optimized. For example, the CPUC 2023 evaluation revealed that better site load management optimization could lead to annual savings ranging from zero to fifty percent, with most districts achieving potential savings of around twenty-five percent.

Support from Local Utilities

To address EV planning challenges, SDG&E has developed the Transportation Electrification Advisory Services (TEAS) program. This program provides guidance on various topics, such as electric vehicle selection, charging infrastructure, capacity analysis, and site and load planning. The TEAS program is a valuable resource for organizations embarking on fleet electrification, and additional funding for similar initiatives should be prioritized.

Feedback from Attendees

Feedback from attendees highlighted several key points. While the event was informative, some participants found the material too technical. Including a primer session to define common terms, such as L1, L2, and DCFC charging, could make the content more accessible.

Private school districts expressed concerns about accessing funding, as they are often ineligible for public incentives. Range limitations also remain a concern, particularly for activities like field trips and sporting events. Local partnerships and agreements to provide charging access at destination sites could help address these challenges.

Attendees also suggested creating a checklist to aid in planning for electrification. This checklist could include considerations such as current fleet needs, route information, charging feasibility and compatibility, EVSE site planning, and utility coordination.

Conclusion

Cajon Valley's school bus electrification is a prime example of both the opportunities and challenges of transitioning to electric vehicles. Their experience underscores the importance of incentives and collaboration with industry partners like Nuvve and SDG&E. When recommending fleet electrification to interested school districts, providing detailed

project roadmaps and introducing supporting organizations can help mitigate the upfront challenges of extensive planning.