



California School District En Route to Eliminating Emissions by Going Electric



Charging ahead with a zero-emission fleet

With the primary goal of creating a cleaner and healthier environment for the students and local communities in Oroville, California, Thermalito Union Elementary School District (UESD) set out to reduce its carbon footprint by electrifying more than half of the district’s school bus fleet by the end of 2022.

Thermalito UESD is a public school system that serves over 1,500 elementary and middle school students throughout Butte County. The school district operates a fleet of nine buses that transports more than 500 students and runs nonstop year-round, averaging 65,000 miles for regular home-to-school routes as well as after-school program routes, field trips, and summer school.

Rural areas demand several key considerations when electrifying fleets. Some challenges include smaller capital expense budgets and more demanding daily routes. However, there are many electrification paths available to rural fleets. To navigate these challenges and successfully transition fleets, it is crucial to explore several project funding avenues and understand the overall timeline for implementation.

“School districts should not hesitate to reach out to their utility in the early stages to help jumpstart their electrification projects.”

Andrew Koster,
MOT Director
Thermalito Union
Elementary School
District (UESD)

Project Timeline

2019

- Researched and secured funding and grants
- Engaged key stakeholders

2020

- Began charging engineering and design
- Charging infrastructure installation and implementation
- Procured six electric school buses

2021

- Procured and installed electric vehicle chargers
- Electric school buses delivered
- Trained drivers and staff
- Installed electrical infrastructure

2022

- Charging equipment energized
- Deployed electric buses

2023

- Continuous monitoring and reporting on performance and benefits
- Pursuing on-site solar and battery storage solutions



Project Funding

In 2019, Thermalito UESD was awarded funding from the California Energy Commission (CEC) and the Butte County Air Quality Management (BCAQMD) to support the district's transition to zero-emission school buses.

In addition to the initial public grant funding Thermalito UESD received for the purchase of zero-emission buses and EV chargers, the district was able to take advantage of even more incentives through PG&E's [EV Fleet Program](#) to reduce the upfront costs of EV chargers and infrastructure further.

Thermalito UESD constructed, maintains, and owns all electrical infrastructure behind the meter for this project. PG&E provided assistance by installing new power poles and transformers, an expense of **\$225,000** that was covered by EV Fleet Program funding.

Thermalito UESD Project at a Glance

- **500 Students**
Attend Thermalito UESD and require year-round transportation
- **11,000 Miles**
Average annual mileage per school bus
- **6 Battery-Electric School Buses**
BEAST model, Type D battery electric 40-foot school bus
- **150 Miles**
Stated range of the 194.5kWh battery pack
- **6 Level 2 AC Chargers**
Installed on-site

Funding Overview

Vehicle Funding

Butte County Air Quality Management District (BCAQMD)

Carl Moyer Program

(1) electric school bus

\$393,540

California Energy Commission (CEC)

California Clean Energy Jobs Act Proposition 39

(5) electric school buses

\$1,660,045

California Energy Commission (CEC)

School Bus Replacement Program

\$300,000

Charging Equipment Funding

PG&E

EV Fleet Program

Rebate of up to 50% of the total charger cost

\$13,829

EV Infrastructure Funding

Butte County Air Quality Management District (BCAQMD)

Carl Moyer Infrastructure Grant

Funding for customer-side infrastructure costs

\$75,209

PG&E

EV Fleet Program

Funding for customer-side infrastructure costs

\$16,983

PG&E

EV Fleet Program

Funding for utility-side infrastructure costs

\$225,000

Total Grant & Rebate Funding: **\$2,684,606**



Lessons Learned



Learn from other school districts

In the early stages of a school district's fleet electrification journey, connect with other school districts large and small to hear their experiences.



Secure grant funding to jumpstart your project

Begin your fleet electrification project by conducting research on grant funding opportunities available to school districts and to your local region.



Build a strong dealer partnership

Dealerships can help bridge the gap and are an excellent liaison between manufacturers and customers.



Get "smart" from the beginning

Procure smart chargers with charging management software from the beginning to ensure school buses are scheduled to charge during off-peak hours and reduce total costs.



Get ahead of maintenance issues

Once a school district has selected a dealer, run through sample maintenance issues to see how the OEM troubleshoots when a specific repair arises.



Leave time for reporting

Public grant funds typically requires significant ongoing reporting. Dedicate 1-2 days per month to complete grant reporting.



Connect with your local utility company early

Your utility provider plays a vital role in your fleet electrification project and it is imperative to engage with them in the early stages of your project planning to ensure you are on the right path. [PG&E's EV Fleet Program](#) helps school fleets easily and cost effectively install charging infrastructure.



Thermalito takes delivery of the new school buses