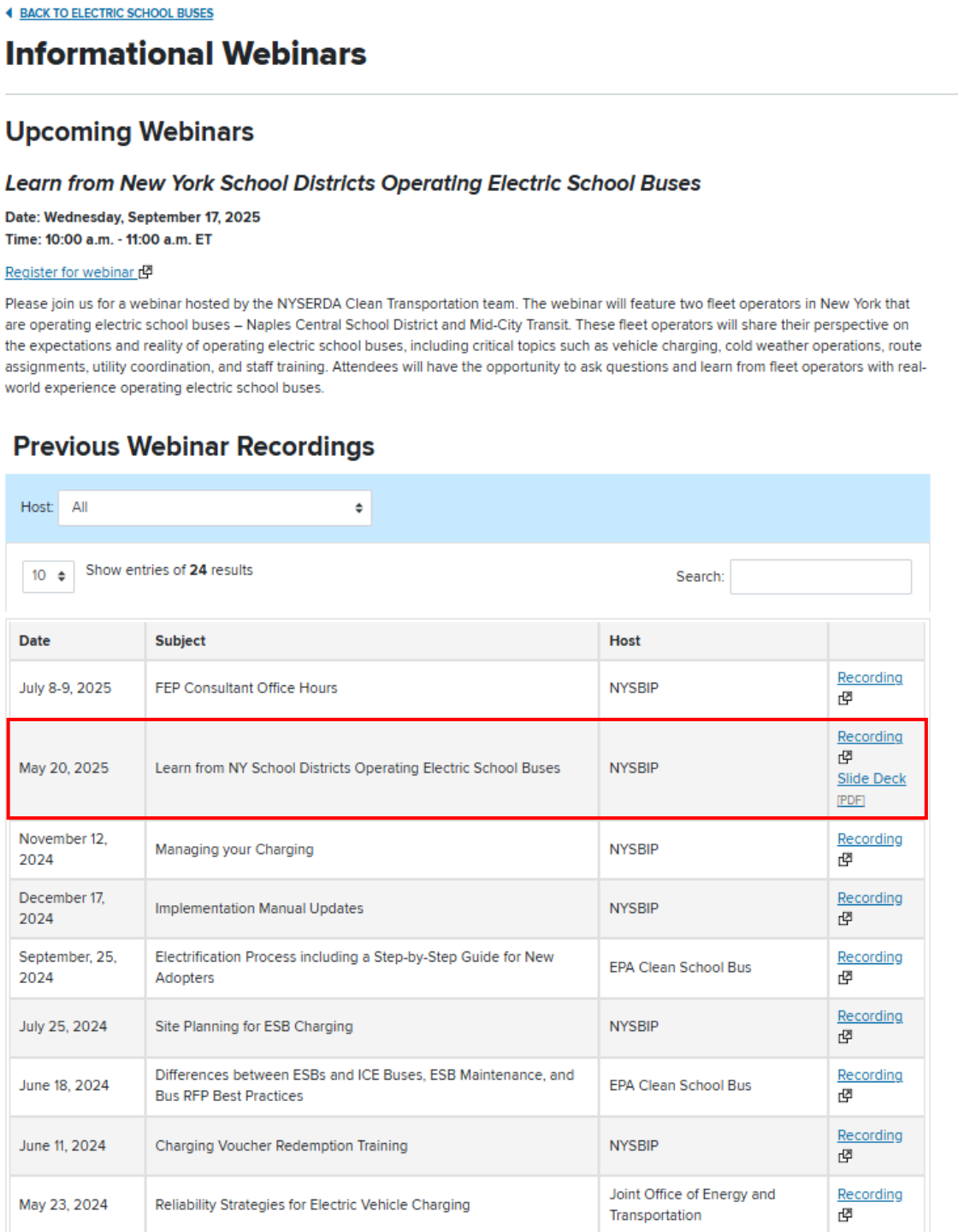
Webinar: Learn from New York School Districts Operating Electric School Buses

September 17, 2025

NEW YORK STATE | NYSERDA

Background

- All our previous webinars are available on our website
- Today's recording and presentations will be shared with attendees once available
- Check out our May webinar featuring Lake Shore CSD (Western New York) and NYCSBUS (New York City)



BACK TO ELECTRIC SCHOOL BUSES

Informational Webinars

Upcoming Webinars

Learn from New York School Districts Operating Electric School Buses

Date: Wednesday, September 17, 2025
Time: 10:00 a.m. - 11:00 a.m. ET

Register for webinar

Please join us for a webinar hosted by the NYSERDA Clean Transportation team. The webinar will feature two fleet operators in New York that are operating electric school buses – Naples Central School District and Mid-City Transit. These fleet operators will share their perspective on the expectations and reality of operating electric school buses, including critical topics such as vehicle charging, cold weather operations, route assignments, utility coordination, and staff training. Attendees will have the opportunity to ask questions and learn from fleet operators with real-world experience operating electric school buses.

Previous Webinar Recordings

Host: All

10 Show entries of **24** results Search:

Date	Subject	Host	
July 8-9, 2025	FEP Consultant Office Hours	NYSBIP	Recording
May 20, 2025	Learn from NY School Districts Operating Electric School Buses	NYSBIP	Recording Slide Deck [PDF]
November 12, 2024	Managing your Charging	NYSBIP	Recording
December 17, 2024	Implementation Manual Updates	NYSBIP	Recording
September, 25, 2024	Electrification Process including a Step-by-Step Guide for New Adopters	EPA Clean School Bus	Recording
July 25, 2024	Site Planning for ESB Charging	NYSBIP	Recording
June 18, 2024	Differences between ESBs and ICE Buses, ESB Maintenance, and Bus RFP Best Practices	EPA Clean School Bus	Recording
June 11, 2024	Charging Voucher Redemption Training	NYSBIP	Recording
May 23, 2024	Reliability Strategies for Electric Vehicle Charging	Joint Office of Energy and Transportation	Recording

Agenda

- Introduction
- Naples CSD (Finger Lakes)
- Mid-City Transit (Hudson Valley)
- Audience Q&A

Current New York State Requirements for School Buses

To improve air quality for students and reduce emissions statewide, NYS has established the following goals:

2027

All school buses purchased after July 1, 2027, must be zero-emission.

2035

All school buses in operation after July 1, 2035, must be zero-emission.

This is a state requirement that has not changed since the initial 2022 legislation

What funding does the New York School Bus Incentive Program (NYSBIP) provide?

$500 million has been allocated for electric school buses in New York State.

NYSBIP funding is delivered in three primary ways:

1. **Fleet Electrification Plans (FEPs)**
2. **Electric bus purchases**
3. **Charger and installation costs**

ESBs in New York State

Where We Started

- **~700** school districts in New York State
- More than **45,000** school buses on the road
- More than half of all buses are contractor-operated

Recent Progress

- More than **125** ESBs on the road
- Funding requests for more than **500** ESBs
- More than **400** school districts planning for their fleet transition with NYSERDA
- Average NYS school bus travels **80** miles per day
- Most ESBs have a range of **150** miles or more

Learn More About NYSERDA Support

https://www.nyserda.ny.gov/All-Programs/Electric-School-Buses

schoolbus@nyserda.ny.gov

NAPLES CENTRAL SCHOOL DISTRICT FLEET

23 VEHICLES FOR TRANSPORTING STUDENT

- 11 – 72 PASSENGER TYPE C IC BUSES
- **2 – 70 PASSENGER TYPE C IC EV BUSES w/210 kWh BATTERY'S**
- 4 – 30 PASSENGER TYPE A TRANSTECH BUSES
- 2 – 24 PASSENGER TYPE A TRANSTECH WHEELCHAIR BUSES
- 2 – CHEVROLET 7 PASSENGER SUBURBAN'S
- 1 – CHEVROLET 4 PASSENGER MALIBU
- **1 – 2025 CHEVROLET 4 PASSENGER EQUINOX EV**

BATTERY PERCENTAGE USED ON ROUTES DURING THE MONTH OF APRIL 2024 - NO CHARGING IN-BETWEEN RUNS

Route #	Starting %	Ending %	Total % Used	AM Ending %	Starting %	PM Ending %	Late Ending %	Total Miles	Month	Temp.
33	100%	20%	80%	68% (32%)	-	46% (22%)	20% (26%)	75 (27, 48)	4/23/24	39*
34	100%	52%	48%	82% (18%)	-	65% (17%)	52% (13%)	59 (21, 38)	4/11/24	48*
36	100%	43%	57%	77% (23%)	-	57.% (20%)	43% (14%)	58 (25, 33)	4/10/24	43*
37	100%	49%	51%	83% (17%)	-	66% (17%)	49% (17%)	40 (14, 26)	4/17/24	37*
39	100%	41%	59%	69% (31%)	-	41% (28%)		57 (29, 28)	4/15/24	42*
40	100%	35%	65%	72% (28%)	-	53% (19%)	35% (18%)	63 (24, 39)	4/23/24	39*
41	100%	16%	84%	73% (27%)	-		16% (57%)	64 (24, 40)	4/12/24	50*
44	100%	60%	40%	87% (13%)	-	77% (10%)	60% (17%)	51 (15, 36)	4/19/24	44*
45	100%	27%	73%	74% (26%)	-	44% (30%)	27% (17%)	61 (22, 39)	5/2/24	42*
49	100%	35%	65%	74% (26%)	-	51% (23%)	35% (16%)	68 (23, 45)	4/9/24	39*

BATTERY PERCENTAGE USED ON ROUTES DURING THE MONTH OF JANUARY 2025 - CHARGING IN-BETWEEN RUNS

Route #	Starting %	Ending %	Total % Used	AM Ending %	Starting %	PM Ending %	Late Ending %	Total Miles	Month	Temp.
33	100%	56% / 22%	122%	56% (44%)	100%	52% (48%)	22% (30%)	80 (27, 53)	1/15/25	18*
34	95%	56% / 39%	100%	56% (39%)	100%	68% (32%)	39% (29%)	58 (21, 37)	1/16/25	14*
36	74%	34% /19%	100%	34% (40%)	79%	42% (37%)	19% (23%)	70 26, 44)	1/14/25	18*
39	100%	50% / 26%	114%	50% (50%)	90%	52% (38%)	26% (26%)	80 (29, 51)	1/9/25	15*
40	100%	40% / 5%	127%	45% (55%)	77%	41% (36%)	5% (36%)	61 (23,38)	1/22/25	-8*
41	100%	57% / 20%	121%	57% (43%)	98%	60% (38%)	20% (40%)	70 (23, 47)	1/23/25	17*
44	100%	68% / 20%	73%	68% (32%)	100%	79% (21%)	59% (20%)	55 (19, 36)	2/5/2025	17*
45	100%	39% /16%	131%	39% (61%)	86%	45% (41%)	16% (29%)	65 (23,42)	1/21/25	-3*
47	100%	57% / 2%	98%	57% (43%)	57%	26% (31%)	2% (24%)	48 (15, 33)	1/21/25	-3*
49	100%	58% / 42%	100%	58% (42%)	100%	64% (36%)	42% (22%)	66 (23, 43)	1/10/25	11*

Electric School Buses
NYSERDA Presentation

Sept, 2025

AGENDA

Introduction

STA Electrification History

Benefits & Challenges of Electric Schools Buses

Community Engagement

Costs and Funding Opportunities

TODAY'S PRESENTER

Dan Higbie, General Manager

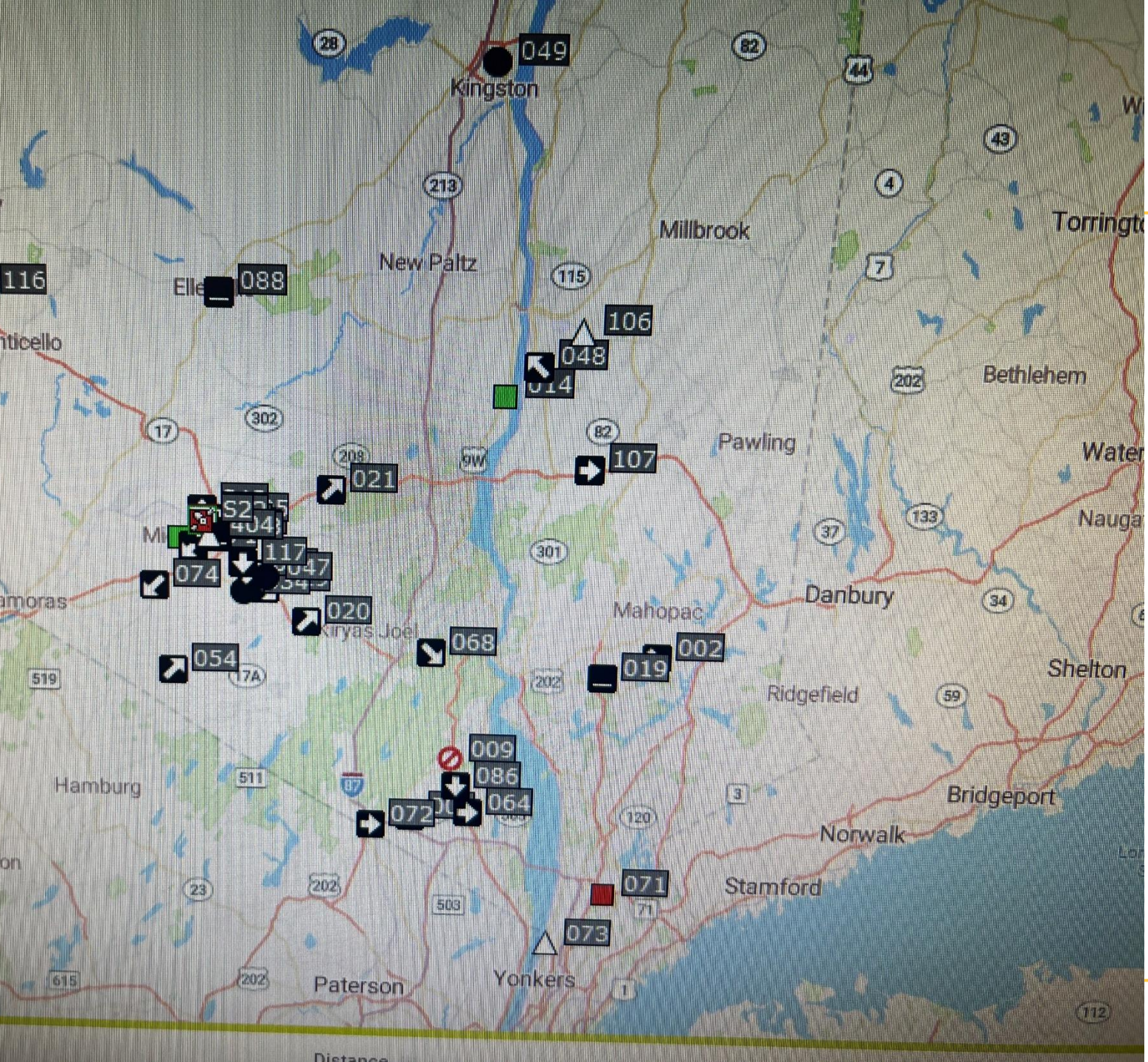
- Started in the School Bus Industry in 2004.
- Operates 400+ Buses in Orange County, NY
- Board of Directors and Incoming Vice President for NY School Bus Contractors Association
- City of Middletown Planning Board
- City of Middletown Parks & Rec Commission Chairperson
- New York Commissioners Advisory Committee Member for Pupil Transportation
- New York and National Association for Pupil Transportation Member

STA's Electrification Experience

- Proven Record
  - 80 buses on the road, additional 120 ordered, with more pending grant approvals
  - Buses delivered across the US and Canada to a variety of climates and customer bases
- State Highlights
  - 12 in Barker, NY
  - 4 in Middletown, NY – with 10 more coming in November
  - 10 in Newburgh, NY – late 2026
  - Additional locations in NY in application stage
- GHG and Particulate Accounting & Climate Risk Mitigation

Benefits of Electrifying School Transportation

- Cleaner Air for Students, Drivers and the Local Community
  - Diesel exhaust negatively impacts cognitive performance and respiratory health
  - Serves all scholars across demographics
- School Routes Are Ideal
  - Regular schedule, options to charge mid-day or at night
- Driver Satisfaction
  - Quiet, smooth rides lead to better behaved students
- Serves as an Educational Aid
  - Teaches students about the benefits of reducing greenhouse gases and emissions



Challenges

- Route Restrictions:
  - Some of our buses do more than 300 miles a day
  - Sports Trips
  - Overnight charters
- Upfront Costs
- Grant Compliance and Restrictions
- Additional Planning/Training
- New Technology
- Weather
- Limitations at your site
  - Permitting
  - Space
  - Electric Availability
  - Weight of Buses

Middletown District Electrification Project - Planning

- **New York Strict Laws and Goals**
  - 2027 Only Electric Bus Purchase
  - 2035 All Electric Fleet
- Gauge stakeholder interest – is your district enthusiastic? What concerns do your drivers and the community have about electric buses?
- Bus Replacement
  - Funding provided from NYTVIP Grant (NYSERDA Grant) for the first (4)
  - NYSERDA Grant for the Additional 10 – with Scrappage
  - Selected IC Electric Buses – How did we choose?
- Researched routes and selected those that would be supported by bus range and charging limitations – Fleet Electrification Plan
- Charging infrastructure selected by STA electrification team – chose a vendor that partners with school bus manufacturers
- Initial site layout was designed prior to discussing plan with utility – this was a mistake

Costs of Electric School Buses

- Buses – *actual cost varies based on spec, battery size*
  - 3 – 3.5x times the cost of a diesel
- Charging Infrastructure – *cost varies greatly based on site needs*
  - Estimate $50K/bus but detailed plan is needed
- Electricity versus Diesel
- Maintenance
  - Expect 30-40% savings on preventative and routine maintenance
  - Long term maintenance and repair costs are still being realized
- Other Costs
  - Training
  - Charger networking, service plans and charger repairs post-warranty
  - Property Tax increases
  - Related site upgrades – lot paving, fencing, etc

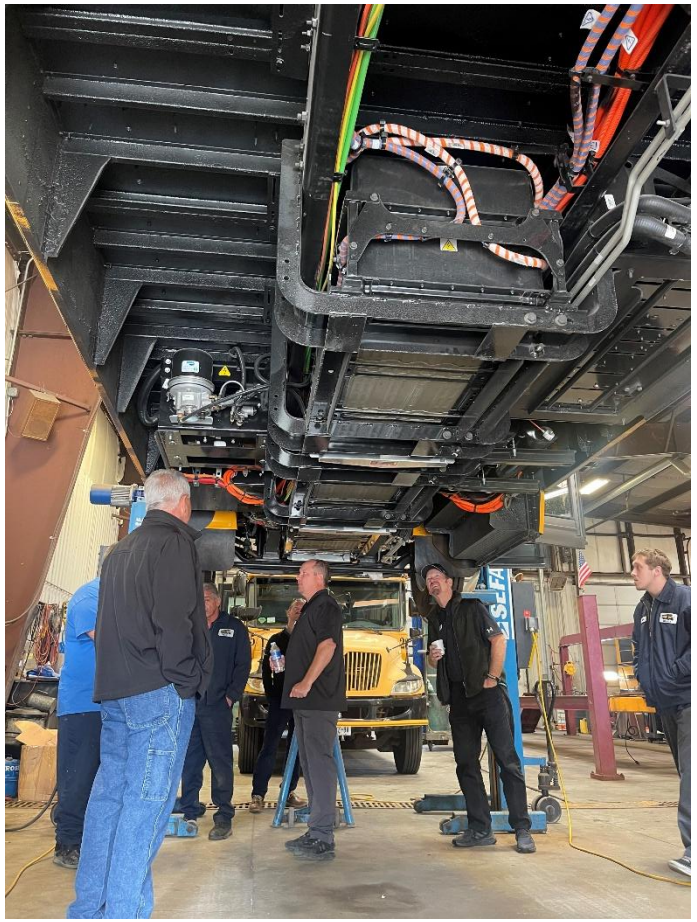
Funding Opportunities

- Federal Grants
  - EPA Clean School Bus Program remains funded. Future release dates and new requirements are TBD
- Federal Tax Refund 30C
  - Up to $100K for EV infrastructure installed by Sept 2026
- State Grants
  - NYSERDA - funding for both buses and infrastructure
- Utility Funding – *offers vary by utility*
  - MDHD Make Ready Pilot
  - EV charging rates and DCFC rebates

Tips and Lessons Learned

- Understand Your Utility Rates and Options
- Expect Surprises in Construction
- Check Your Supplier's Financials
- Have a Plan for Maintenance
- Have a Plan for Charge Scheduling
- Grant Compliance Requirements
- Expect Learning Curves and Naysayers
- Your TCO is Specific to Your Location

Training & Installation



One of our buses dropping of at our High School

THANK YOU

Dan Higbie | dhigbie@ridesta.com
Rachel Lane | rlane@ridesta.com

Benefits of Electric School Buses

- Healthier for our Students, Drivers, and Communities

- Electric School Buses Have Zero Tailpipe Emissions
  - Diesel exhaust is a carcinogen and negatively impacts respiratory health
  - Diesel exhaust is linked to negative cognitive developmental impacts
  - Children are more susceptible to the harmful effects of diesel
  - Pollution levels can be several times higher inside a diesel bus than outside of it

Benefits of Electric School Buses

- Reduces Greenhouse Gas emissions
- Increased Operational Efficiency
  - In diesel and gas buses, most energy stored in the fuel is lost to heat and friction. 77-90% of the energy used to charge the bus is used directly for bus motion.
  - Established routes allow for optimizing charging times
  - Regenerative braking extends the range of the bus and reduces brake wear and tear
- Comfortable Rider Experience
  - Low engine noise leads to better student behavior on the bus
  - Smooth, pleasant ride
  - The drivers love them!

Common Questions

- How long do batteries last and what happens to them when they need to be replaced?
  - All batteries are covered by multi-year warranties.
  - Battery life naturally degrades over time. V2G applications degrade the battery life faster.
  - Proper storage and minimizing high-rate charging helps to improve the life of the battery.
  - Battery end of life technology is evolving. Batteries can be used for external storage or recycled.

- Is battery range reduced in hot and cold climates?
  - This is true! Teach drivers to precondition their buses and batteries so that the cabins and batteries are at optimal temperature for a run, reducing the impact temperature will have on range. Buses can also come with optional external diesel heaters to support cabin temperatures in cold weather.

Common Questions

- What about fires?
  - School bus transportation continues to be the safest form of transportation for children.
  - School bus fires are extremely rare, and even more so in electric buses than in their combustion engine counterparts.
  - School buses, including batteries, undergo rigorous testing.
  - Batteries are in protective encasing that sits between the frame rails. The buses are equipped with automatic and manual high voltage disconnects.
  - Provide training to first responders. Bus manufacturers and the NFPA also provide training and information on responding to battery fires.
- Doesn't the pollution just shift to the electric grid?
  - The dirty bus pollution students breath in when on and around school buses is eliminated when you make the switch to electric buses. Bus charging produces extra emissions on the electric grid, and this amount varies by the source of power used by the local utility, but grid emissions are lower than combustion engine emissions.