Electric School Bus Network National Forum

April 9, 2025



Forum Agenda

	01.	Intro to the Ele
April 9, 2025	02.	Microgrids: ZE
	03.	School Distric
	04.	Q&A
	05.	Summary and





- ectric School Bus Network
- EV Benefits, Resiliency, and More
- ct Experience: Steelton-Highspire

Closing



Ice Breaker: Where do you get your ESB news? What social media platforms are you using the most?







Electric School Bus Network

experts to help support the electric school bus fleet transition.

The Electric School Bus Network accelerates nationwide school bus fleet electrification through peer-to-peer networking and dialogue-driven forum **meetings** for school districts, advocacy organizations, government organizations, and industry representatives. The ESB Network provides access to educational tools, resources, and subject matter



Meet the ESB Team



Rachel Chard Deputy Director



Michelle Hanson Program Manager



Ian Fried Lead Project Manager



Alise Crippen Lead Project Manager



Katelyn Tomaszewski Project Manager



Skyler Potocek Project Manager



Sarah Stalcup-Jones Project Manager



Ibraheem Ameer Project Manager



Emily Gasca Project Manager







Paige Seles Project Manager



Alberto Santos-Davidson Project Manager





Chrystal Ales Project Manager



Liza Walsh Project Manager



Electric School Bus Network Forum Meetings

- Forum meetings are not webinars they are ongoing discussions where participation is encouraged
- **Goal: Ease the transition to electrify school bus fleets nationwide**
 - Facilitate conversations
 - Provide up-to-date information
 - Independent/Third Party Partner







Microgrids: ZEV Benefits, Resiliency, and More





Charging Power Demand







Disaster Risk and Resiliency



Source: FEMA National Risk Index for Natural Hazards



Risk Index





Relatively High



Relatively Moderate



Relatively Low



Very Low



No Rating



Not Applicable





Microgrids







Microgrid Deployments

In Operation





Under Construction



Feasibility Study







Microgrid Energy Portfolio



Values Average of Battery Power Average of Solar Power Average of Load Power ::20:00 PM ::45:00 PM :55:00 PM :10:00 PM :35:00 PM 8:00:00 PM 8:25:00 PM 8:50:00 PM 1:45:00 PM 9:15:00 PM 1:20:00 PN :30:00 PI 0:55:00 PI 9:40:00 P 0:05:00 P ö .5345015345015345015345015345015345015345

NETWORK

Microgrid Net Load





Resiliency

- Microgrids can also provide resiliency in the event of a grid outage
- Grid outages are rare and unpredictable making it difficult to determine how much resiliency is required and calculate the economic benefits of resiliency
- Tradeoffs between economic performance and resiliency
- ESB probably require less backup for resiliency than transit

Table	1.	Minor	Unpla

Outage Date a Time
5/13/2022
5/14/2022
7/21/2021

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Outage Date
4/20/2021
8/1/2021



nned Grid Outages at Terminal 1

2	Duration (minutes)	Cause	
	0.5	Bird made contact with substation equipment	
	0.5	Bird made contact with substation equipment	
	0.4	Mylar balloons	

nned Grid Outages at Terminal 1

Duration (minutes)	Cause
212	Automatic equipment detected a fault and automatically de-energized the circuit
1781	Replaced failed underground cable



Microgrid Resources



A CALSTART Report June 2023

CALSTART

Prepared by: Bryan Lee, Aditya Kushwah, and Kristian Jokinen



Source: https://calstart.org/wp-content/uploads/2023/06/Microgrids-Best-Practices-for-ZEB-Resilien





Bryan Lee Lead Project Manager <u>blee@calstart.org</u>





School District Experience: Steelton-Highspire





About Steelton-Highspire

- Steelton, PA is home of America's first steel company and birthplace of steel manufacturing that has relied on burning fossil fuels
- Two schools and approximately **1,450 students**
- **95%** of our students are economically disadvantaged
- Working with a **\$11.7M deficit**
- Always looking for creative solutions
- "What is Best for the Students"



1.7 MW solar array

- Partnership with McClure Company (PPA)
- Solar energy helps provide cost savings
- Provides 100% of our electricity needs combined with ESCO Project
- \$2M in energy savings over the next two decades
- Since the solar energy system went live in late 2021, saving \$15,000 for the first 13 years and \$200,000 per year for the remaining seven years
- HB 1032 Solar for Schools



Leader in clean energy

- Partnership With First Student
- Applied and awarded Rd 1 of Clean School Bus Program
- First and only school district in Pennsylvania that is 100% solar and 100% electrified bus transportation
- Awarded \$2,370,000 rebate from the EPA's Clean School Bus Program Round 1
- Six (6) new electric school buses
- Incorporated First Student's
 FirstCharge infrastructure solution
- ESB batteries charged by solar array
- Can store enough energy to power critical energy loads during outages







Contact Info



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Questions?





Thank You for Participating

- A follow-up email will be sent **Friday, April 11** with the following:
 - Recording of the meeting
 - Copy of the slide deck
- The next ESB Network Newsletter will be sent on Tuesday, May
 6
- The next National Forum will be June 11, 2025, from 1:002:00 p.m. ET
- Please email <u>schoolbusteam@calstart.org</u> with questions for our team





www.electricschoolbusnetwork.org



