Electric School Bus Webinar Series
Webinar 3

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Who and What is NCTCOG?

Regional Planning Agency

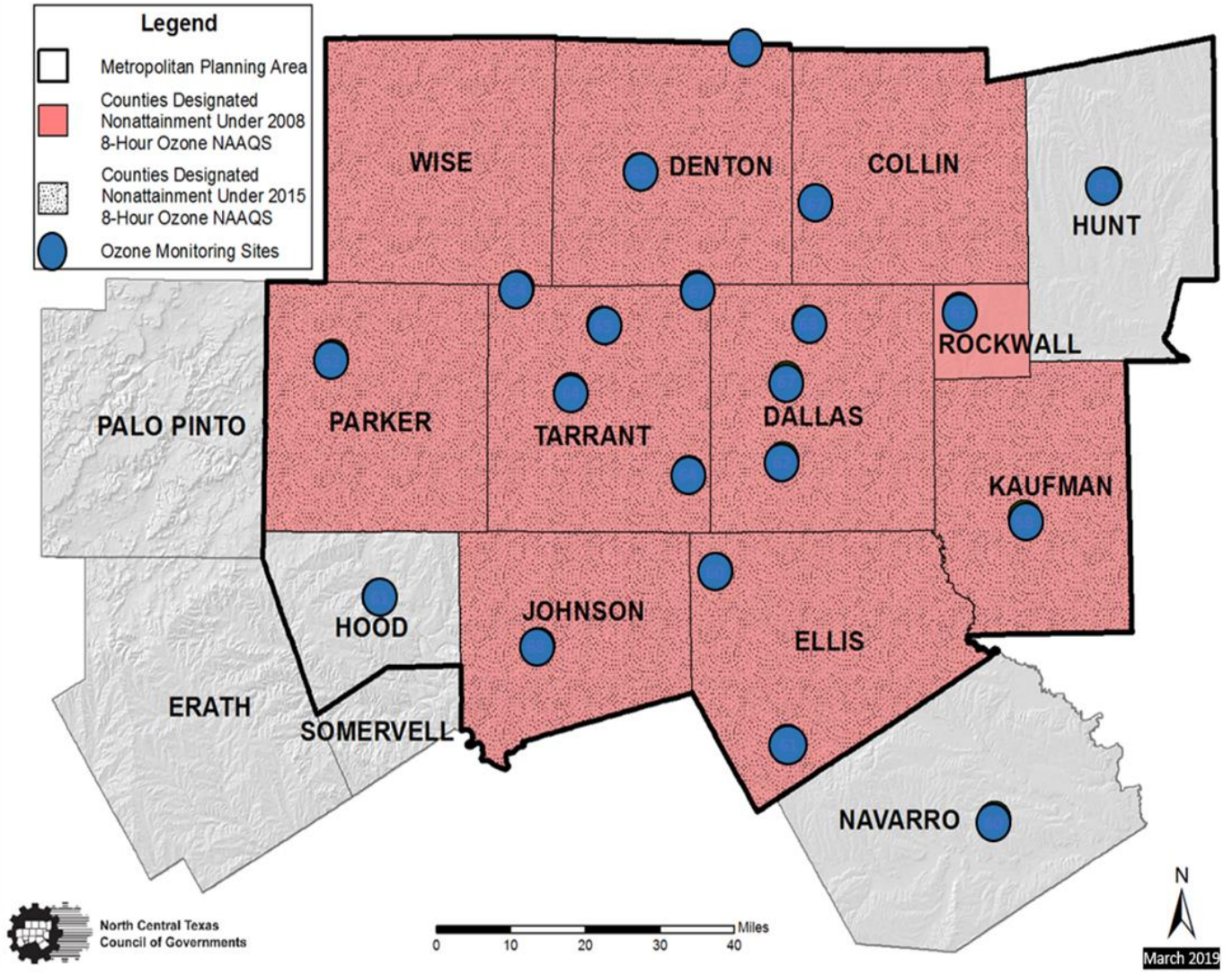
North Central Texas Council of Governments

Metropolitan Planning Organization (MPO)

RTC Regional Transportation Council

DFW Clean Cities Coalition

Dallas-Fort Worth CLEAN CITIES



Clean Cities Portfolio

Light-, Medium-, and Heavy-Duty Vehicles

Alternative and Renewable Fuels and Infrastructure

Idle Reduction Measures and Fuel Economy Improvements

New Mobility Choices and Emerging Transportation Technologies

Measuring Clean Cities Coalition Impact

Coalition projects have resulted in a cumulative impact in energy use equal to nearly **10 billion** gasoline gallon equivalents resulting from reduced fuel use and increased fuel diversity.[1]

Enough to drive the distance to the sun and back

1,175

times

Enough fuel to fill nearly

1.2 million

tanker trucks

Coalition projects have helped to put nearly **1 million alternative fuel vehicles** on the road.[2]

96 million gasoline gallon equivalents

of energy were saved through fuel economy improvement projects like telematics, driver training, and outfitting fleets with idle reduction equipment.[2]

Technology Integration Program

Provide objective/unbiased data and real-world lessons learned that inform future research needs and support local decision-making

Your Regional Resources

Austin Area

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Today's Agenda:

Amy Hodges, DFWCC: Overview of Webinar Series

Luke Metzger, Environment Texas: Environmental and Health Benefits of Electric Buses

Maria Brown, Lion Electric: Lion Electric School Buses

Joe Walton, TCEQ: Electric School Bus Projects Grant Funding Opportunities

Amy Hodges, DFWCC: EPA and NCTCOG School Bus Funding

Duncan McIntyre, Highland Electric Transportation: Simplifying the Switch to Electric School Buses

Maggie Clancy, Durham: Power of Planning in Partnership

Webinar Series Overview

Webinar 1- Thursday, December 3: EDF, IC Bus, Blue Bird, Oncor

Webinar 2- Wednesday, December 16: Collins, Thomas Built Buses, energy managers

Webinar 3- Wednesday, January 13: Lion Electric, grant funding, innovative financing

Webinar recordings and presentations:
www.dfwcleancities.org/dfw-clean-cities-meetings

Environmental and health benefits of electric buses

Luke Metzger

Executive Director,
Environment Texas

Kids are vulnerable to air pollution

- Children’s airways are smaller than those of adults and are more susceptible to inflammation and injury
- Children’s lungs are not fully developed until their teenage years
- Children breathe more through their mouths, bypassing nasal filtration

Diesel buses are a threat

■ 95% of school buses run on diesel

■ Inhaling diesel exhaust can cause respiratory diseases and worsen existing conditions like asthma.

■ Diesel exhaust is a cancer-causing agent

■ Coronavirus patients in areas that had high levels of air pollution before the pandemic are more likely to die from the infection than patients in cleaner parts of the country

BENEFITS OF ELECTRIC BUSES

Electric buses don’t emit any tailpipe pollution, eliminating exhaust that is linked to asthma attacks, respiratory illness and cancer.

BENEFITS OF ELECTRIC BUSES

Replacing all of America's school buses with electric buses could avoid an average of 5.3 million tons of greenhouse gas emissions each year.

Opportunities for funding

Grants for School Buses, Shuttle Buses, and Transit Buses

Home / Air Quality / TERP / Texas Clean School Bus Program

Texas Clean School Bus Program

KAMALA D. HARRIS
U.S. Senator for California

Clean School Bus Act

North Central Texas Council of Governments

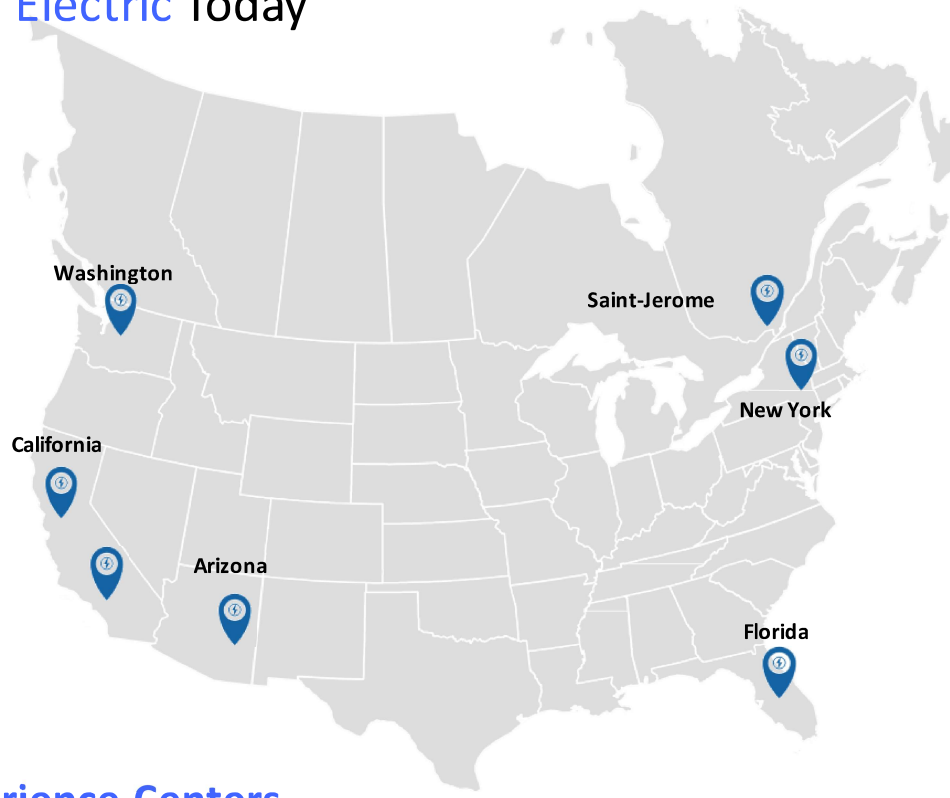


LION ELECTRIC

An all-electric commercial vehicle manufacturer

LION ELECTRIC

Lion Electric Today



350+ employees / 2,000 indirect jobs

2,500 electric vehicles per year manufacturing capacity

300+ electric vehicles in operation

More than 6 million zero-emission miles driven

Experience Centers

- **Sacramento,** California
- **Los Angeles,** California
- **Jacksonville,** Florida
- **Phoenix,** Arizona
- **Albany,** New York
- **Seattle,** Washington

LION ELECTRIC

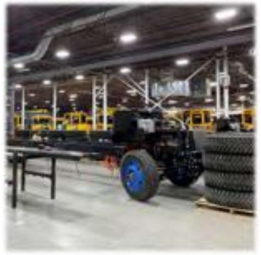
Purpose-Built for Electric

100% In House

→ Lion's vehicles are purpose-built for electric and entirely designed and assembled in-house

- Lion built chassis, truck cabin and bus body
- Proprietary battery technology, with modular energy capacity
- 100% Lion software integration
- V2G ready battery technology
- Range up to 250 miles

TRUCK CABIN | BUS BODY | CHASSIS | BATTERY | POWERTRAIN



The Lion Advantage Supported by an R&D Team of 100+ Engineers & Technicians

Lion adapts to its customers' needs by designing each integrated component from the ground up specifically for EV; involves no retrofitting or third party integrators

LION ELECTRIC

Best-in-Class Product Line-up Available Today

Lion has 7 Vehicles ***Available Today…***

ALL-ELECTRIC MEDIUM AND HEAVY-DUTY URBAN TRUCKS

LION6	LION8	LION8 Refuse
		
Class 6	Class 8	Refuse Class 8

ALL-ELECTRIC BUSES

LIONM	LIONA	LIONC	LIOND
			
Shuttle Bus	Type A School Bus	Type C School Bus	Type D School Bus

…With Purchases by ***Top Customers***

amazon · CN · Hydro Québec · SAQ · Parc Safari · Transport Canada · ecomaine · Waste Connections, Inc. · Molson Coors · AGROPUR · C&S Wholesale Grocers

YUL Montréal-Trudeau International Airport · Groupe Gaudreault · transdev · TwinRivers Unified School District · Los Angeles Unified School District – Students at the Center · Dry Creek Joint Elementary School District · Transco Student Canada · Washington Unified School District · Le Groupe Transbus · Cajon Valley Union School District · keolis

Broadest product line-up of all-electric medium and heavy-duty urban vehicles available for purchase and use today

LION ELECTRIC

Manufacturing Vehicles Today and Supporting Growth Tomorrow

LION IS PRODUCING VEHICLES ***TODAY…***

Dedicated facility near Montreal, Quebec, serving as manufacturing facility, R&D center and corporate headquarters

- ✓ 200,000 sq. ft. dedicated operating area
- ✓ Annual capacity of 2,500 vehicles
- ✓ 450+ employees across all functions

…TO SUPPORT GROWING DEMAND IN THE U.S. AND CANADA

- → Lion Experience Centers provide full-service training, infrastructure assistance and maintenance support
- → Growing network of experience centers in the United States and Canada providing a turnkey experience and full support to rapidly growing customer base

Existing Manufacturing Capacity

Canadian Prime Minister Justin Trudeau at Lion manufacturing facility in March 2020

Customer Experience Centers and R&D Facilities

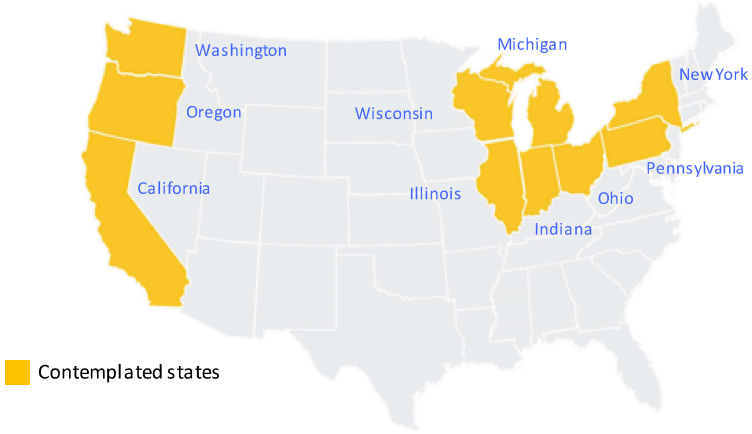
- 2020 Experience Centers
- 2020 R&D Centers
- Planned Experience Centers (2021)
- Planned R&D Centers (2021)

LION ELECTRIC

U.S. Manufacturing Capacity Expansion

OVERVIEW

- Establish high-volume, state-of-the-art vehicle production facility in the U.S.
- Will provide additional capacity to meet growing demand with manufacturing footprint in closer proximity to large U.S. customer pool
- Currently assessing 10+ potential brownfield plants in various states
  - Site selection criteria includes workforce availability, proximity to key customers, suppliers, and available subsidies



RATIONALE

- Closer Proximity to largest portion of North America
- Made in America for the American Market. Leading Green job growth
- Potential for municipal / state level funding
- Proximity to larger pool of suppliers

PROJECT TIMELINE

Q1 2021
Completion of site selection and industrialization plan

2021
Facility ramp-up

H2 2021 – H1 2022
Site staffing (management and operations)

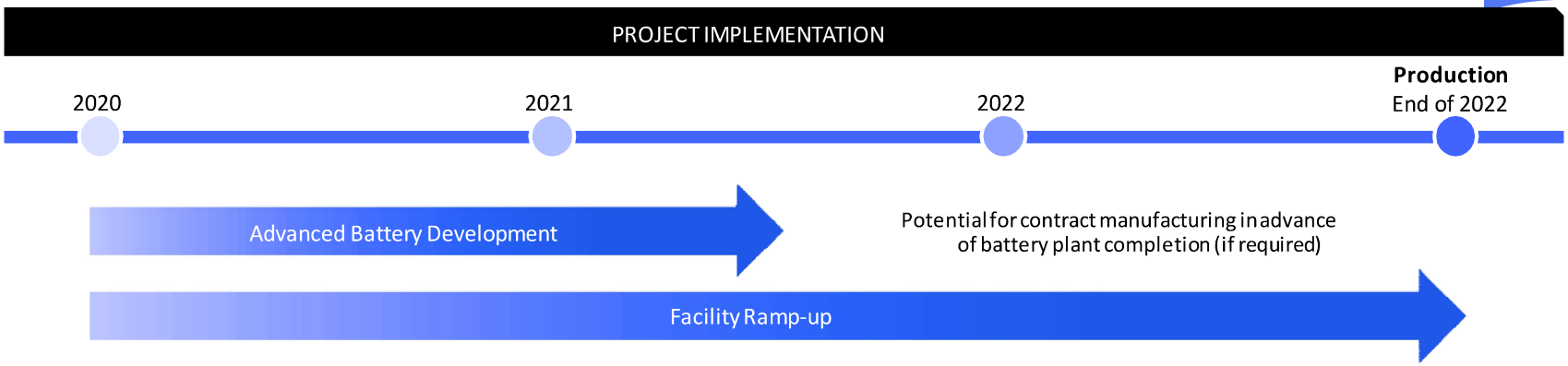
H1 2023
Anticipated start of production and capacity increase

Expansion of manufacturing footprint into the U.S. will allow Lion to meet growing customer demand

LION ELECTRIC

Battery System Development and Assembly Facility Project

- Project conceived to develop proprietary battery systems and drive vehicle economics through a highly-automated assembly facility
- Primary focus is to optimize battery pack and module integration of cylindrical cells, leveraging 10+ years of electric vehicle R&D
- Supported by experienced execution team including industry pioneers in battery technologies



EXPECTED STRATEGIC BENEFITS TO LION

- Projected Battery Systems Cost Savings (~55%) Driven by Further Vertical Integration
- Control Over Battery Design to Optimize Specifications
- Eliminating Supplier Dependency
- Engineering Flexibility to Rapidly Adapt to Emerging Battery Technologies (e.g., solid state)

LION ELECTRIC

Lion provides a full suite of services to support its customers

1 DIRECT SALES APPROACH

Highly specialized internal sales team focused on EV

2 LION GRANT TEAM

Lion Grant Team

Dedicated team forming strong relationships with local entities in the U.S. and Canada to find the right customer funding solutions

Operates at the forefront of policy and the evolving EV ecosystem

3 INFRASTRUCTURE SUPPORT

Lion Energy

Helping customers select and deploy charging infrastructure ahead of vehicle delivery

4 EV EDUCATION AND VEHICLE SELECTION

Lion Academy

Data-driven vehicle education and selection advice to meet each customer's specific needs

5 AFTERMARKET SUPPORT

Lion iBeat

Telematics solution providing real time analytics and ongoing maintenance services, saving customers time and money

6 EXPERIENCE CENTERS

Bright Squad

Teams throughout the U.S. and Canada focused on ensuring a smooth transition to electric for all customers

Building the future:

Energy

- Partnerships
- Utilties
  - Implementation Strategies at local levels
  - V2x - White Plains, NY
- Charger technology providers
  - Nuvve
  - ABB
  - Chargepoint
  - Blink
  - BTC

Cost to Own

- Driving Total Cost of ownership down
  - Volume
    - Manufacturing : Econ. of Scale
    - Energy: leverage lower prices
  - DC chargers: 24 kW-500 kW
  - Use of new designs and material

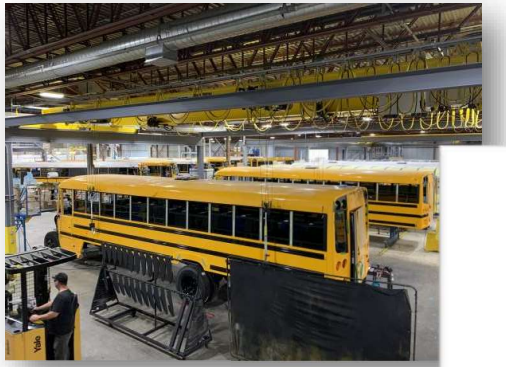
Investment

- Leverage the engery sector to escalate EV adoption
- Transportation energy as a service
- Microgrid generation / storage / Transportation

LION ELECTRIC


LION ELECTRIC

School Bus: EV market approach



- Meet and exceed safety requirements
- Evaluation of customer needs
- Purpose built for EV
  - Go further, last longer, lead economics (TOC)
- Volume approach to the market: cheaper every year

LionC (All-electric Type C School Bus)

Vehicle length: 473 in
Vehicle width: 96-102 in
Wheelbase: 256-278 in
Gross Vehicle Weight Rating (GVWR): Up to 33,000 lb
Capacity: Up to 77 passengers
Maximum Power: 250 kW / 335 hp
Maximum Torque: 2,500 Nm / 1,800 ft-lb

Range: 100-125-155 miles
Battery Capacity: 126-168-210 kWh
Transmission: Direct Drive / No Transmission
Charging Type: Level II (AC) - J1772 & Level III (DC) - CCS-Combo
Emissions Certification: Zero Emissions - US EPA Certificate of Conformity & CARB Executive Order

LionA (All-electric Mini School Bus)

Vehicle length: 313 in
Vehicle width: 96 in
Wheelbase: 143 in
Gross Vehicle Weight Rating (GVWR): 22,350 lb
Capacity: Varies depending on options
Maximum Power: 160 kW / 215 hp
Maximum Torque: 1,200 Nm

Range: 75-150 miles
Battery Capacity: 84-168 kWh
Transmission: Direct Drive / No Transmission
Charging Type: Level II (AC) - J1772 & Level III (DC) - CCS-Combo
Emissions Certification: Zero Emissions - U.S. EPA Certificate of Conformity & CARB Executive Order

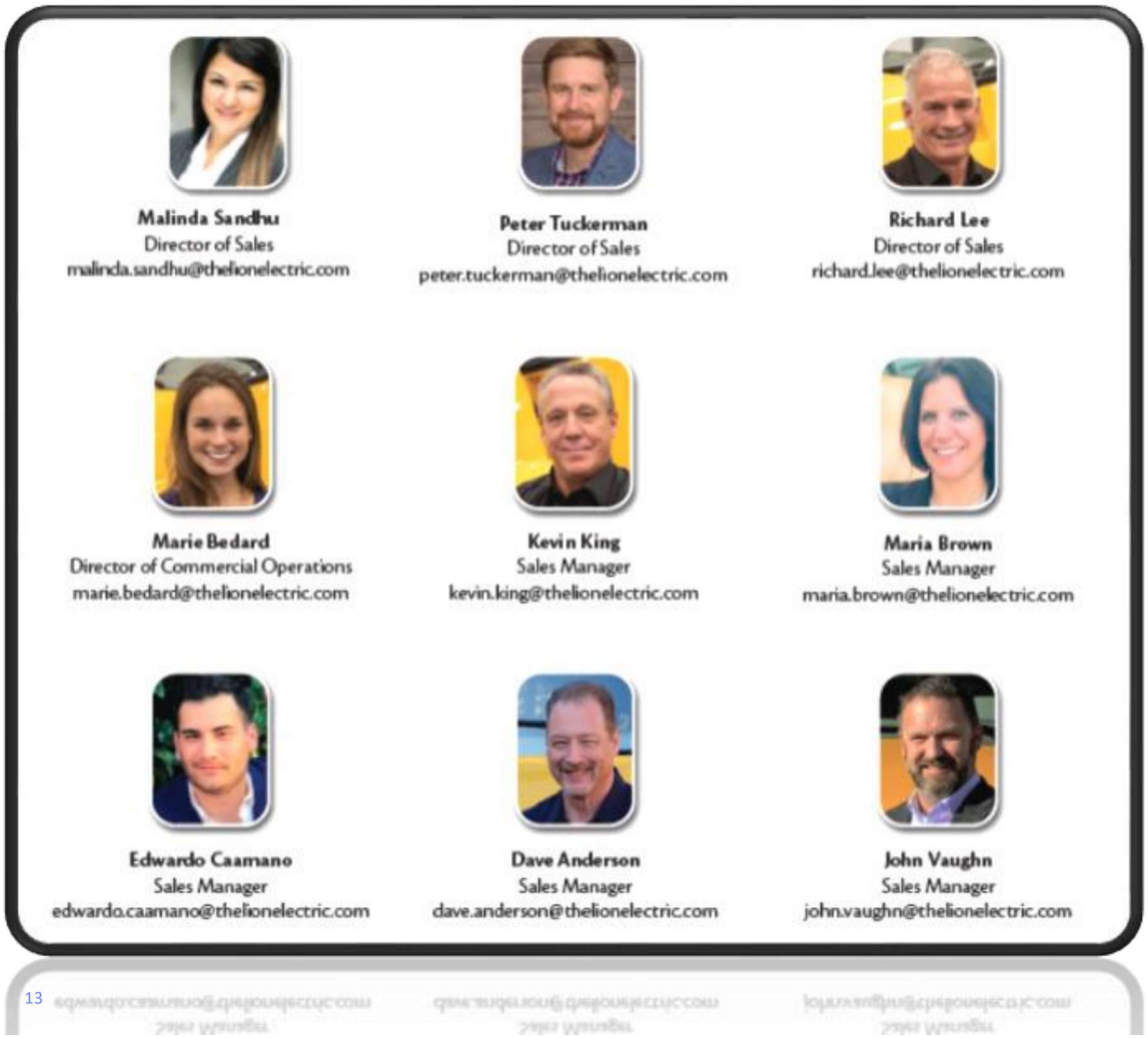
LionD (All-electric Type D School Bus)

Vehicle length: 471 in
Vehicle width: 102 in
Wheelbase: Up to 252 in
Gross Vehicle Weight Rating (GVWR): Up to 36,200 lb
Capacity: Up to 83 passengers
Maximum Power: 250 kW / 335 hp
Maximum Torque: 2,500 Nm / 1,800 ft-lb
Range: 100-125-155 miles

Battery Capacity: 126-168-210 kWh
Transmission: Direct Drive / No Transmission
Charging Type: Level II (AC) - J1772 & Level III (DC) - CCS-Combo
Emissions Certification: Zero Emissions - U.S. EPA Certificate of Conformity & CARB Executive Order

LION ELECTRIC

Diversity in Team, Deployments and Education



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Marc-André Pagé
Vice President of Commercial Operations
marcandre.page@thelionelectric.com

The School Bus Team
Over 200 years of experience

LION ELECTRIC

Diversity in Team, Deployments and Education

STNEXPO
CONTENT. COMMUNITY. COMMERCE.

NAPT
NATIONAL ASSOCIATION for PUPIL TRANSPORTATION

ACTEXPO
CELEBRATING 10 YEARS

LION ELECTRIC

Diversity in Team, Deployments and Education

casto

CASBO
Smart business. Smart schools.™

Washington Association WAPT for Pupil Transportation

NSTA
NATIONAL SCHOOL TRANSPORTATION ASSOCIATION

California Association of Black School Educators CABSE

EPRI ELECTRIC POWER RESEARCH INSTITUTE

Clean Cities

MOTHERS OUT FRONT

ENVIRONMENTAL LAW & POLICY CENTER

LION ELECTRIC

Thank you

LION ELECTRIC

Electric School Bus Projects
Grant Funding Opportunities

Air Grants Division • January 2021

Agenda

- **TERP Overview**
- **TxVEMP Overview**
- **Q & A**

What does TERP do?

The purpose of the TERP program is to:

- provide grants to reduce nitrogen oxides (NO_X) emissions from mobile sources;
- support programs to encourage the use of alternative fuels for transportation in Texas; and
- help to keep the air in Texas clean.

How Does TERP Reduce NO_X Emissions from Mobile Sources?

- TERP provides financial incentives for the **early retirement** of heavy-duty vehicles and equipment, particularly those with large diesel engines, that have been operating in Texas.
- Retired vehicles and equipment are rendered permanently inoperable, and replaced with newer, cleaner models.
- Grantees commit to operating newer, cleaner models in designated areas of Texas.

TERP Grant Programs

Diesel Emissions Reduction Incentive (DERI) Program

Emissions Reduction Incentive Grants (ERIG) Program

Rebate Grants Program

Seaport and Rail Yard Areas Emissions Reduction (SPRY) Program

Texas Clean Fleet Program (TCFP)

Texas Natural Gas Vehicle Grant Program (TNGVGP)

Alternative Fueling Facilities Program (AFFP)

Texas Clean School Bus (TCSB) Program

Light-Duty Motor Vehicle Purchase or Lease Incentive Program (LDPLIP)

New Technology Implementation Grant (NTIG) Program

Port Authorities Studies & Pilot Program (PASPP)

Governmental Alternative Fuel Fleets (GAFF) Program

TERP Grant Programs
Electric School Bus Opportunities

TERP programs that focus on reducing NO_X emissions in the nonattainment and affected areas:

- **Diesel Emissions Reduction Incentive (DERI) Grants Program (FY20-21 ~$45M)**
  - The **Emissions Reduction Incentive Grants (ERIG) Program** provides grants on a competitive basis to upgrade or replace older heavy-duty vehicles, non-road equipment, locomotives, marine vessels, and stationary equipment.
  - The **Rebate Grants Program** provides grants on a first-come, first-served basis for the replacement or repower of heavy-duty on-road diesel vehicles and select non-road equipment.

TERP Grant Programs
Electric School Bus Opportunities

TERP grant programs available to applicants state-wide:

- The **Texas Clean School Bus Program** provides grants on a first-come, first-served basis to replace or retrofit older diesel school buses with newer school buses powered by any fuel type to reduce emissions of particulate matter in diesel exhaust throughout the state. **(FY20-21 $6.2M)**
- The **Light-Duty Purchase or Lease Incentive Program** provides grants on a first-come, first-served basis for the purchase or lease of an eligible new light-duty motor vehicle powered by compressed natural gas, liquefied petroleum gas, or hydrogen fuel cell or other electric drive. **(FY20-21 $7.7M)**

TERP Grant Programs
Electric School Bus Opportunities

TERP grant programs for natural gas, alternative fuel, and electric vehicles and infrastructure within counties in and along some of the major interstate corridors across Texas:

- The **Texas Clean Fleet Program** provides grants on a competitive basis for large fleets of on-road light-duty or heavy-duty vehicles to replace diesel vehicles with new alternative fuel or hybrid vehicles. **(FY20-21 $7.7M)**
- The **Alternative Fueling Facilities Program** provides grants on a competitive basis for the construction or expansion of natural gas and other alternative fueling stations. **(FY20-21 $12M)**

TERP Contact Information

- **Website:** **www.terpgrants.org**
- **E-mail:** **terp@tceq.texas.gov**
- **Toll Free:** **800-919-TERP (8377)**

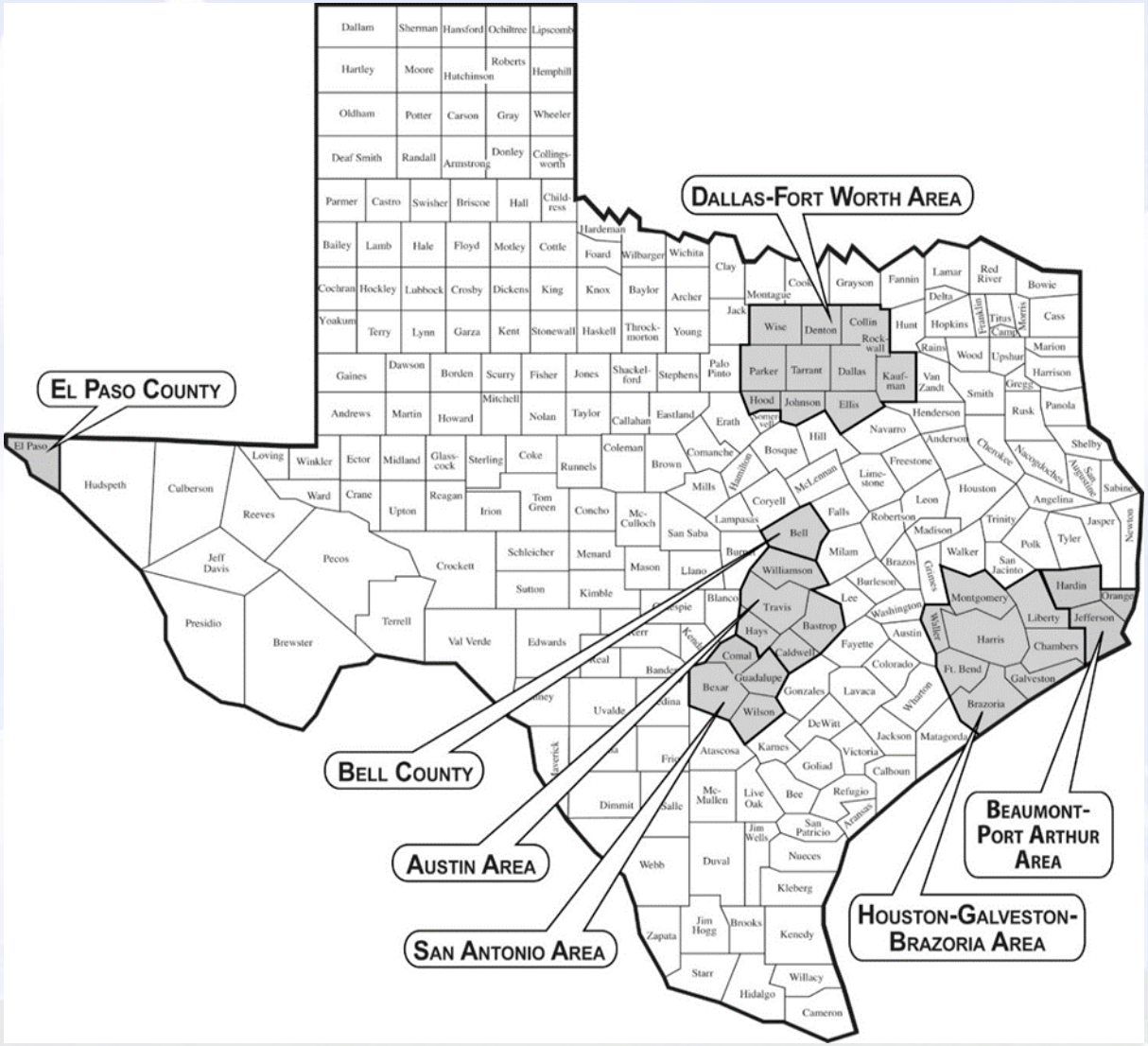
Texas Volkswagen Environmental Mitigation Program (TxVEMP)

- Volkswagen entered into settlements with the U.S Environmental Protection Agency and California Air Resources Board to resolve violations for installing devices on 2.0 and 3.0 liter diesel vehicles to emit NO_X above the federal standards in normal operation.
- As part of the settlement agreements, VW must pay approximately $2.9 billion into the Environmental Mitigation Trust Agreement for State Beneficiaries (Trust).
- Texas is designated as a state beneficiary under the Trust.
- Governor Abbott designated the TCEQ as the Lead Agency for Texas.
- The Lead Agency must administer the funds, submit funding requests, track and monitor the use of the funds, and submit semi-annual reports to the Trustee.

TxVEMP

- Over $209 million in grant funding available to Texas
- Replacement and Repower Project Categories
  - Class 4 – 7 Local Freight Trucks
  - Class 8 Local Freight Trucks and Drayage Trucks
  - Class 7 – 8 Refuse Vehicles
  - School Buses
  - Transit and Shuttle Buses
  - Forklifts and Port Cargo Handling Equipment (Electric Only)
  - Airport Ground Support Equipment (Electric Only)
- Other Project Categories
  - Ocean-Going Vessel Shore Power
  - Light-Duty Zero Emission Vehicle Supply Equipment

TxVEMP Priority Areas



TxVEMP Funding and Implementation

Grant Round	Total Funding Amount	Opening Date
School, Transit, & Shuttle Buses	$58.7M	***CLOSED***
Class 7-8 Refuse Vehicles	$41.9M	***OPEN Now - January 27, 2021***
Class 4-8 Local Freight & Drayage Trucks	$33.5M	***OPEN Now - January 27, 2021***
Level 2 Light-Duty Zero Emission Vehicle Supply Equipment	$31.4M	***OPEN Now - October, 2021***
Fast-Charge Light-Duty Zero Emission Vehicle Supply Equipment	$31.4M	*Summer 2021*
Electric Forklifts & Port Cargo-Handling Equipment	$16.8M	*Summer 2021*
Electric Airport Ground Support Equipment	$16.8M	*Winter 2021*
Ocean-Going Vessel Shore Power	$1.9M	*Winter 2021*
Total[1]	**$201M**	

[1]Does not include 4% of total funding for administrative expenses.

TxVEMP Contact Information

- **Website:** **www.txvwfunds.org**
- **E-mail:** **vwsettle@tceq.texas.gov**
- **Toll Free:** **(833) 215-TXVW (8989)**

EPA Funding Programs

Funding Agency	Program	Eligible Applicants	Eligible Activities	Old Vehicle Criteria	Funding Levels	Deadline
EPA	Diesel Emissions Reductions Act (DERA) Clean Diesel Funding Assistance Program	Public entities	Replace or repower heavy-duty vehicles or equipment	**Fuel:** Diesel **Model Year:** 1996 – 2009 (newer than 2010 if replacing with electric) **GVWR:** >16,000 lbs.	**Up to 45%** cost if new vehicle is electric; up to 60% if repower **Up to 35%** cost if new is powered by engine certified to CARB optional low-NOx standards (both CNG and LPG engines currently available); up to 50% if repower **Up to 25%** cost for all others; up to 40% if repower"	Closed; Estimated Winter 2021
EPA	DERA School Rebate Program	Public entities	Replace buses	**Fuel:** Diesel **Model Year:** 2006 or older **GVWR:** >10,000 lbs.	$20,000 for diesel and gasoline $25,000 for propane $30,000 for CNG/LNG $65,000 for battery or hydrogen electric Maximum rebate per application is $300,000	Closed; Estimated Fall 2021

NCTCOG – Available Replacement Programs

Funding Agency	Program	Eligible Applicants	Eligible Activities	Old Vehicle Criteria	Funding Levels	Deadline
NCTCOG	Clean Fleets North Texas (CFNT) 2020	Local governments or private companies that contract with local governments	Replace heavy-duty diesel vehicles and equipment	**Fuel:** Diesel **Model Year:** 1996 – 2006 (up to 2009 if replacing with electric) **GVWR:** >16,000 lbs.	**Up to 45%** if electric **Up to 35%** if new engine is certified to CARB Low NOx standards **Up to 25%** for all others	Next Deadline: April 9, 2021 Final Deadline: October 8, 2021
	North Texas Emissions Reduction Project (NTERP) 2020	Private entities				

For all funding go to: www.nctcog.org/aqfunding

Highland Electric Transportation

Simplifying the Switch to Electric School Buses

Duncan McIntyre
Founder & CEO

Highland Electric Transportation

School Bus Discussion / Program Option

North Central Texas Council of Governments

Why School Bus?

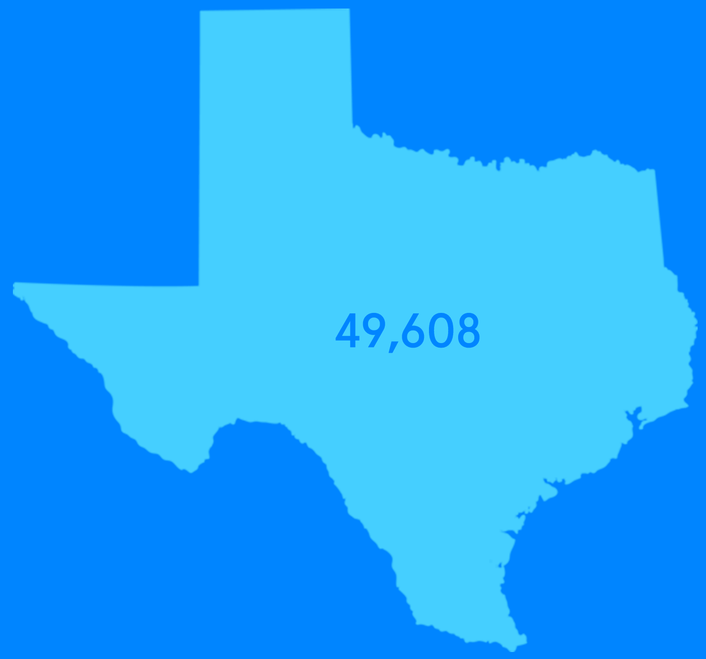
The Proof is in the Numbers

479,876 school buses currently operate in the US

26MM pupils are transported daily

Texas has 49,608 buses and transports
1.353 million pupils daily

Over 85% are diesel



Problem

01

Diesel Pollution

Traditional diesel school buses emit toxic fumes that are harmful to children and bad for the environment

02

Cost

The up-front cost of purchasing electric school buses is prohibitive for school districts

03

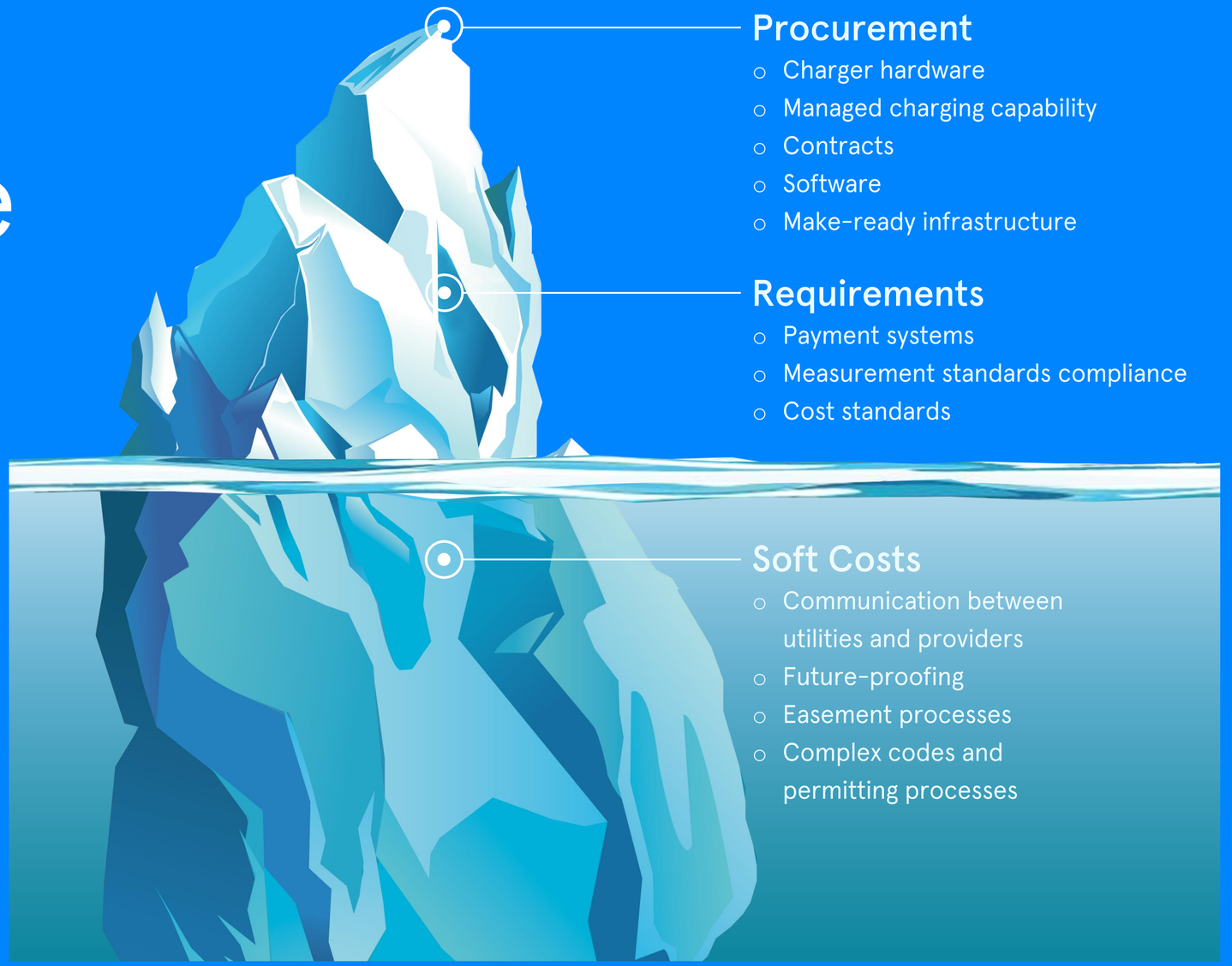
Complexity

Managing electric transportation fleets requires expertise in advanced energy technology, policy and finance

Problem

Hidden Infrastructure Costs

Procurement and compliance costs can be seen and quantified—it's the invisible soft costs that can sink a project



Procurement

- Charger hardware
- Managed charging capability
- Contracts
- Software
- Make-ready infrastructure

Requirements

- Payment systems
- Measurement standards compliance
- Cost standards

Soft Costs

- Communication between utilities and providers
- Future-proofing
- Easement processes
- Complex codes and permitting processes

Problem

Barriers to EV Adoption

Obstacles

Upfront cost

Expertise in energy infrastructure

Charging complexities

Software / hardware integration

Many others

Strategies to Solve “Upfront Cost”

Operational savings
- Lower fuel cost
- Lower maintenance cost

Vehicle-to-Grid (V2G) income
- Vehicle batteries can be used to provide energy services to the local utility

Declining EV purchase pricing

Incentives

Compare

Options to Consider for an EV Project

Independent Path

Seek grants

Design depot infrastructure

Select hardware and software vendors

Build V2G arrangements

Seek tax-payer funding for project costs
- Repay taxpayer as project delivers promised savings and supplemental income

HET: Turnkey Path

Guaranteed project success

Guaranteed fixed price, savings compared to current diesel fleet cost

Project designed and built for future expansion

Risks of new technology, uncertain electricity costs, and uncertain repair costs: all transferred to Highland

"For $23,200 per year I got an electric bus, charger, Installation, fuel, and maintenance; locked in for ten years ... with no surcharges!"

– Municipal Transportation Director

Our Solution

Electric School Buses as a Service

Simple

Our turnkey solutions include everything a school district needs to electrify their school bus fleet: vehicles, charging infrastructure, managed charging, and maintenance

Low-Cost

We offer communities budget-neutral plans where Highland takes on the risk and responsibility of owning and operating an EV fleet

Emissions-Free

Clean electric busses reduce pollution and improve student health by eliminating toxic diesel fumes that are linked to asthma, absenteeism, and lower test scores

Product

A Simple Service Solution for School Districts

Plan

We design and implement the entire project

Finance

We finance the buses, charges, and all other costs

Charge

We charge the buses during off-peak hours, ensuring a “full tank” before each trip

Maintain

We provide a complete warranty, reimbursing for all repair costs, including parts and labor

Manage Electricity Storage

We charge bus batteries during peak solar mid-day, and discharge the power back to the grid during the evening peak demand period

Benefit

Our Financial Bet Reduces Your Risks

We make bets on four things, so you don't have to ask the taxpayer to...

Operational savings for EVSB compared to diesel
- Lower "fuel" cost
- Lower maintenance costs

Vehicle-to-grid (V2G) income
- Helping the electric utility and getting paid for it

Declining EVSB purchase pricing

Coordinated federal, state and utility EVSB incentives

Beverly Public Schools, MA

EVSB V2G Site Implementation

Thank You

For more information please contact
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C: 978.828.3912

https://www.highlandet.com

The Power of Planning in Partnership

Webinar #3
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Dallas-Fort Worth CLEAN CITIES

North Central Texas Council of Governments

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Lion Electric Bus Type C from our White Plains, NY location

Overview

- Who we are
- Our commitment to EV
- What we've learned so far
- Key phases
- What ISDs can do to help

Who we are

- National Express LLC (NELLC) is a leading provider of student transportation services, committed to getting students to school safely, on time and ready to learn, and a provider of local transit, paratransit and shuttle solutions to customers and communities alike
  - 1.38 Million+ passengers transported daily
  - 290+ customer service centers
  - Operating in 36 States and 3 Provinces
  - 26,500+ Vehicles Operated
- Our vision is to deliver service excellence to earn the partnership, loyalty and trust of our customers and employees.
- Our priorities center around what we value most: **safety, people, customers, community and excellence**

Our commitment to EV

- We recognize the need to transform the industry with cleaner vehicles and we have dedicated a team to enabling the delivery of EV school buses to all communities that desire them.
- Implementing electric school buses is a powerful and meaningful step forward in improving the health and wellness of students and communities at large.
- We believe it begins with the right partners who hold similar values and shared goals for achieving success.
- For us, it’s personal.

Benefits of Electric School Buses

- **Positive environment for the community, students and drivers.** No exhaust fumes, reduced noise pollution, better ride-ability, ease of operation, carbon-free depots and promote use of renewable energy generation.
- **Exceeds the demands of student transportation.** Technology advancements in battery, design, and range have matured for full-scale deployment.
- **Superior vehicle performance.** Quieter operation, smoother ride, and sophisticated diagnostics which provide real-time feedback to improve the operation and driving experience
- **Improved efficiencies and use of resources.** EV buses have fewer moving parts, which means: less maintenance, less downtime, less hazardous waste with greater reliability, and a smaller fleet footprint requiring less space
- **Safety.** Driver behavior systems, wifi, GPS, collision mitigation, fewer road miles, and advanced telematics make the EV option safer than traditional route vehicles

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Barriers to EV and how we meet the challenge

High purchase price: today the purchase price for an electric school bus is 3-4x that of a traditional diesel bus

Complex infrastructure implementation: depot electrification—a primary challenge of electric vehicles—necessitates complex and carefully-planned infrastructure work across utilities, property owners, operators, fleet owners, school districts, government agencies and others to successfully equip a site to support EV fleet

Requires extensive, dedicated project management: EV requires a combination of the right partnerships with numerous suppliers and stakeholders, the right know-how with technical teams and operations insights, and the right fit to meet the specific needs for your district, all working in concert to deliver a sustainable, long-term solution

At Durham, we believe all communities deserve access to pollution-free, carbon-free, quality, reliable, best-in-value, zero-emission vehicles.

We will leverage grant programs, V2G and infrastructure, and our strategic partnerships with all major school bus providers to bring zero emission vehicles to our valued customers and their communities.

Our dedicated team of experts across school bus operations, fleet procurement, engineering and project management will take the lead from start to finish of your implementation, ensuring right fit, right price and right time – partnering with you every step of the way.

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What we've learned so far…

- White Plains case study – power of partnership
- Educate, educate, educate
- Money matters – plan for your grant needs
- The time is now – grants aren't here forever
- Build for scale – future proofing lens

ELECTRIC SCHOOL BUS ROADMAP

GETTING TO A PROPOSAL: 1-3 MOS.

DISCOVERY

As your partner, Durham School Services will take the lead in gathering key information to inform a comprehensive proposal. This includes requirements across fleet, routes and infrastructure, and applying for available grants to ensure you're enabled to leverage all funds available for electric school bus conversion.

PRICING & PARTNERS

As part of our proposal, Durham will identify strategic partners for pricing and implementation. Our goal is to ensure our customers have access to the best pricing and products available.

PROPOSAL

Durham will deliver a comprehensive proposal to the District for review and alignment before making any commitments. This proposal will include transparency of pricing and partners, timing and expected outcomes.

INTEGRATION AND DELIVERY: 6-8 MOS.

FLEET PROCUREMENT

After proposal alignment, Durham will move forward with securing the electric fleet with the provider on behalf of the District. Our procurement team will ensure all necessary requirements are met on-time and on-budget.

DEPOT ELECTRIFICATION

Durham's infrastructure team is dedicated to ensure all steps of this process are delivered according to plan, including design, permitting, build, and integration. We will work with all stakeholders to ensure implementation meets expectations.

ON-GOING SUPPORT

Durham is committed to excellence throughout the entire process, including driver training, maintenance of vehicles, infrastructure and charging support.

How ISDs can help

- Ride and Drive events for community engagement
- Including EV requirements in your RFPs
- Reaching out to your utility companies early in the process
- Single project owner with a clear decision-making process
- Knowing your must-haves: budget, timing, stakeholder alignment
- Becoming advocates and supportive to others who are interested in fleet electrification

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