

V O L V O

VOLVO GROUP ELECTRIC TRUCKS & MACHINES IN NORTH AMERICA

WASHINGTON ALTERNATIVE FUEL VEHICLE TECHNICAL ADVISORY GROUP (AFV-TAG)



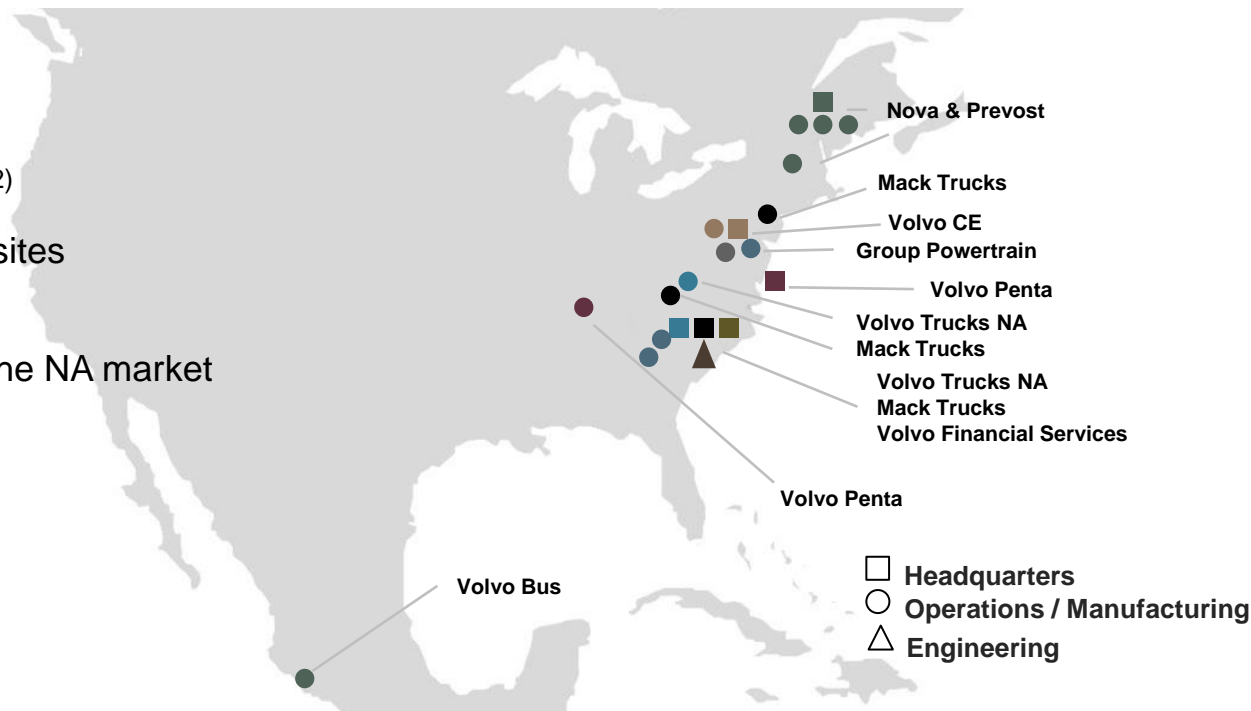
Andrea Pratt

Zero Emission Technology Program Director, Volvo Group NA

VOLVO
VOLVO GROUP

Volvo Group North America

- ~30% of Group's net sales
- Approx. 13,700 employees (2022)
- Fourteen major manufacturing sites
- Only heavy-duty truck group with 100% U.S. production for the NA market
- Global HQ for Mack Trucks, Volvo Financial Services



VOLVO

On-Going Commitment to Climate & Sustainability



Volvo Trucks Hagerstown - MD

Carbon-neutral manufacturing plant and
landfill-free operations



Volvo Trucks Greensboro - NC

100% renewable electricity sites
throughout the US



Distribution Centers

Education to make sustainability a natural part
of all employees' actions



Volvo Trucks New River Valley - VA



Volvo Trucks Customer Center - VA



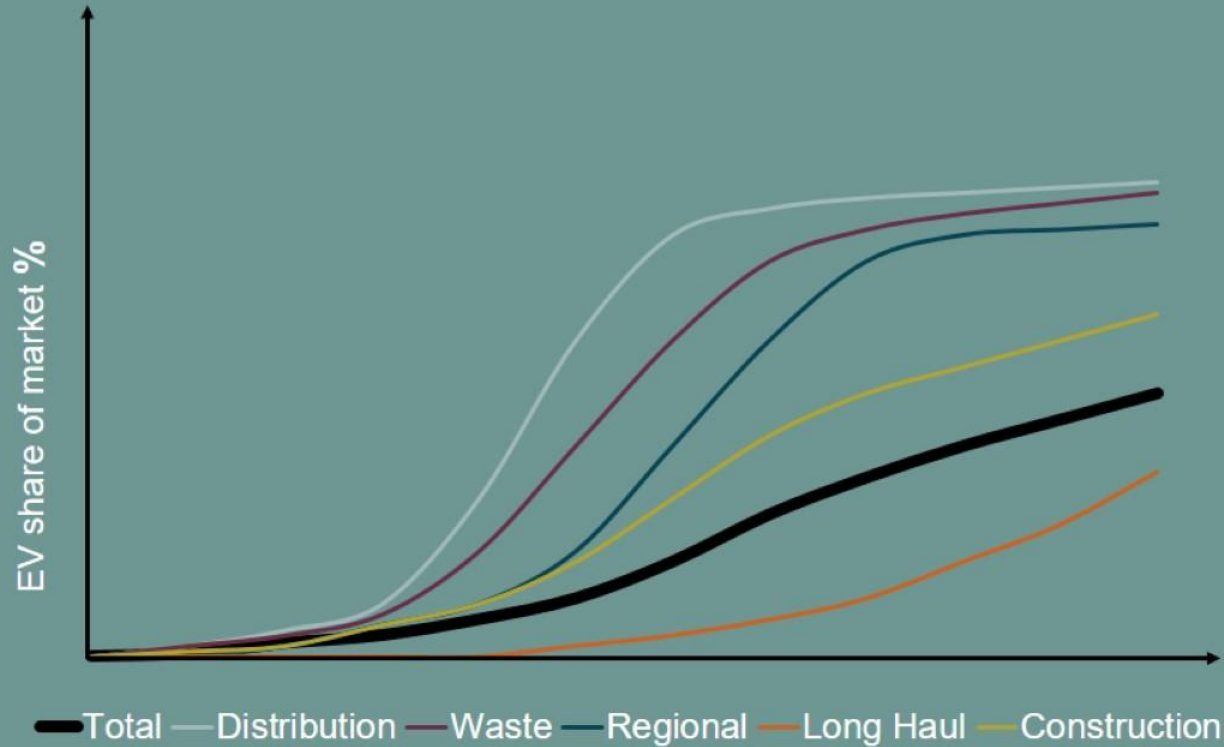
Dealer Network



Setting a Clean Direction

- 100% fossil free vehicles by 2040
- 35% electric vehicles by 2030
- Introduction of fuel cell vehicles in the second half of this decade

The Great Shift to electrification

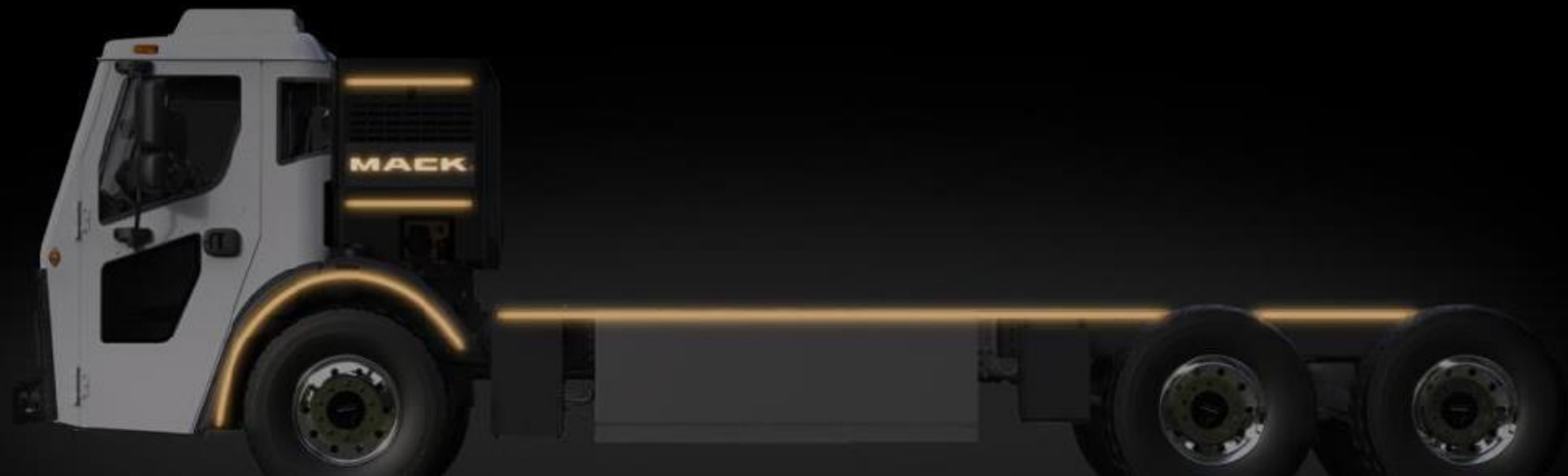


- Segment by segment
- Market by market
- Region by region



MACK TRUCKS EMOBILITY

Copper is the new bulldog era and it's here today!



One of Largest Nonprofit Recyclers, Eco-Cycle, Orders Mack® LR Electric as its First BEV

02-10-2022

BOULDER, CO (Feb. 10, 2022) – Mack Trucks announced today that Eco-Cycle, one of the largest nonprofit recyclers and Zero Waste organizations in the U.S., recently ordered a Mack® LR Electric battery electric vehicle (BEV) – the first BEV that Eco-Cycle will add to its fleet.



Electromobility in Refuse



City of Santa Cruz, California, Purchases Mack LR® Electric Vehicle to Help Meet Sustainability Goals

05-11-2022

LONG BEACH, California (May 10, 2022) – The City of Santa Cruz, California, recently purchased a Mack LR® Electric refuse vehicle, the first fully electric vehicle in the municipality's sanitation fleet, and plans to purchase another. Mack made the announcement during the Advanced Clean Transportation (ACT) Expo, May 9-12, at the Long Beach Convention Center.

CHARGING AHEAD THE VOLVO VNR ELECTRIC



VOLVO

Continuous scaling of our VNR Electric sales and deliveries

Customers across North America are putting the VNR Electric into real operations to achieve decarbonized transportation





L25 ELECTRIC

Volvo Electric Compact Wheel Loader

ECR25 ELECTRIC

Volvo Electric Compact Excavator

ELECTROMOBILITY AND ELECTRIC POWER
SOLUTIONS

VOLVO PENTA ELECTRIC POWER



VOLVO

THE ELECTRIC ECOSYSTEM

Building the decarbonization journey for our customers



ELECTRIC
TRUCKS



ROUTE
SIMULATIONS



FINANCIAL
SERVICES



CHARGING
INFRASTRUCTURE

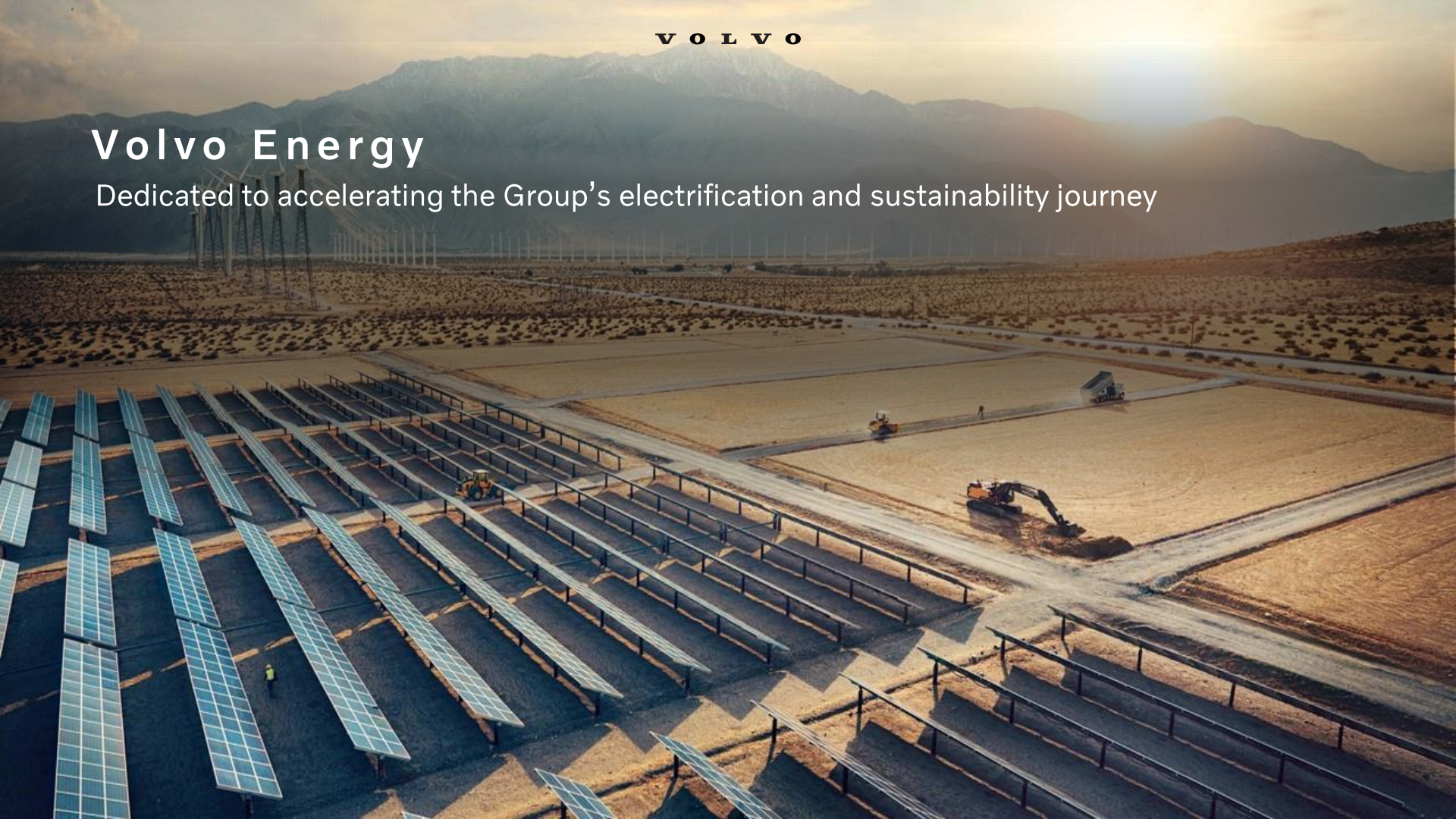


MAINTENANCE
& REPAIR

V O L V O

Volvo Energy

Dedicated to accelerating the Group's electrification and sustainability journey





**VOLVO
LIGHTS**

**BRINGING BATTERY-ELECTRIC
FREIGHT TRUCKS TO MARKET**
FROM DEMONSTRATION TO COMMERCIALIZATION

Lessons Learned Guidebook



Authorized by Volvo Group North America



Volvo LIGHTS (Low Impact Green Heavy Transport Solutions) is part of California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment — particularly in disadvantaged communities. The total project cost was \$90 million, with a funding award of \$44.8 million.

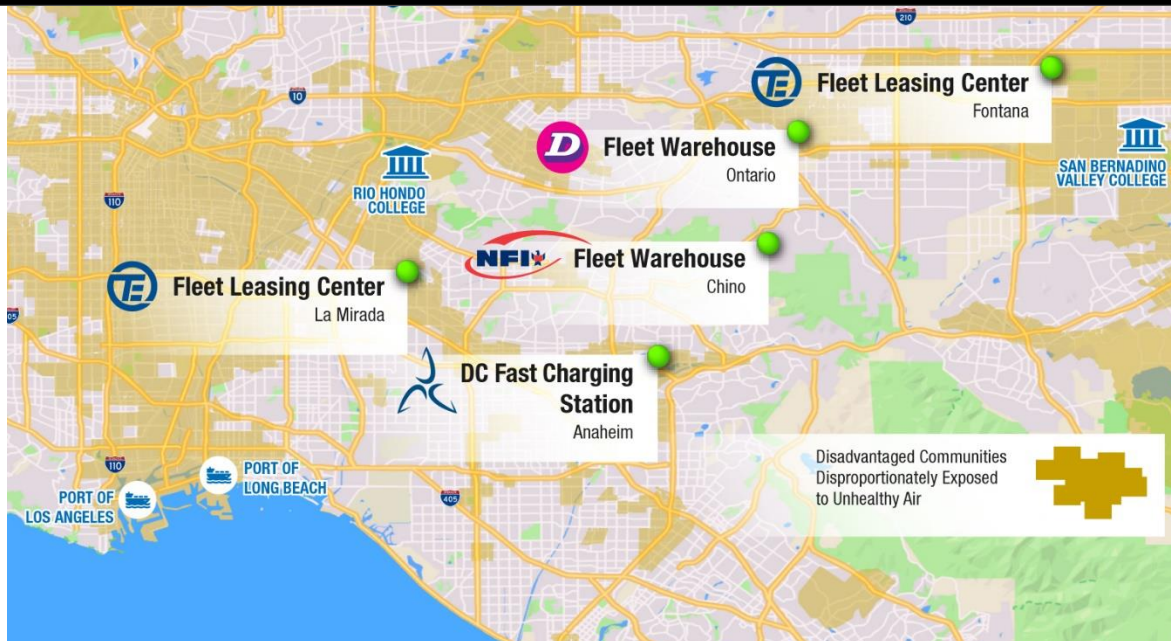


Demonstrating innovations critical to the commercial success of battery electric trucks and equipment for goods movement

LIGHTSproject.com



PROJECT PARTNERS



23 Battery Electric Heavy-Duty Trucks



29 Battery Electric Equipment



58 Public & Private Chargers



2 Colleges Designing Electric Truck Maintenance Programs



1.8 Solar Energy Generation
Million KWH



2 Ports Providing Infrastructure Planning

BEV Repair and Maintenance



- Paradigm shift in trucking requires investments across the entire ecosystem of support
- New training programs created through Volvo LIGHTS for repair & maintenance
- Certified EV dealers can help assess impact on fleet operations and ensure safe electric truck servicing.
- First responder training distributed through National Fire Protection Agency and where dealers are going through the certification process.

12 EV Certified Volvo Trucks Dealers and 40 in process

(12) EV Certified Volvo Trucks Dealers ★

- TEC Equipment – Fontana, CA
- TEC Equipment – LA Mirada, CA
- TEC Equipment – Oakland, CA
- Affinity Truck Center – Fresno, CA
- Milea Truck Center - Bronx, NY
- Hudson County Motors – Secaucus, NJ
- Nacarato Truck Center – Troutville, VA
- TransEdge Truck Centers – Pittsburgh, PA
- Northwest Equipment Sales – Boise, ID
- Ballard Truck Center – Tewksbury, MA
- Pare Centre Du Camion – Quebec, QC
- Camions Volvo Montreal – Dorval, QC

(40) In Process ★



Early ZEV Deployments: Lessons Learned

- Single largest challenge for the heavy-duty ZEV market is **charging infrastructure**
- Engage utilities and local officials early in the infrastructure design process
- TCO is currently dependent on public funding for vehicle purchase & infrastructure
- Fleet ownership of property eases facility planning and investments
- Divergent priorities of multiple stakeholders must be managed
- Consider identifying a dedicated point of contact within your organization



CEC BESTFIT Awards \$2M Grant for MHD Charging Corridor



EMISSIONS & EFFICIENCY

Volvo Trucks to build charging corridor in California for electric vehicles

July 18, 2022



FleetOwner

VOLVO
VOLVO GROUP

PARTNERS FOR A ZERO EMISSION VEHICLE FUTURE





DAIMLER

NAVISTAR

A new path forward

A growing coalition of stakeholders has come together, united by a commitment to minimize heavy-duty vehicle emissions and support the adoption of heavy-duty Zero Emission Vehicles (ZEVs).

PACCAR Inc

V O L V O

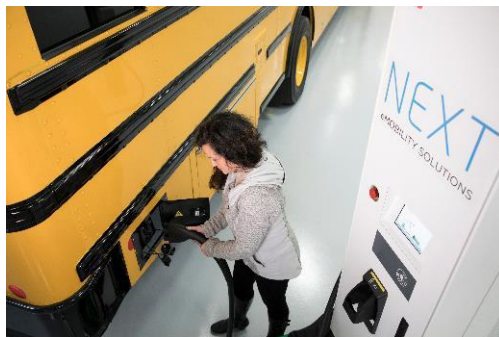
PARTNERS FOR A
ZERO EMISSION VEHICLE FUTURE



What we believe

Zero Emission Vehicles are the future of commercial transport.

We support efforts to build a cleaner, more sustainable future through policy that will ensure confidence among fleets and unite economic and environmental benefits around the country.



PARTNERS FOR A
ZERO EMISSION VEHICLE FUTURE



A new path forward

The best approach going forward is through coordinated and collaborative federal and state policy, built on a foundation of enhanced national vehicle standards.

This national approach **must address critical hurdles to nationwide commercial ZEV deployment** such as the **build-out of necessary charging infrastructure**; it also needs to encourage the deployment of ZEVs across the transportation and logistics supply chain through **vehicle purchase incentives**.

Regional or state initiatives should help deploy ZEVs where they can best address local air quality concerns and encouraging market success to maintain jobs and economic resilience.

Working together, we can achieve the end goal of ZEV commercial truck fleets





How you can get involved



Sign up for updates

- Stay updated on coalition news and developments
- Email info@pzevf.org



Share information with your network

- Download our national one pager [here](#)



Visit our website for more information: www.pzevf.org/

