



SESSION TOPIC

Transportation: Driving Electrified Fleets into the Fast Lane

Transportation: Driving Electrified Fleets into the Fast Lane

MODERATOR

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PANELISTS

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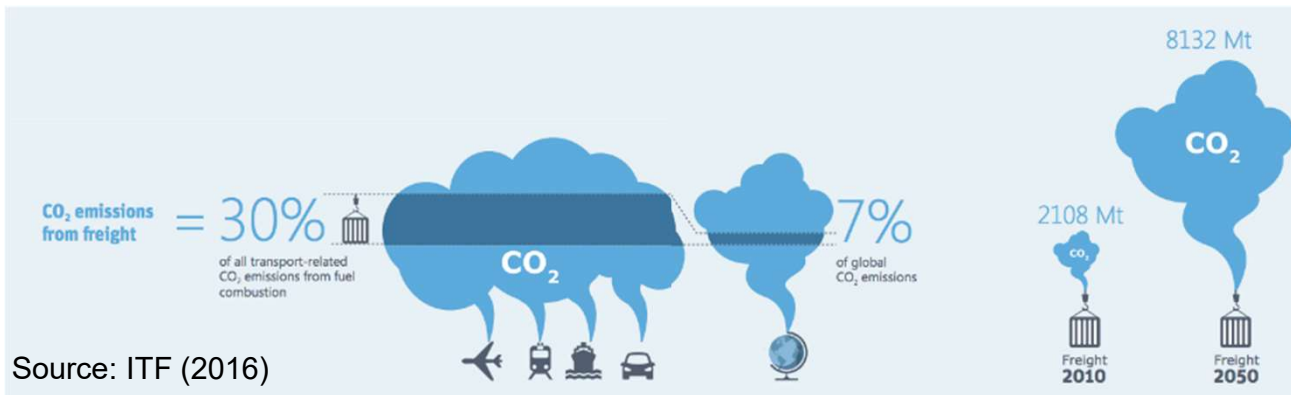
A
PROGRAM
OF CALSTART

Global Commercial Vehicle Drive to Zero Program

Benjamin Mandel

Pathways to Decarbonization in the Northeast
August 29, 2019

Drive to Zero helps nations tackle climate change and urban pollution while spurring innovation



- Freight fuel consumption and GHGs are forecasted to grow four-fold through 2050.
- Urban regions suffer the worst impacts of air pollution in an increasingly urbanized world.
- HDVs represent a disproportionate share of energy consumption and emissions.
- Technology innovation can spur industrial development.

Drive to Zero is a strategic international initiative to catalyze the growth of zero-emission MHDVs

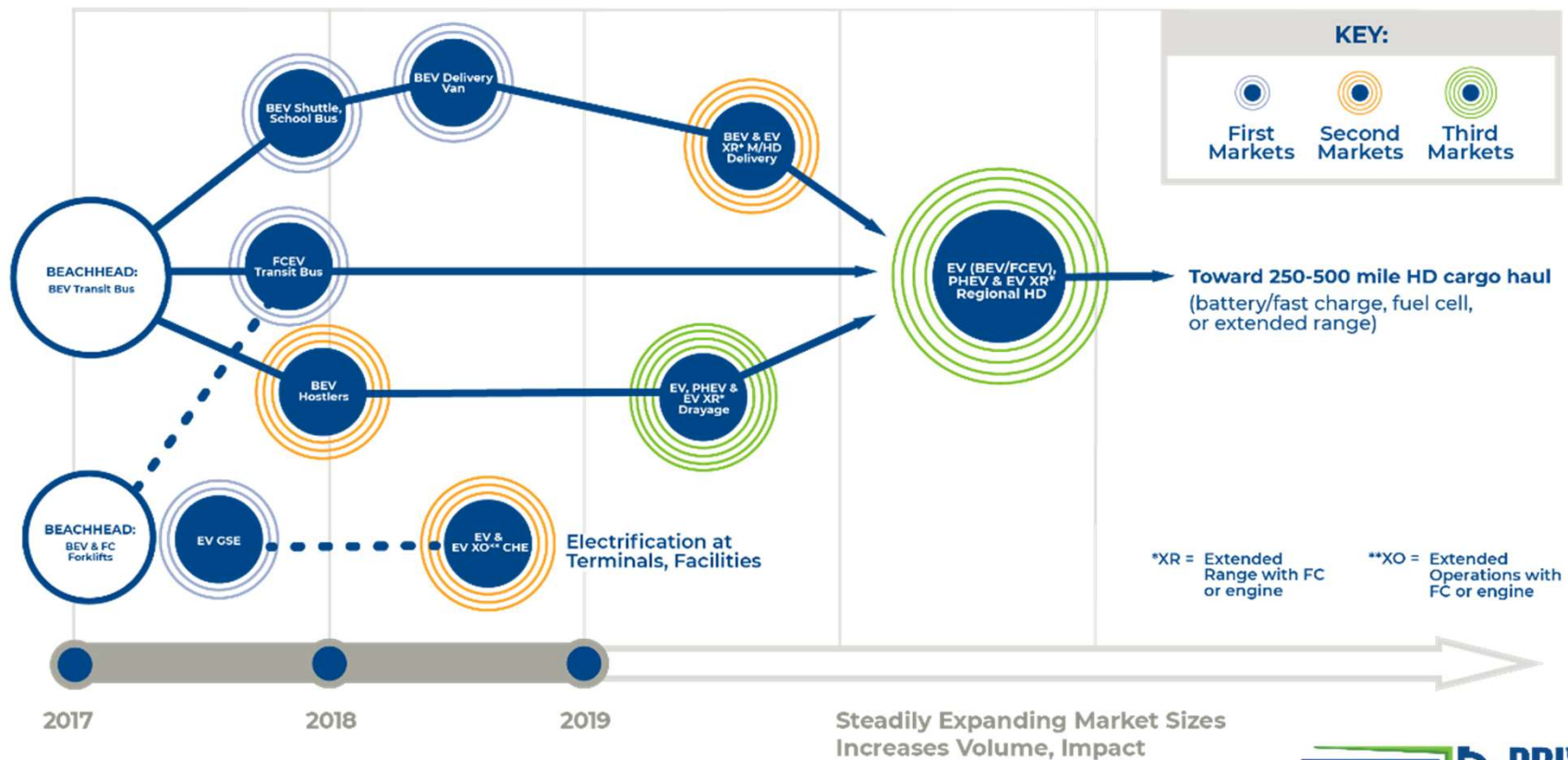
2025

Beachhead near- and zero-emission applications for MHDVs are commercially viable and cost-competitive in target global markets.

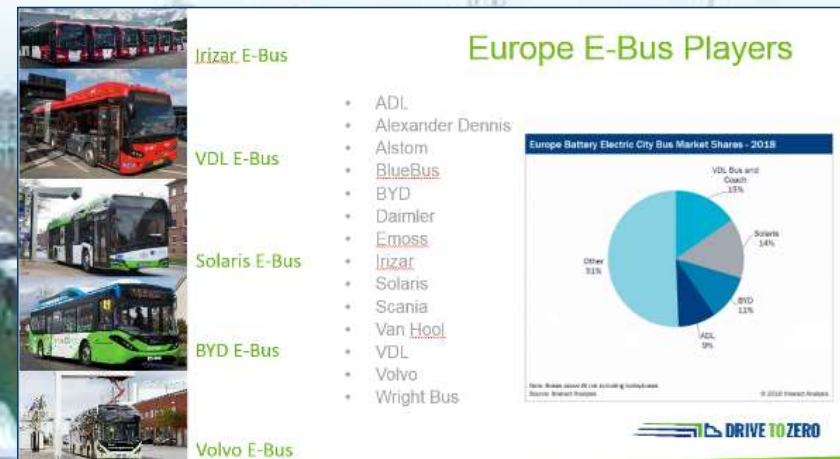
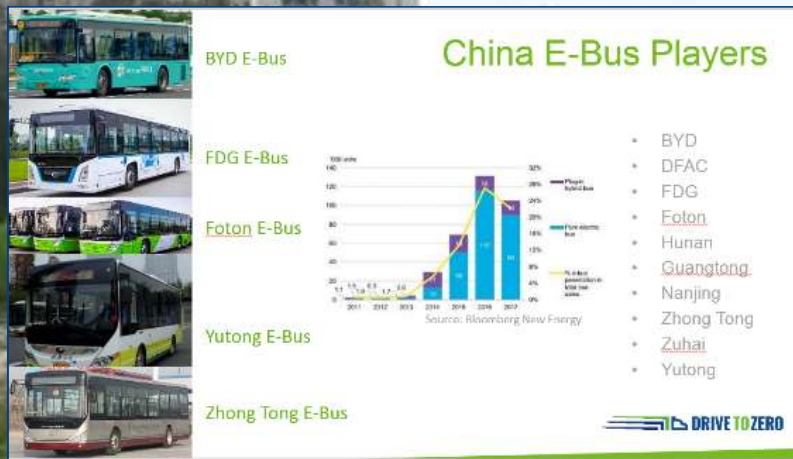
2040

Zero-emission MHDVs dominate in their segments.

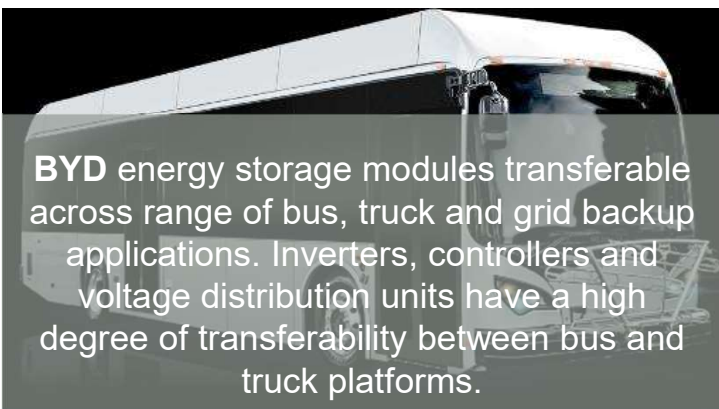
Our “beachhead” strategy targets vehicle segments where zero-emission technology is likely to succeed



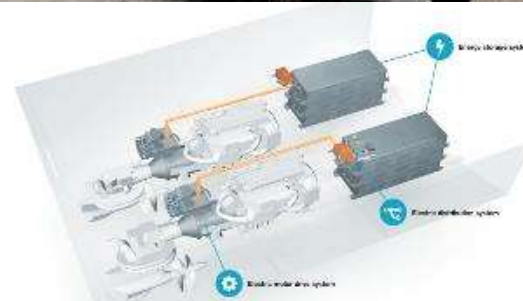
Momentum in e-buses creates first steps for commercial vehicles



Electric technology is highly transferable, speeding production across vehicle types



- Volvo electric truck based off core bus electric powertrain
- Same power train in autonomous electric dump trucks, marine system

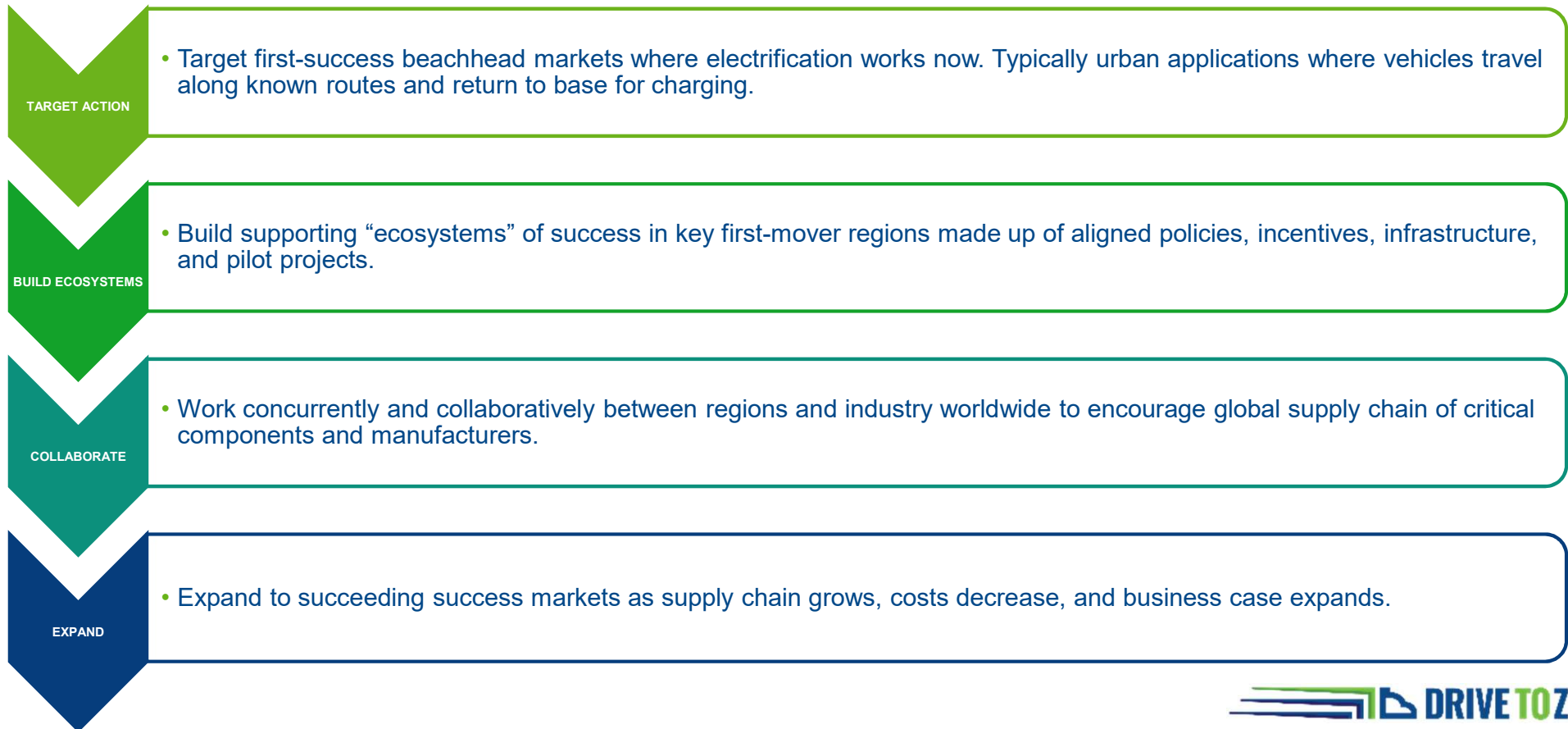


... inverters, controllers and voltage distribution units have a high degree of transferability between bus and truck platforms...



DRIVE TO ZERO

Drive to Zero focuses on the “HOW”



Program was launched last September and has gained incredible momentum



60+ organizations worldwide have signed the Pledge

The Pledge

Cities, governments, manufacturers, fleets and fuel suppliers agree to:

- Work together to accelerate early markets for zero- and near-zero emission trucks, buses and equipment.
- Share information with peer regions.
- Access best tools, research, assistance, data.

Catherine McKenna, Minister of Environment and Climate Change Canada, announces endorsement at Drive to Zero Vancouver Workshop



We are developing tools to drive market success

POLICY AND
ACTION
TOOLKIT

Live

ZE TECH
INVENTORY

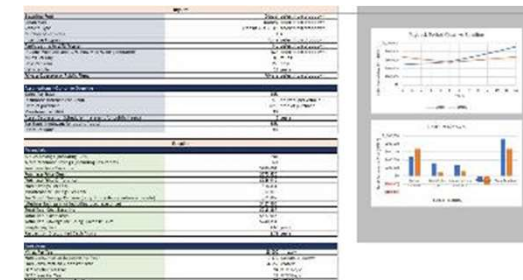
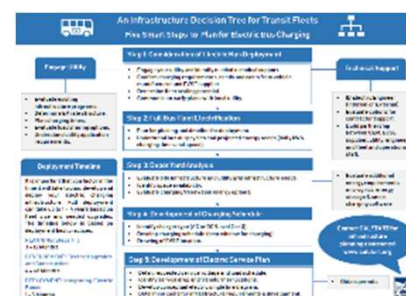
Beta Version Live

INFRA
PLANNING
GUIDANCE

Coming soon

TCO
CALCULATOR

Coming soon



Resources for Transformation: <https://globaldrivetozero.org/resources/>





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Thank you!

For more information:

www.globaldrivetozero.org

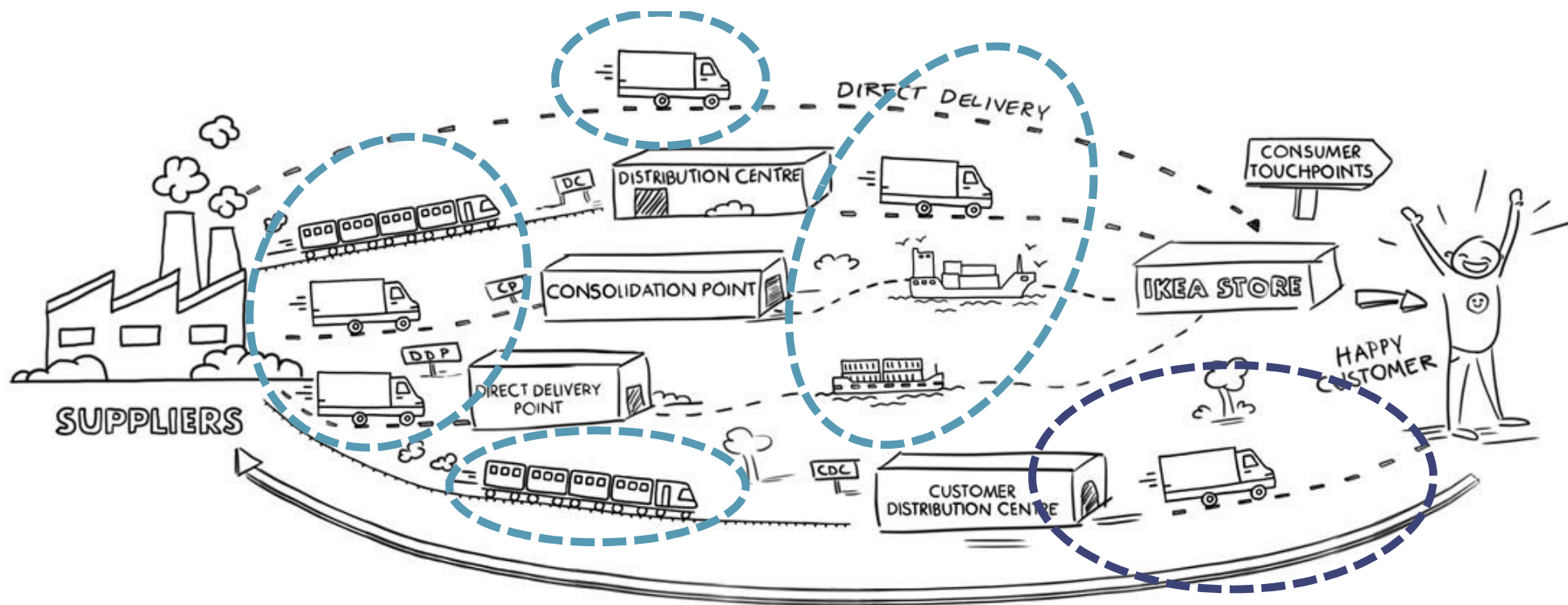
bmandel@calstart.org

IKEA TRANSPORT & LOGISTICS SERVICES AMERICAS

Heavy Duty EVs in Transport

2019-09-06





Inter IKEA Group

- -15% absolute emissions from Transport & Logistics Services by 2030 compared to 2017 levels
- Fuel agnostic due to the varied nature of transportation routes

INGKA Group (IKEA Group)

- Zero emissions home delivery by 2025
- Zero emissions home delivery by 2020 in New York, Los Angeles, Amsterdam, Paris & Shanghai

LONG TERM AMBITION FY17-FY30

-70%

co₂e per transport work

-15%

Absolute emissions

Baseline Year: FY17

PROTERRA CATALYST® PLATFORM INTRODUCTION



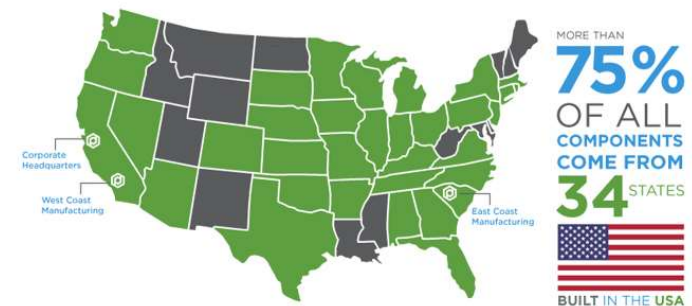
ABOUT PROTERRA



Proterra's Mission

Advancing electric vehicle technology to deliver the world's best-performing heavy-duty vehicles

- Offices and manufacturing in CA and SC
- 500+ employees, with strong transportation expertise
- >90 customers; >700 vehicles sold
- >8,000,000 service miles
- >47,000,000 pounds of CO2 emissions avoided



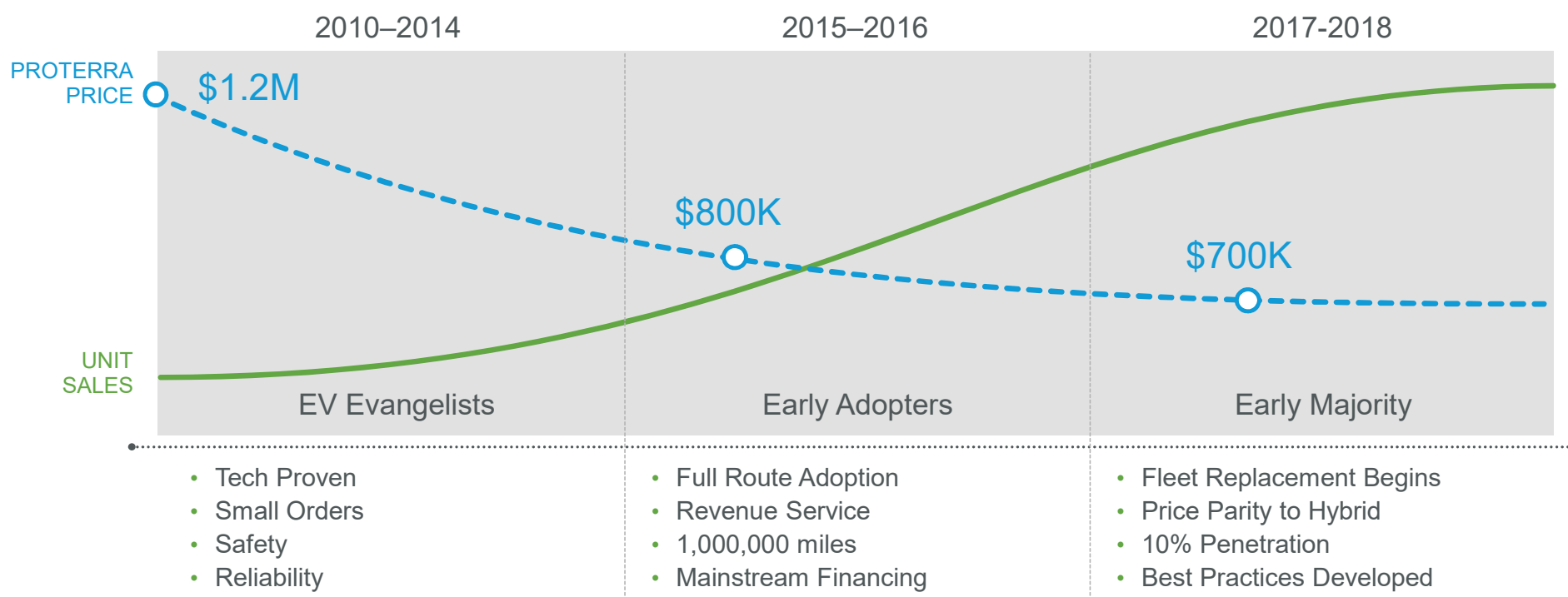
Strong Transportation Expertise



World-Class Financial Partners



THE TRANSIT MARKET IS RAPIDLY SHIFTING TO EV



NORTHEAST & MID-ATLANTIC PROTERRA CUSTOMERS



CT

GBT BRIDGEPORT

DC

DC CIRCULATOR WASHINGTON

DE

DART FIRST STATE DOVER

MA

WRTA WORCESTER

PVTA SPRINGFIELD

ME

SH-ZOOM TRANSIT BIDDEFORD

GREATER PORTLAND METRO PORTLAND

MD

BGE BALTIMORE

MCDOT ROCKVILLE

NY

MTA NEW YORK CITY

TOMPKINS CONSOLIDATED
AREA TRANSIT ITHACA

PA

SEPTA PHILADELPHIA

VA

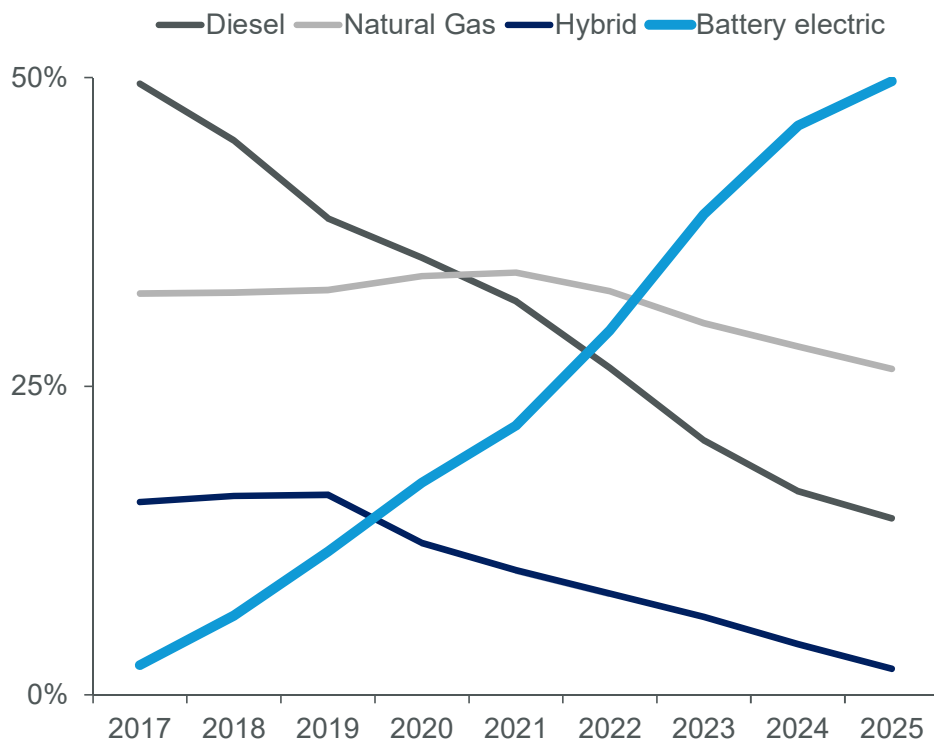
HAMPTON ROADS TRANSIT NORFOLK

MAJOR COMMITMENTS TO 100% EV TRANSIT



EV Transit Bus adoption continues to increase

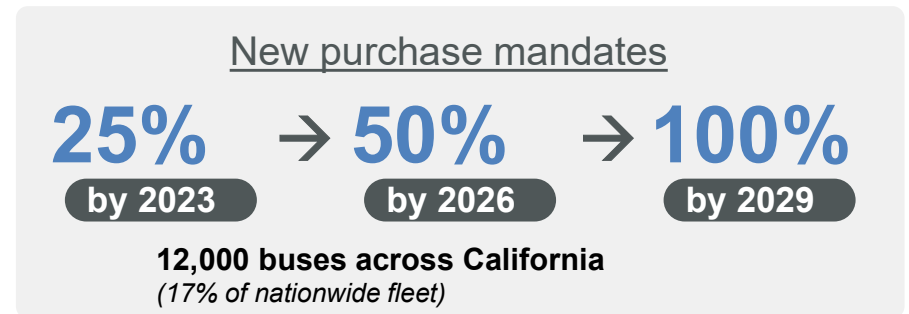
Major cities adopting EV technology for transit buses



Source: Frost & Sullivan Heavy Duty Transit Bus North America Powertrain Adoption Forecast



California mandates 100% electric transit buses by 2040



Source: National Transit Database; agency websites; 2017 American Public Transportation Association Fact Book