

# CARB Workgroup Meeting for the Long-Term Heavy-Duty Investment Strategy

Cory Shumaker, Development Specialist, California Hydrogen Business Council

The goal of the funding is to move zero-emission vehicles through the commercialization process and meet increasing demand. During the webinar, CALSTART presented Draft Technology Status Snapshots, Draft Zero-Emissions Beachhead, Draft Low NOx Beachhead, Draft Efficiencies Beachhead, and Draft Recommendations for Investment Priorities. Some of them are shown below:

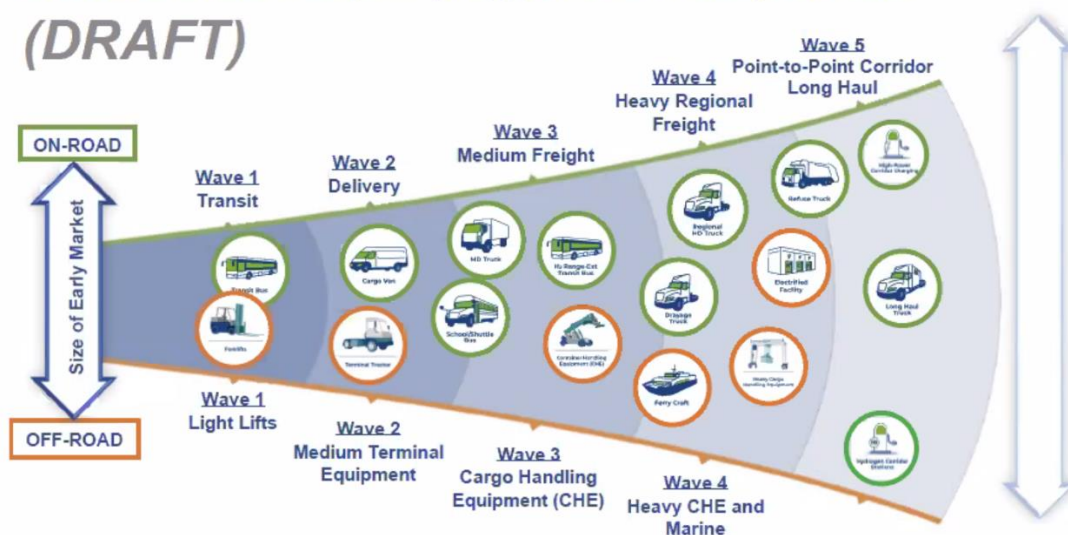
## Fuel Cell Electric Vehicle (FCEV)



## The Beachhead Model: Zero Emissions Pathway

Diverse Vehicles Models, Expanding Supply Chains, A Growing ZEV Market

(DRAFT)



### Market Progress Over Time

Similar drivetrain and component sizing can scale to early near applications

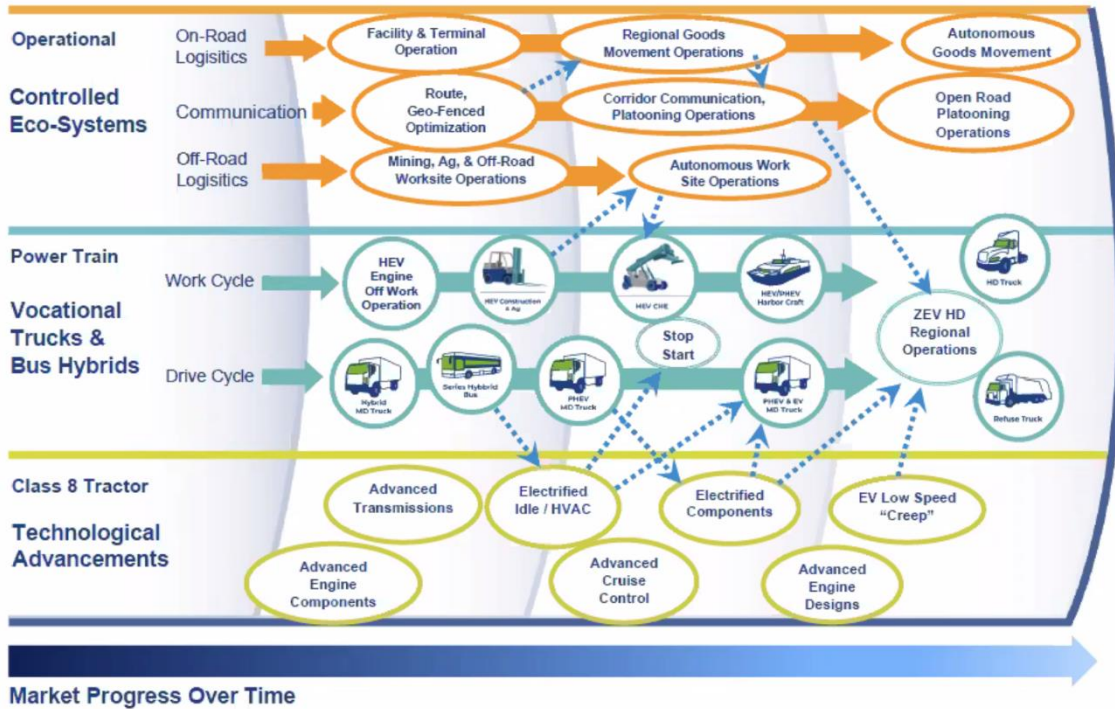
Expanded supply chain capabilities and price reductions enable additional applications

Steadily increasing volumes and infrastructure strengthen business case and performance confidence

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## The Beachhead Model: Efficiencies Pathways (DRAFT)



Dotted line connections indicate opportunities to leverage or extend technologies from one application to another, building component volumes.

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## DRAFT Recommendations for Low Carbon Transportation Investment Priorities

THREE-YEAR RECOMMENDATIONS FOR LOW CARBON TRANSPORTATION*			
	FY 2021-22	FY 2022-23	FY 2023-24
<b>Demos</b>	<i>\$50-\$90 Million</i> Focus: ZE Longer Range HD Goods Movement, ZE Ag-Construction Equipment, ZE/Hybrid Heavier Cargo Handling Equipment, ZE/Hybrid Marine	<i>\$50-\$90 Million</i> Focus: ZE Longer Range HD Goods Movement, ZE Ag-Construction Equipment, ZE Heavier Cargo Handling Equipment, ZE Rail, ZE/Hybrid Marine	<i>\$50-\$90 Million</i> Focus: ZE Longer Range HD Goods Movement, ZE Construction Equipment, ZE Heavier Cargo Handling Equipment, ZE/Hybrid Marine
<b>Pilots</b>	<i>\$200-\$325 Million</i> Focus: ZE Drayage and Regional Delivery, Advanced Powertrains, ZE/Hybrid Ag-Construction- Heavier Cargo Handling Equipment, ZE/Hybrid Marine, ZE Facilities	<i>\$200-\$325 Million</i> Focus: ZE Longer Range HD Goods Movement, Advanced Powertrains, ZE Ag-Construction-Heavier Cargo Handling Equipment, ZE/Hybrid Marine, ZE Facilities	<i>\$200-\$325 Million</i> Focus: ZE Longer Range Goods Movement, Advanced Powertrains, ZE Ag-Construction-Heavier Cargo Handling Equipment, ZE Rail, ZE/Hybrid Marine, ZE Facilities
<b>Commercial</b>	<i>\$396-\$475 Million</i> Focus: ZE Drayage and Regional Delivery, ZE Delivery, ZE Transit, ZE Heavier Cargo Handling Equipment, ePTOs	<i>\$490-\$680 Million</i> Focus: ZE Drayage and Regional Heavy-Duty Delivery, ZE Delivery, ZE Transit, ZE Heavier Cargo Handling Equipment, ZE/Hybrid Marine, ePTOs	<i>\$605-\$995 Million</i> Focus: ZE Drayage, ZE Regional Heavy-Duty Delivery, ZE Transit, ZE Heavier Cargo Handling Equipment, ZE/Hybrid Marine, ePTOs
<b>Total Funding</b>	<b>\$646-\$890 Million*</b>	<b>\$740-\$1095 Million*</b>	<b>\$855-\$1410 Million*</b>
<i>*The vehicle and equipment types listed in the table above are a prioritized selection of the project types that CARB would invest in, given sufficient available funds. These focus areas are identified</i>			

- More information can be found [here](#).
- The [Public Workshop on Developing the Fiscal Year 2020-21 Funding Plan for Clean Transportation Incentives](#) will be held on Sept 29th.