



Clean Transportation Incentives

and the

Long-Term Heavy-Duty Investment Strategy



CARB leads California's charge to improve air quality and reduce the negative impacts of climate change, protects public health, and promotes clean, energy-efficient fuels and technology.

Policy Drivers and Guiding Documents

EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

EXECUTIVE ORDER N-79-20

October 28, 2021

2020 Mobile Source Strategy

CALIFORNIA SUSTAINABLE FREIGHT ACTION PLAN

CALIFORNIA AIR RESOURCES BOARD

Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents

CALIFORNIA AIR RESOURCES BOARD

2022 PROGRESS REPORT
California's Sustainable Communities and Climate Protection Act

CALIFORNIA AIR RESOURCES BOARD

December 2022

2022 Scoping Plan for Achieving Carbon Neutrality
Executive Summary

Cap-and-Trade Auction Proceeds Fourth Investment Plan
Fiscal Years 2022-23 through 2024-25

CALIFORNIA CLIMATE INVESTMENTS
Cap and Trade Dollars at Work

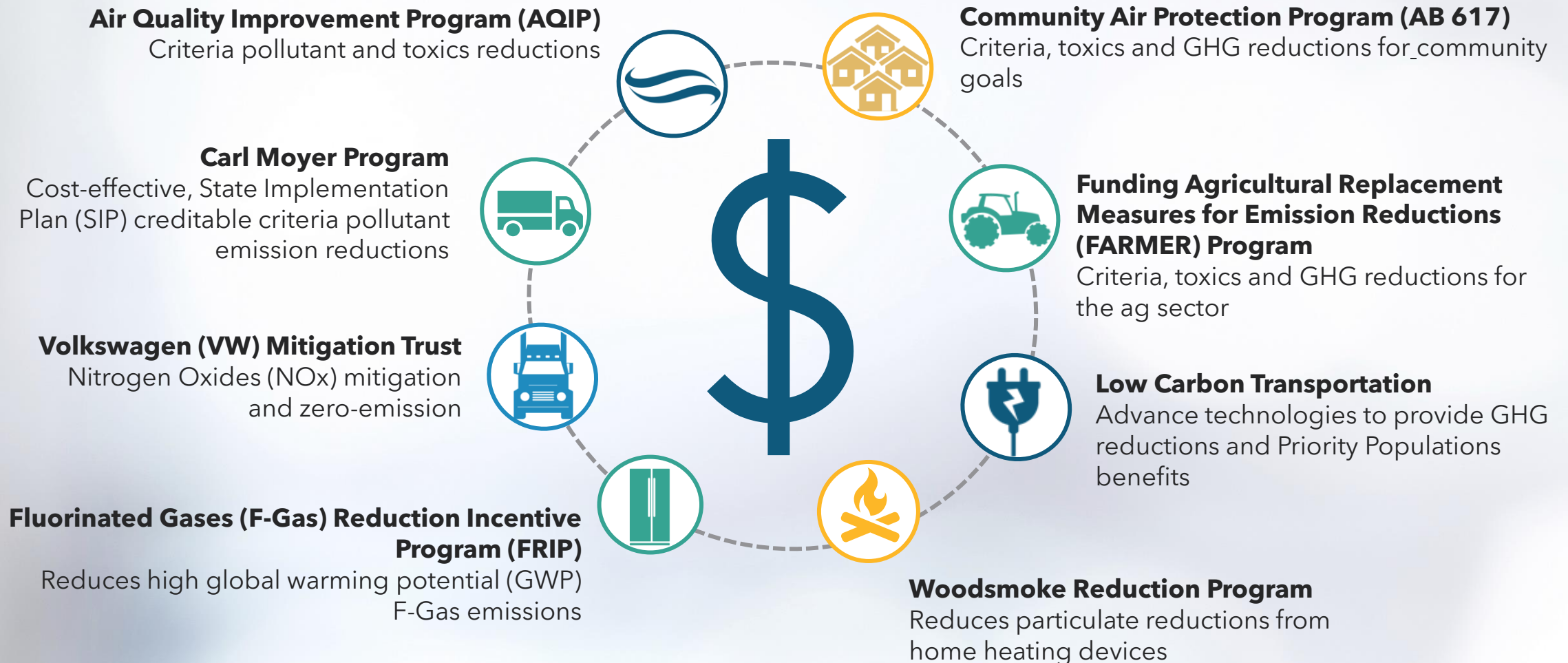
CALIFORNIA AIR RESOURCES BOARD

California Zero-Emission Vehicle Market Development Strategy

February 2021

CARB

CARB Incentive Programs



Long-Term Heavy-Duty Investment Strategy

Annual three-year investment strategy for Clean Transportation Incentives

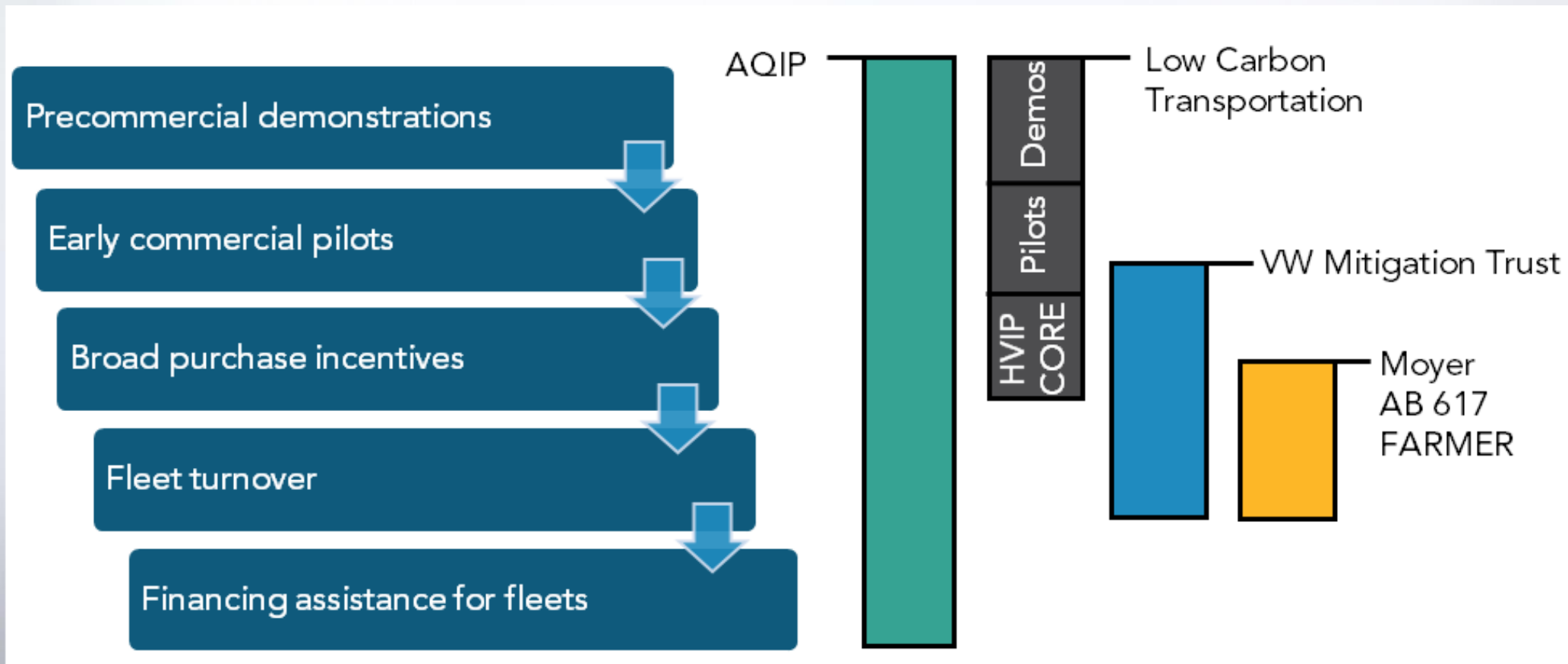
Roadmap for transforming the heavy-duty transportation sector

Outlines priorities for investment

Focus on equity and small businesses

Includes annual report on the State's school bus fleet

Heavy-Duty Technology Progression Through CARB Incentive Programs



Metrics of Success

Supporting Healthy Communities

Supporting Technology Evolution

Growing the Green Economy

58
PERCENT

DAC VOUCHERS

Fifty-eight percent of vouchers (HVIP and CORE combined) have funded vehicles and equipment deployed in DACs, as identified in CalEnviroScreen.



399
MILLION

MILES TRAVELED

There were 399,110,203 cleaner-than-diesel miles traveled in California by HVIP-funded vehicles between 2010 and 2023.



509
MODELS

MANUFACTURERS

There are 88 HVIP- and/or CORE-eligible manufacturers offering 509 vehicle or equipment models.



198
MILLION

DAC MILES TRAVELED

HVIP-funded vehicles have traveled approximately 198 million miles in DACs, as identified in CalEnviroScreen.



895+
THOUSAND

EQUIPMENT RUNTIME

CORE-funded zero-emission off-road equipment has been used for 895,954 hours in California between 2020 and 2023.



\$3.4
BILLION

TOTAL INVESTMENT

Additional public and private spending toward these purchases totaled \$3.4 billion--over \$3 for every \$1 of voucher investment. Leveraged private spending represents purchases redirected from traditional technologies to clean technologies.



Technology Status and Market Readiness

- Tracks progress toward commercialization for each critical pathway and technology category
 - Technology applications characterized by commercialization stage: demonstration, pilot, and commercial
 - Based on “technology readiness levels”
- Complements Market Readiness Indicators

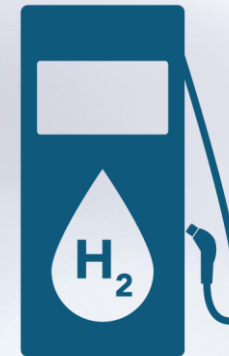
FY 2023-24 Heavy-Duty Investment Priorities

	FY 2024-25	FY 2025-26	FY 2026-27
Demos	<p>\$55-\$95 Million</p> <p>ZE Construction and Mining Equipment, ZE Heavier CHE, ZE Line-Haul Rail, ZE Marine, ZE Aviation, High Power Charging Capable BE Trucks</p>	<p>\$65-\$100 Million</p> <p>ZE Construction and Mining Equipment, ZE Heavier CHE, ZE Line-Haul Rail, Emergency and Heavy Specialty Equipment, ZE Aviation, High Power Charging Capable BE Trucks</p>	<p>\$75-\$115 Million</p> <p>ZE Line-Haul Rail, Emergency and Heavy Specialty Equipment, ZE Heavy Aviation</p>
Pilots	<p>\$200-\$325 Million</p> <p>ZE Ag-Construction-Heavier CHE, ZE/Hybrid Marine, Strategic Range Extenders, ZE Facilities/Communities/Corridors</p>	<p>\$225-\$350 Million</p> <p>FC Long Haul Trucks, ZE Ag-Construction-Mining-Heavier CHE, ZE/Hybrid Marine, Strategic Range Extenders, ZE Facilities/Communities/Corridors</p>	<p>\$250-\$400 Million</p> <p>FC Long Haul Trucks, ZE Ag-Construction-Heavier CHE, ZE/Hybrid Marine, ZE Facilities/Communities/Corridors, ZE Light Aviation, High Power Charging Capable BE Trucks</p>
Commercial	<p>\$1,147-\$1,164 Million</p> <p>ZE Drayage, BE Long Haul Trucks, ZE School/Transit, ZE Heavier CHE, ZE Switcher Rail, ZE/Hybrid Marine, Temp. Fueling, Financing and Insurance Assistance, ePTOs</p>	<p>\$1,083-\$1,112 Million</p> <p>ZE Drayage, BE Long Haul Trucks, ZE School/Transit, ZE Heavier CHE, ZE Switcher Rail, ZE/Hybrid Marine, Temp. Fueling, Financing and Insurance Assistance, Heavy/Specialty ePTOs</p>	<p>\$1,354-\$1,399 Million</p> <p>ZE Drayage, BE Long Haul Trucks, ZE School/Transit, ZE Heavier CHE, ZE Construction and Mining Equipment, ZE Switcher Rail, ZE/Hybrid Marine, Heavy/Specialty ePTOs</p>
Total Funding	\$1,402-\$1,584 Million*	\$1,373-\$1,562 Million*	\$1,679-\$1,914 Million*

Governor's Zero-Emission Vehicle (ZEV) Package

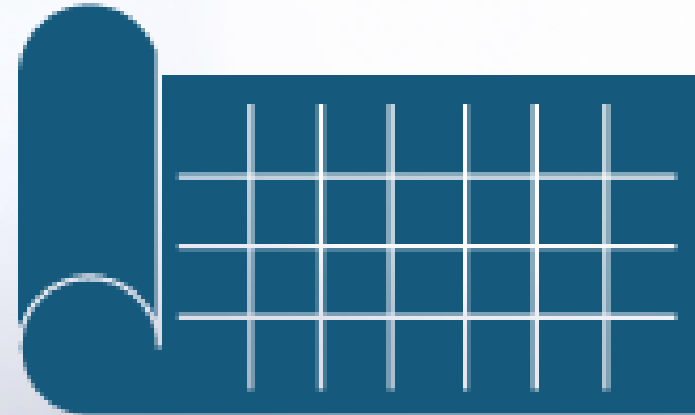
Current ZEV Package

- Governor's proposed budget maintains the multi-agency \$10 billion over 7 years ZEV package approved in 2023
- Funding maintained for critical investments across several agencies (e.g., California Energy Commission (CEC), California State Transportation Agency (CalSTA), Governor's Office of Business and Economic Development (GOBiz))



Funding Plan Purpose

- Provides an annual detailed guide to explain how Clean Transportation Incentive funds will be spent
- CARB Staff make recommendations on how to allocate funds that are appropriated in the State budget for the current fiscal year
- Outlines policy drivers and the vision for investments
- Develops a plan that meets community needs as well as agency goals



State Budget & Funding Plan Process Overview

General Timeline



Clean Transportation Incentives Funding To-Date

Fiscal Year	Funding Amount (millions)	Fiscal Year	Funding Amount (millions)
2013 - 14	\$55	2019 - 20	\$497
2014 - 15	\$217	2020 - 21	\$29
2015 - 16	\$113	2021 - 22	\$1,548
2016 - 17	\$391	2022 - 23	\$2,610
2017 - 18	\$588	2023 - 24	\$441
2018 - 19	\$483	2024 - 25	\$410

Total Funding = \$7.4 billion

Funding Plan Development Schedule

Milestone	Date
Kick-Off Workshop	June 13, 2024 (today)
Daytime Workgroup Meetings	June - October 2024
Evening Community Meetings	June - October 2024
Release Draft Funding Plan for Review	Mid-August 2024
Second Workshop: Draft Funding Plan	August 29, 2024*
Release Proposed Funding Plan	October 11, 2024*
Board Considers the Proposed Funding Plan	November 21, 2024*
Project Implementation Begins	December 2024

* Subject to change

Heavy-Duty Programs Overview

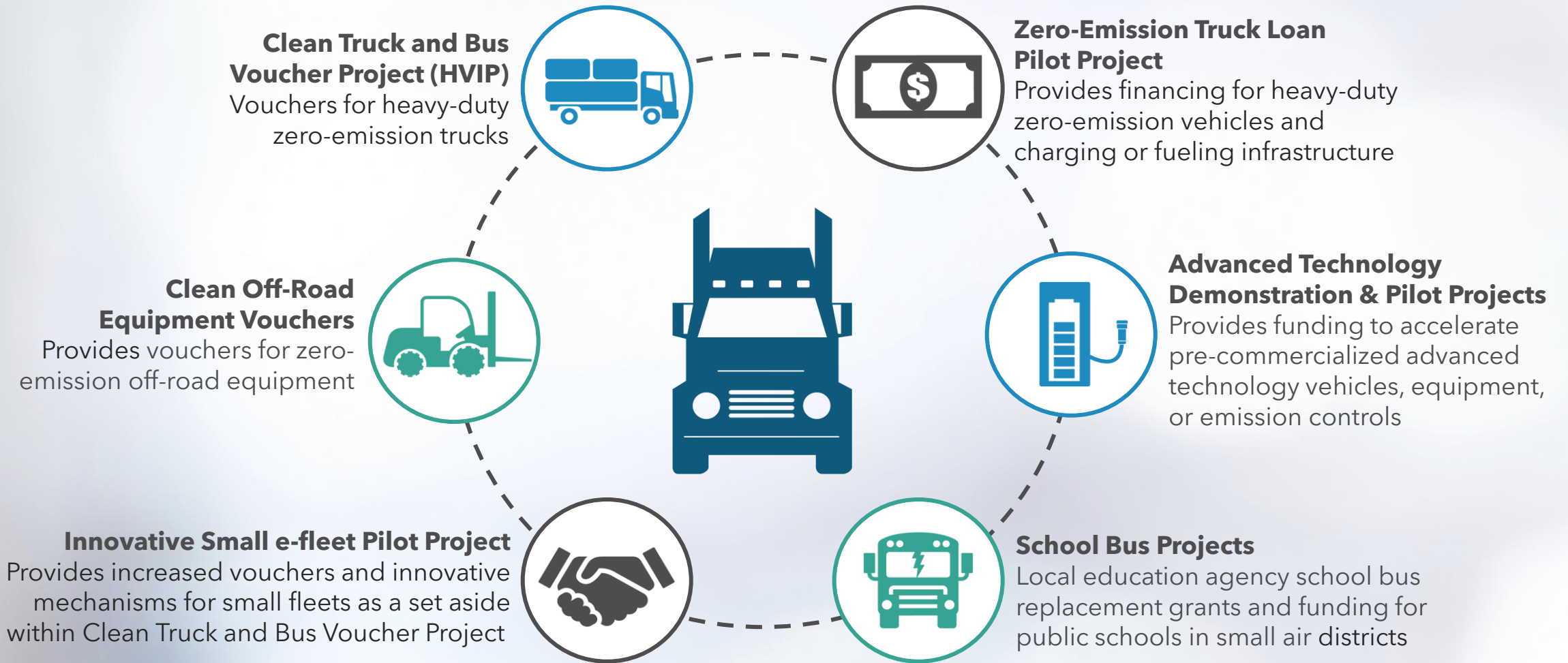
Medium- & Heavy-Duty On- & Off-Road Equipment Investments

- Medium- and Heavy-duty vehicle purchase incentives
- Off-road equipment purchase incentives

Investment Goals

- Build on efforts to ensure that investments are equitably distributed
- Strategically focus funds on priority communities
- Focus on reducing barriers for small fleets
- Collaboration with other State agencies and community partners

Heavy-Duty Incentive Projects



Clean Off-Road Equipment (CORE) Status Update

- **CORE has funded over 3,000 pieces of Heavy-Duty equipment**
 - Stacking is allowed and no scrappage required
 - Enhancements for infrastructure, small business, and Disadvantaged Communities (DACs)
- **Approximately \$65 million of funding available ~ Summer 2024**
 - \$14.3 million will be focused on small businesses
 - Equipment categories combined - funding to focus on eight categories
 - Equipment eligibility - based on primary function
 - Voucher amounts updated
 - Commercial Harbor Craft - New Appendix E



Advanced Technology Demonstration and Pilots



- **Accelerate technology development and market deployment**
 - Demonstration projects support precommercial technologies
 - Pilot projects boost early market volumes of commercialized technologies
- **\$225 million joint CARB & California Energy Commission solicitation**
 - 31 applications submitted with \$425 million in requests - \$200 million oversubscription
 - 12 applications selected
 - All projects expected to begin this year
- **No new funding proposed in Governor's May budget revision**

Decarbonizing Aviation - What's Next?

- Near-term solutions in need of investment (1-5 years)
 - SAF?
 - Ag/cargo drones?
 - Advanced air mobility/urban air mobility?
- On the horizon (5+ years)
 - Advanced air mobility/urban air mobility?
 - Regional commercial passenger transport?
 - Clean-sheet cargo?
 - Hydrogen hubs and land/air H2 ecosystems?
- What should we be planning for? How can government help?