DOCKETED	
Docket Number:	23-ALT-01
Project Title:	2023-2024 Investment Plan Update for the Clean Transportation Program
TN #:	249873
Document Title:	Presentation - Public Meeting of the Advisory Committee for the Clean Transportation Program Investment Plan Update
Description:	N/A
Filer:	Spencer Kelley
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	4/26/2023 1:16:17 PM
Docketed Date:	4/26/2023

California Energy Commission

Public Meeting of the Advisory Committee for the Clean Transportation Program Investment Plan Update

April 27, 2023

Housekeeping

- This workshop is being recorded.
- Virtual participation will be possible through Zoom or telephone.
- Workshop event webpage is https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program/clean-transportation-program-investment-8
- Docket location: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-ALT-01
- Written comments should be submitted to Docket 23-ALT-01.

Deadline for comments is Tuesday, May 11, 2023, by 5:00 P.M.

Meeting Agenda

- Welcome and Housekeeping.
- Opening remarks by Commissioner Monahan.
- Presentations by CEC staff on the Clean Transportation Program, including funding activities, federal funding, community benefits and tribal outreach, and ZEV planning and analysis.
- Overview of the draft staff report version of the *2023-2024 Investment Plan Update.*
- Advisory Committee discussion on the *2023-2024 Investment Plan Update.*
- Public comment.
- Closing remarks.

Welcome to the April 27, 2023 Public Meeting of the Advisory Committee for the Clean Transportation Program Investment Plan

Overview of the Clean Transportation Program and Investment Plan Process

April 27, 2023

Patrick Brecht – Project Manager for the Clean Transportation Program Investment Plan
Fuels and Transportation Division

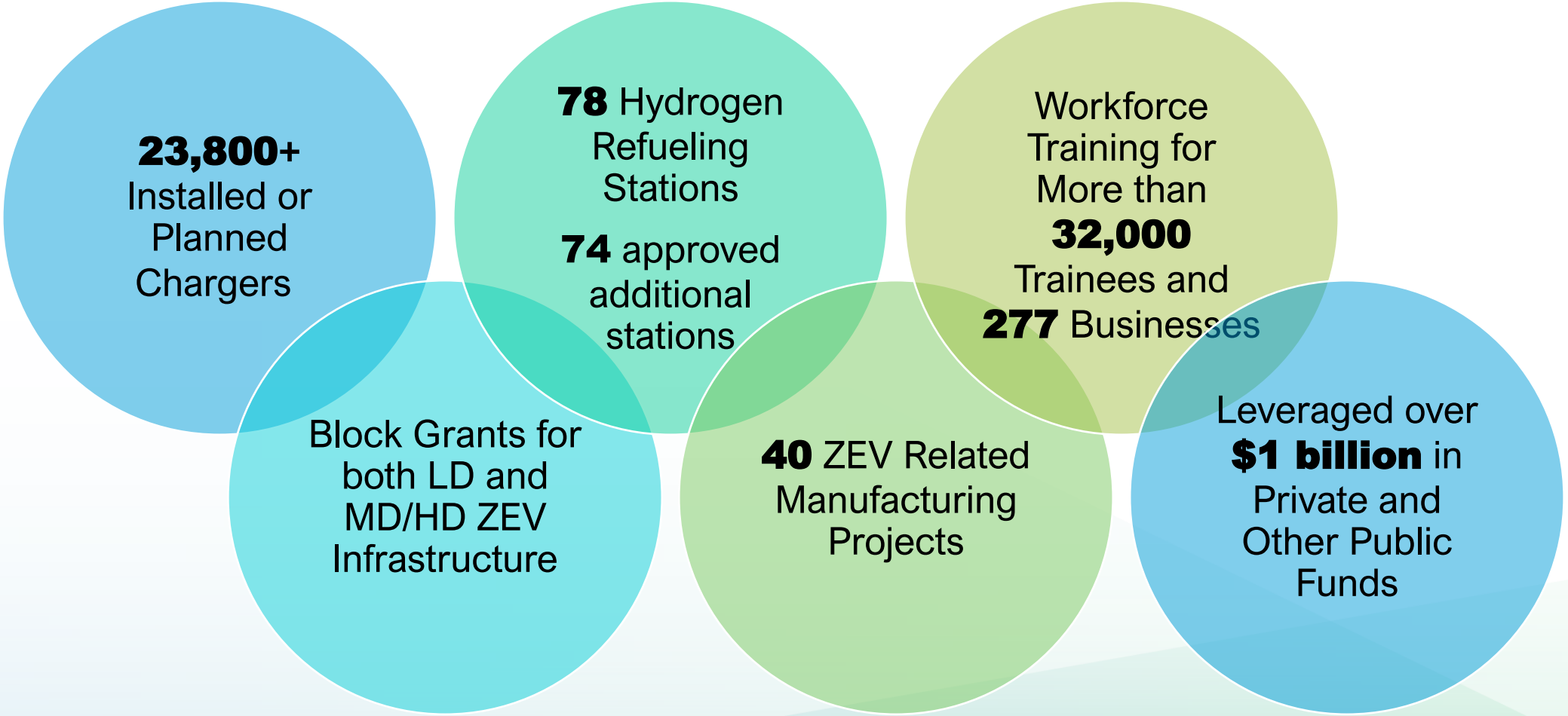
Origins of the Clean Transportation Program

- Transportation sector responsible for significant greenhouse gas emissions and public health impacts.
- Pollution burdens fall disproportionately on vulnerable and disadvantaged communities.
- Clean Transportation Program created to invest in a cleaner, healthier transportation system.
- Provides up to $100 million per year. Expires at end of 2023.

Assembly Bill No. 8

CHAPTER 401

Clean Transportation Program Highlights
(as of March 2023)



Purpose of the Investment Plan

- Guides the Clean Transportation Program's investments toward meeting the state's clean transportation goals
- Provides multi-year funding allocations for improved planning and visibility
- Takes into consideration state regulations and other funding programs to promote coordination across agencies
- Allocates funding for multiple fuel and vehicle technologies, transportation sectors, and supporting activities (e.g. workforce development)

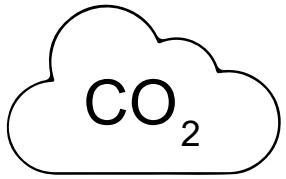
Commitment to Inclusion, Diversity, Equity and Access

- Seek to provide more than 50% of Clean Transportation Program funds to projects that benefit low-income and disadvantaged communities.
- Outreach and engagement with DACAG, Clean Transportation Program Advisory Committee, coalitions, and community groups.
- CEC will engage the public through workshops and will share information on the CEC website.
- Expand outreach to local community-based organizations

Program Community Benefits

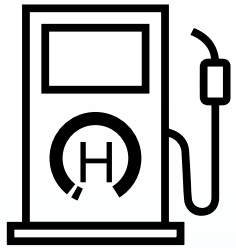
- Planning a public process to define, measure, track, and target more program community benefits.
- Will explore community benefits beyond project location and GHG reductions such as health, mobility options, workforce, economic, and more.
- First workshop was held at the end of 2022 and the second was held March 2023.

Key California ZEV Policy Goals



Climate

- Reduce GHG emissions to 40 percent below 1990 levels by 2030
- Achieve carbon neutrality by 2045



ZEV Infrastructure

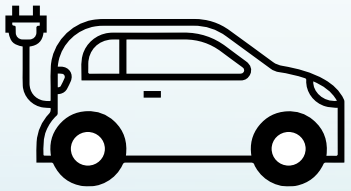
- 250,000 electric vehicle chargers, including 10,000 DC fast chargers, by 2025
- 200 hydrogen refueling stations by 2025

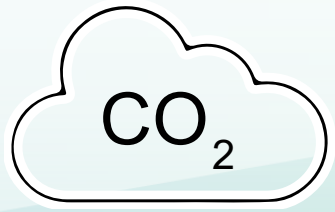
ZEV Fleet

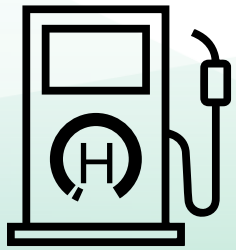
- (See next)

Executive Order N-79-20 Goals

- ✓ 100% in-state sales of new passenger cars and trucks be zero-emission by 2035 **(CARB's Advanced Clean Cars II Regulations)**
- ✓ 100% medium- and heavy-duty vehicles be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks **(CARB's Advanced Clean Trucks Regulation)**
- ✓ 100% zero-emission off-road vehicles and equipment by 2035 where feasible







Informing the Investment Plan

- *AB 2127 Electric Vehicle Charging Infrastructure Assessment*
- *SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment*
- Zero-Emission Vehicle Infrastructure Plan (ZIP)
- Public meetings/workshops with the Advisory Committee
- Consultation with the Disadvantaged Communities Advisory Group
- Experience with administration of past Investment Plans
- Adjusting for federal government and state budget augmentations

Investment Plan Process & Schedule

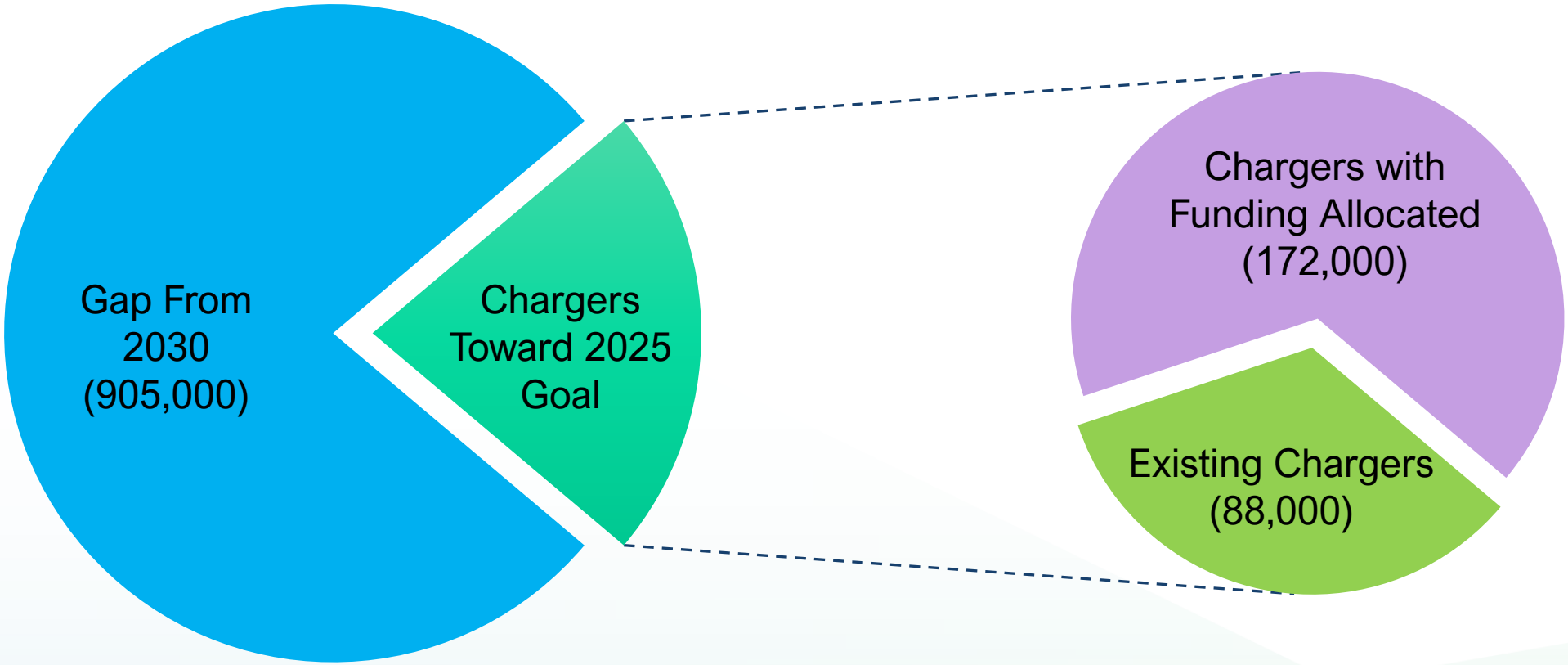
*Tentative
Schedule does not include DACAG consultations

ZEV Planning and Analysis

Charging Infrastructure Planning and Analysis

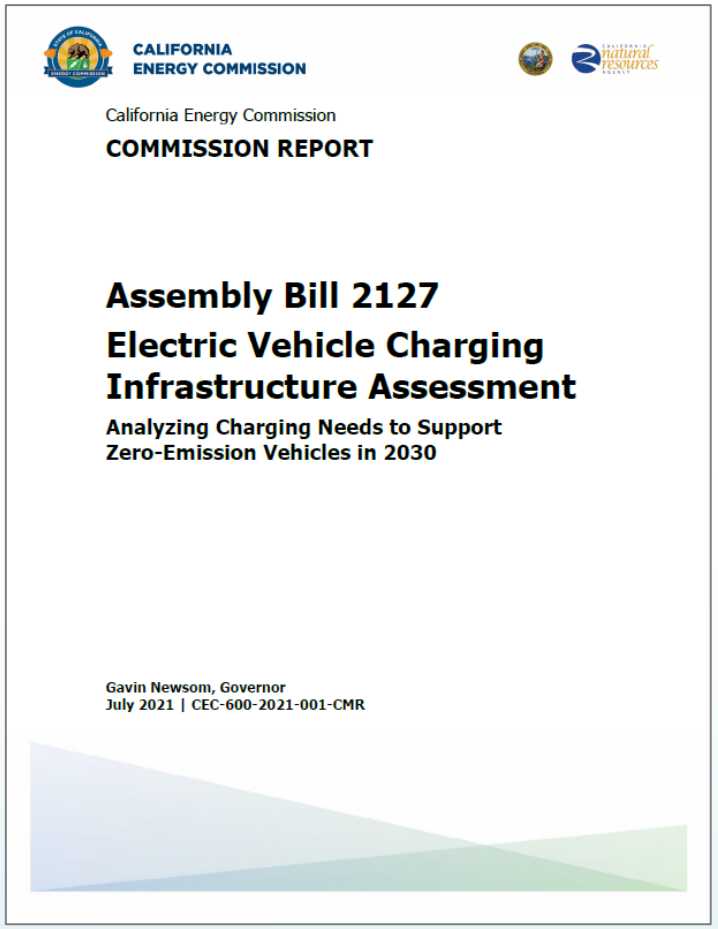
Michael Nicholas, Supervisor, Infrastructure Modeling and Assessment Unit
Fuels and Transportation Division

Charger Count and Target Gap



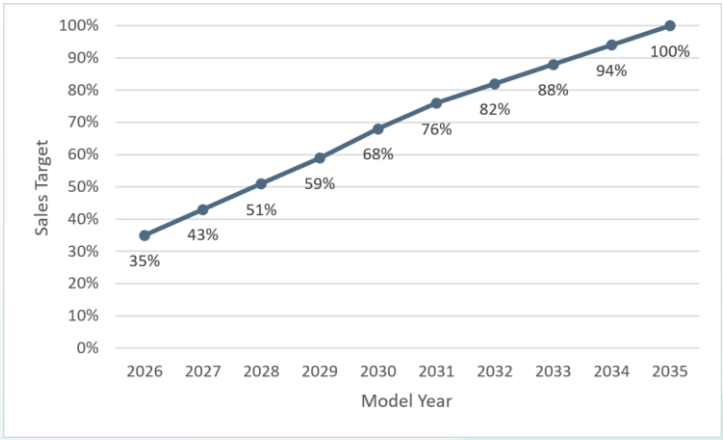
EV Charging Assessments

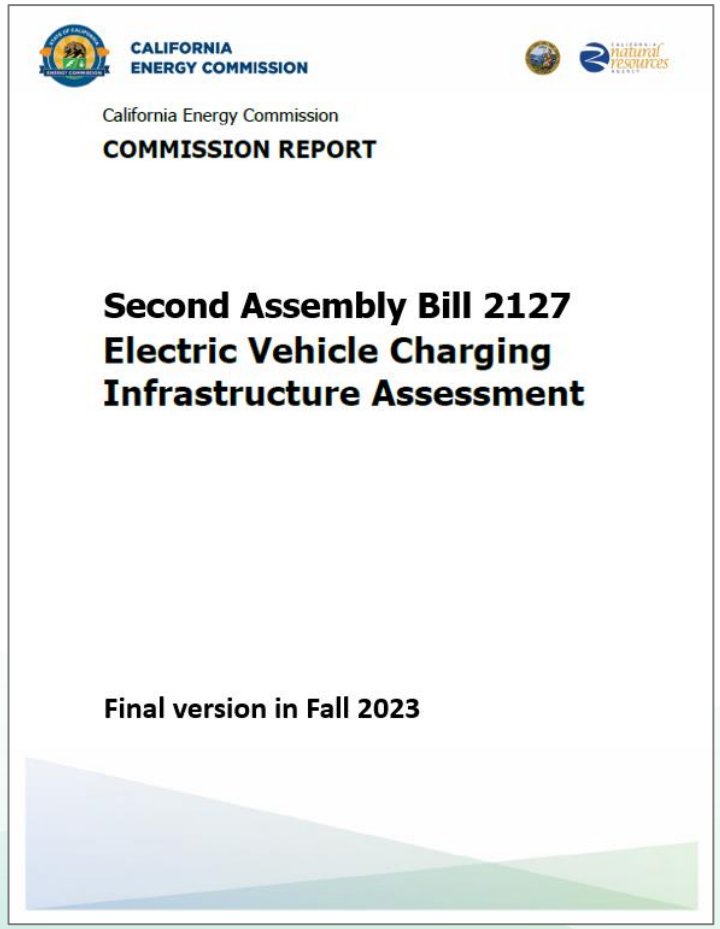
First Assessment 2021 → Second Assessment Fall 2023



- Draft report May 2023
- Workshop June 2023

ACC II sales schedule for light-duty ZEVs

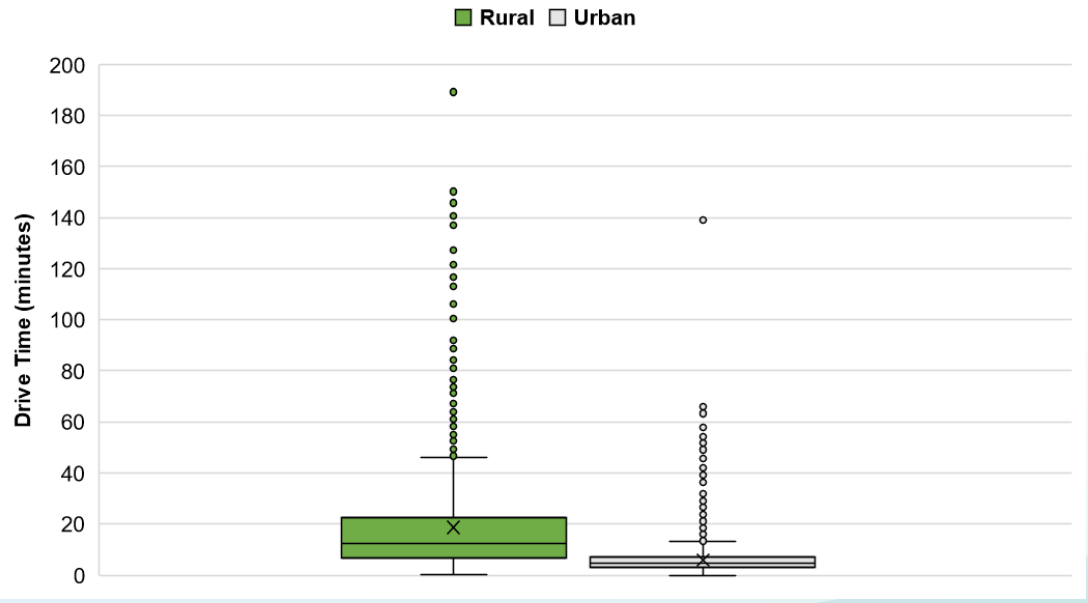




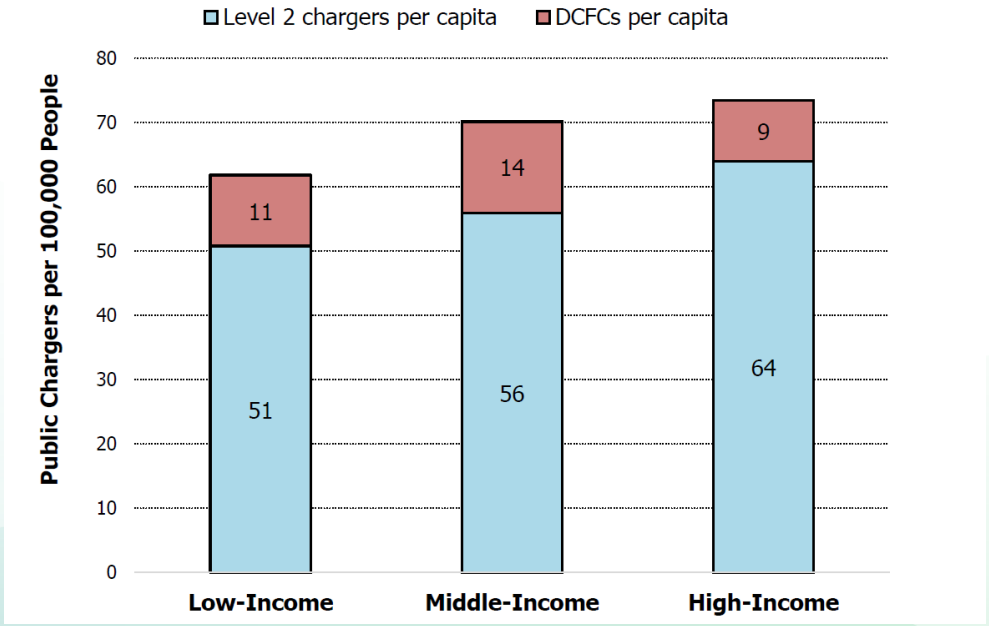
SB 1000 Update

Assessment of whether chargers are deployed disproportionately by income, population density, or geography

Drive time to the nearest DC fast charger



Public Level 2 and DC Fast Chargers Per Capita by Income Level

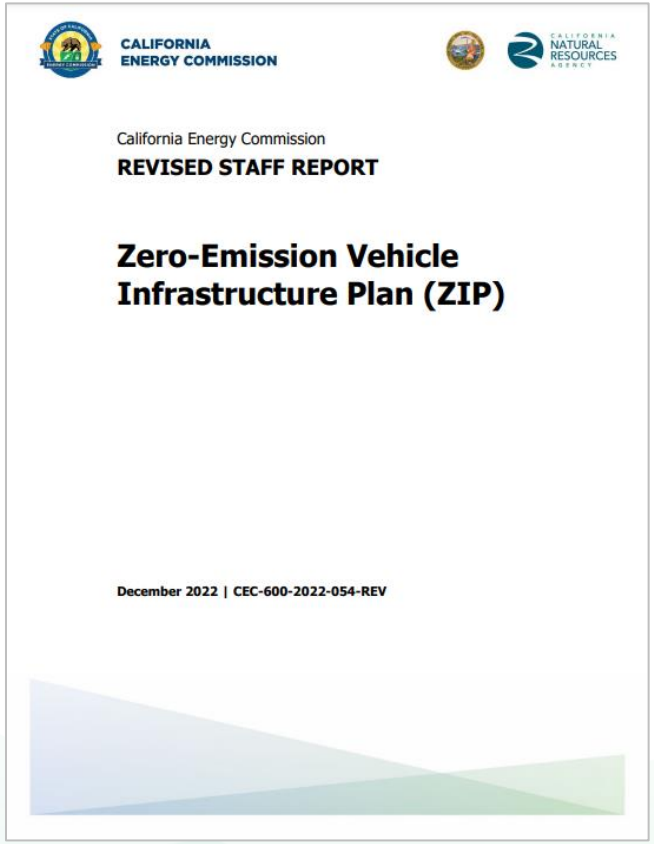


EV Charger Reliability Update

- New minimum uptime required in CEC solicitations
- Staff is collaborating with industry to improving reliability
- Developing field-testing protocol to evaluate charger reliability
- Developing uptime regulations to support AB 2061

ZEV infrastructure plan

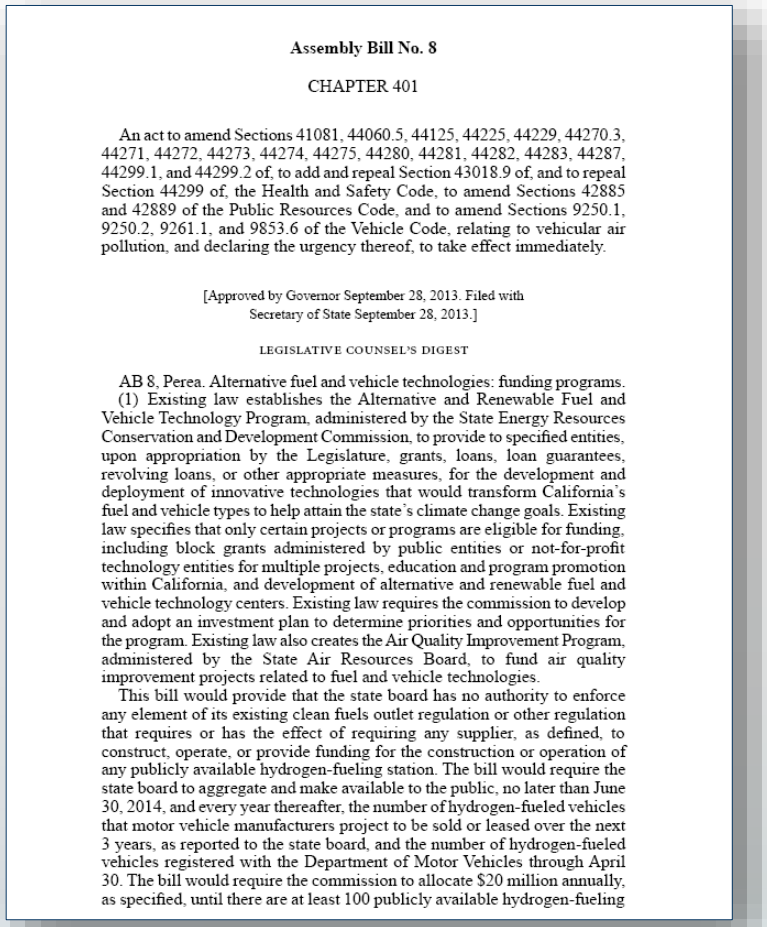
- Integrated State strategy with contributions from relevant state agencies
- Focus on policy rather than quantitative goals
- Highlights the role for public and private funding in accelerating adoption and addressing equity



Hydrogen Assessments

Kristi Villareal, Air Pollution Specialist
Fuels and Transportation Division

Hydrogen Refueling Station Goals



Assembly Bill No. 8

CHAPTER 401

An act to amend Sections 41081, 44060.5, 44125, 44225, 44229, 44270.3, 44271, 44272, 44273, 44274, 44275, 44280, 44281, 44282, 44283, 44287, 44299.1, and 44299.2 of, to add and repeal Section 43018.9 of, and to repeal Section 44299 of, the Health and Safety Code, to amend Sections 42885 and 42889 of the Public Resources Code, and to amend Sections 9250.1, 9250.2, 9261.1, and 9853.6 of the Vehicle Code, relating to vehicular air pollution, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor September 28, 2013. Filed with Secretary of State September 28, 2013.]

LEGISLATIVE COUNSEL'S DIGEST

AB 8, Perea. Alternative fuel and vehicle technologies: funding programs.

(1) Existing law establishes the Alternative and Renewable Fuel and Vehicle Technology Program, administered by the State Energy Resources Conservation and Development Commission, to provide to specified entities, upon appropriation by the Legislature, grants, loans, loan guarantees, revolving loans, or other appropriate measures, for the development and deployment of innovative technologies that would transform California's fuel and vehicle types to help attain the state's climate change goals. Existing law specifies that only certain projects or programs are eligible for funding, including block grants administered by public entities or not-for-profit technology entities for multiple projects, education and program promotion within California, and development of alternative and renewable fuel and vehicle technology centers. Existing law requires the commission to develop and adopt an investment plan to determine priorities and opportunities for the program. Existing law also creates the Air Quality Improvement Program, administered by the State Air Resources Board, to fund air quality improvement projects related to fuel and vehicle technologies.

This bill would provide that the state board has no authority to enforce any element of its existing clean fuels outlet regulation or other regulation that requires or has the effect of requiring any supplier, as defined, to construct, operate, or provide funding for the construction or operation of any publicly available hydrogen-fueling station. The bill would require the state board to aggregate and make available to the public, no later than June 30, 2014, and every year thereafter, the number of hydrogen-fueled vehicles that motor vehicle manufacturers project to be sold or leased over the next 3 years, as reported to the state board, and the number of hydrogen-fueled vehicles registered with the Department of Motor Vehicles through April 30. The bill would require the commission to allocate $20 million annually, as specified, until there are at least 100 publicly available hydrogen-fueling

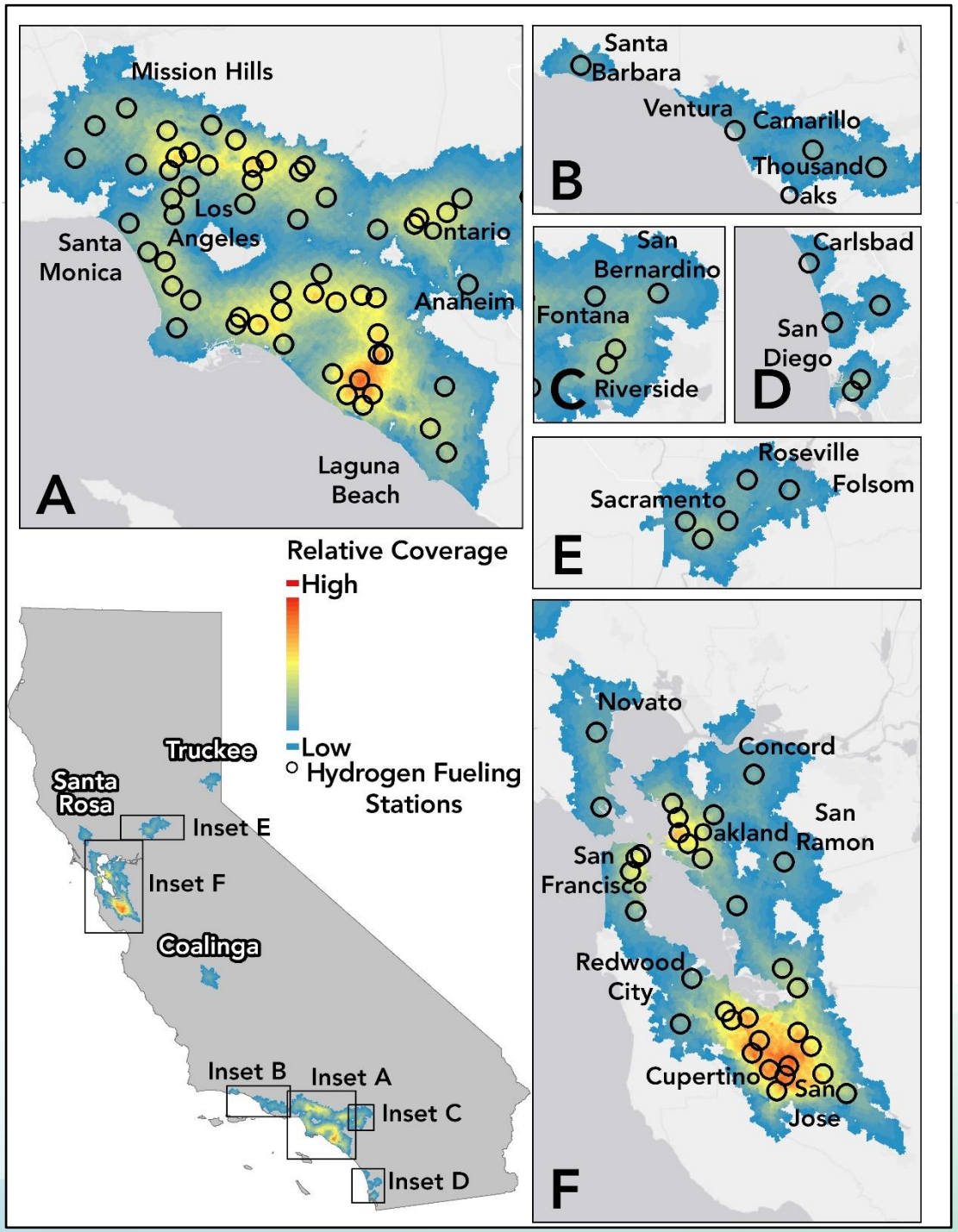
- Required by AB 8
  - 100 publicly available hydrogen stations by 2024
- Governor Brown's Executive Order B-48-18
  - Increased goal to fund 200 hydrogen stations by 2025

Status of Station Network

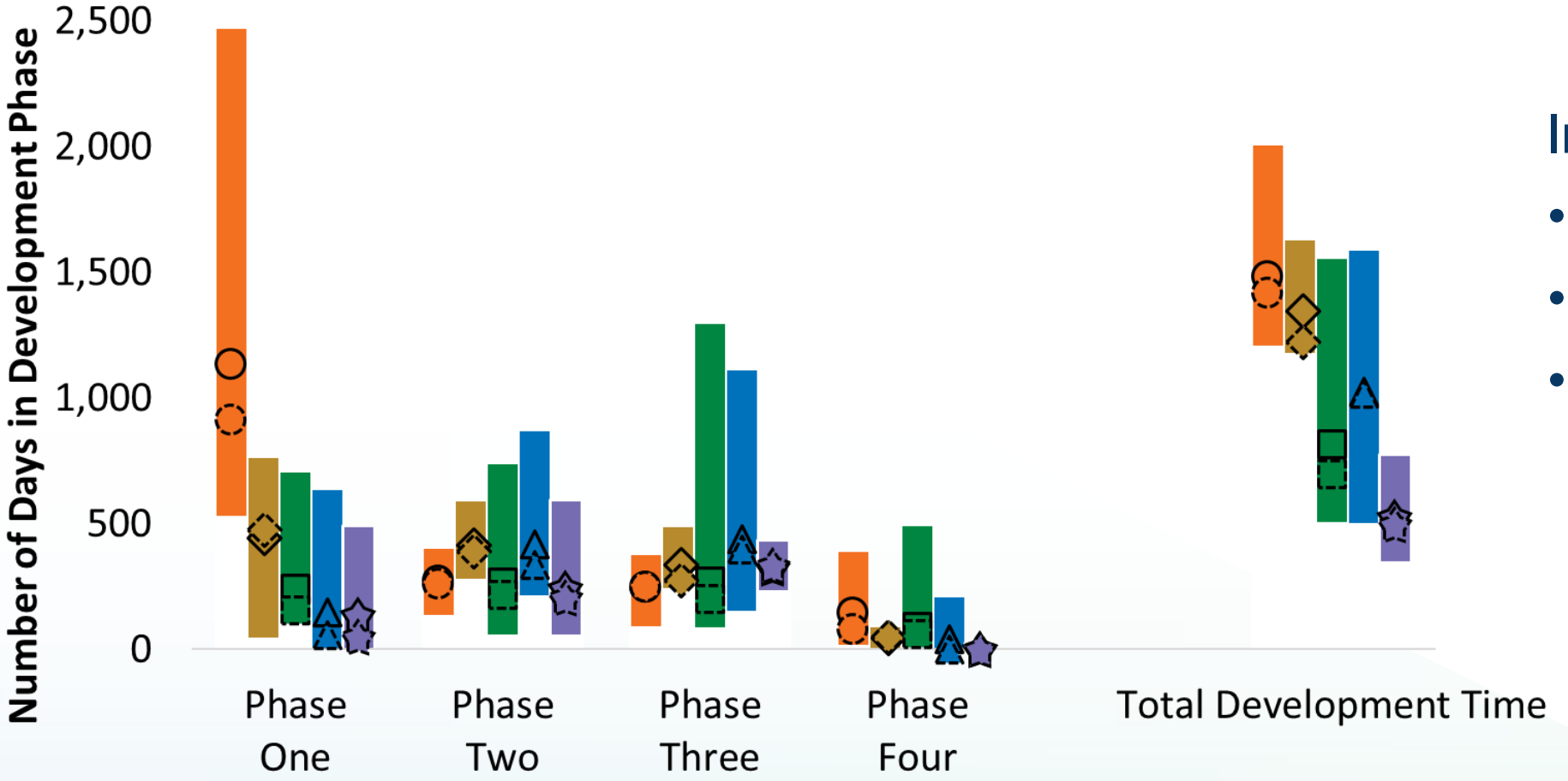
- Hydrogen refueling stations planned (public and private funding): 181
  - 56 stations open retail
  - 7 stations temporarily non-operational
  - 30 stations under construction
  - Additional 82 planned (GFO-19-602)
  - 6 stations proposed for award (GFO-22-607)

Photo taken from the 2022 Annual Evaluation

Hydrogen Refueling Network



Station Development Time

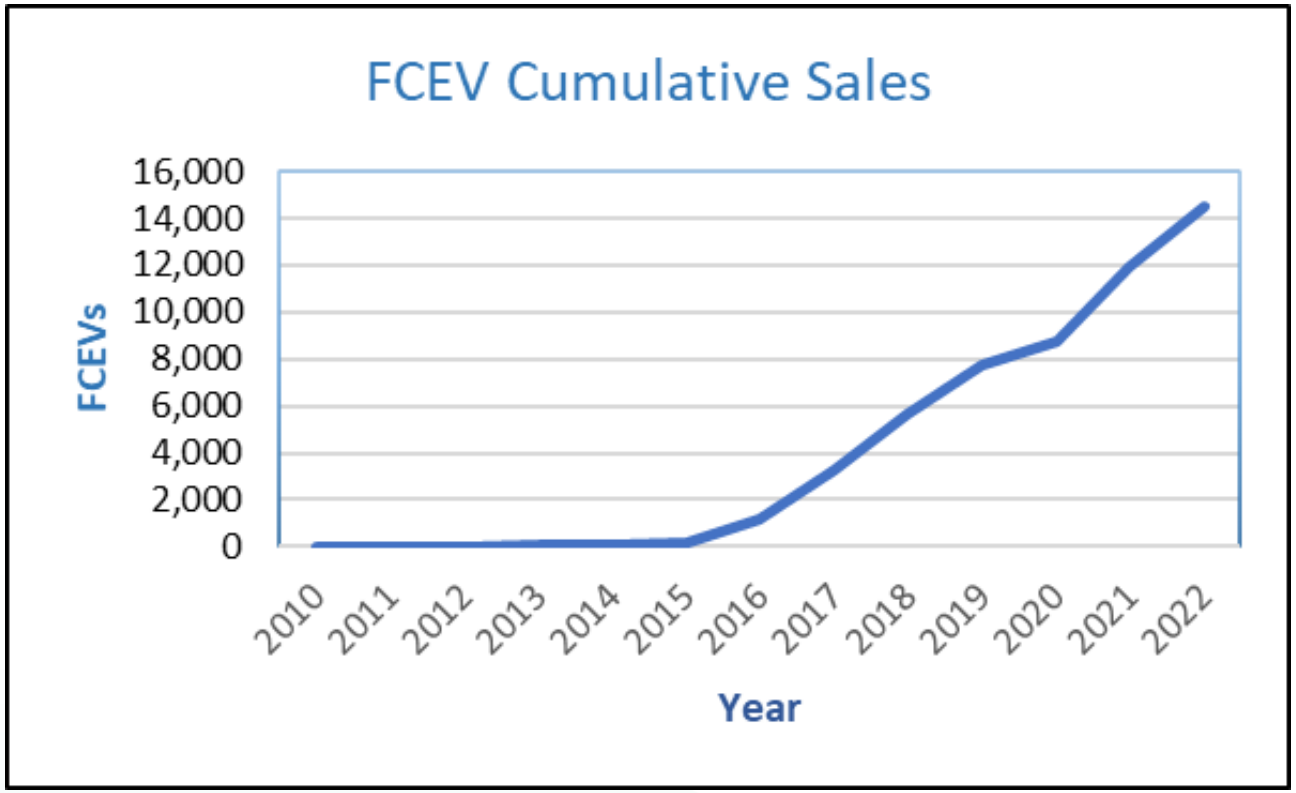


Impacts:

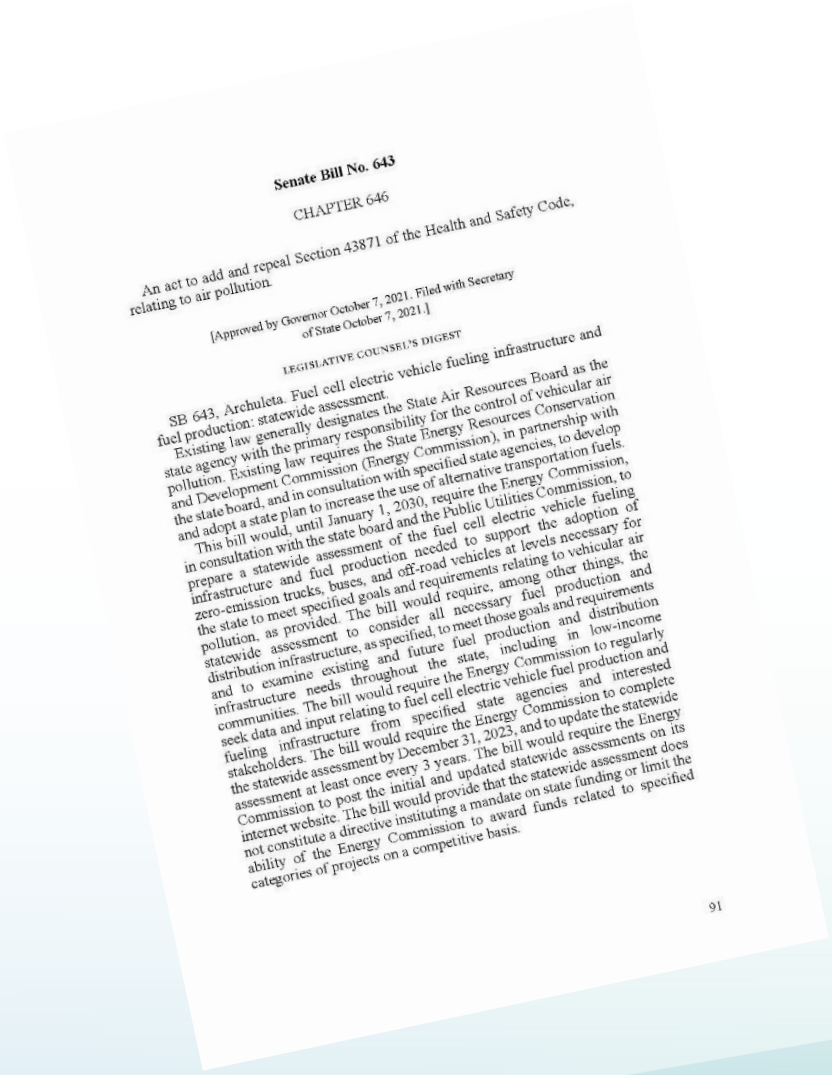
- COVID-19 pandemic
- Global inflation
- Supply chain

Fuel Cell Electric Vehicle Deployment

- 12,700 estimated on-road FCEVs
- 181 stations would have the capacity to refuel 243,300 FCEVs



MD/HD Infrastructure, Renewable Hydrogen Supply



Senate Bill No. 643

CHAPTER 646

An act to add and repeal Section 43871 of the Health and Safety Code, relating to air pollution.

[Approved by Governor October 7, 2021. Filed with Secretary of State October 7, 2021.]

LEGISLATIVE COUNSEL'S DIGEST

SB 643, Archuleta. Fuel cell electric vehicle fueling infrastructure and fuel production: statewide assessment.

Existing law generally designates the State Air Resources Board as the state agency with the primary responsibility for the control of vehicular air pollution. Existing law requires the State Energy Resources Conservation and Development Commission (Energy Commission), in partnership with the state board, and in consultation with specified state agencies, to develop and adopt a state plan to increase the use of alternative transportation fuels.

This bill would, until January 1, 2030, require the Energy Commission, in consultation with the state board and the Public Utilities Commission, to prepare a statewide assessment of the fuel cell electric vehicle fueling infrastructure and fuel production needed to support the adoption of zero-emission trucks, buses, and off-road vehicles at levels necessary for the state to meet specified goals and requirements relating to vehicular air pollution, as provided. The bill would require, among other things, the statewide assessment to consider all necessary fuel production and distribution infrastructure, as specified, to meet those goals and requirements and to examine existing and future fuel production and distribution infrastructure needs throughout the state, including in low-income communities. The bill would require the Energy Commission to regularly seek data and input relating to fuel cell electric vehicle fuel production and fueling infrastructure from specified state agencies and interested stakeholders. The bill would require the Energy Commission to complete the statewide assessment by December 31, 2023, and to update the statewide assessment at least once every 3 years. The bill would require the Energy Commission to post the initial and updated statewide assessments on its internet website. The bill would provide that the statewide assessment does not constitute a directive instituting a mandate on state funding or limit the ability of the Energy Commission to award funds related to specified categories of projects on a competitive basis.

91

- Established by Senate Bill 643 (Archuleta, 2021)
- Requires a statewide assessment of hydrogen MD/HD, off-road infrastructure and H2 supply
- Inaugural report due December 31, 2023, every 3 years through January 1, 2030

Medium- and Heavy-Duty Hydrogen Stations

- 6 medium- and heavy-duty stations operating
  - Includes 3 transit and 3 heavy-duty truck fueling stations
- 9 medium- and heavy-duty stations planned
  - Includes 3 transit and 6 heavy-duty truck fueling stations

Source: Energy Commission Staff

Renewable Hydrogen Production

- 5 projects funded (3 new facilities, 2 expansions) with $17 million in CTP funding.
- $66 million in match funding.
- New production capacity of nearly 24,000 kg/day.
- Technologies: 3 electrolysis/1 gasification.

Clean Transportation Program Funding Activities

Light-Duty Passenger Vehicle Charging: Block Grants

Brian Fauble, Energy Commission Specialist III
Fuels and Transportation Division

CALeVIP 1.0
First Light-Duty Block Grant

- CALeVIP
- 13 regional projects covering 36 Counties
- $226 million in incentive funding (including partner funding)
- Installed and in-progress:
  - More than 11,400 Level 2 connectors
  - More than 1,700 DC fast chargers
- 59% in disadvantaged and/or low-income communities

Source: CALeVIP Rebate Statistics Dashboard
https://calevip.org/rebate-statistics

CALeVIP 2.0
Center for Sustainable Energy (CSE)

- High-powered DC fast chargers
- Applications sorted by level of readiness, rather than first-come, first-served
- Golden State Priority Project: $30 million
  - First application window closed March 10, 2023
  - Eastern and Central Regions
  - Eligible projects must be in disadvantaged and/or low-income communities

Photo credit: CSE

CALeVIP BUILDING EV INFRASTRUCTURE

Communities in Charge
CALSTART

- https://thecommunitiesincharge.org/
- Level 2 chargers
- Community sites and disadvantaged/ low-income communities prioritized
- Applications sorted by readiness then scored
- First project: Statewide, $30 million
  - Opened on March 23, 2023
  - Closes on May 8, 2023

Photo credit: IKON
https://www.ikonefs.com/services/electrical-vehicle-charging/

COMMUNITIES IN CHARGE

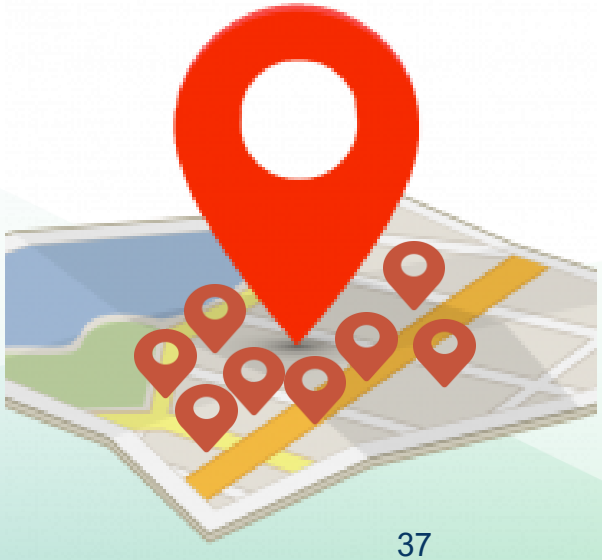
Light-Duty Passenger Vehicle Charging: Funding Solicitations

Madison Jarvis, Air Pollution Specialist
Fuels and Transportation Division

CHiLL-2

Convenient, High-visibility, Low-cost Level 2 Charging Solicitation

- $24 million
- Goals:
  - Demonstrate replicable and scalable business and technology models to deploy **Level 2** electric vehicle (EV) charging stations
  - Improve public awareness of and confidence in Level 2 charging access through **high-density**, high-visibility installations
- Timeline:
  - Solicitation Release: March 23, 2023
  - Applications Due: June 16, 2023
  - NOPA: August 2023
  - Projects begin: Q4 2023



FAST

Fast and Available Charging for All

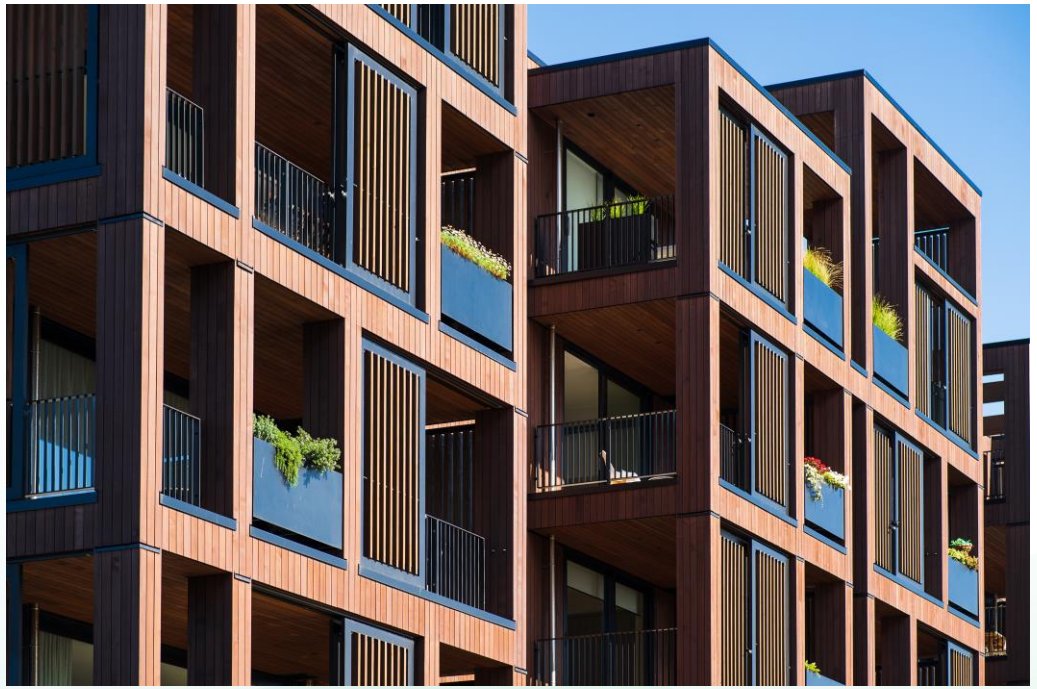
- $35 million for **DC fast charging**
- Goals:
  - Support EV charging infrastructure for high mileage on-demand transportation services, car sharing enterprises, or car rental agencies, and the public
- Timeline:
  - Solicitation Release: April 5, 2023
  - Applications Due: June 23, 2023
  - NOPA: August 2023
  - Projects begin: Q4 2023

Source: Bay Area Air Quality Management District

REACH 2.0

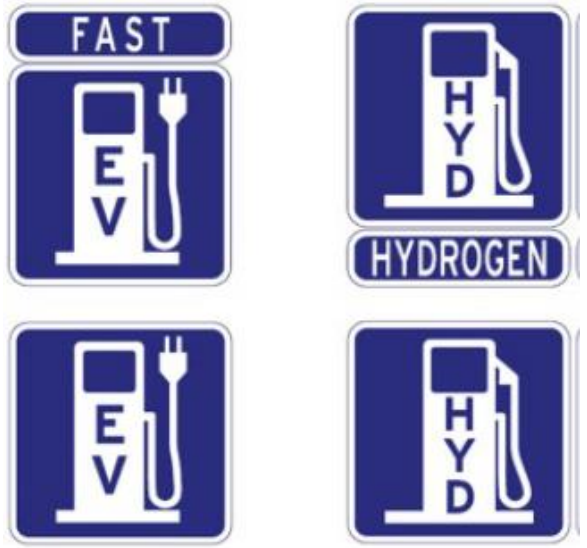
Reliable, Equitable, and Accessible Charging for Multi-family Housing 2.0

- $20 million
- Goals:
  - Increase electric vehicle (EV) charging access for multi-family housing (MFH) residents
    - Level 1 & Level 2 charging solutions
  - Enable greater EV adoption among MFH residents
- Timeline:
  - Solicitation Release: *April, 2023*
  - Pre-Application Workshop: *May 10, 2023*
  - NOPA: *November 2023*
  - Projects begin: *Q2 2024*



Signage and Measures to Increase Visibility (GFO-22-613)

- $1 million
- Goals:
  - Increase visibility of existing EV Charger Stations along freeways, highways, and urban expressways and boulevards
    - General Service, Specific Service, and Wayfaring Signs
    - Hydrogen Stations and Application of Green Paint to Charger Spaces
- Timeline:
  - Solicitation Posting: April 13, 2023
  - Pre-Solicitation Workshop: April 25, 2023
  - Applications Due: June 29, 2023



General Service Signs

Medium- and Heavy-Duty ZEV Infrastructure Investments

Jamaica Gentry, Air Pollution Specialist
Fuels and Transportation Division

Clean Transportation Program MD/HD Allocations in the FY 22/23 Commission Report (in millions)

Category	Funded Activity	2022-2023	2023-2024	2024-2025
Clean Transportation Program & General Fund Zero-Emission Vehicles and Infrastructure	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure	$30.1	$13.8	-
General Fund Zero-Emission Vehicles and Infrastructure	Drayage	$171.95	$185.0	$49.0
General Fund Zero-Emission Vehicles and Infrastructure	Port Infrastructure	-	$40.0	$80.0
General Fund Zero-Emission Vehicles and Infrastructure	Transit	$28.5	$90.0	$50.0
General Fund Zero-Emission Vehicles and Infrastructure	School Bus	$389.25	$15.0	-
	Total	**$619.8**	**$343.8**	**$179.0**

Funding Waves Progress To Date

EV Fast Track

- First Come, First Served
- $16.2M Awarded
- 36 Projects Awarded
- 83% Awarded Meet Equity Criteria

Hydrogen

- Competitive
- $17M Funding Available
- 5 Projects Awarded
- 74% Awarded Meet Equity Criteria

EV Jump Start

- Competitive
- $13.95M Funding Available
- 98% Applicants Met Equity Criteria

Public Charging

- Competitive
- $8.1M Funding Available
- 80% Applicants Met Equity Criteria

Vehicles to be Serviced by Infrastructure

EV Fast Track and Hydrogen

Vocation	# of Awards	# of Vehicles (Public is n/a)
Drayage	11	1054
Transit	3	32
School Bus	3	53
Service	5	28
Refuse	5	18
Delivery	4	46
Shuttle	6	32
Other	0	0
Public Station	4	n/a
TOTAL	41	1263

EV Jump Start and Public Charging

Vocation	# of Applications Being Evaluated	# of Vehicles (CaaS is TBD)
Drayage	6	99
Transit	4	37
School	6	37
Service	13	78
Refuse	1	2
Delivery	15	165
Shuttle	14	44
Other	12	1129
Public Station	10	n/a
Total	81	1591

HVIP Set Aside Funding Availability

Drayage (Fleet)

- $37.9M Available
- Drayage Truck fleets with private charging sites

Launching June 2023

Transit

- $11.4M Available
- ICT Compliant Transit Agencies

Launching June 2023

Drayage (Public)

- $37.9M Available
- Drayage Truck fleets with publicly accessible charging sites

Launching November 2023

School Bus

- $17.7M Available
- First come, first served

Launching November 2023

Innovative EV Charging Solicitation

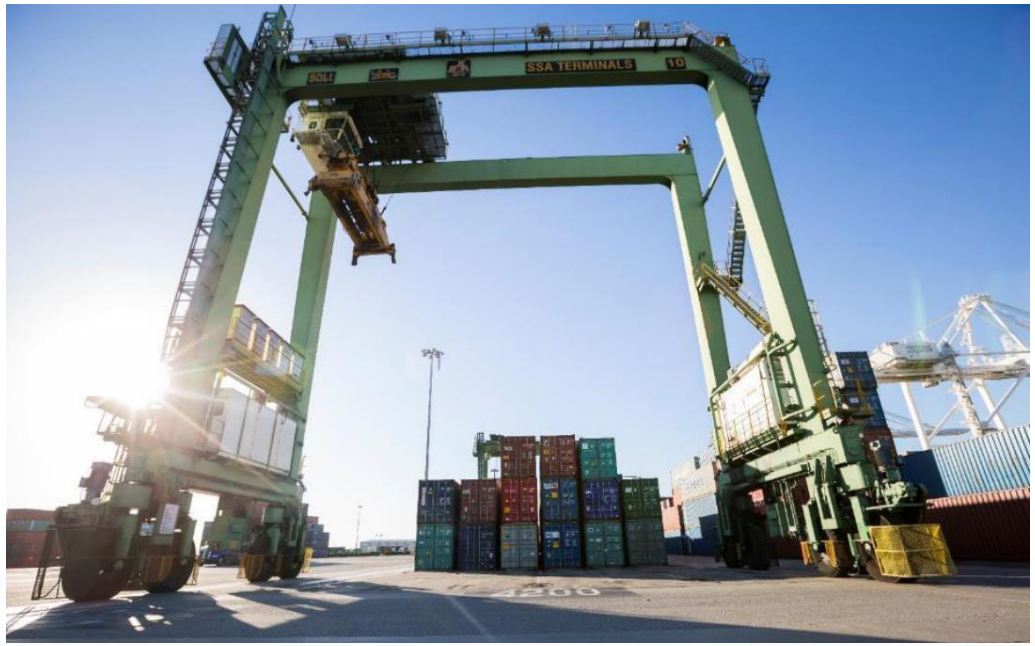
Innovative Business Models

- Truck Parking
- Charging Corridors
- Mobility/Charging as a Service (CaaS)

Innovative Technologies

- Ultra-fast Charging (large scale)
- Interoperability
- Battery Swapping
- Non-traditional Charging Structures

Advanced Technology Demonstration and Pilot Projects



Cavotec Rubber-Tired e-Gantry at the Port of Long Beach Harbor

Eligible Project Categories

- Green Zones
- ZE Equipment
- ZE Off-Road Construction and Agricultural Equipment

Emerging Opportunities (in ZEV technology)

- Aviation
- Locomotive
- Marine

TransPower Battery ElecTruck™ Drayage Truck (EDD-2)

MD/HD EV Charging and Hydrogen Refueling for Designated Corridors

Solicitation Concept

- Corridor-based MD/HD ZEV Infrastructure
- Complement to CTC's Clean Freight Corridor Efficiency Assessment
- Tentative Release in Late 2023

Funding for VGI-Focused Charging

Jeffrey Lu, Air Pollution Specialist
Fuels and Transportation Division

Vehicle-grid integration supports California's decarbonization goals

Vehicle-grid integration (VGI) describes strategies and products that encourage grid-friendly charging while ensuring driver needs are still met

→ **For example: Smart one-way charging and bidirectional charging**

Customer savings

Customer confidence

Support grid reliability

This slide includes visuals from Flaticon.com

Multiple CEC efforts aim to scale VGI

1. Ensure **minimum technical capabilities** for block grant funded chargers
   - These minimum technical requirements can enable VGI capability
2. Several **funding solicitations** supporting VGI

Responsive, Easy Charging Products With Dynamic Signals (REDWDS) [GFO-22-609]

Funds development and deployment of products which help customers easily manage charging and respond to grid signals (such as rates and demand response).

Electric School Bus Bi-Directional Infrastructure [GFO-22-612]

Funds bidirectional chargers for existing electric school bus fleets.

Funding for Hydrogen Refueling

Kristi Villareal, Air Pollution Specialist
Fuels and Transportation Division

LD Vehicle and Multi-Use Hydrogen Refueling Infrastructure

- $27 million in grant funds available
- Purpose of GFO-22-607
  - Projects that will provide publicly available hydrogen refueling stations to enable continued growth of California's FCEV market
  - Encourage the development of multi-use stations with separate LD and MD/HD refueling dispensers

Mill Valley Light Duty Station
Photo Credit: First Element Fuel

Innovative Hydrogen Refueling Solutions for Heavy Transport

- GFO-22-502: Conducted in partnership with CEC's Energy Research and Development Division (ERDD), $16.5 million in grant funds available
- Purpose:
  - Advance innovative hydrogen refueling solutions to support fuel cell technologies in emerging heavy-duty on-road and off-road sectors.
    - Reduce hydrogen delivery refueling costs
    - Improve reliability
    - Enable higher fill rates
    - Minimize energy losses

Project Groups – Eligible Vehicle Types

Project Group	Eligible Vehicle Types
Group 1: Mobile Off-Road Equipment	• Mobile agricultural equipment • Construction equipment • Mining equipment • Airport ground support equipment • Cargo handling equipment
Group 2: Emerging Off-Road Applications	• Freight locomotives • Passenger locomotives or multiple units • Commercial harbor craft • Ocean-going vessels • Aircraft
Group 3: MDHD On-Road Vehicles	• Trucks • Buses • Multi-modal solutions that support both MDHD on-road vehicles and other end-uses with shared equipment

ZEV-Related Manufacturing; Low-Carbon Fuel Production

Jonathan Bobadilla, Energy Commission Specialist
Fuels and Transportation Division

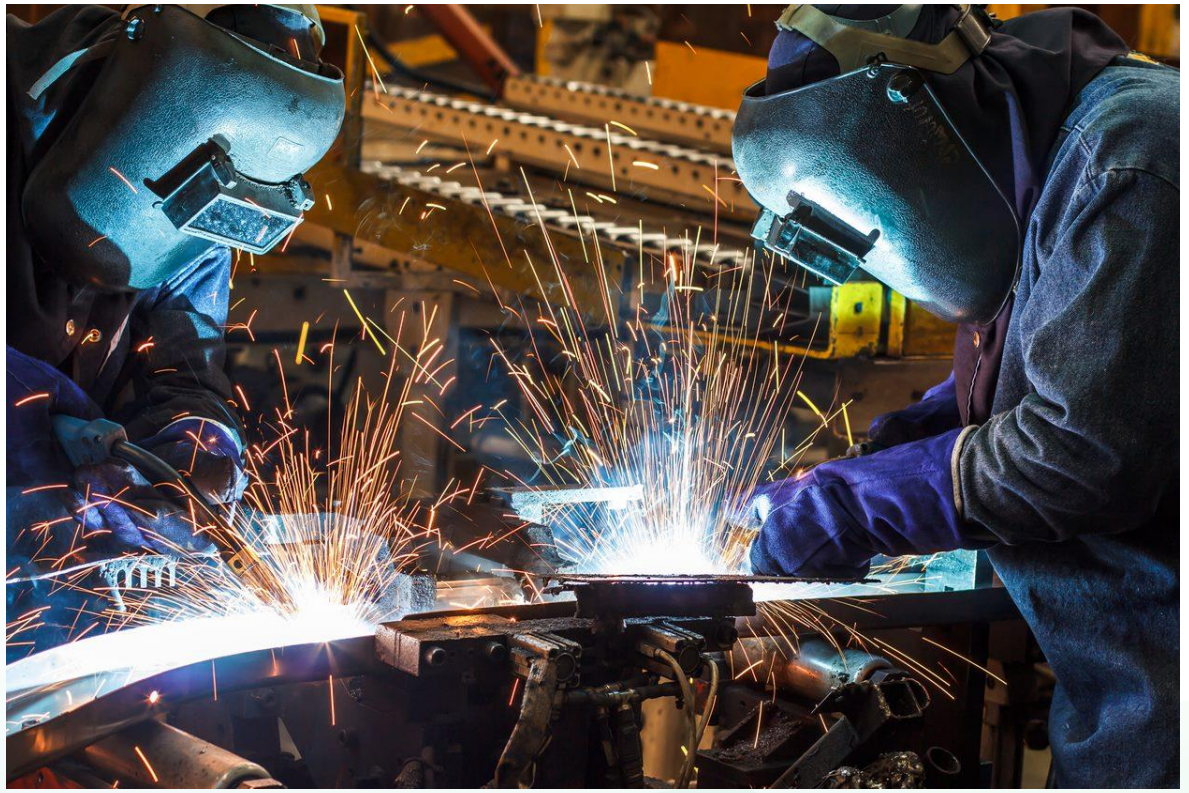
Manufacturing Solicitations FY 2021/22

Two solicitations:

- Zero-Emission Transportation Manufacturing (ZETM)
- Zero-Emission Vehicle Battery Manufacturing Block Grant

Statutory goals:

- Support manufacturing in California
- Increase number and quality of jobs
- Bring positive economic impacts to the state
- Contribute to California's goals of zero-emission transportation

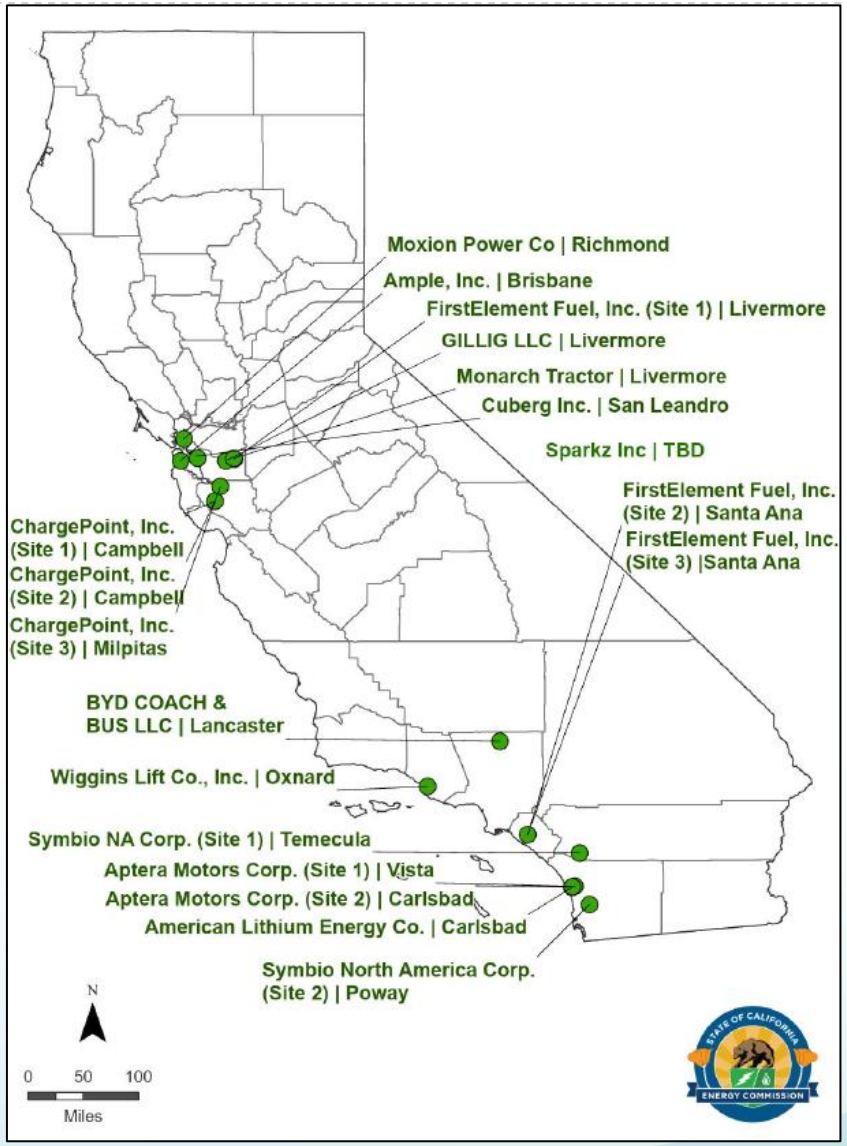


GFO-21-605 ZETM Funding Results

Project Category	Applications Received	Funding Requested ($ million)	Proposed Awards	Proposed Funding ($ million)	Proposed Match ($ million)
Complete ZEVs	15	$183	6	$112	$134
ZEV Batteries	7	$94	5	$63	$117
ZEV Infrastructure	2	$18	1	$15	$15
Components for ZEV & ZEV Infrastructure	2	$16	1	$8	$14
TOTAL	**26**	**$311**	**13**	**$198**	**$281**

Source: GFO-21-605 Solicitation Page. Proposed awards pending approval at CEC business meeting.

GFO-21-605 ZETM Awardees



Awardee Name	Project Location City(ies)	Manufactured Product	Proposed Award Amount ($ millions)	Proposed Match Share ($ millions)
American Lithium Energy Corporation	Carlsbad	Battery cells	$10.2	$10.2
Ample, Inc.	Brisbane	Battery Modules	$14.7	$15.0
Aptera Motors Corp.	Carlsbad, Vista	Battery electric passenger vehicle	$21.9	$26.4
BYD COACH & BUS LLC	Lancaster	Battery Electric School Bus	$30.0	$39.8
ChargePoint, Inc.	Campbell, Milpitas	Electric vehicle chargers	$14.6	$14.6
Cuberg Inc.	San Leandro	Battery cells	$11.2	$51.7
FirstElement Fuel, Inc.	Livermore, Santa Ana	Hydrogen refueling station modules and pumps	$7.7	$14.4
GILLIG LLC	Livermore	Battery electric bus	$29.7	$35.3
Moxion Power Co.	Richmond	Battery modules	$15.0	$26.7
Sparkz, Inc.	TBD	Battery cells	$12.5	$13.8
Symbio North America Corp.	Temecula, Poway	Hydrogen fuel cell power system and vehicle	$9.1	$11.0
Wiggins Lift Co., Inc.	Oxnard	Battery electric forklift	$8.1	$8.5
Zimeno Inc. DBA Monarch Tractor	Livermore	Battery electric tractor	$13.1	$13.2

Manufactured Products Supported

Source: GILLIG, battery electric bus

Source: BYD, battery electric school bus

Source: ChargePoint, EVSE

Source: Wiggins, battery electric forklift

Source: Moxion, EVSE battery module

Source: Cuberg, battery cells

Source: FirstElement, HRSE pump

GFO-21-606 Block Grant Results

Zero-Emission Vehicle Battery Manufacturing Block Grant

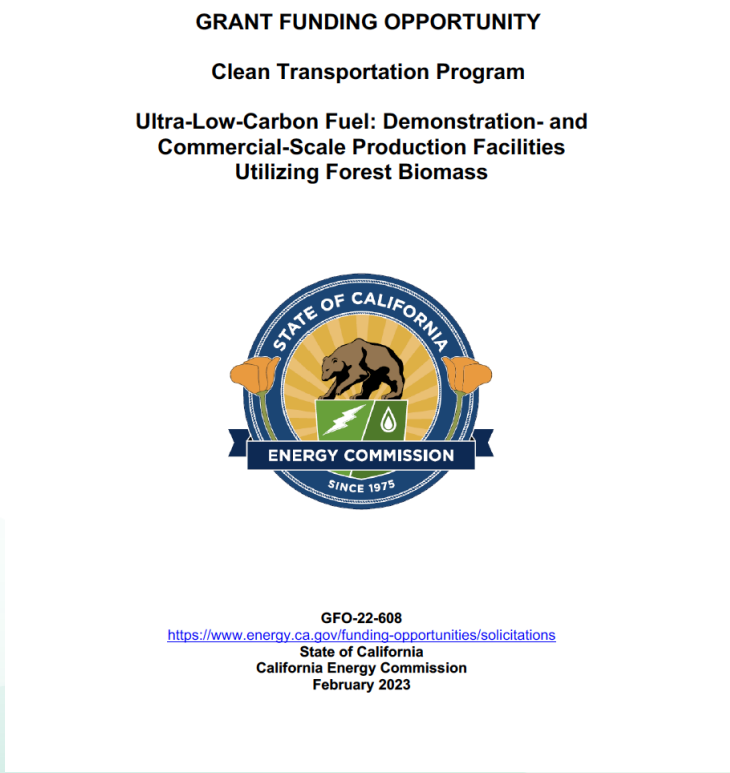
- Implementer: CALSTART
- Funding Total: $25 million
- Sub-awards for ZEV battery manufacturing

Source: GFO-21-606 Solicitation Page. Proposed sub-awards are subject to approval at a CEC business meeting.

Forest Biomass to Low-Carbon Fuel

Ultra-Low-Carbon Fuel: Demonstration- and Commercial-Scale Production Facilities Utilizing Forest Biomass Solicitation

- $9 million
- Goals:
  - Support ultra-low carbon fuel in two funding categories: demonstration- and commercial-scale production facilities utilizing forest biomass.
- Timeline:
  - Solicitation Release: February 3, 2023
  - Applications Due: April 27, 2023
  - NOPA: June 2023
  - Projects begin: Q4 2023



Workforce Training and Development

Larry Rillera, Air Pollution Specialist
Fuels and Transportation Division

Clean Transportation: Workforce Goals

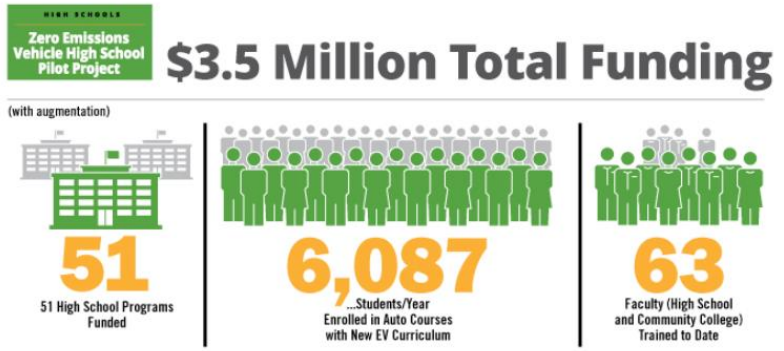
Goals:

- Develop clean transportation career pathways
- Focus on job creation, quality, and quantity
- Leverage workforce partnerships and investments
- Support prioritized communities
- Support labor standards and workforce requirements
- Support small-, minority-, women-, disabled veteran-, LGBTEQ- owned business enterprises

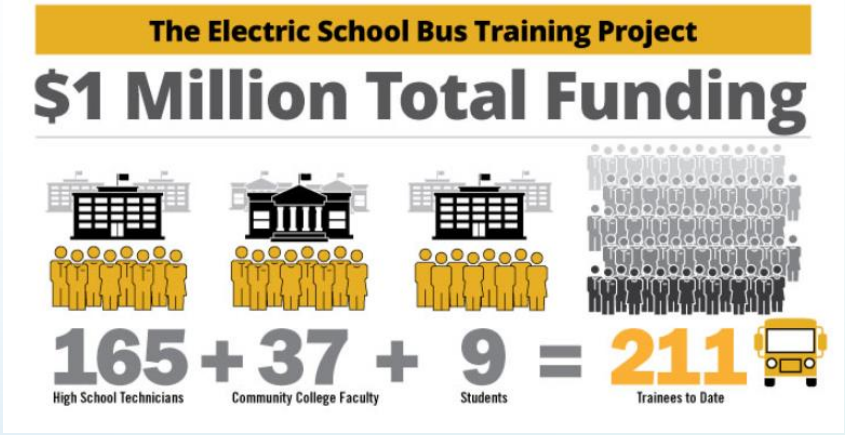
Workforce Training and Development

The Zero Emissions Vehicle Training Enhancement Program

The Zero Emissions Vehicle High School Pilot Project



The Electric School Bus Training Project



The ZEV Truck Training Project

Coming soon!

Workforce Training and Development

- Concept 1: Electric Vehicle Infrastructure Training Program (EVITP)
- Concept 2: National Electric Vehicle Infrastructure (NEVI) Training
- Concept 3: Expand the Electric School Bus (ESB) Training Project
- Concept 4: IDEAL Community Workforce Development to Support Reliable Infrastructure
- Concept 5: Open ZEV Infrastructure Workforce Training and Development Concepts

NEVI Funding
Competitive Federal Funding

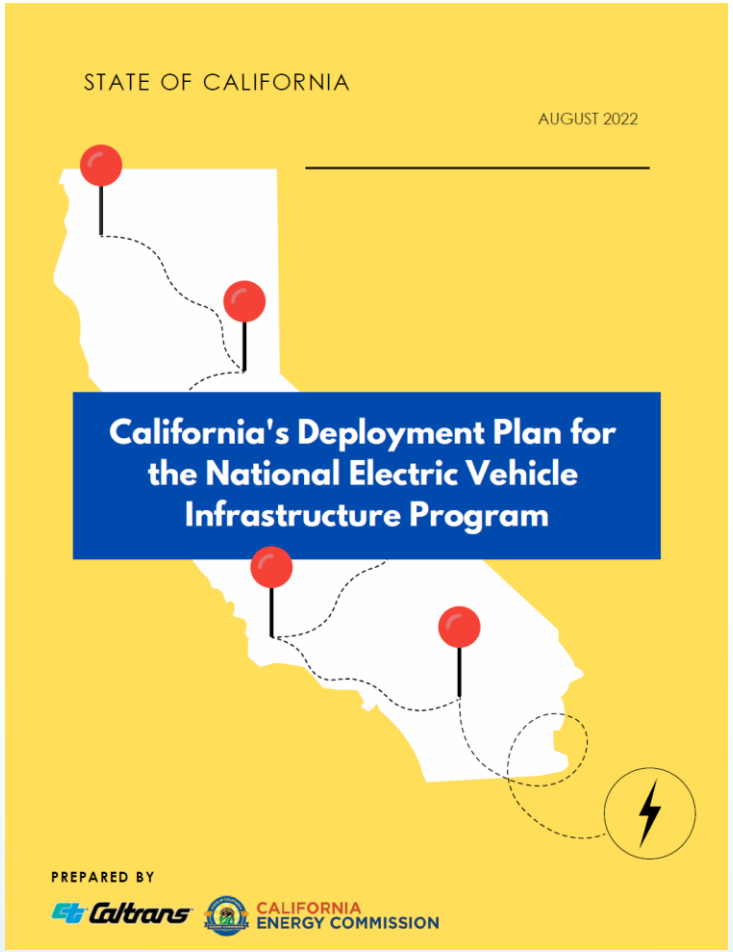
Ben De Alba, Supervisor, Strategic Investment Unit
Fuels and Transportation Division

Federal Funding Opportunities

Infrastructure Investment and Jobs Act of 2021

- $5 billion for the National Electric Vehicle Infrastructure (NEVI) Formula Program
- $2.5 billion for the Charging and Fueling Infrastructure Discretionary Grant Program (CFI):
  - Alternative Fuel Corridors Grants
  - Community Charging and Fueling Grants

National Electric Vehicle Infrastructure Program (NEVI)



- Formula funding: $384M for California over 5 years
- Supports charging stations on private sites along 6,600 miles of interstates, US routes, and state routes in California
- At least four fast chargers every 50 miles or less and no more than one mile from corridor
- 50% of chargers must be in Disadvantaged Communities/Low-Income Communities (DAC/LIC) and 40% in Justice40 communities

U.S. DOT: Charging and Fueling Infrastructure Discretionary Grant Program (CFI)

- CEC/Caltrans applying for $350 million Alternative Fuel Corridors category (MDHD)

- Pursuing public zero-emission truck corridor project along I-5 from Mexico to Canada

Photo Courtesy of West Coast Corridor Clean Transit Initiative Study

Community Benefits Framework; Tribal Communities Outreach

Larry Rillera, Air Pollution Specialist
Fuels and Transportation Division

Community Benefits Framework

What

Continues efforts to ensure that CTP projects are not only located in disadvantaged and low-income communities but also that these communities benefit from partnerships and investments

How

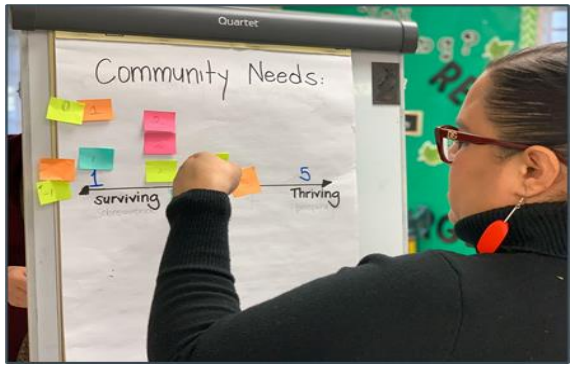
Define, measure, and improve the benefits provided to communities by partnerships and investments.

Track community benefits for future projects.

Establish ongoing and institutional feedback that incorporates community direction.

Questions:

- What CTP benefits are valuable to communities?
- How should the CEC define community?
- How should the CEC define benefits?
- How can the CEC better track and attribute benefits?



Community Benefits Framework

Uplift San Bernardino

Benefits from Clean Transportation Future

- Happy, appreciative community
- Less asthma
- Improved mental health
- Increased community participation
- Improved
- Ride sharing
- Combination of private and public transportation

Vision for Clean Transportation Future

- Urban mobility accessible to the entire population, affordable to all budgets
- More accessible resources and information for low-income families, technical support (e.g. how to navigate the system)
- Community-level education – work with people that are already engaged with the community

Proposed Community Benefits Framework

Proposed five-step process for benefit assessment:

1. Identify the community affected by a CTP project
2. Address a community need
3. Define project benefits with communities
4. Record community benefit metrics
5. Track community benefits over time and increase/identify future benefits

CEC staff is soliciting input on this draft process.

Tribal Communities Outreach

- Recognizing and committing the CEC to supporting California tribal energy sovereignty and independence (Resolution No. 23-0302-09).

- Consulting with the CEC's Tribal Program and the Tribal Lead Commissioner for assistance with outreach and promotion of transportation-related funding opportunities to tribes.

- Ensuring that Clean Transportation Program investments benefit rural and tribal communities.

- **May 4, 2023** The CEC will host a Tribal Listening Session on accelerating electric vehicle adoption through a dedicated tribal focused funding opportunity. Open to all California Native American Tribes. https://www.energy.ca.gov/event/meeting/2023-05/tribal-listening-session-concepts-zero-emission-vehicle-infrastructure-tribal

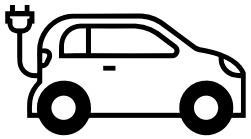
Questions for staff

2023-2024 Investment Plan Update for the Clean Transportation Program

Patrick Brecht

Project Manager for the Clean Transportation Program Investment Plan

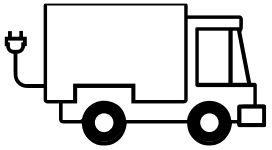
Investments in FYs 23/24 - 25/26



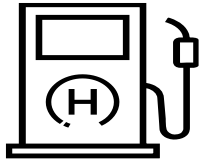
$634 M
Light-Duty EV Charging Infrastructure

+

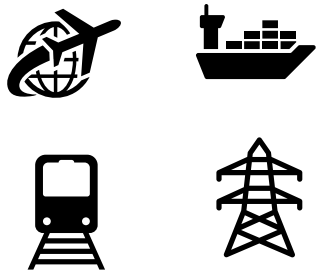
$384 M
NEVI



$954 M
Medium- and Heavy-Duty ZEV Infrastructure

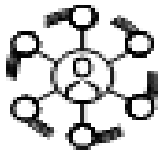


$ 70 M
Hydrogen Refueling Infrastructure



$46 M
Emerging Opportunities

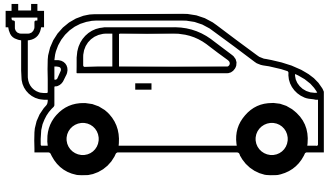
$5 M
Low-Carbon Fuels



$5 M
ZEV Workforce Development

Total: $1.7 Billion

Light-Duty EV Charging



$634 M

+

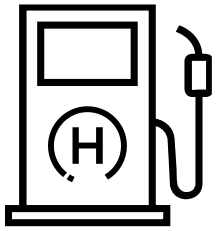
$384 M

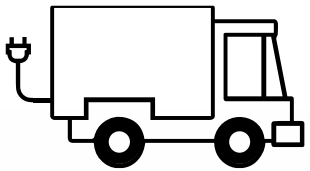
NEVI

- Equitable at-home solutions for multi-family residences
- Targeted deployments in rural and priority communities
- Broad network of high-power fast chargers

→ This fiscal year: $13.8 M (Program) and $370 M (General Fund)

Heavy-Duty ZEV Infrastructure



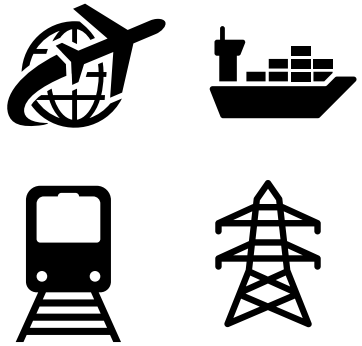


$954 M

- Both hydrogen refueling and EV charging
- Zero emission port infrastructure
- Fuel thousands of trucks, buses, and off-road equipment

→ This fiscal year: $13.8 M (Program) and $645 M (General Fund)

Emerging Opportunities

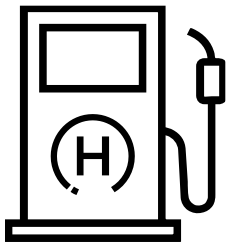


$46 M

- Sectors early in transition to zero emission including aviation, marine, and rail
- Vehicle-grid integration to support grid-friendly charging

→ This fiscal year: $35 M (General Fund)

Hydrogen Refueling Infrastructure



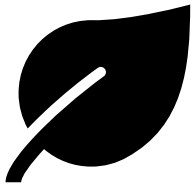
$70 M

- Clean Transportation Program funding will significantly exceed legislative goal of 100 stations
- State's general fund is expected to help meet the goal of 200 stations
- Both light-duty and innovative mixed-use

→ This fiscal year: $20M (Program)

Low Carbon Fuels

- Bio-derived fuels including from forest wastes
- Low-carbon hydrogen production
- Complements other funding and incentive programs

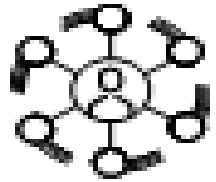


$5 M

→ This fiscal year: $5 M (Program)

Workforce Training and Development

- Training and workforce development programs
- Prioritize disadvantaged and low-income communities



$5 M

→ This fiscal year: $5M (Program)

Funding Allocations Table

Category	Funding Source	2023-2024	2024-2025	2025-2026
Light-Duty Electric Vehicle Charging Infrastructure	Program	$13.8	-	-
Light-Duty Electric Vehicle Charging Infrastructure	General Fund	$210.0	$90.0	$40.0
Equitable At-home Charging	General Fund	$160.0	$80.0	$40.0
Medium- and Heavy-Duty ZEV Infrastructure	Program	$13.8	-	-
Drayage Truck ZEV Infrastructure	General Fund	$185.0	$49.0	-
Transit Bus ZEV Infrastructure	General Fund	$90.0	$50.0	$30.0
School Bus ZEV Infrastructure	General Fund	$15.0	-	-
Clean Trucks, Buses and Off-Road Equipment ZEV Infrastructure	General Fund	$315.0	$31.0	$25.0
Port ZEV Infrastructure	General Fund	$40.0	$80.0	$30.0
Emerging Opportunities	General Fund	$35.0	$11.0	-
Hydrogen Fueling Infrastructure	Program	$10.0	-	-
Hydrogen Fueling Infrastructure	General Fund	$20.0	$20.0	$20.0
Zero- and Near Zero-Carbon Fuel Production and Supply	Program	$5.0	-	-
ZEV Manufacturing	General Fund	-	-	-
Workforce Training and Development	Program	$5.0	-	-
	Total Program	**$47.6**		
	Total General Fund	**$1,070**	**$411**	**$185**

Questions for Consideration: #1

Does the timing and allocations between light-duty and medium-duty/heavy-duty infrastructure investments in the Investment Plan strike the right balance for ZEV acceleration? If not, where should adjustments be made and why?

Questions for Consideration: #2

Does the Investment Plan reflect the needs of low-income, disadvantaged, or underrepresented Californians and California communities? If not, what changes to the Investment Plan should the CEC consider?

- Relatedly, how should we expand or modify the Advisory Committee to include additional perspectives and ideas?

Questions for Consideration: #3

Is there additional context, e.g. new regulations (like Advanced Clean Fleets) or market changes (like accelerating passenger EV sales), that we should factor into our decision-making on priorities?

Questions for Consideration: #4

Given the realities of the current state budget, are there any changes you'd make by shifting fungible Clean Transportation Program dollars to other categories?

Closing Links and Contact

More information:
https://www.energy.ca.gov/programs-and-topics/topics/transportation

Submit e-comments by May 11, 2023 at:
https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=23-ALT-01

Contact:
Patrick.Brecht@energy.ca.gov