DOCKETED	
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Project Title:	2021-2022 Investment Plan Update for the Clean Transportation Program
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California Energy Commission

2nd Advisory Committee Meeting for the Clean Transportation Program

September 16, 2021

Housekeeping

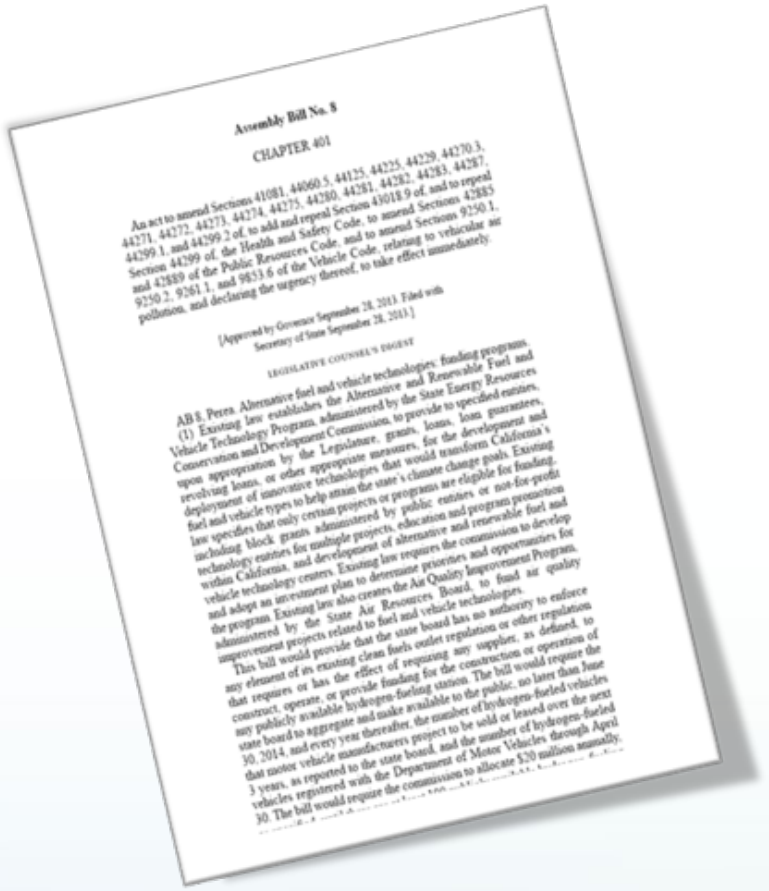
- This workshop is being recorded.
- Virtual participation will be possible Zoom or telephone during the public comment period.
- Workshop event webpage https://www.energy.ca.gov/event/meeting/2021-09/clean-transportation-program-investment-plan-advisory-committee-meeting
- Written comments should be submitted to Docket 21-ALT-01 https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=21-ALT-01

Deadline for comments is Thursday, September 30, 2021, by 5:00 P.M.

Meeting Agenda

- Opening remarks and introductions.
- Presentations by CEC staff on the Clean Transportation Program funding activities, related work, and key changes in the Revised Staff Draft Report version of the *2021-2023 Investment Plan Update*.
- Advisory Committee discussion on the *2021-2023 Investment Plan Update.*
- Public comment.
- Closing remarks.

Clean Transportation Program Origins in Statute



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

- Established by Assembly Bill 118 (Nunez, 2007)
- Provides approximately $95.2 million per year
- Extended to January 1, 2024 by Assembly Bill 8 (Perea, 2013)

Purpose of the Investment Plan

- Guides the Clean Transportation Program's investments toward meeting the state's clean transportation goals
- 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)
- Since 2020, sets multi-year funding allocations to improve consistency and transparency for potential funding partners

Commitment to Inclusion, Diversity, Equity and Access

- Collaboration with the Disadvantaged Communities Advisory Group
- Prioritize and invest in proper community outreach and engagement
- Partner with local community-based organizations
- Develop metrics that go beyond funding locations
- **Seeking to provide >50% of Investment Plan funds to benefit low-income and disadvantaged communities**

Context Setting: Climate & Air Quality

Legislation & Executive Orders are steering the state towards near- and zero-emission transportation

Target	Description
Climate	2030: 40% GHG reduction in economy 2030: 20% GHG reduction in transportation fuels 2045: Net zero carbon economy
Air Quality	2031: 80% reduction in smog-forming NOx

Zero Emission Vehicles (ZEVs) are an essential part of achieving these goals!

Context Setting: ZEV Goals

Category	Description
Light Duty Vehicles	- 2025: 1.5M ZEVs - 2030: 5M ZEVs - 2035: 100% of New Sales are ZEVs (E.O. N-79-20)
Charging and Refueling Infrastructure	- 2025: 250,000 Chargers (inc. 10,000 DC Fast Chargers) - 2025: 200 Hydrogen Refueling Stations
Medium- and Heavy-Duty Vehicles	- 2029: 100% of New Transit Bus Purchases are ZEVs - 2035: 100% of All Off-Road Vehicles and Equipment are ZEVs (E.O. N-79-20) - 2035: 100% of All Drayage Trucks are ZEVs (E.O. N-79-20) - 2045: 100% of All Trucks and Buses are ZEVs (E.O. N-79-20)

Informing the Investment Plan

- *AB 2127 Electric Vehicle Charging Infrastructure Assessment-Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030*
  - Commission Report published on July 14, 2021

- *SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment*
  - First report published in December 2020
  - Second report expected in December 2021

- Consulting with the Disadvantaged Communities Advisory Group

- **Adjusting for General Fund augmentations from Budget Act of 2021**
  - $3.9 billion for ZEV-related investments across agencies
    - $1.165 billion to be administered by CEC
    - Some allocations are targeted, others allow more discretion

Assembly Bill 2127 Charging Infrastructure Assessment

Raja Ramesh, Air Pollution Specialist
Fuels and Transportation Division

Overview of AB 2127 and Executive Order N-79-20

- Every 2 years, create reports assessing:
  - Charging infrastructure needs for all vehicle types by 2030
  - Utility grid connection
  - Charger hardware and software
  - Programs accelerating EV adoption
- Update AB 2127 assessment to capture EO N-79-20's expanded targets

Zero-Emission Vehicle Targets

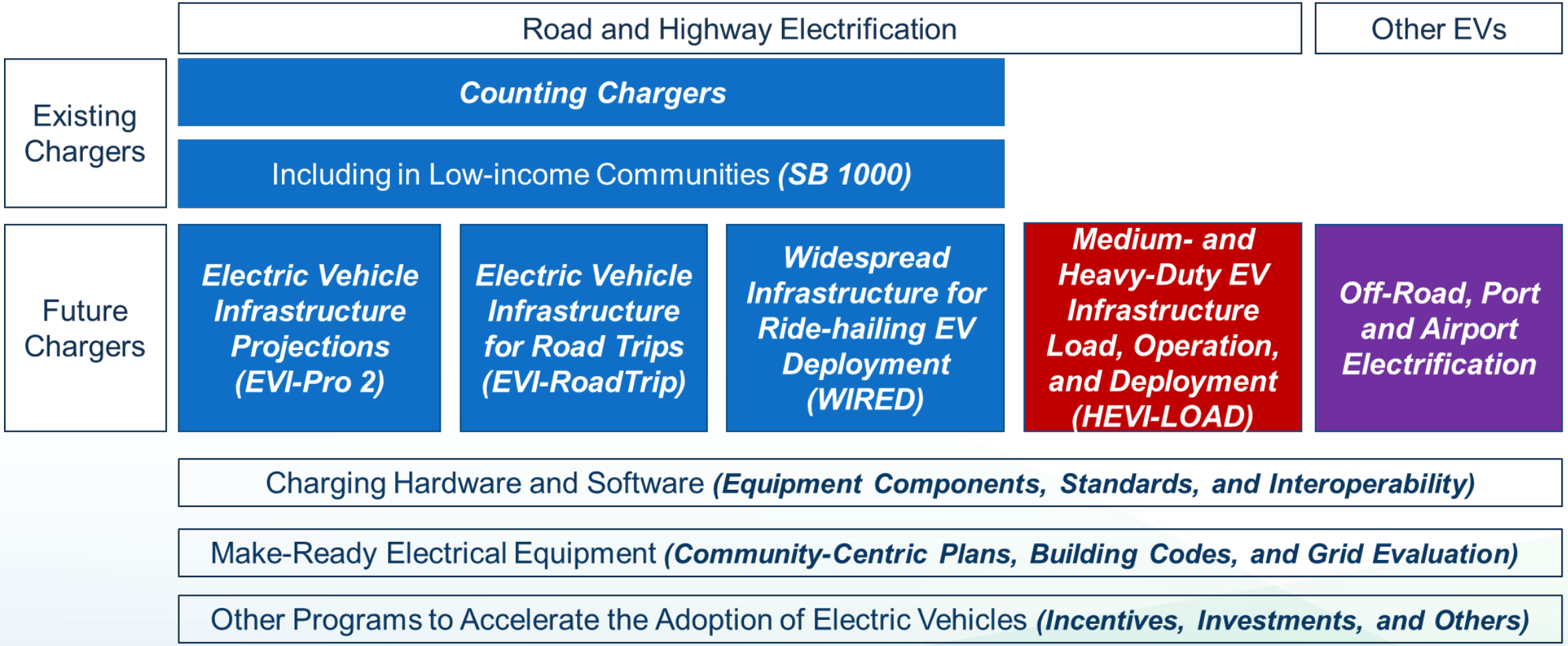
AB 2127:
5M ZEVs by 2030

Source: FreeWire

EO N-79-20 / MSS:
8M ZEVs by 2030

Source: Volta Charging

Scope of AB 2127 Assessment



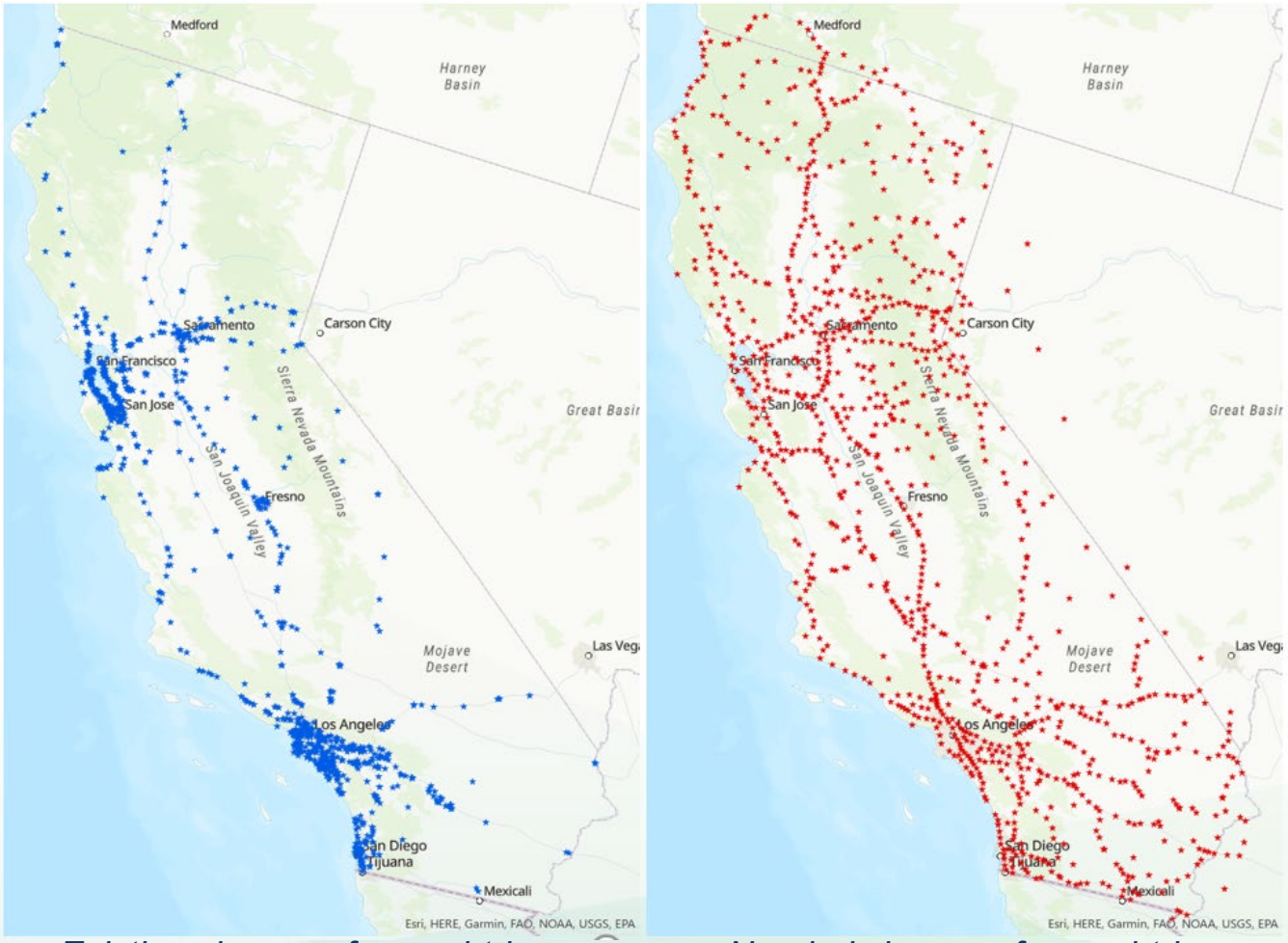
Modeling Approach

Inputs

- ✓ ZEV population (Hydrogen, pure battery electric, plug-in hybrid)
- ✓ Residential charging access
- ✓ Travel data
- ✓ Vehicle attributes by class
- ✓ Charger utilization

Outputs

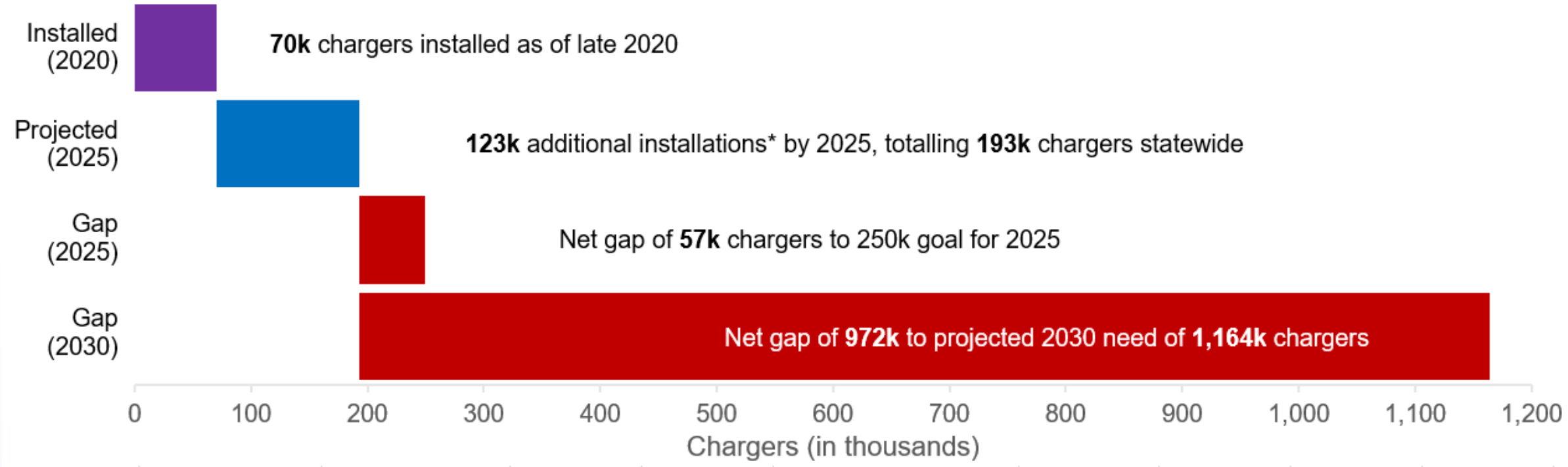
- ✓ Number of chargers needed at statewide and countywide level
- ✓ Broken down by charger type and location type
- ✓ Statewide load profiles



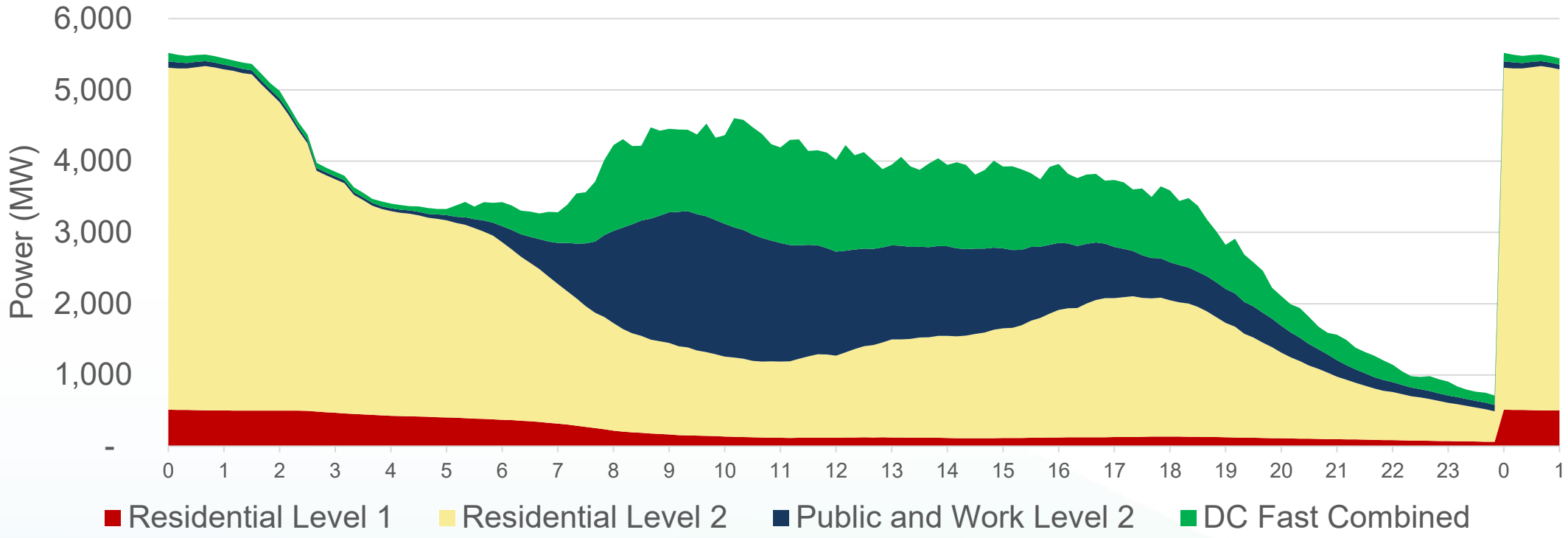
Existing chargers for road-trips *Needed chargers for road-trips*

Source: CEC, National Renewable Energy Laboratory, and Alternative Fuels Data Center

Light-Duty Results



Projected Load:
Light Duty

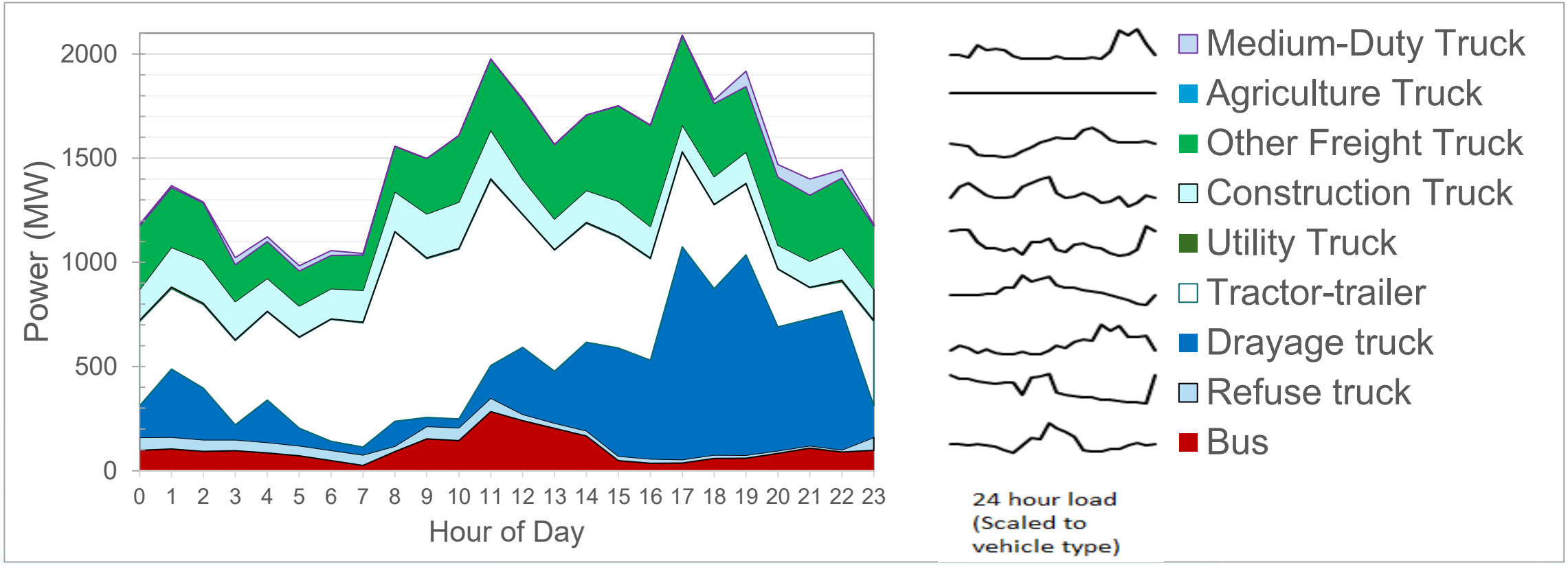


Projected 2030 statewide power for light-duty charging for 8 million ZEVs on a typical weekday

Medium- and Heavy-Duty Results

- **180,000** medium- and heavy-duty ZEVs in 2030 to achieve EO N-79-20 goals
- Modeling suggests **157,000** DC fast chargers needed
- Ongoing analysis will investigate higher charging power
- Critical for equity!

Projected Load on the Grid:
Medium- and Heavy Duty (HEVI-LOAD)



Projected 2030 load curve for medium- and heavy-duty on-road vehicles across major segments

Beyond Charger Numbers

- Focus on Equity
- Local “best-fit” solutions
- Financing innovations and continued public support
- Vehicle-grid integration
  - Bidirectional charging
- Standard connectors and communications
  - Convenience
  - Grid-friendly charging

Source: Ford Motor Company

California Electric Vehicle Infrastructure Deployment Assessment (SB 1000)

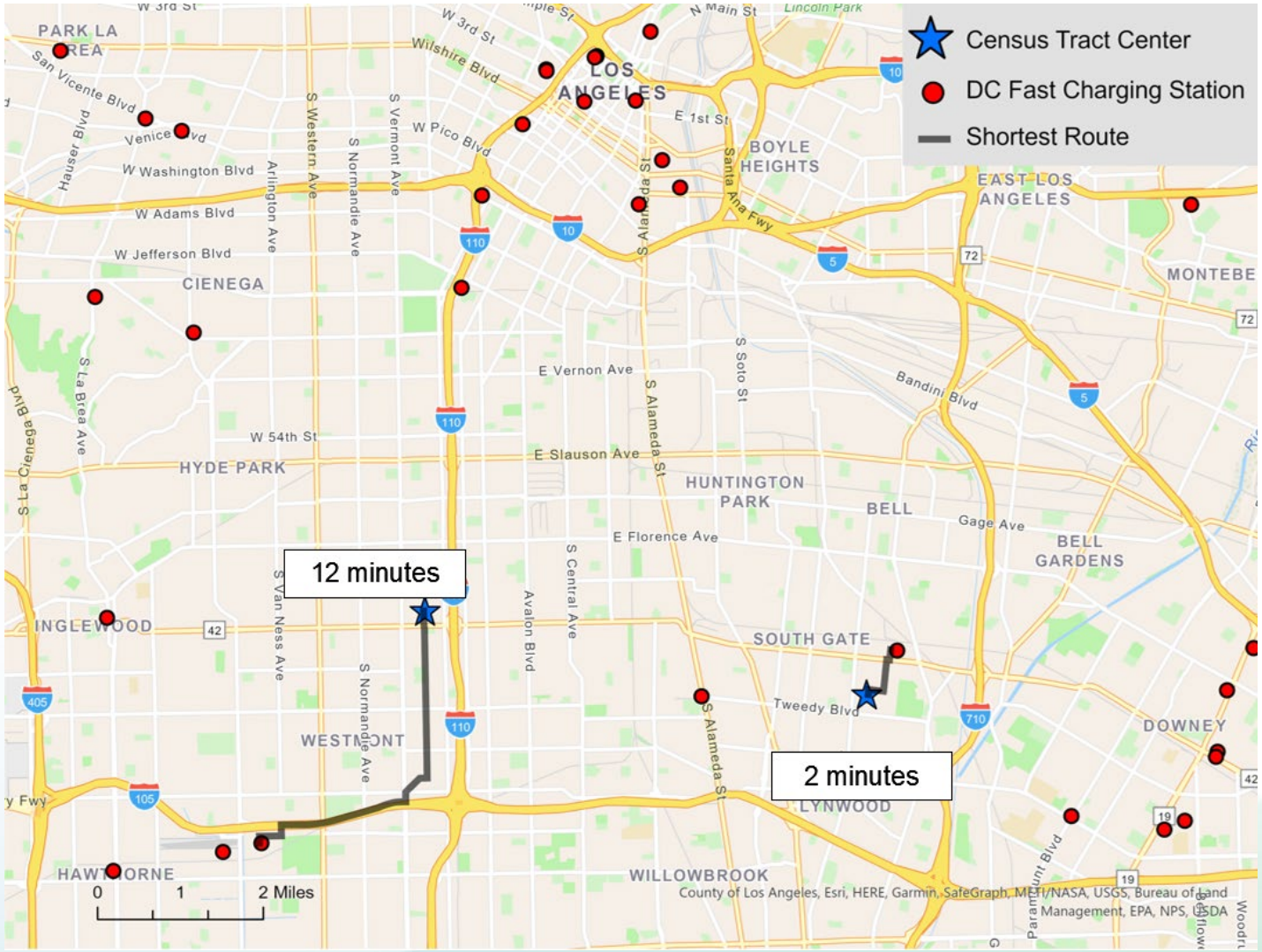
Increasing Access to Electric Vehicle Charging Infrastructure for All

Larry Rillera, Air Pollution Specialist
Fuels and Transportation Division

Comparing 2020 and 2021 Analyses

2020 Analysis (published December 2020)	**2021 Analysis** (expected December 2021)
Public Level 2 and DC fast chargers tend to be collocated with EVs but are unevenly distributed across income groups and population. On average, low-income communities have fewer per capita public Level 2 and DC fast chargers. High-population-density census tracts have fewer public DC fast chargers than low-population-density census tracts.	Disadvantaged communities have drive times of under an hour to a public DC fast charging station. Low-income communities have a wide range of drive times of up to 3 hours to a public DC fast charging station. High-population density census tracts are closer to a DC fast charging station than low-population density census tracts. Rural communities have long drive times of up to 4 hours to a DC fast charging station.

2021 Focus: Drive times to DC fast chargers



Summary of 2021 Findings

- About 80% of all census tracts, regardless of income level or CalEnviroScreen score, have population centers that are under 10 minutes from a DC fast charging station.
- **Rural communities** have long drive times of up to 4 hours to a DC fast charging station.
- **Low-income communities** have a wide range of drive time of up to 3 hours to a DC fast charging station.
- **Disadvantaged communities** have drive times of under an hour to a DC fast charging station.
- **High-population-density areas** are closer to a DC fast charging station than low-population density areas.

Takeaways from 2021 Analysis

- Clean Transportation Program funding decisions for DC fast charging incentives should consider **prioritizing shorter drive times** to faster and newer technology chargers to enhance charging access for underserved populations.
- **Drive time maps** could be used as a starting point to identify where additional DC fast charging may be needed to close fast-charging gaps. (More analysis is needed to better understand congestion in areas as a result of increased demand.)
- The CEC is **committed to enhancing equity** across the Clean Transportation Program and is identifying ways to incorporate this analysis into upcoming grant funding opportunities, starting with a solicitation to increase charging access for rural Californians.

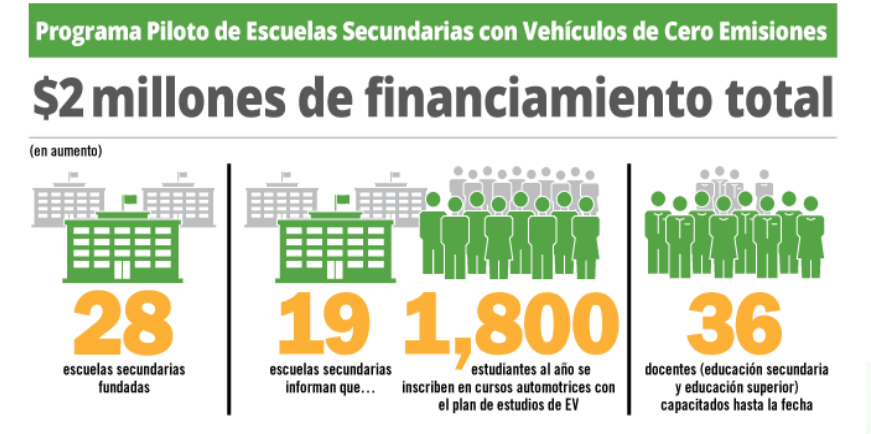
Clean Transportation Program Community Benefits

Larry Rillera
Fuels and Transportation Division

Actions Taken to Elevate Equity

- Reconstituted and diversified the Clean Transportation Program Advisory Committee
- Consulting with the Disadvantaged Communities Advisory Group
- Consulting with the CEC's Tribal Program and the Tribal Lead Commissioner
- Conducting and tailoring grants to address findings of CA Electric Vehicle Infrastructure Deployment Assessment (SB 1000)
- Established the IDEAL Communities Partnership
- Issuing the IDEAL ZEV Workforce Pilot (pending release)

CalEnviroScreen at the 87th percentile for a CALeVIP funded project in Sacramento.



ZEV High School Training Project results to date (in Spanish)

Actions Planned to Better Define and Track Community Benefits

- Focus on underserved communities
- Capture full spectrum of environmental and socioeconomic benefits
- Listen to communities
- Public engagement process
- Qualitative and quantitative metrics
- Incorporate lessons learned
- Institutionalize continuous/ongoing feedback

Update on Clean Transportation Program

Patrick Brecht
Investment Plan Project Manager
Transportation Policy and Analysis Office

Update on Light-Duty Charging Infrastructure Investments

Title	Funding	Description
Second Block Grant for Light-Duty Electric Vehicle Charger Incentive Projects (GFO-20-607)	Up to $500 million available. NOPA released September 3, 2021	- Provide streamlined incentives to install chargers - Successor to CALeVIP - Two proposed awards, each up to $250 million
Vehicle-Grid Innovation Lab ("ViGIL") (GFO-20-610)	Up to $2 million available. NOPA expected September 2021	- Increase the capacity and throughput of electric vehicle supply equipment's standards testing - Supports charger innovation, development, and commercialization
Charging Access for Reliable On-Demand Transportation Services ("CARTS") (GFO-21-601)	Up to $6 million available. Proposals due October 29, 2021	- Must demonstrate participation or support from on-demand services (e.g. ride-hailing services, taxi fleets, food delivery services) - Three regions of the state, up to $2 million each
Multi-Family Housing EV Charging Infrastructure Reliable Rural EV Charging Infrastructure	Under development. Expected release in November 2021 & December 2021	- Promote charging access for all Californians

More information available at https://www.energy.ca.gov/funding-opportunities/solicitations.
Details are accurate as of September 9, 2021, and subject to change.

Update on Medium- and Heavy-Duty ZEV Infrastructure Investments

Title	Funding	Description
Block Grant for MD/HD ZEV Infrastructure Incentive Projects	Up to $50 million approved $17 million available to start	- Concierge-like model, working directly with eligible applicants to plan and fund infrastructure - Will include charging equipment and hydrogen refueling station equipment

Update on Recovery and Reinvestment (FY 2020-2021)

Guiding principles:

Speed of Implementation | Job Creation

Impacted Communities | Economic Development

Title	Funding	Description
EV Ready Communities Blueprints – Phase II (GFO-19-603)	Additional $9.2 million will be allocated to NOPA Revised NOPA expected September 2021	- Additional awards will be determined based on proposals' competitively evaluated score - Expect to fully fund one partial award, plus three new awards
Upcoming solicitation – IDEAL Workforce **I**nclusive **D**iverse **E**quitable **A**ccessible **L**ocal ZEV Workforce Pilot	Additional $0.8 million will be included in the solicitation Solicitation expected September 2021	- Will supplement original CEC commitment ($5 million) as well as CARB commitment ($1 million) to upcoming solicitation

More information available at https://www.energy.ca.gov/funding-opportunities/solicitations.
Details are accurate as of September 9, 2021, and subject to change.

Update on Fuel Production Investments

Title	Funding	Description
Ultra-Low-Carbon Fuel: Commercial-Scale Production Facilities & Blending Infrastructure (GFO-20-608)	Up to $8 million available Pre-approved applications due September 22, 2021	- Pre-applications already received and approved - Up to $6 million for new or expanded ultra-low-carbon fuel production facilities - Up to $2 million for blending infrastructure projects - Diesel substitutes, gasoline substitutes, biomethane, electricity for transportation use
Renewable Hydrogen Transportation Fuel Production (GFO-20-609)	Up to $7 million available Pre-approved applications due September 22, 2021	- Pre-applications already received and approved - Expected to provide fuel for stations that serve on-road light-, medium-, and fuel cell vehicles - Must be 100% derived from in-state renewable resources

More information available at https://www.energy.ca.gov/funding-opportunities/solicitations.
Details are accurate as of September 9, 2021, and subject to change.

More Information

Please visit our CEC Solicitations page for more information and updates on any solicitation

https://www.energy.ca.gov/funding-opportunities/solicitations

General Funds from ZEV Package to be Administered by the CEC

- $250 million for zero-emission drayage trucks
- $25 million for drayage truck and infrastructure pilot
- $90 million for transit buses
- $50 million for school buses
- $250 million for ZEV manufacturing grants
- $500 million for ZEV infrastructure

The budget prioritizes diesel emission reduction by earmarking funding to replace

1,125 drayage trucks

1,000 school buses

1,000 transit buses

with zero-emission alternatives and refueling infrastructure

And to accelerate **charging** and **hydrogen refueling** stations and promote ZEV-related **manufacturing**

$785 million appropriated in Budget Act of 2021;
$380 million anticipated in FY 2022-23 and 2023-24

Plan for Spending ZEV General Funds by Augmenting Recent Solicitations

Goal – Meet state ZEV goals by administering General Funds quickly and efficiently

Staff reviewed and re-evaluated all oversubscribed Clean Transportation Program Notices of Proposed Awards.

Augmented awards:

- **Hydrogen Refueling Infrastructure:** $27.0 million (Sufficient to reach 200 stations)
- **Blueprints for MD/HD ZEV Infrastructure:** $2.4 million
- **Zero-Emission Transit Fleet Infrastructure Deployment:** $16.3 million
- **BESTFIT Innovative Charging Solutions:** $8.2 million

Key Changes in the Revised Staff Draft Version of the 2021-2023 Investment Plan

- Incorporated $1.165 billion General Fund ZEV package to be administered by the CEC over three fiscal years
- Adjusted Clean Transportation Program funding to reflect the addition of ZEV package funds
- Conducting update to Charging Infrastructure Assessment (AB 2127) and leveraging findings to inform CTP investments
- Conducting update to CA Electric Vehicle Deployment Assessment (SB 1000) and leveraging findings to inform CTP investments
- Incorporated feedback from first Advisory Committee meeting and docket submissions

Clean Transportation Program Revisions in Revised Staff Draft

		STAFF DRAFT			REVISED STAFF DRAFT		
Category	**Funded Activity**	**2021-2022**	**2022-2023**	**2023-2024**	**2021-2022**	**2022-2023**	**2023-2024**
Zero-Emission Vehicles and Infrastructure	Light-Duty Electric Vehicle Charging Infrastructure and eMobility	$30.2	$10.0	-	$30.2	$30.1	$13.8
Zero-Emission Vehicles and Infrastructure	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure	$30.0	$52.2	$27.6	$30.1	$30.1	$13.8
Zero-Emission Vehicles and Infrastructure	Public Hydrogen Fueling Infrastructure	$20.0	$20.0	$10.0	$20.0	$20.0	$10.0
Alternative Fuel Production and Supply	Zero- and Near Zero-Carbon Fuel Production and Supply	$10.0	$10.0	$5.0	$10.0	$10.0	$5.0
Related Needs and Opportunities	Manufacturing	$3.0	$1.5	$2.5	-	-	-
Related Needs and Opportunities	Workforce Training and Development	$2.0	$1.5	$2.5	$5.0	$5.0	$5.0
-	**Total**	**$95.2**	**$95.2**	**$47.6**	**$95.2**	**$95.2**	**$47.6**

Combined CTP and General Fund Allocations in Revised Staff Draft

Clean Transportation Program + General Fund

Category	Funded Activity	2021-2022	2022-2023*	2023-2024*
Zero-Emission Vehicles and Infrastructure	Light-Duty Electric Vehicle Charging Infrastructure and eMobility	$288.1	$30.1	$13.8
Zero-Emission Vehicles and Infrastructure	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure	$373.35	$160.1	$138.8
Zero-Emission Vehicles and Infrastructure	Public Hydrogen Fueling Infrastructure	$47	$20	$10
Alternative Fuel Production and Supply	Zero- and Near Zero-Carbon Fuel Production and Supply	$10	$10	$5
Related Needs and Opportunities	Manufacturing	$118.75	$125	-
Related Needs and Opportunities	Workforce Training and Development	$5	$5	$5
-	**Total**	**$842.2**	**$350.2**	**$172.6**

*Subject to appropriation by the Legislature

2021-2023 Investment Plan Schedule and Next Steps

Milestones	Scheduled Date	
Release Draft Staff Report	April 26, 2021	✓
1st Advisory Committee Meeting	April 29, 2021	✓
Release Revised Staff Draft	September 8, 2021	✓
2nd Advisory Committee Meeting	September 16, 2021	✓
Release of Lead Commissioner Report	Late October 2021	
Seeking Business Meeting Approval	November 2021	

Questions for Consideration

1. Do the revised funding allocations in the latest version of the Investment Plan appropriately account for the availability of new General Fund monies? If not, what changes to the investment plan should the CEC consider?
2. Is the CEC appropriately balancing the needs and opportunities for ZEV infrastructure across the light- and medium-/heavy-duty sectors? If not, what changes to the Investment Plan should the CEC consider?
3. 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?

INFORMATION

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

Submit e-comments by September 30, 2021 at: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=21-ALT-01

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