DOCKETED

<table>
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<tr>
<th>Docket Number:</th>
<th>21-ALT-01</th>
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<tbody>
<tr>
<td>Project Title:</td>
<td>2021-2022 Investment Plan Update for the Clean Transportation Program</td>
</tr>
<tr>
<td>TN #:</td>
<td>237591</td>
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<tr>
<td>Document Title:</td>
<td>Presentation - 2021-2023 IPU 1st AC Meeting</td>
</tr>
<tr>
<td>Description:</td>
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<tr>
<td>Filer:</td>
<td>Christina Cordero</td>
</tr>
<tr>
<td>Organization:</td>
<td>California Energy Commission</td>
</tr>
<tr>
<td>Submitter Role:</td>
<td>Commission Staff</td>
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<tr>
<td>Submission Date:</td>
<td>4/29/2021 8:42:07 AM</td>
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<td>Docketed Date:</td>
<td>4/29/2021</td>
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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/2021-04/clean-transportation-program-investment-plan-advisory-committee-meeting

• Written comments should be submitted to Docket 21-ALT-01

  Deadline for comments is Friday, May 14, 2021 by 5:00 P.M.
Meeting Agenda

• Opening remarks and introductions.
• Presentations by CEC staff on the Clean Transportation Program funding activities and related work.
• Development and contents of the 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.
Update on Clean Transportation Program

Charles Smith
Office Manager
Transportation Policy and Analysis Office
Clean Transportation Program Origins in Statute

- 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)
## Highlights of Investments 2009-2021

<table>
<thead>
<tr>
<th>Highlights</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,000+ Installed or Planned Chargers</td>
<td>Creation of Efficient Block Grants for ZEV Infrastructure</td>
</tr>
<tr>
<td>83 New or Upgraded Publicly Available Hydrogen Refueling Stations</td>
<td></td>
</tr>
<tr>
<td>27 ZEV or ZEV Infrastructure Manufacturing Projects</td>
<td>Workforce Training for More than 22,000 Trainees and 277 Businesses</td>
</tr>
<tr>
<td>71 Low-Carbon, Sustainable Fuel Production Projects within California</td>
<td></td>
</tr>
<tr>
<td>Leveraged over $734 Million in Private and Other Public Funds</td>
<td></td>
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</table>
# Medium- and Heavy-Duty (MD/HD) ZEV Infrastructure Investments

<table>
<thead>
<tr>
<th>Program</th>
<th>Status</th>
<th>Proposed Award</th>
<th>Awardees</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blueprints for MD/HD ZEV Infrastructure (GFO-20-601)</td>
<td>Closed</td>
<td>$5.6 million</td>
<td>28 awardees</td>
<td>19 public agencies, 9 private entities</td>
</tr>
<tr>
<td>Zero-Emission Transit Fleet Infrastructure Deployment (GFO-20-602)</td>
<td>Closed</td>
<td>$20 million</td>
<td>4 awardees</td>
<td>Two fleet electrification and microgrid projects, Two hydrogen refueling projects</td>
</tr>
<tr>
<td>Block Grant for MD/HD ZEV Infrastructure Incentive Projects (GFO-20-603)</td>
<td>Closed</td>
<td>$50 million</td>
<td>1 awardee</td>
<td>EnergIIZE Commercial Vehicles, Concierge-like model, working directly with eligible applicants to plan and fund infrastructure</td>
</tr>
<tr>
<td>Zero-Emission Drayage Truck and Infrastructure Pilot Project (GFO-20-606)</td>
<td>Closed</td>
<td>$23.4 million CEC, $24 million CARB</td>
<td>2 awardees</td>
<td>One battery electric project in southern CA, One hydrogen project in northern CA</td>
</tr>
</tbody>
</table>
## Light-Duty Charging Infrastructure Block Grants

**CALeVIP Projects to Date (as of March 2021)**
- $159 million allocated to 9 launched projects
  - Plus $34 million committed from funding partners
- >$250 million in oversubscribed requests (mostly DC fast chargers)
- $84 million reserved (4,000 Level 2 connectors, 1,000 DC fast chargers)
- $14.6 million paid/installed (534 Level 2 connectors, 206 DC fast chargers)

### New CALeVIP projects launched since June 2020

<table>
<thead>
<tr>
<th></th>
<th>Launch Date</th>
<th>Counties</th>
<th>Funding*</th>
<th>Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonoma Coast</td>
<td>July 8, 2020</td>
<td>Mendocino Sonoma</td>
<td>$6.75 million</td>
<td>Level 2 &amp; DC fast chargers</td>
</tr>
<tr>
<td>San Diego County</td>
<td>October 27, 2020</td>
<td>San Diego</td>
<td>$21.7 million</td>
<td>Level 2 &amp; DC fast chargers</td>
</tr>
<tr>
<td>Peninsula-Silicon Valley</td>
<td>December 16, 2020</td>
<td>San Mateo Santa Clara</td>
<td>$55.23 million</td>
<td>Level 2 &amp; DC fast chargers</td>
</tr>
</tbody>
</table>

*Includes partner funding
### Upcoming CALeVIP Projects

<table>
<thead>
<tr>
<th></th>
<th>Tentative Launch</th>
<th>Counties</th>
<th>CEC Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inland Counties</strong></td>
<td>May 12, 2021</td>
<td>Butte, El Dorado, Imperial, Kings, Merced, Napa, Nevada, Placer, Solano, Stanislaus, Sutter, Tulare, Yolo</td>
<td>$17.5 million</td>
</tr>
<tr>
<td><strong>South Central Coast</strong></td>
<td>Q3 2021</td>
<td>San Luis Obispo, Santa Barbara, Ventura</td>
<td>$7.1 million</td>
</tr>
<tr>
<td><strong>Alameda County</strong></td>
<td>Q4 2021</td>
<td>Alameda</td>
<td>$14 million</td>
</tr>
<tr>
<td><strong>Southern California Level 2</strong></td>
<td>Q1 2022</td>
<td>Los Angeles, Orange, Riverside, San Bernardino</td>
<td>$22 million</td>
</tr>
</tbody>
</table>

**Increased Rebates for Low-Income or Disadvantaged Communities**

- **Level 2**: +$500
- 50 kW-99 kW: +$10,000 (or 75% of total cost)
- 100+ kW: +$20,000 (or 75% of total cost)

**Increased Rebates for Multi-Unit Dwellings**

- **Level 2**: +$2,000

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**Second Block Grant Solicitation (GFO-20-607)**

- Open, with proposals currently due June 2021
### Other Light-Duty Charging Infrastructure Investments

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<thead>
<tr>
<th>Program</th>
<th>Status</th>
<th>Amount Proposed</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>EV Ready Communities Phase II – Blueprint Implementation (GFO-19-603)</td>
<td>Closed</td>
<td>$7.5 million</td>
<td>Three proposed awards - Bay area; Central Valley; Southern CA</td>
</tr>
<tr>
<td>BESTFIT Innovative Charging Solutions (GFO-20-605)</td>
<td>Closed</td>
<td>$8.4 million</td>
<td>Five proposed light-duty charging awards - Three proposed MD/HD charging awards</td>
</tr>
</tbody>
</table>

### Electric Vehicle Infrastructure Training Program (EVITP)
- Codified by AB 841 (2020)
- Requires EVITP certification for installation of publicly funded chargers
- CEC-CPUC workshop on April 16, 2021
# Fuel Production

## Ultra-Low Carbon Fuel: Commercial-Scale Production Facilities & Blending Infrastructure (GFO-20-608)

- **Open**
- Up to $8 million available
- Released April 12, 2021
- Pre-Application Abstract due June 11, 2021
- Full Application due September 22, 2021
- Must include: “Evaluation Criteria for Providing Benefits to Priority Populations”

## Renewable Hydrogen Transportation Fuel Production (GFO-20-609)

- **Open**
- Up to $7 million available
- Released April 9, 2021
- Pre-Application Abstract due June 11, 2021
- Full Applications due September 22, 2021
- Must include: “Evaluation Criteria for Providing Benefits to Priority Populations”

All dates and details are as of April 27, 2021, and are subject to change. See each solicitation’s website for updates or further details.
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Status</th>
<th>Cost Details</th>
<th>Details</th>
</tr>
</thead>
</table>
| Hydrogen Fuel Cell Demonstrations in Rail and Marine Applications at Ports          | Closed       | $10.5 million proposed for award                                             | Co-funded with CEC’s Natural Gas Research Program  
- Includes fuel cell demonstrations; shared fueling infrastructure; and design and feasibility of fuel cell-powered harbor craft |
| Augmentation of Clean Fuels Transportation Pilot Career Opportunity Training Plan  | Direct Agreement | $1.5 million                                                                 | Partnership with CA Community Colleges’ Advanced Transportation and Logistics initiative  
- Adds ≥10 high schools to receive support for advanced automotive programs. |
| Recovery and Reinvestment Funding                                                   | Approach TBD  | $10 million available                                                         | Workshop held  
- Public comments due May 3, 2021
Please visit our CEC Solicitations page for more information and updates on any solicitation:
https://www.energy.ca.gov/funding-opportunities/solicitations
Clean Transportation Program
Low-Income and Disadvantaged Community Investments

Presenter: Jonathan Bobadilla, Energy Commission Specialist
Date: 04/29/2021
Introduction

Context

• Track progress for advancing the recommendations from Advisory Committee, and SB 350 Low-Income Barriers Study.

• CEC commitment to investing in Low-Income Communities (LIC) & Disadvantaged Communities (DAC)

Update for 2021

• Newer data sources

• More precise locations of LIC/DAC census tracts

• Leveraging new ArcGIS mapping software features
Low-Income and Disadvantaged Communities Identified

Clean Transportation Program’ Low-Income and Disadvantaged Community investments:

**Low-Income Community**
- Median household incomes at or below 80 percent of the statewide median income
- At or below the low-income threshold according to The California Department of Housing and Community Development and U.S. Census Bureau

**Disadvantaged Community**
- SB 535 Disadvantaged Communities designated areas identified in California Air Resources Board Priority Population Webmap and CalEnviroScreen 3.0

ESRI ArcGIS Pro mapping tool:

- **Input:** Clean Transportation Program investments
- **Geoprocessing Model:** ArcGIS Model Builder using Python script blocks
- **Output:** Clean Transportation Program Investments with project location attributes (DAC, LIC, legislative district, etc.)
Investment Results as of April 2021

Clean Transportation Program Funding as of April 2021*

- $284.3 million, 29%
- $241.7 million, 24%
- $76.5 million, 8%
- $220.0 million, 22%
- $166.6 million, 17%

- Both Low Income and Disadvantaged Community
- Disadvantaged Community
- Low Income Community
- Neither Low Income nor Disadvantaged Community
- Statewide or Not Applicable

Source: CEC Fuels and Transportation Division staff

49% Funding in LIC/DACs

69% ...if excluding "Statewide or N/A" investments

*Results subject to change with CES 4.0 update, adding Tribal areas.
Clean Transportation Program
Investment Map GIS Webmap

Source: CEC Cartography staff using ESRI ArcGIS Pro; Available at: https://caenergy.maps.arcgis.com/apps/webappviewer/index.html?id=df6221d9f3e147b1a480707cac979a6c
Thank You!

Contact: Jonathan.Bobadilla@energy.ca.gov
SB 1000: California Electric Vehicle Infrastructure Deployment Assessment

Increasing Access to Electric Vehicle Infrastructure for All

Tiffany Hoang, Air Pollution Specialist
Fuels and Transportation Division
April 29, 2021
Low-Income Communities Have Fewer Chargers

Measuring Access to Fast Charging with New Drive Time Analysis

12 minutes

2 minutes
More Variation in Drive Times Across Low-Income Communities

Some Low-Income Communities Have Long Drive Times

DC Fast Charging Access in Low-Income Communities by Drive Time
- More than 10 minutes to station
- Between 5 and 10 minutes
- At or less than 5 minutes

Public DC Fast Charging Stations (as of Feb. 2021)

Sources:
AFDC (February 2021)
ACS (2014-2018)
HCD 2020
Variation in Drive Times Across Disadvantaged Communities
Potential to Serve Disadvantaged Communities with Long Drive Times

DC Fast Charging Access in Disadvantaged Communities by Drive Time
- More than 10 minutes to nearest station
- Between 5 and 10 minutes
- At or less than 5 minutes

Sources:
- AFDC (February 2021)
- CES 3.0
Fewer Chargers within High Population Density Areas

High Population Density Areas Have Shorter Drive Times

Thank You!

Tiffany.Hoang@energy.ca.gov
AB 2127 Charging Infrastructure Assessment - Staff Draft

Raja Ramesh
Air Pollution Specialist
• “…a statewide assessment of the electric vehicle charging infrastructure needed … [for] at least five million zero-emission vehicles on California roads by 2030, and of reducing emissions of greenhouse gases to 40 percent below 1990 levels by 2030.” (AB 2127)

• “…shall update the biennial statewide assessment of zero-emission vehicle infrastructure required by Assembly Bill 2127 (Chapter 365, Statues of 2018) to support the levels of electric vehicle adoption required by this Order.” (Executive Order N-79-20)
ZEV Trajectories

California ZEV population

- CEC IEPR Mid
- CARB MSS
- California 2025 and 2030 goals

California ZEV population projection from 2019 to 2030.

- 2025 and 2030 goals shown as green dots.
- CEC IEPR Mid shown as blue line.
- CARB MSS shown as orange line.
- California 2025 and 2030 goals shown as green dots with a star indicating the year.
Development Process

• January 2021: Inaugural Staff Report version published

• February 2021: Two-day workshop held

• May 2021: Revised Staff Report expected

• June 2021: Anticipated Business Meeting adoption

• 2022: Creation of the next biennial assessment

Docket of comments on report development: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-AB-2127
Charger Deployment Lagging Behind Vehicle Sales

- Widespread, accessible, and convenient charging infrastructure is critical to transportation electrification
- Charging infrastructure deployment is lagging vehicle sales, and this gap may stymie progress toward 5 and 8 million ZEVs by 2030

Modeling Approach

**Inputs**

- ZEV population
- BEV/PHEV split
- 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
Thank You!
2021-2023 Investment Plan Update for the Clean Transportation Program

Patrick Brecht
Project Manager
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

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

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

**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

- **SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment** (published December 2020).
- Consulting with the Disadvantaged Communities Advisory Group
- 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.
- Development of a loan-funding working group.
Progress Report
250,000 Chargers by 2025

- **64,081** existing Level 2 chargers (estimated)
- **118,950** with funding allocated Level 2 chargers (including CTP, utilities, and other sources)
- **56,969** gap from 2025 goal

- **5,963** existing DC fast chargers (estimated)
- **3,607** with funding allocated DC fast chargers (including CTP, utilities, and other sources)
- **430** gap from 2025 goal
Progress Report
200 Hydrogen Fueling Stations by 2025

- **47** OPEN RETAIL HYDROGEN FUELING STATIONS
- **132** IN DEVELOPMENT HYDROGEN FUELING STATIONS
- **21** GAP FROM 2025 GOAL

**HYDROGEN FUNDING ALLOCATED TO DATE**

$166 million

**200 PUBLIC STATIONS**

**200 STATION GOAL**
### Key Priorities in the Staff Draft Report Version of the 2021-2023 Investment Plan Update

1. Continue with multiyear funding plan format.

2. $95.2 million/year as baseline funding.

3. Support the near-term ZEV infrastructure needs of light-duty passenger vehicles, while ramping up investments in medium- and heavy-duty ZEVs in later years.

4. Encourage a focus on high-quality job opportunities and benefits to underserved communities across all funding categories.

5. Promote consideration of alternative project financing strategies.
## Proposed Funding Allocations

<table>
<thead>
<tr>
<th>Category</th>
<th>Funded Activity</th>
<th>2021-2022</th>
<th>Next 1½ FYs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zero-Emission Vehicles and Infrastructure</strong></td>
<td>Light-Duty Electric Vehicle Charging Infrastructure and eMobility</td>
<td>$30.2</td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td>Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure</td>
<td>$30</td>
<td>$79.8</td>
</tr>
<tr>
<td></td>
<td>Hydrogen Refueling Infrastructure</td>
<td>$20</td>
<td>$30*</td>
</tr>
<tr>
<td><strong>Alternative Fuel Production and Supply</strong></td>
<td>Zero- and Near Zero-Carbon Fuel Production and Supply</td>
<td>$10</td>
<td>$15</td>
</tr>
<tr>
<td><strong>Related Needs and Opportunities</strong></td>
<td>Manufacturing</td>
<td>$3</td>
<td>$4</td>
</tr>
<tr>
<td></td>
<td>Workforce Training and Development</td>
<td>$2</td>
<td>$4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>$95.2</td>
<td>$142.8</td>
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*In the final half year of funding, the CEC is planning to split funding for hydrogen infrastructure between light-duty and medium- and heavy-duty hydrogen infrastructure.*
## 2021-2023 Investment Plan
### Schedule and Next Steps

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Scheduled Date</th>
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<tbody>
<tr>
<td>Release Draft Staff Report</td>
<td>April 26, 2021</td>
</tr>
<tr>
<td>1st Advisory Committee Meeting</td>
<td>April 29, 2021</td>
</tr>
<tr>
<td>Release Revised Staff Draft</td>
<td>Mid-June 2021</td>
</tr>
<tr>
<td>2nd Advisory Committee Meeting</td>
<td>Mid-July 2021</td>
</tr>
<tr>
<td>Release of Lead Commissioner Report</td>
<td>September 2021</td>
</tr>
<tr>
<td>Seeking Business Meeting Approval</td>
<td>October 2021</td>
</tr>
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</table>
More information:
https://www.energy.ca.gov/programs-and-topics/topics/transportation

Submit e-comments by May 14, 2021 at: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=21-ALT-01

Contact:
Patrick.Brecht@energy.ca.gov
## Staff Draft Report
### Proposed Funding Allocations

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