

**DOCKETED**

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# Advisory Committee Meeting and Public Workshop for the 2019-2020 Investment Plan Update



February 6, 2019

Patrick Brecht

California Energy Commission



# Meeting Agenda

- 10:30 am      Introductions and Opening Remarks
- 10:45 am      Presentation: Overview of the *2019-2020 Investment Plan Update for the ARFVTP*
- 11:00 am      Advisory Committee Discussion, Public Comment
- 12:30 pm      Lunch break
- 1:30 pm      ARFVTP Activities, Advisory Committee Discussion, Public Comment (continued)



# Purpose of the ARFVTP

*“...to develop and deploy innovative technologies that transform California’s fuel and vehicle types to help attain the state’s climate change policies.”*

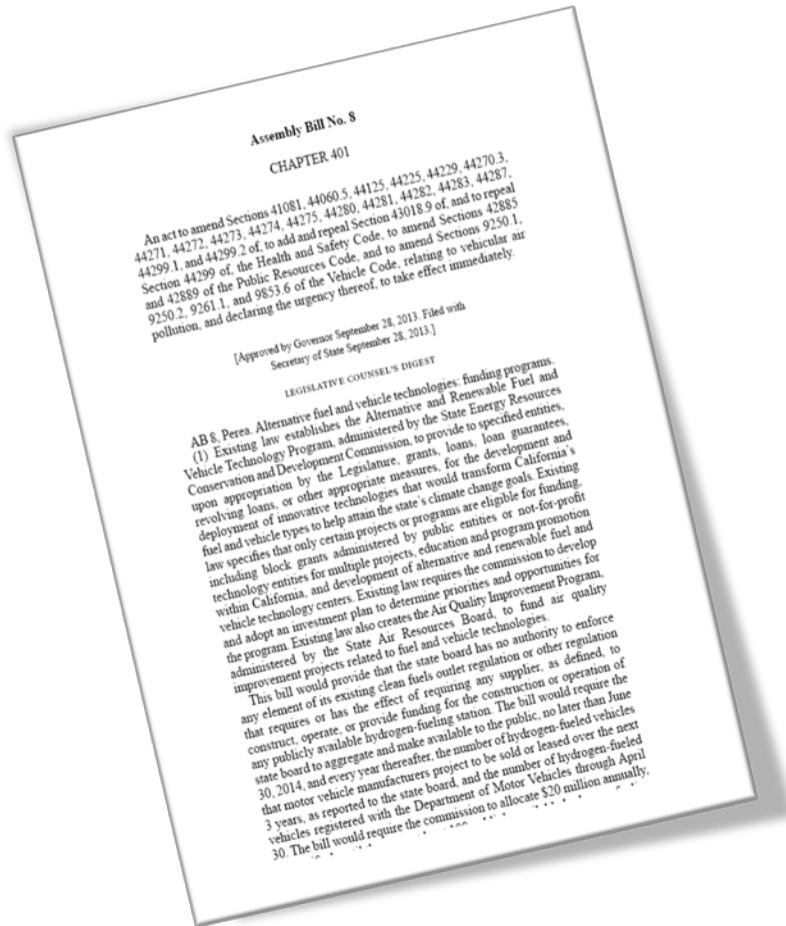
- California Health and Safety Code 44272(a)

## Complementary goals:

- Improve air quality
- Increase alternative fuel use
- Reduce petroleum dependence
- Promote economic development



# ARFVTP Origins in Statute



- Established by Assembly Bill 118 (Nunez, 2007)
- Provides up to \$100 million per year in funds
- Extended through January 1, 2024 by Assembly Bill 8 (Perea, 2013)



# Commitment to Diversity

The Energy Commission adopted a resolution on April 8, 2015 to firmly commit to increasing:

- Participation of women, minority, disabled veteran and LGBT business enterprises in program funding opportunities
- Outreach to and participation by disadvantaged communities
- Diversity in participation at Energy Commission proceedings
- Diversity in employment and promotional opportunities

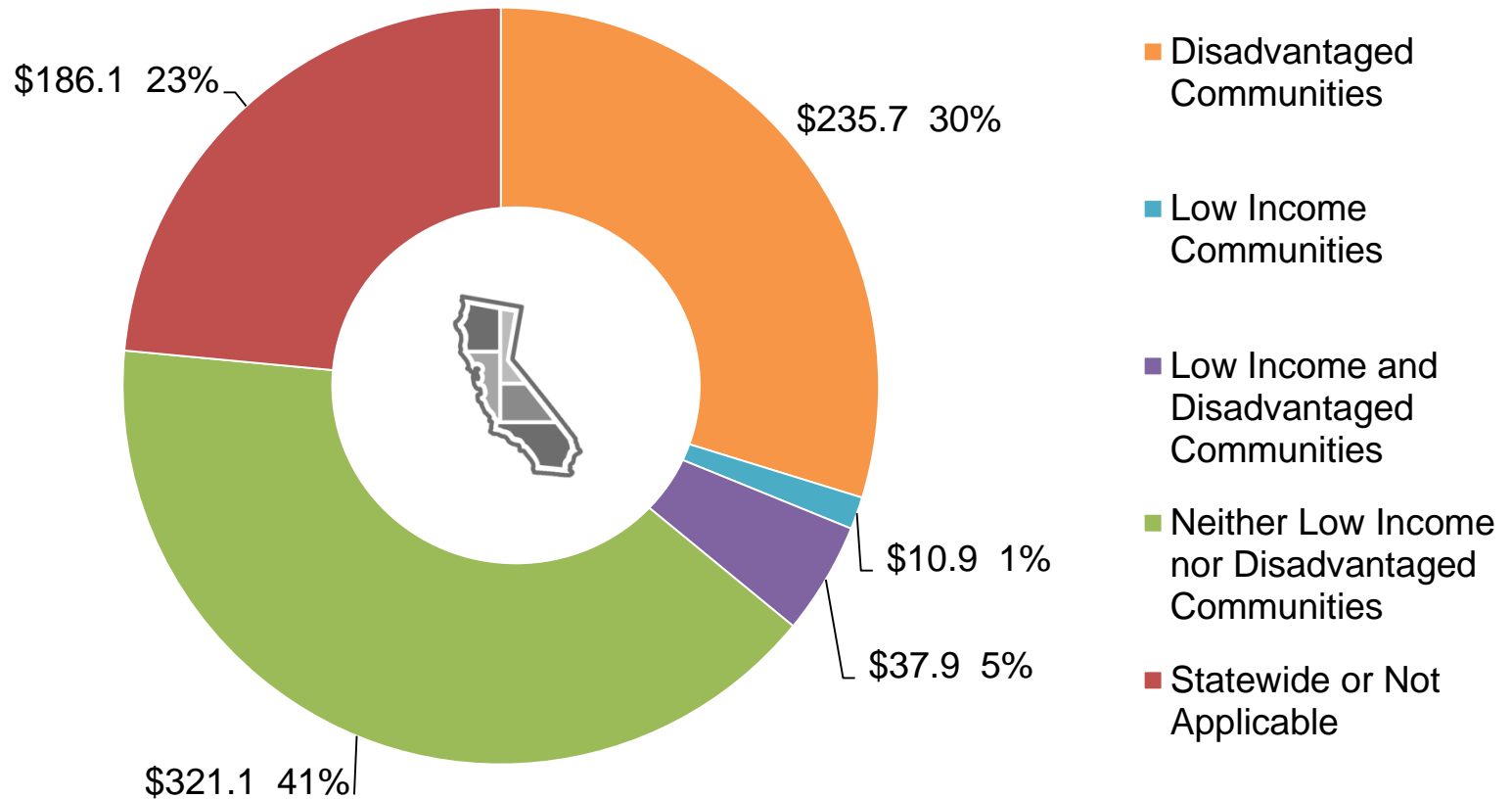


# Commitment to Diversity

- **Fairness** – Increase funding accessibility to all Californians
- **Inclusion** – Small businesses make up a significant portion of the U.S. economy
- **Job Creation** – Projects can create jobs for residents of the under-served communities
- **Diversity of Ideas** – Great ideas occur in a variety of areas
- **Diversity in Communities' Needs** – Needs vary widely from one area to the next (air quality, socioeconomic, etc.)



# ARFVTP Funding Toward Disadvantaged Communities (in millions)



Note: As of December 1, 2018








# Investment Plan Purpose

- Basis for Fiscal Year 2019-2020 solicitations, agreements, and other funding opportunities
- \$95.2 million funding allocation for a portfolio of fuels, technologies, and supporting elements
- Funding allocations for categories (not individual projects)



# Investment Plan Update Schedule

Milestones	Scheduled Date
Release Draft Staff Report	November 2, 2018 
1 <sup>st</sup> Advisory Committee Meeting	November 8, 2018 
Release Revised Staff Report	January 10, 2019 
2 <sup>nd</sup> Advisory Committee Meeting	February 6, 2019
Release Lead Commissioner Report	March 2019
Business Meeting Approval	April 2019



# Key Changes in Revised Staff Report

- Updated statistics (as of December 1, 2018)
- Input from the First Advisory Committee Meeting, stakeholders, and the public
  - Separated funding for “Manufacturing” and “Workforce Development” and moved from Zero-Emission Vehicle Infrastructure category to Related Needs and Opportunities



# Electric Vehicle Charging Infrastructure

**\$32.7 million**  
Proposed Allocation

## ZEV Deployment Goals

- 1.5 million Zero-Emission Vehicles by 2025
- 5 million Zero-Emission Vehicles by 2030

## Supporting Infrastructure Goals

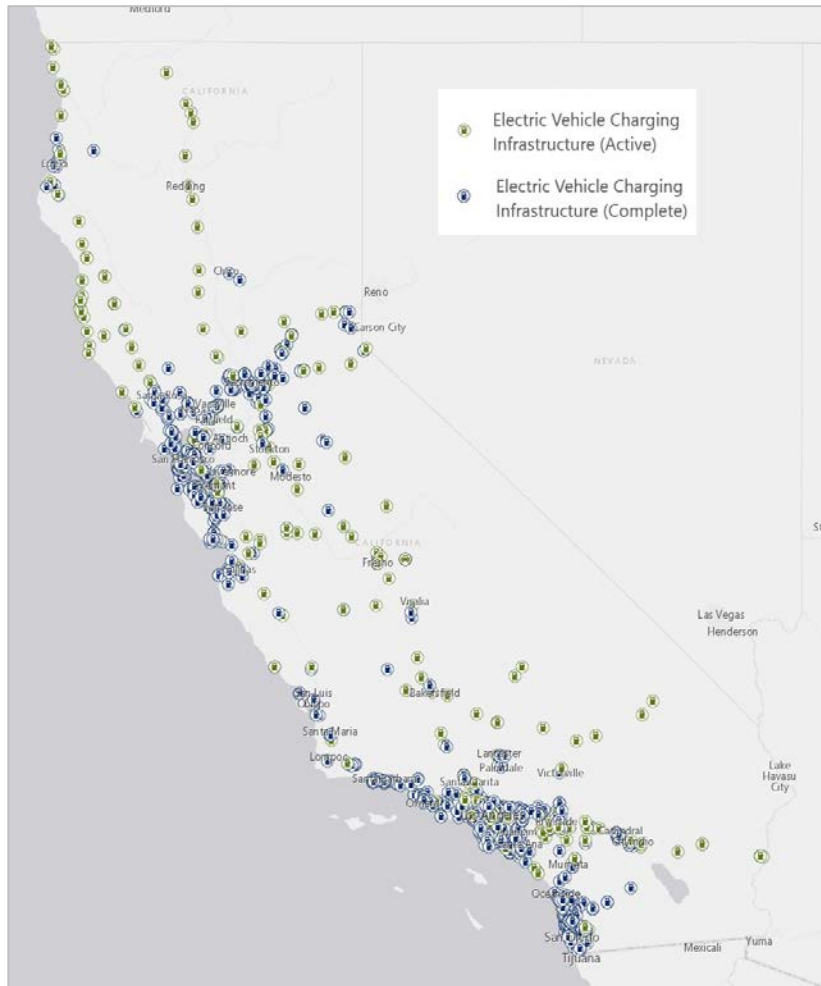
- 250,000 EV chargers in California by 2025 (including 10,000 DC Fast Chargers)

## Recent Legislation

- AB 2127 (2018) – Statewide assessment of charging stations
- SB 1000 (2018) – Charging station proportionality



# EV Infrastructure Support



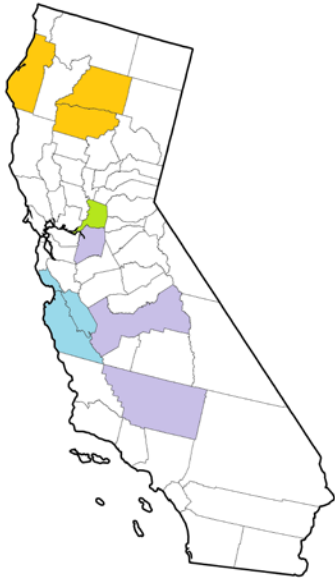
**Total Awards**  
\$94.9 M for charging infrastructure

Charging Outlets	Private	Public	Both
Installed	4,405	3,525	7,930
Planned	82	1,424	1,506
<b>Total</b>	<b>4,487</b>	<b>4,949</b>	<b>9,436</b>

Source: [http://energy.ca.gov/transportation/arfvtp/project\\_map.html](http://energy.ca.gov/transportation/arfvtp/project_map.html)



# 2019 CALeVIP Roadmap



- Two active incentive projects

## Fresno County launched in 2017

- Funding reserved: \$714,000 / Number of rebates: 29

## Southern California launched in 2018

- Funding reserved: \$25.69 million/ Number of rebates: 148

- Four incentive projects in 2019

**Q2 2019**



**Sacramento  
County**

**Q2 2019**



**Northern  
California**

**Q3 2019**



**Central Coast**

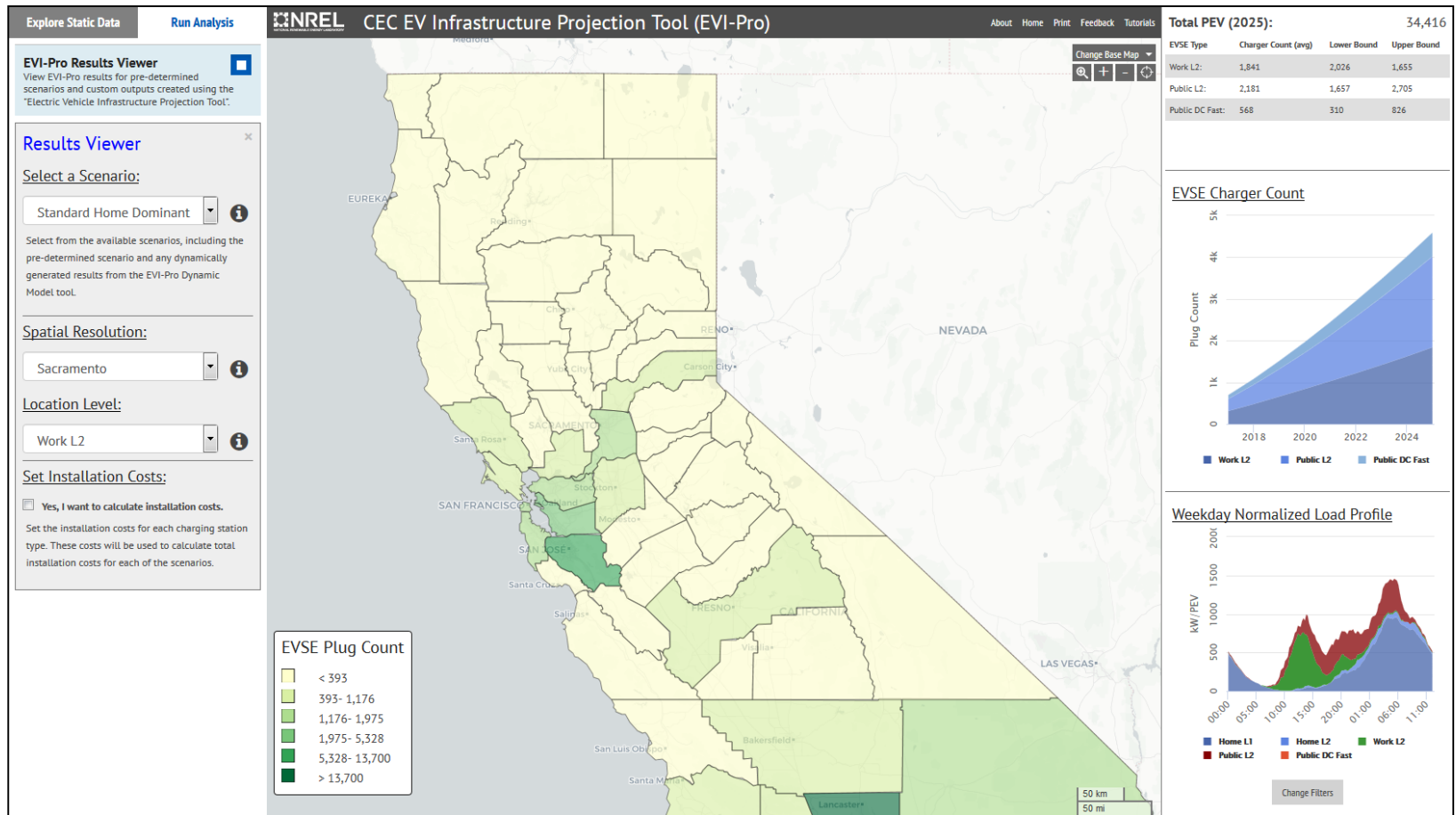
**Q4 2019**



**San Joaquin  
Valley**



# EV Infrastructure Projection (EVI-Pro)





# Recent Legislation

AB 2127 (Ting, Chapter 365, Statutes of 2018)

Requires the Energy Commission, working with California Air Resources Board and the California Public Utilities Commission, to biennially assess:

- existing and future needs for electric charging deployment necessary to deploy 5 million zero-emission vehicles and
- reduce greenhouse gas emissions 40% below 1990 levels by 2030

SB 1000 (Lara, Chapter 368, Statutes of 2018)

Requires the Energy Commission, in consultation with California Air Resources Board, to assess whether charging station infrastructure is disproportionately deployed by:

- population density
- geographical area
- population income level (including low-, middle-, and high-income levels)





# Hydrogen Refueling Infrastructure

**\$20 million**  
Proposed Allocation

Assembly Bill 8 requires \$20 million annual allocation to reach goal of at least 100 publicly available stations

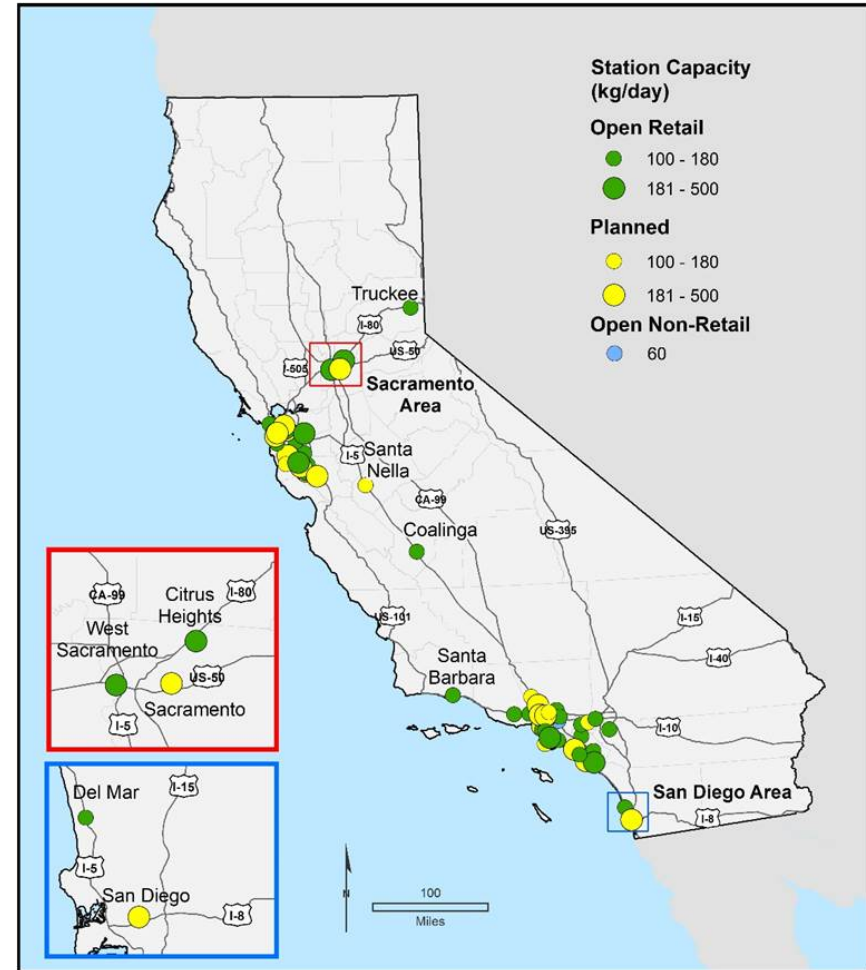
- 64 hydrogen stations funded to date
- 12 are in disadvantaged communities
- The funded stations will support about 24,000 FCEVs
- 38 ARFVTP funded stations open today can support 11,000 FCEVs
- 5,900 FCEVs in California through December 2018 according to recent industry estimates



# Funded Station Locations

- 38 Stations Open Retail
- 26 Stations Under Construction
- 12 Stations in Disadvantaged Communities

(Anaheim, Burbank, CSULA, Emeryville, Hollywood, Lawndale, LAX, Ontario, Riverside, Santa Monica-Cloverfield, Santa Nella, South San Francisco)





# Current Considerations

- 2018 Executive Order B-48-18 set goal of 200 hydrogen refueling stations by the year 2025
- LCFS Modification for ZEV Infrastructure
  - CARB Resolution 18-34, approved September 2018
  - Allows hydrogen refueling stations to earn hydrogen refueling infrastructure credits based on the capacity of the hydrogen station, in addition to credits earned for the fuel dispensed



# Current Considerations

- Joint Agency Staff Report on Time and Cost Needed to Attain 100 Hydrogen Refueling Stations in California released December 28, 2018
- Hydrogen draft solicitation concepts released January 23, 2019
- Staff workshop on the draft concepts is February 12, 2019 at 10 A.M. at the Energy Commission



# Advanced Freight and Fleet

**\$17.5 million**  
Proposed Allocation

Medium- and Heavy-Duty Vehicles ( $\geq 10,000$  pounds)

Supports California's Sustainable Freight Action Plan

Open to broad range of project, fuel, and technology types

- Sustainable freight and goods movement
- Dedicated charging and refueling infrastructure for fleets
- Enabling technologies and non-propulsion projects



# Advanced Freight and Fleet Funding to Summary (as of December 1, 2018)

Vehicle/Technology Type	# of Vehicles	ARFVTP Funding (in Millions)
Medium-Duty Hybrids, PHEVs and BEVs	132	\$13.1
Heavy-Duty Hybrids, PHEVs and BEVs	78	\$48.2
Electric Buses	35	\$14.2
Natural Gas Trucks	51	\$19.1
Fuel Cell Trucks and Buses	13	\$14.5
Vehicle-to-Grid	6	\$7.7
Off-Road Hybrids	2	\$4.5
E85 Hybrids	1	\$3.0
Intelligent Transportation Systems	110	\$2.0
<b>Total</b>	<b>428</b>	<b>\$126.3</b>



# Advanced Freight and Fleet Demonstrations



Low NOx Natural Gas Engine



Battery-Electric Drayage Truck



Battery-Electric Yard Tractor



Battery-Electric Reach Stacker



# Current Activities

- Development of the next Advanced Freight and Fleet Technologies grant funding opportunity.
  - Release date estimate Q3 of 2019
  - \$17.5 million available in 2018-2019 funds





# Low-Carbon Fuel Production and Supply

\$20 million  
Proposed Allocation

Diesel and gasoline substitutes, biomethane, renewable hydrogen

Focus on waste-based & renewable feedstocks

## Related Policies

- Senate Bill 1383 (2016) – Reduce short-lived climate pollutants
- Senate Bill 1505 (2006) – Requires 33.3% renewable hydrogen



# Low-Carbon Fuel Project Funding (as of December 1, 2018)

Fuel Type	Awards Made	Funds Awarded (in Millions)
Gasoline Substitutes	14	\$29.5
Diesel Substitutes	24	\$68.3
Biomethane	21	\$61.3
Renewable Hydrogen	2	\$7.9
<b>Total</b>	<b>61</b>	<b>\$167.0</b>



# Recent Years' Low-Carbon Fuel Production Funding

- **GFO-18-601: Community-Scale and Commercial-Scale Advanced Biofuels Production Facilities**
  - NOPA released on 1/18/2019
  - \$71.4 million requested by 18 passing proposals
  - Total awards: \$19.45 million (ARFVTP) for 5 projects
- **GFO-18-602: Demonstration-Scale Biofuels Production Facilities**
  - NOPA released on 1/18/2019
  - Total awards: \$12 million (ARFVTP) across all 5 received proposals
- **Greenhouse Gas Reduction Fund: \$12.5 million (FY 18-19)**
  - Expected timeframe – late 2019
  - Staff will conduct funding guideline workshop in March 2019



# Manufacturing

Manufacturing  
\$3.5 Million  
Proposed Allocation

Support for ZEV and ZEV infrastructure supply chain

Supports clean transportation plans

- ZEV Action Plan
- Sustainable Freight Action Plan
- Low-Income Barriers Study

Prioritize investment into disadvantaged communities



# Manufacturing Investments (as of December 1, 2018)

Product Type	Funding (in millions)	Match Funding (in millions)
Battery Systems	\$9.6	\$13.2
Charging Equipment	\$1.1	\$1.1
Electric Motorcycles	\$4.2	\$6.9
Electric Powertrains and Platforms	\$12.5	\$30.3
Electric Trucks / Buses	\$16.2	\$23.1
<b>Total</b>	<b>\$43.6</b>	<b>\$74.6</b>



# Current Solicitation

## *ZEV, ZEV Components, and ZEV Infrastructure Manufacturing Solicitation (GFO-18-605)*

- Released December 19, 2018
- Total of \$9.9 million available
- Category A (\$4.9 million): ZEVs and ZEV Components
- Category B: (\$5.0 million): ZEV Infrastructure
- Application deadline: February 21, 2019



# Workforce Development

Workforce Development  
\$1.5 Million  
Proposed Allocation

Support ZEV and ZEV infrastructure workforce needs

Prioritize workforce activities for disadvantaged communities



# Workforce Partnerships Funding (as of December 1, 2018)

Entity	Funding (in millions)	Match Funding (in millions)
Employment Development Department	\$8.2	\$7.5
Employment Training Panel	\$11.8	\$11.3
California Workforce Development Board	\$0.3	\$0.5
California Community Colleges Chancellor's Office	\$5.8	\$0.5
Advanced Transportation and Logistics	\$3.0	-
Cerritos Community College District	\$1.0	-
California State University, Long Beach	\$0.2	-
<b>Total</b>	<b>\$30.3</b>	<b>\$19.8</b>





# Current Activities

- Cerritos Community College District Agreement
  - Augmentation of \$1 million to expand high school program
- Developing a new agreement with Community Colleges and Advanced Transportation and Logistics (ATL) Initiative
  - Up to \$1 million for develop training curriculum for school districts who are receiving electric bus funding through the Prop 39 School Bus Replacement Program.
- Developing a new agreement with Community Colleges and ATL
  - \$1.4 million in funding to expand the Community College Advanced Vehicle Technology training program



# Proposed Funding Allocations

Category	Funding Activity	Funding Allocation (in millions)
Zero-Emission Vehicle Infrastructure	Electric Vehicle Charging Infrastructure	\$32.7
	Hydrogen Refueling Infrastructure	\$20
Advanced Technology and Alternative Fuel Production	Advanced Freight and Fleet Technologies	\$17.5
Alternative Fuel Production	Low-Carbon Fuel Production and Supply	\$20
Related Needs and Opportunities	Manufacturing	\$3.5
	Workforce Development	\$1.5
<b>Total</b>		<b>\$95.2</b>

# Thank You

More information:

<https://www.energy.ca.gov/transportation/arfvtp/>

Submit e-comments by February 22, 2019 at:

<http://energy.ca.gov/altfuels/2018-ALT-01>

Contact:

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