

DOCKETED

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Project Title:	Transportation
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Document Title:	Clean Transportation Program
Description:	Introduction to the 2019 IEPR Staff Workshop on Clean Transportation Program Successes
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Clean Transportation Program

Staff Workshop on Clean Transportation Program
Successes for 2019 IEPR



Larry Rillera, Fuels and Transportation Division
July 18, 2019
California Energy Commission



Housekeeping

- Restroom Locations
- Emergency Exit
- Vending Machines



Agenda

- Housekeeping and Introduction (10:00 – 10:05)
- Clean Transportation Program Background, Highlights, and Success Stories (10:05 – 10:20)
- Zero-Emission Vehicle Infrastructure (10:20 – 12:00)

Break (12:00 – 1:00)

- Zero-Emission Vehicle Technology (1:00 – 2:00)
- Low Carbon / Clean Air Projects (2:00 – 2:45)
- Clean Transportation Program Funding Summary, Benefits Report Summary, and Benefits Report Methodology (2:45 – 3:45)
- Public Comments
- Closing Comments
- Adjourn



Clean Transportation Program 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)



Purpose of Clean Transportation Program

“...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

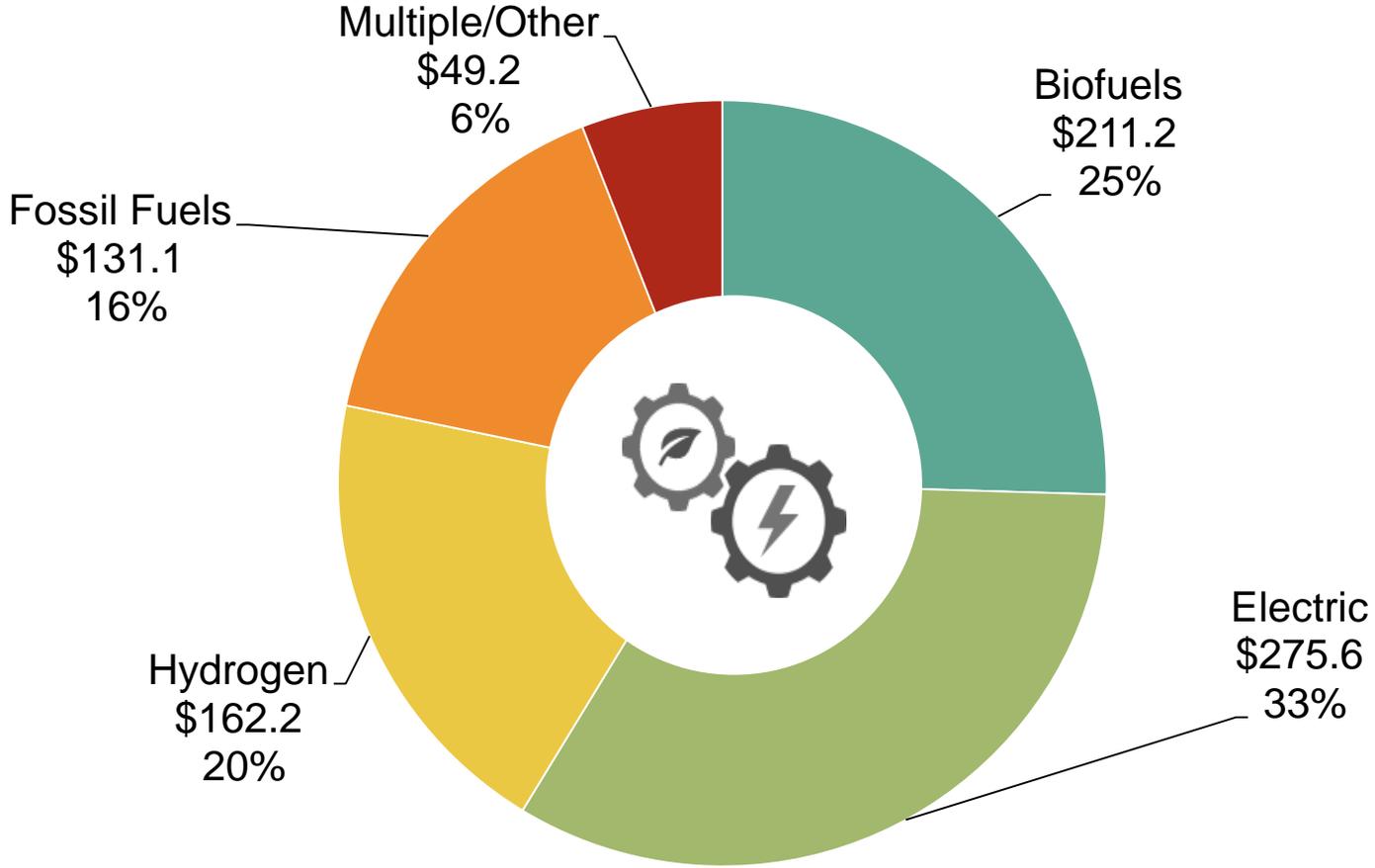


Guiding Policies and Regulations

Policy Origin	Goals and Milestones
Assembly Bill 32 (2006) Senate Bill 32 (2016)	2020: Reduce greenhouse gas emissions to 1990 levels 2030: ...40% below 1990 levels
Executive Order B-55-18	Achieving a carbon-neutral economy by 2045
Senate Bill 1383 (2011)	Reduce emissions of short-lived climate pollutants 40%-50% below 2013 levels by 2030
Low-Carbon Fuel Standard	Reduce carbon intensity of transportation fuels by 10% by 2020 and 20% by 2030
Clean Air Act	Reduce NOx by 80% by 2023
Executive Order B-48-18; Zero-emission Regulations	2025: 1.5 million zero-emission vehicles; 250,000 chargers (including 10,000 fast chargers); and 200 hydrogen refueling stations 2030: 5 million zero-emission vehicles
Executive Order B-32-15	Improve freight efficiency and transition freight movement to zero- emission technologies



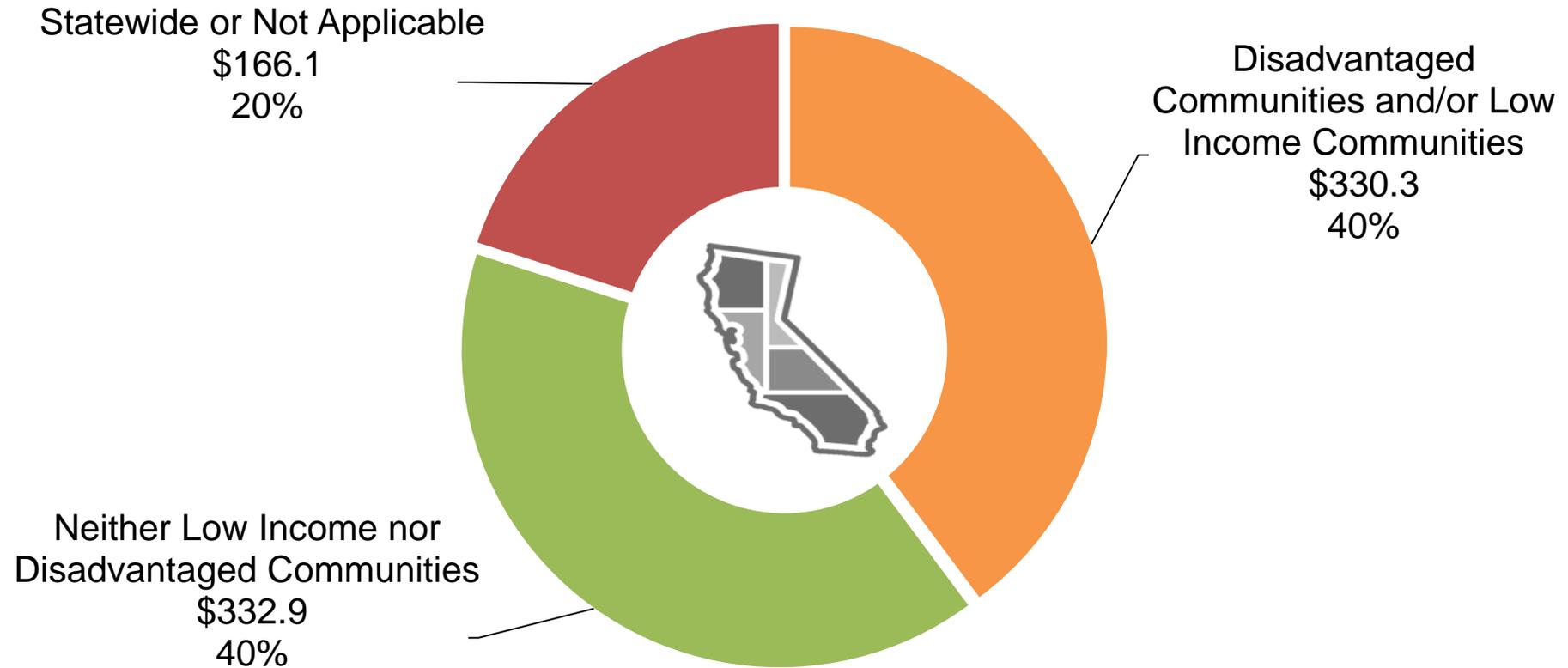
Clean Transportation Program Projects To-Date (In Millions)



Note: As of March 1, 2019



Clean Transportation Program Funding Toward Disadvantaged Communities (In Millions)



Note: As of March 1, 2019



ZEV Infrastructure

Electric Vehicle Charging

- Total Investment: \$94.9 million for 9,436 private and public charging
- ZEV Deployment Goals:
 - 1.5 million ZEVs by 2025
 - 5 million ZEVs by 2030
- Supporting Infrastructure Goals:
 - Executive Order B-48-18: 250,000 EV chargers by 2025 (including 10,000 DC Fast Chargers)
- California Electric Vehicle Infrastructure Project (CALeVIP)
- Complement Other Funding Sources
- Innovative Mobility Strategies



ZEV Infrastructure

Hydrogen Refueling Infrastructure

- Assembly Bill 8 (2013)
 - \$20 million annual allocation
 - Target: 100 publicly available stations
- Executive Order B-48-18
 - Target: 200 publicly available stations by 2025
- Funded to Date
 - 39 hydrogen refueling stations are open today
 - 12 are located in disadvantaged communities
 - Capacity of up to 17,000 kg/day (equivalent to 24,000 FCEVs)



ZEV Infrastructure Projects

- Redwood Coast Energy Authority (ARV-14-055)
- ChargePoint, Inc. (ARV-10-012)
- Center for Sustainable Energy (ARV-16-017)
- American Honda Motor Company, Inc. (ARV-13-058)
- Silicon Valley Leadership Group Foundation (ARV-13-043)
- FirstElement Fuel, Inc. (ARV-14-008 and ARV-14-013)



ZEV Technology

- Demonstration and deployment of medium- and heavy-duty vehicles
- On- and off-road vehicle technologies
- Broad range of project, fuel, and technology types
- ZEV infrastructure manufacturing
- Workforce training and development



ZEV Technology Projects

- Proterra, Inc. (ARV-14-044 and ARV-18-026)
- Port of Long Beach (ARV-16-024)
- Cerritos Community College District (600-16-005)
- CALSTART (ARV-11-014)



Low Carbon / Clean Air Technology

- Low carbon fuel production, infrastructure, and vehicle deployment
- Focus on waste-based and renewable feedstocks for low carbon transportation fuels



Low Carbon / Clean Air Technology Projects

- South Coast Air Quality Management District (500-12-12 and 600-13-008)
- Pixley Biogas LLC dba Calgren Renewable Fuels (ARV-10-053 and ARV-16-018)
- World Energy (AltAir Fuels, LLC (ARV-14-022))
- CR&R Inc. (ARV-10-052 and ARV-12-005)



Panel 1: ZEV Infrastructure Questions

- 1) Describe your organization and the progress or success of the project(s) funded by the California Energy Commission.
- 2) Highlight the key significance of progress or success of your efforts to date in terms of technology advance, market uptake and growth, supply chain manufacturing, business model formation or other economic, regional, business and environmental benefits.
- 3) Can you replicate success in potential expansions or new projects? What is your plan for the future? Is your success replicable throughout other regions in California:
 - Various electric and hydrogen fuel cell vehicle submarkets, such as light duty vehicles, transit and school buses, and trucks?
 - EV charging submarkets, such as workplace, public access, destinations, residences, multi – unit dwellings, and fleets?
 - Disadvantaged communities?
- 4) What government actions do you recommend to address challenges that may impede maintaining current progress or achieving future success? What do you recommend as a specific funding objective for Clean Transportation Program fund?



Panel 1: ZEV Infrastructure Questions (cont.)

- 5) What ideas are worth exploring to spur greater amounts of private investment in conjunction with government incentives in multiple submarkets?
- 6) What actions are necessary to fully implement electric and natural gas utility grid integration attributes from:
 - Electric vehicle use and electric vehicle charging system installations?
 - Hydrogen fuel cell vehicle use, development of renewable hydrogen and hydrogen refueling stations?
- 7) What circumstances and conditions are required to increase growth of:
 - Hydrogen refueling infrastructure beyond the first 100 refueling stations to support growth of several hundred thousand hydrogen fuel cell vehicles in California by 2030?
 - Electric charging system installations to support an expected 5 million electric vehicles in California by 2030?
- 8) Do you anticipate cost reductions in:
 - Electric vehicle charging infrastructure?
 - Hydrogen refueling infrastructure and renewable hydrogen fuel production?
- 9) What actions are necessary to accelerate cost reductions?



Break

Return at 1:00 pm



Panel 2: ZEV Technology Questions

- 1) How have your Energy Commission projects moved the needle forward for ZEV markets?
- 2) Describe new partnerships, emerging opportunities, or lessons learned from your respective projects.
- 3) Describe planning and development issues associated with the charging/refueling infrastructure that support deployment of your ZEV technologies.
- 4) The Clean Transportation Program values ZEV technology demonstrations/deployments that accrue to all communities including disadvantaged communities. Describe how Program investments have resulted in environmental, economic, and equity benefits to these communities.



Panel 3: Low Carbon Questions

- 1) What role did Clean Transportation Program investment play in your project?
- 2) Describe the benefits that have accrued to local/regional communities from this investment.
- 3) What is needed to replicate (or otherwise enhance) the scale of your project within California?
- 4) What do you see as the next transformative technology? What is needed to bring the technology to market and increase market adoption?
- 5) As we start moving more towards ZEV technologies and infrastructure, what role do you see low carbon / clean air projects playing in California?
- 6) Describe best practices or lessons learned from your respective projects.



Clean Transportation Program Funding Summary, benefits Report Summary, and Benefits Report Methodology

- Susan Ejlalmaneshan, California Energy Commission
- Christopher Neuman, National Renewable Energy Laboratory



Public Comments

- 3 minute maximum
- Speak clearly
- State your name
- Identify your affiliation



Next Steps

Docket No. 19-IEPR-04

Project Title: Transportation

<https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=19-IEPR-04>

Written Comments Deadline: 5:00 pm on August 1, 2019

Thank you!