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# **Clean Transportation Program Benefits Assessment**

Presenter: Susan Ejlalmaneshan, Fuels and Transportation Division

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# Major Clean Transportation Milestones

Policy Origin	Objective	Goals and Milestones
Assembly Bill 32 Senate Bill 32 Executive Order B-55-18	GHG Emission Reduction	<ul style="list-style-type: none"> <li>• 2020: to 1990 levels</li> <li>• 2030: to 40% below 1990 levels</li> <li>• 2045: Achieve carbon neutrality</li> </ul>
Clean Air Act CA State Implementation Plans	Air Quality	<ul style="list-style-type: none"> <li>• 2031: 80 percent reduction in NOx</li> </ul>
Executive Order B-16-12 Executive Order B-48-18	Increase Zero-Emission Vehicles	<p>Vehicles</p> <ul style="list-style-type: none"> <li>• 2025: 1.5 million ZEVs deployed</li> <li>• 2030: 5 million ZEVs deployed</li> </ul> <p>Infrastructure</p> <ul style="list-style-type: none"> <li>• 2020: Support 1.5 million ZEVs</li> <li>• 2025: 250,000 EV chargers (including 10,000 DC fast chargers) and 200 H2 stations</li> </ul>



# About the Clean Transportation Program

## Health and Safety Code 44272(a)

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

Supports and complements statewide efforts to decarbonize the transportation sector

Coordinated with other major programs and regulations, including:

- ZEV Regulation
- Utility Investments
- Low Carbon Fuel Standard
- Cap-and-Trade / GHG Reduction Fund
- Settlement Agreements (VW, NRG)
- Air Quality Improvement Program



# Program Funding Update

## Funding Portfolio to Date

Light-Duty EV Charging	Medium- and Heavy-Duty EV Charging
Hydrogen Refueling Stations	ZEV Manufacturing Expansion
Renewable Hydrogen Production	ZEV Workforce Training and Development
ZEV and Low-Emission Truck Demonstrations	ZEV Rebates (via CVRP, HVIP support)
ZEV Regional Readiness and Planning Grants	Biofuel Production Development and Expansion
NG Vehicle Rebates and Refueling Stations	

As of December 2019, \$865 million awarded

## Proposed Future Funding (in \$M)\*

Light-Duty EV Charging and eMobility	\$132.9
Medium- and Heavy-Duty ZEVs and Infrastructure	\$134.8
Hydrogen Refueling Infrastructure	\$65
Zero- and Near-Zero Carbon Fuel Production and Supply	\$25
ZEV Manufacturing	\$9
ZEV Workforce Training and Development	\$7.5
Recovery and Reinvestment	\$10
<b>Total (FY 20/21 - 2023)</b>	<b>\$384.2</b>

\*Pending adoption of proposed allocations in 2020-2023 Investment Plan Update



# About the Benefits Report

Required in biennial *Integrated Energy Policy Report* (next in 2021)

*“The evaluation shall include...”*

- Expected benefits of the projects
- Overall contribution toward promoting a transition to clean, alternative transportation fuels

## Key Quantified Benefits

- Petroleum displacement
- Greenhouse gas emission reductions
- Air quality



# Expected Benefits

**Petroleum displacement** assessed in direct proportion to the amount of alternative fuel...

...produced (Biofuel production; renewable hydrogen production)

...dispensed (Charging infrastructure; hydrogen refueling stations)

...consumed (Vehicle demonstration, deployment, or manufacturing)

**GHG** and **air quality** are proportional to above, plus an alternative fuel's lifecycle emissions (for GHGs) and tailpipe emissions (for air quality)

## Key Takeaways:

- Addresses most direct, near-term impacts of a project
- Relatively straightforward to calculate
- Highly variable based on usage assumptions
- Does not account for funding or regulatory context



# Market Transformation Benefits

Similarly focused on quantifying **petroleum displacement**, **GHG** emission reduction, and **air quality** improvements

Summarizes the anticipated, longer-term impacts from the Clean Transportation Program's investments

Due to higher uncertainty, includes a range of “Low” to “High” benefits

## Key Takeaways:

- Incorporates broader assumptions about technology development and market response
- Not exhaustive; projects may instigate market transformation in unexplored ways
- Similarly does not account for funding or regulatory context





# Market Transformation Benefits

## Consumer Response to “Perceived” Value of Vehicle

### Vehicle price reductions

- Reduction in the perceived price of light-duty ZEVs due to increased availability of EVSE or H2 refueling stations.

## Vehicle Production Improves with Volume

### Vehicle cost reductions

- Reductions due to direct investments in production.
- Reductions due to increased experience or learning-by-doing associated with deploying additional units.

## Technology is Replicated

### Next-generation technologies

- Additional fuel production facilities or advanced trucks deployed as a result of funding support of the technology.



# Potential Areas for Improvement

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1. Focusing benefits on contributions to long-term goals
2. Further emphasizing market transformation benefits
3. Reassessing the attribution of benefits
4. Conveying the benefits of non-quantifiable investments
5. Measuring and ensuring benefits to all Californians



**Thank You!**

