

Equitable Zero-Emission Vehicle Access

California Environmental Voters | Issue Brief | August 2022

Executive Summary

Note: The baseline assumptions in this memo are based on state (i.e., California Public Utility Commission (CPUC) and California Energy Commission (CEC)) planning models.

ZEV Incentives are woefully underfunded

If we want to provide 4 million low- and middle-income individuals¹ with zero-emission vehicles (ZEVs) by 2030 (i.e., half of all eight million new ZEVs expected by 2030 under the more ambitious Executive Order N-79-20 goals)² using the maximum benefits from Clean Cars 4 All (\$9,500)³ and the maximum Clean Vehicle Rebate (\$4,500)⁴ for an all-electric vehicle, we would need \$7 billion annually to meet this goal (\$4.75 billion to CC4A, \$2.25 billion to CVRP).^a Currently, California Air Resources Board (CARB) has proposed \$360 million to CC4A in FY 2022-2023 and \$515 million to CVRP through FY 2023-24.⁵ **The cost to provide maximum incentives to even 4 million low- and middle-income households is 13x what we are currently planning to spend on CC4A, and over 4 times what is currently allocated to CVRP.** CVRP budget should be even greater because the funding spans to FY 2023-24 as well higher income individuals and any individual who purchases a fuel cell electric vehicle are also eligible for rebates.

There are over 6 million households in California who may qualify for low- and middle-income incentives/rebates on ZEVs based on 400 percent of Federal Poverty Level.^{6,b} Assuming maximum benefits from CC4A (\$9,500) and maximum CVRP (\$4,500) for an all-electric vehicle, we would need \$11 billion annually to meet this goal (\$7.5 billion to CC4A, \$3.5 billion to CVRP).^c The cost to provide incentives to all 6 million households is over 20 times what we are currently planning to spend on CC4A, and nearly 7 times what is currently allocated to CVRP.

To support an equitable charging infrastructure for those 4 million new ZEVs by 2030, we would need to invest **\$690 million to \$1.1 billion annually** to ensure those 4 million households have access to charging infrastructure.^d (In addition to enough funding to support 164,914 Level 2 charging in multi-unit dwellings not specifically tied to low- and middle-income households).

We know low/middle income families need this funding to ensure equitable transitions to clean vehicles

The data shows that households earning more than \$75K spend a lower percentage of their overall income on transportation costs, whereas those making less than \$75K spend a far greater portion of their income⁷ – making ZEV purchases for this demographic nearly impossible without significant rebates. If we are serious about ensuring all Californians can participate in transitioning to a cleaner future, we must invest more in equitable ZEV access.

^a 4 million x \$9,500 = \$38 billion to CC4A / 8 years = \$4.75 billion annually; 4 million x \$4,500 = \$18 billion to CVRP / 8 years = \$2.25 billion annually. Total = \$4.75 billion + \$2.25 billion = \$7 billion annually to both programs. Note that the average incentive and rebate amounts are not the maximum, however, maximum incentives/rebates make ZEV ownership accessible to low- and middle-income Californians without households overspending their average transportation expenditures.

^b California has 13.1 million households. We approximate the number of households at 400% of the federal poverty level as the number of households with income below \$75k, excluding households of size 1 with income above \$45k. We then use the distribution of car ownership in households to calculate the number of households that may be eligible for these incentives. In particular: (1) Approximately 60% of all households have an annual income of \$75k and below. (2) We exclude approximately 14.6% of 2.6 million households that have income between \$45-75k that live alone in order to arrive at about 7.4 million households at 400% of the federal poverty line. (3) We use the proportion of car ownership in the different household income levels (78% of first quintile, 89% of second quintile, and 95% of third quintile) to arrive at 6.3 million households that earn less than approx. \$75k, own cars, and may be eligible for these incentives. Sources: Number of households from U.S. Census Bureau QuickFacts California. 2020 transportation spending, vehicle ownership, and household income quintiles from the US Department of Transportation, Bureau of Transportation Statistics, Household Spending on Transportation. Percent of single households from US Census Bureau, Living Arrangements Over the Decades.

^c 6.3 million households x \$9,500 to CC4A / 8 years = \$7.5 billion annually; 6.3 million households x \$4,500 to CVRP / 8 years = \$3.5 billion annually. Total = \$7.5 billion + \$3.5 billion = \$11 billion annually to both programs.

^d Under the CEC's standard scenario to reach 8 million ZEVs by 2030. Assuming half of multi-unit dwelling (MUD) chargers needed for 8 million ZEVs are allocated to serve 4 million low- and middle-income MUDs = 164,914. Costs to install = \$1,800-17,800 per site. Total for MUD chargers = \$297 million to \$2.935 billion. Assuming all 100% of needed public DCFC chargers should benefit the low- and middle-income individuals = 30,572 public DCFC. Rebates per charger = \$61,767- \$72,107. Total for DCFC = \$1.89 - 2.2 billion. Assuming all 100% of needed public and work L2 should benefit the low- and middle-income individuals = 470,015 public L2 + 327,012 work L2 = 797,027. Rebates per connector = \$4,146 - \$4,460. Total for L2 = \$3.3 - 3.6 billion. Total for all chargers = \$5.5 - 8.7 billion over the next 8 years. \$5.5 - \$8.7 billion / 8 years = \$690 million - \$1.1 billion.

Why does California need to invest more in equitable ZEV access?

If California does not act boldly now to ensure equitable access to ZEVs and clean mobility options, disadvantaged communities will continue to bear the brunt of air pollution and the climate crisis. Low-income communities in California have less cars on average than higher income residents,⁸ yet are more likely to drive high polluting vehicles,⁹ and live in neighborhoods with the worst air pollution.¹⁰

If California adopts Advanced Clean Car II standards that ensure all new cars, trucks, and SUVs sold are zero emitting vehicles by 2035, according to Environmental Defense Fund analysis, it will provide the following benefits:¹¹

- **Health:** Prevent **7,406** premature deaths
- **Climate:** Eliminate more than **1.2 billion** tons of climate pollution by 2050
- **Consumer savings:** Save Californians who buy a new zero-emission car or SUV in 2035 more than **\$13,000** over the life of the vehicle
- **State fiscal savings:** Save the state of California **\$194 billion** cumulatively by 2050 in health and economic benefits

Summary of Assumptions

First, the baseline assumption is that the grid is developed in line with CPUC and CEC planning models to support charging infrastructure for new ZEVs on the road, as well as funding for education and outreach for Clean Cars for All and Clean Vehicle Rebate Program to create broader awareness of these opportunities.

Secondly, these numbers are based on new vehicle purchases and do not account for low- and middle-income households that may already own a ZEV. These numbers also assume manufacturers can meet demand and vehicle Manufacturer's Suggested Retail Prices (MSRPs) do not significantly change. Note all other assumptions are in endnotes and footnotes.

To arrive at the values, calculations are based on how much funding it would take to provide the maximum incentives to 1) the 4 million households which the California Air Resources Board (CARB) has stated the Clean Cars 4 All statewide expansion would reach,¹² and 2) eligible households earning 400% below the federal poverty level and have a vehicle, which is approximately 6 million households.¹³ These values also assume that California provides the *maximum incentives* for an all-electric vehicle (\$9,500 in Clean Cars 4 All and \$4,500 in Clean Vehicle Rebate Projects) for all 4 or 6 million households evenly distributed over the next eight years. While average rebates and incentives to date are lower than the maximum, because of high cost of zero-emission vehicles, providing maximum incentives would provide greater accessibility for low- and middle-income households.

Additional Assumptions

- California has a reliable, clean electric grid which can provide consistent, on-demand power to charge an additional 4 or 6 million ZEVs by 2030
- Technology continues to advance for zero-emission vehicles and battery electric vehicles become the norm
- Car manufacturers can keep up with demand, do not significantly alter their prices, and continue to offer mass-market EVs
- There is no significant shortage of lithium batteries or other disruptions in the supply chain to manufacture ZEVs
- Budget allocations and incentive disbursements can be spread evenly across the next 8 fiscal years
- Statewide expansion of CC4A will ramp up quickly and any unused funds will carry over from FY 2022-2023 allocations to future fiscal years

Endnotes

- ¹ https://ww2.arb.ca.gov/sites/default/files/2022-06/CC4A%20Website%20FAQs-060322%20Final_MAP.pdf
- ² <https://www.energy.ca.gov/programs-and-topics/programs/electric-vehicle-charging-infrastructure-assessment-ab-2127>
- ³ <https://www.electricforall.org/rebates-incentives/>
- ⁴ <https://cleanvehiclerebate.org/en/increased-rebate>
- ⁵ https://ww2.arb.ca.gov/sites/default/files/2022-07/fy2223_draft_funding_plan_accessible.pdf
- ⁶ <https://www.census.gov/quickfacts/CA>; <https://data.bts.gov/stories/s/Transportation-Economic-Trends-Transportation-Spen/ida7-k95k/>; <https://www.census.gov/library/visualizations/2021/comm/living-arrangements-over-the-decades.html>; <https://xapprod.aqmd.gov/RYR/Home/Eligibility>
- ⁷ <https://data.bts.gov/stories/s/Transportation-Economic-Trends-Transportation-Spen/ida7-k95k/>
- ⁸ <https://www.governing.com/archive/gov-car-ownership-poverty.html>
- ⁹ https://ww2.arb.ca.gov/sites/default/files/2022-06/CC4A%20Website%20FAQs-060322%20Final_MAP.pdf
- ¹⁰ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=239615>
- ¹¹ <https://www.edf.org/media/new-study-finds-californias-zero-emission-cars-standards-could-save-lives-reduce-pollution>
- ¹² https://ww2.arb.ca.gov/sites/default/files/2022-06/CC4A%20Website%20FAQs-060322%20Final_MAP.pdf
- ¹³ <https://www.census.gov/quickfacts/CA>; <https://data.bts.gov/stories/s/Transportation-Economic-Trends-Transportation-Spen/ida7-k95k/>; <https://www.census.gov/library/visualizations/2021/comm/living-arrangements-over-the-decades.html>; <https://xapprod.aqmd.gov/RYR/Home/Eligibility>