

# Addendum to Proposed FY 2021-22 Funding Plan for Clean Transportation Incentives

## Update to reflect November 19, 2021 Board Action

On November 19, 2021, the California Air Resources Board approved the proposed Fiscal Year 2021-22 Funding Plan for Clean Transportation Incentives in full. Since the publication of the plan, staff has identified a typographical error in the Clean Vehicle Rebate Project (CVRP) section and technical errors in emission reduction projections associated with the Clean Cars 4 All program. The corrected Clean Cars 4 All emission reduction estimates represent approximately a 15 percent decrease in the total carbon dioxide equivalent emissions reductions generated by the program, and a 3 percent to 5 percent decrease in emissions reductions for various criteria pollutants. The corrections are provided below, with the updates marked with an asterisk (\*) and highlighted.

### Proposed Fiscal Year 2021-22 Funding Plan for Clean Transportation Incentives, page 47

The Funding Plan correctly describes the \$250 reduction in CVRP rebates. Table 10 on page 47 included a typographical error with the standard rebate reduction for battery electric vehicles changes from \$2,000 to \$1,500. It should reflect a change from \$2,000 to \$1,750.

### Proposed Fiscal Year 2021-22 Funding Plan for Clean Transportation Incentives, page 62

#### Project Evaluation and Outcomes

Staff estimates that the \$75 million allocated for the Clean Cars 4 All would fund about 6,225\* incentives and provide 65,154\* metric tons of CO2 equivalent GHG emission reductions. The allocation would also reduce approximately 46\* tons of NOx, 2.51\* tons of PM 2.5, and 9.34\* tons of ROG.

## Appendix A: Emission Reductions Quantification Methodology, page A-6

Table A-1: Summary of Proposed Projects in FY 2021-22 Funding Plan and Total Potential Emission Reductions

Project Category	Proposed FY 2021-22 Allocation (millions)	# of Vehicles or Equipment Funded	Total Potential Lifetime Emission Reductions (tons)			
			GHG	NOx	PM 2.5	ROG
Clean Transportation Equity Investments	\$150					
Clean Cars 4 All	\$75	6,225*	65,154*	46.31*	2.51*	9.34*

## Appendix A: Emission Reductions Quantification Methodology, pages A-18 through A-20

### Clean Cars 4 All

Clean Cars 4 All (CC4A) achieves emission reductions by incentivizing the scrap and replacement of old, high-emitting vehicles with cleaner advanced technology vehicles. To calculate the emission reductions for this project, staff used past project data to determine the model year of the baseline vehicle and the replacement vehicle. Based on project data through the 2020 calendar year, on average, a 2000 model year vehicle was being scrapped and replaced by an average 2018 model year advanced technology vehicle.

Project data for the 2020 calendar year shows that 13\* percent of the funding went to BEV purchases, 59\* percent went to PHEV purchases, and the remaining 28\* percent went to conventional hybrid vehicle purchases. For the purposes of this analysis, staff assumed that FY 2021-22 funding would continue to incentivize those technologies at similar rates. Table A-8 reflects the emission factors for the selected baseline conventional hybrid, PHEV and BEVs. For more information on how these emission factors were developed, please see the Emission Factor Development section at the beginning of this appendix.

**Table A-2: Clean Cars 4 All Emission Factors**

<b>Pollutant</b>	<b>2000 Gasoline (g/mi)</b>	<b>2018 Conventional Hybrid (g/mi)</b>	<b>2018 PHEV (g/mi)</b>	<b>2018 BEV (g/mi)</b>
NO <sub>x</sub>	0.1918	0.0157	0.0085	0
PM 2.5	0.0208	0.0116	0.0108	0.0099
ROG	0.0388	0.0033	0.0018	0
GHG	480	276	185	78

Staff generated vehicle usage assumptions for CC4A through literature review for each of the vehicle types evaluated, similar to CVRP. The annual usage assumptions for CC4A are shown in Table A-9.

**Table A-3: Clean Cars 4 All Annual Usage Assumptions**

<b>Technology</b>	<b>Usage (mi/yr)</b>
PHEV/Conventional Hybrid	14,855 <sup>1</sup>
BEV	14,400 <sup>2</sup>

Using the emission factors and technology mix mentioned above and the annual usage assumptions, staff calculated the potential annual per-vehicle emission reductions for CC4A, as shown in Table A-10.

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<sup>1</sup> Based on 40.7 miles per day. Smart, J., Powell, W., and Schey, S., "Extended Range Electric Vehicle Driving and Charging Behavior Observed Early in the EV Project," SAE Technical Paper 2013-01-1441, 2013, doi:10.4271/2013-01-1441. (<http://papers.sae.org/2013-01-1441/>)

<sup>2</sup> Based on EMFAC 2017 Volume III- Technical Documentation, California Air Resources Board <https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-iii-technical-documentation.pdf>

**Table A-4: Clean Cars 4 All Annual Emission Reductions on a Per-Vehicle Basis**

Pollutant	Supported Technologies	Per-Vehicle Annual Emission Reductions (tpy)	
		Per Technology	Average
GHG	Conventional Hybrid	3.02	4.19*
	PHEV	4.38	
	BEV	5.79	
NOx	Conventional Hybrid	0.00288	0.00298*
	PHEV	0.00300	
	BEV	0.00305	
PM 2.5	Conventional Hybrid	0.00015	0.00016
	PHEV	0.00016	
	BEV	0.00017	
ROG	Conventional Hybrid	0.00058	0.00060
	PHEV	0.00061	
	BEV	0.00062	

Based on proposed funding amounts and past project data, staff anticipates the average incentive amount to be \$10,240\* per vehicle. With proposed \$75 million allocation for CC4A, staff estimates that approximately 6,225\* vehicles can be funded. Staff assumed a 15 percent administration rate would go to the districts for administering the programs. CC4A has a 30-month ownership requirement; therefore, total potential emission reductions for the project are quantified over the course of two and a half years. The total potential emission reductions for CC4A are shown in Table A-11 below.

**Table A-5: Total Potential Emission Reductions for Clean Cars 4 All**

Pollutant	Per-Vehicle Average Annual Emission Reductions (tpy)	Number of Vehicles	Average Annual Emission Reductions (tpy)	Project Life (years)	Lifetime Annual Emission Reductions (tons)
GHG	4.19	6,225*	26,061*	2.5	65,154*
NOx	0.00298		18.52*		46.31*
PM 2.5	0.00016		1.00*		2.51*
ROG	0.00060		3.73*		9.34*