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October 21, 2019

Clerk of the Board
California Air Resources Board
Submitted Electronically via http://www.arb.ca.gov/lispub/comm/bclist.php

Re: CARB 2019-2020 Funding Plan for Clean Transportation Investments for Low Carbon Transportation and Air Quality Improvement Program Investments

Dear Chair Nichols and Members of the Board,

We submit these comments on the Proposed Fiscal Year 2019-2020 Funding Plan for Clean Transportation Incentives for Low Carbon Transportation and the Air Quality Improvement Program ("the Plan") on behalf of the California Council for Environmental and Economic Balance (CCEEB). CCEEB has a longstanding history of support for air quality incentive programs that achieve critically needed emissions reductions above and beyond what is required by local, state, and federal regulations.

As part of our efforts, we have convened over many years a diverse range of environmental, business, and agency leaders through the California Environmental Dialogue (CED) to develop consensus-based policy solutions. Earlier this year, CED published a white paper on incentive programs, which we have attached here for your information. While the points raised in this letter are those of CCEEB alone, we believe the CED principles can help guide the State in program funding decisions. Furthermore, we believe the principles on transparency and accountability, balancing near- and long-term objectives, and applying a technology-neutral approach are of particular relevancy in terms of the proposed funding Plan.

For CCEEB, our main points on the Plan are as follows:

- **CARB's investment portfolio, including funds in the Plan, needs to be balanced** to ensure immediate reductions of oxides of nitrogen (NOx) and fine particulate matter (PM2.5), in addition to reductions in greenhouse gases (GHGs). Currently, the portfolio excludes some clean air vehicle technologies that can achieve

significant public health benefits and help meet air quality standards in the near term.

- **The Clean Truck and Bus Vouchers (HVIP) should retain low-NOx options** for heavy-duty vehicles. CARB has a unique opportunity to influence the turnover of California's legacy fleet over the next few years as the final phases of the Truck and Bus Rule are implemented, and should be supporting the cleanest vehicle options commercially available *today*. While battery electric and fuel cell vehicles play an important role in the technology transformation underway across the state, waiting for these technologies to come to market at affordable prices will miss critically needed emissions reductions in the near term, particularly in the San Joaquin Valley and South Coast regions.

- **The Plan's definition of "near zero" is inconsistent with other definitions**, including those in the Health and Safety Code, and should be reconsidered. The narrow definition provided in the Plan excludes technologies we believe were meant to be included under SB 1204 (Lara, 2014) and SB 1403 (Lara, 2017).

What follows is a more in-depth discussion of each of these three main points.

CARB's "Balanced Portfolio" Seems Lopsided

The Plan acknowledges the importance of a balanced portfolio, stating, "Incentives need to be carefully prioritized between investing in technologies that achieve immediate emissions reductions, and providing support to emerging advanced technologies that are necessary to meet our long-term goals."[1] In this, "immediate emissions reductions" seems to primarily refer to the regional criteria pollutant attainment needs in South Coast (2023, 2031) and San Joaquin Valley (2025), although these reductions should be equally recognized for the local benefits that come from reducing air toxics and PM2.5. Conversely, "long-term goals" appears to refer to the State's climate policies for 2030 and 2045.

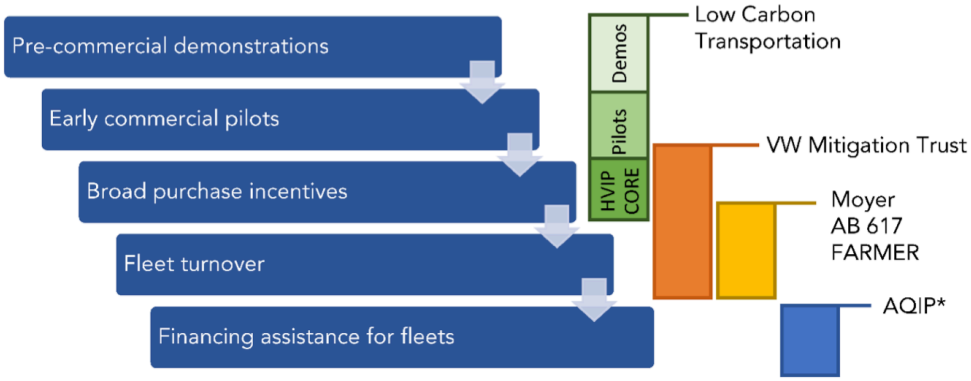
CCEEB firmly believes in a balanced approach that maximizes emissions reductions in criteria and toxic pollutants *and* GHGs. It should never be a matter of one or the other. The question is how best to strike this balance across CARB's portfolio of investments. The Plan and its Appendix D, the Heavy-Duty Investment Strategy, use a "beachhead" concept, "which prioritizes funding to technologies and applications that can most easily be self-sustaining and have strong potential to transfer and spread to broader applications…."[2] While this concept is useful for evaluating climate-focused technology-forcing investments, it is less sensitive to strategies needed for attainment of health standards and the reduction of localized impacts. That is, it places primacy on *technology* transformation rather than *emissions* reductions.

[1] Appendix D, CARB Heavy-Duty Investment Strategy. Page D-2.
[2] Appendix D, page D-3.

CARB seems to recognize this technology bias, stating, "While many of the other programs within the portfolio focus on cost-effective, near-term reductions of criteria pollutants, HVIP looks to the long-term."[3] However, while funding available through the Air Quality Improvement Program (AQIP), the Carl Moyer Program, and AB 617 Community Air Protection Incentives do allow for a broader range of investments, eligibility restrictions and, in the case of the AB 617 funds, a strong preference for zero-emission technologies coupled with geographic restrictions, prevent these programs from achieving needed penetration rates and reaching critical mass among fleets making purchase decisions today. Additionally, the California Energy Commission recently removed funding for near-zero technologies from its Clean Transportation Funding Plan, eliminating another important source of support for vehicle turnover.

Figure 6 of the Plan paints a useful picture of CARB's overall investment portfolio and how it targets different stages of technology development.[4] However, missing from this picture is critical information about the magnitude of these programs, in terms of total funding available, and scope, in terms of how many vehicles or fleets can make use of these funds, both of which directly influence emissions reductions possible. CCEEB believes more can and should be done to maximize emissions reductions across the entire portfolio and to match investments to demand among project applicants, in addition to technology transformation objectives.

Figure 6



*Statutorily, AQIP funding can be used to support technologies through the whole commercialization pathway. But AQIP is the only program that is able to offer financing assistance to fleets to purchase cleaner vehicles. As the effective date of SB 1 approaches and the need for financing assistance increases, CARB has focused AQIP dollars towards this area, allowing other programs within the portfolio to fund the earlier stages of the commercialization path.

[3] CARB Proposed Fiscal Year 2019-20 Funding Plan for Clean Transportation Incentives for Low Carbon Transportation Investments and the Air Quality Improvement Program. Release date September 20, 2019. Page 90.

[4] Even considering technology transformation, the beachhead concept seems to put most weight on accelerating near-term commercialization of battery electric vehicles rather than the full scope of technology development, in that little is provided to fund research and development needed for longer-term emerging and advanced technologies like hydrogen fuel cells and alternative fuels.

In considering the overall Heavy-Duty Investment Strategy, it is helpful to include details about funding levels and scope. Here we provide a quick summary:

	Funding (millions)	Use and Scope
AQIP	$48 FYE2020	Truck Loan Assistance. Both low-NOx and EV options available, but limited to small businesses.
Carl Moyer	$94 FYE2020	Unclear what portion of funds is available for on-road low-NOx vehicles; funding includes grants for off-road, marine, and locomotive projects.
AB 617	$240 FYE2020	Funds available for a wide range of projects, mobile and stationary, but must benefit a limited number (10) of CARB-approved communities. Preference is given to zero-emission technology and infrastructure.
VW NOx Mitigation Trust	$423 Total, multi-year	Only $60 million (15%) is available for low-NOx options, split between two multi-year funding cycles. 85% is restricted to ZE options, despite the fact that the Trust was established to mitigate NOx emissions.
HVIP	$142 FYE2020	Limited to engines with a specified all-electric range. Low-NOx and most hybrids "graduated" and receive no funding.
Advanced Technology Demonstration and Pilot Projects	$40 FYE2020	Limited to ZE drayage trucks (pre-commercialization), ocean-going vessels, and the Golden State Carbon Challenge.

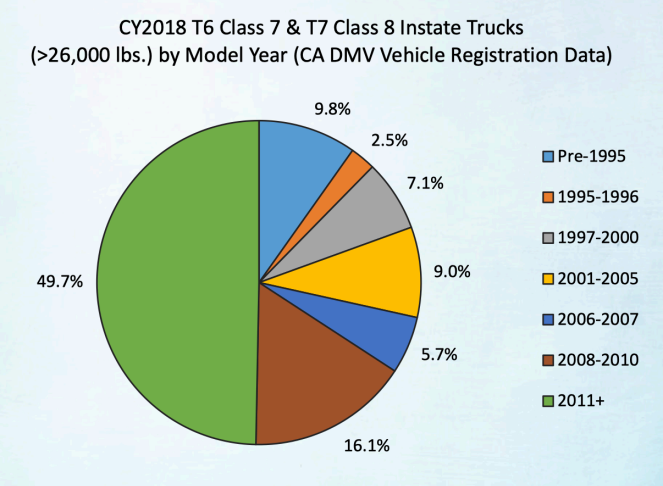
The Plan explains that technologies "graduate" from one incentive program to the next as commercialization improves, as shown in Figure 6. However, in looking across the entire investment portfolio, we conclude that most funds are limited to electric vehicles, with little provided for low-NOx options that maximize criteria and toxic pollutant reductions across the entire legacy fleet operating in California, or for advanced technologies that are still in the research and development stages, such as hydrogen fuel cell vehicles and other alternative fuels. CCEEB asks CARB to do more to engage stakeholders in a broader discussion of its portfolio priorities and timelines, and to consider evaluation metrics based on the level of emissions reductions possible, aligning investments with program demand. At a minimum, CCEEB asks CARB to reconsider changes to its Clean Truck and Buses Voucher program (HVIP) that removed eligibility for low-NOx options.

Reinstate HVIP Funding for Optional low-NOx Engines

The Plan states that, "These successes [from low NOx engines] have resulted in an increased market demand that the HVIP budget for this fiscal year will not be able to match," and then, somewhat perplexingly, seems to solve the problem by simply

removing these vehicles from eligible funding categories.[5] CCEEB believes that CARB should instead retain this funding category and address any over-subscription problem by increasing—not removing—funding to help meet demand. That is to say, the fix for a shortfall shouldn't be to remove the funding, but rather to rebalance the portfolio to meet the needs of California fleets.

In total, staff anticipates the HVIP, with no changes, will have more than a $100 million shortfall for fiscal year 2019-2020. Expected savings from "graduating" low-NOx engines amount to $34 million, or about a third of the total shortfall. The current voucher for low-NOx trucks is a maximum of $52,000 per vehicle, less than 24 percent of what is provided to battery electric vehicles (BEVs). Thus, for each BEV voucher, the program could turnover as many as four low-NOx trucks or buses. For many fleets, low-NOx engines are the preferred (or only) clean air choice. As the Plan states, "With these OEM's acceptance of low NOx natural gas engine technology, production volumes have increased. Fleets have several well-known manufacturers to choose from. Fleets are more comfortable purchasing trucks from these OEMs and are more confident knowing their investment will be supported; thus posing less perceived risk to the end-user. *When compared to zero-emission vehicles, currently no large OEM offers a commercially available zero-emission truck*."[6] [*Emphasis* added.]



It should be understood that the actual choice for fleet owners is not ZEV vs. low-NOx; it is between a cleaner vehicle with funding vs. a 2010-or newer vehicle compliant with the Truck and Bus Rule. Indeed, *this* is the time sensitive opportunity that the *annual* Plan needs to capitalize upon, given that a significant number of heavy-duty vehicles will be purchased over the next few years. Once purchased, these vehicles could remain on the road up to 18 years, as established by the Legislature under SB 1.[7] According to the CARB EMission FACtors (EMFAC, 2017) model, more than 35 percent of California class-7 and class-8 trucks are pre-2010 and need to be turned over in order to be able to comply with CARB's Truck and Bus Rule and register with the Department of Motor Vehicles.

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[5] CARB Proposed Fiscal Year 2019-20 Funding Plan for Clean Transportation Incentives for Low Carbon Transportation Investments and the Air Quality Improvement Program. Release date September 20, 2019. Page 88.
[6] CARB Funding Plan, page 91.
[7] Health & Safety Code (H&SC) Section (§) 43021(a)(1&2).

CCEEB strongly recommends that the low-NOx option be retained in the HVIP program so as to allow greater progress in meeting air quality goals and to capitalize on the opportunity presented by the Truck and Bus Rule. We believe this modification to the Plan can be done in a manner that meets the on-the-road needs of project applicants while still addressing shortfalls in funding, especially if CARB were to realign funding priorities across its entire portfolio to include support for both zero-emission and near-zero emission technologies.

Definition of "Near-Zero" Appears Inconsistent with SB 1204 and SB 1403

In the Plan, CARB provides the following definition for "near-zero": "For the purposes of this funding plan, CARB, in consultation with the California Energy Commission, has defined near zero-emission as vehicles that have a duty-cycle that include zero-emission operation, including ePTOs and hybrids with an all-electric range. Currently, ePTOs represent a technological improvement that support[s] the pathway towards zero-emission technologies. In the immediate term ePTOs are considered a near zero-emission vehicle, however, as the technology evolves, CARB may modify the definition of near zero-emission to include only those technologies that achieve a specified all-electric range. This definition is consistent with SB 1403, which requires that near zero-emission vehicles reduce greenhouse gas emissions and improve air quality when compared to conventional or fully commercialized alternatives."[8]

Unfortunately, CCEEB feels the Plan definition is not fully consistent with SB 1204 (Lara, 2014) and SB 1403 (Lara, 2017), which authorize and establish guidelines for Clean Transportation Incentives. SB 1204 and SB 1403 define "zero" and "near zero" as, "vehicles, fuels, and related technologies that reduce greenhouse gas emissions and improve air quality when compared with conventional or fully commercialized alternatives, as defined by the state board in consultation with the State Energy Resources Conservation and Development Commission. 'Zero- and near-zero-emission' may include, but is not limited to, zero-emission technology, *enabling technologies that provide a pathway to emissions reduction*s, advanced or *alternative fuel engines for long-haul trucks*, and hybrid or *alternative fuel technologies* for trucks and off-road equipment."[9] [10][*Emphasis* added.]

[8] CARB Funding Plan, page 76.
[9] H&SC § 39719.2(g).
[10] See also H&SC § 44258(c), which defines "near-zero vehicle" as, "a vehicle that utilizes zero-emission technologies, enables technologies that provide a pathway to zero-emissions operations, or incorporates other technologies that significantly reduce criteria pollutants, toxic air contaminants, and greenhouse gas emissions, as defined by the state board in consultation with the State Energy Resources Conservation and Development Commission consistent with meeting the state's mid- and long-term air quality standards and climate goals." This section was added by SB 1275 (De León, 2014), which authorizes CARB to establish and administer the Charge Ahead California Initiative, which has as a goal the placement of 1,000,000 zero- and near-zero-emission vehicles by 2023. This definition was also used in AB 2016 (Frazier, 2018).

CCEEB is concerned that the Plan's definition is narrower than the Health and Safety Code, as specified in SB 1204 and SB 1403. It is also inconsistent with the South Coast Air Quality Management Plan (AQMP, 2016) definition, which was adopted by the Board as part of its State Implementation Plan. The AQMP explains that, "While the Truck and Bus Regulation will ultimately require a majority of the heavy-duty trucks to meet 2010 heavy duty exhaust emission standards by 2023, there is a need to deploy on-road heavy-duty trucks that have engines that are considered 'near-zero' or have 'zero-emission mile' capability. *For the purposes of this control measure, 'near-zero' is defined as 0.02 g/bhp-hr NOx emissions*." [*Emphasis* added.]

Indeed, the common understanding of "near-zero" in public and CARB policy discussions has always included low-NOx engines that meet the 0.02 g/bhp-hr standard. CCEEB supports the common definition, noting that legislative analysis for SB 1204 states, "[The authors] cite a need for early demonstration projects to explore performance and integration challenges which need to be followed up with larger pre-commercial demonstrations to evaluate real world performance. Once these systems are developed and tested, the authors note that targeted incentive programs must be created to achieve *full* market penetration."[11] [*Emphasis* added.] We believe this indicates legislative support for incentives up to the point of full market penetration. Similarly, SB 1403 requires that no less than 20 percent of total funds must be invested in *existing* zero- and near-zero technology.[12]

We appreciate the opportunity to provide CCEEB comments to the Board, and for consideration of the points we raise. If you have questions or wish to discuss either our comments or the CED principles for sustained and effective incentive programs, please contact Janet Whittick at janetw@cceeb.org or (415) 512-7890 ext. 111.

Sincerely,

Janet Whittick
CCEEB Policy Director

cc: Mr. Wayne Nastri, SCAQMD
Mr. Samir Sheikh, SJVAPCD
Mr. Bill Quinn, CCEEB
Ms. Kendra Daijogo, The Gualco Group, Inc. and CCEEB Consultant

[11] SB 1204 Bill Analysis, Assembly Transportation Committee, June 20, 2014. Page 4.
[12] H&SC § 39719.2(b)(1).

Clean Air Dialogue – a working group of CED
Principles for Sustained and Effective Incentive Programs

The California Environmental Dialogue (CED) is a group of California business leaders, environmental groups, and government officials who collaborate through open and honest dialogue to develop timely policy solutions that improve economic efficiency and future environmental protection. CED explores diverse perspectives to formulate solutions that address today's most challenging environmental issues. Over the past two decades the Clean Air Dialogue, a working group of CED, has specifically discussed air quality and climate change solutions for California.

Addressing air quality and climate change issues is critical to securing a sustainable future for Californians. This requires emissions reductions across all sectors, and mobile source emissions pose an ongoing challenge in this regard. **"**Mobile sources—cars, trucks, and a myriad of off-road equipment—and the fossil fuels that power them are the largest contributors to the formation of ozone, PM2.5, diesel particulate matter, and greenhouse gas (GHG) emissions in California. They are responsible for approximately 80 percent of smog-forming nitrogen oxide (NOx) emissions, 90 percent of diesel particulate matter emissions, and nearly 50 percent of GHG emissions. Given this contribution, significant cuts in pollution from these sources are needed."[1]

The goal of this paper by the Clean Air Dialogue is to present a clear set of effective principles that support greater and consistent funding for cleaner transportation to help California achieve its air and climate change goals. The following set of principles represent a consensus approach to the development and implementation of policy and investment strategies that will improve air quality and accelerate the deployment of cleaner, lower emitting mobile source technologies. The Clean Air Dialogue recommends the use of incentive programs to encourage actions that complement state and federal regulations, and achieve additional, or early emission reductions.

It is important that these principles apply across all implementing agencies in order to maximize benefits, provide transparent and clear priorities for incentive programs, and ensure that the State's air quality and climate change goals are achieved.

- **Increased and Consistent Funding** – Increased and consistent funding over a multi-year time frame, similar to the existing AB 118/AB 8 program (approximately 8 years), is essential to provide market certainty for consumers, fleets, dealers, manufacturers, and suppliers participating in the transition to cleaner technologies. Many of California's cleaner transportation funding programs are chronically oversubscribed and receive funding on a yearly, stop-start basis. Funding certainty is important to manufacturers for long-term product planning, which requires multiple years to bring products to market after design, testing, and manufacturing. Sustained and consistent funding is equally important for air quality and community planning efforts, particularly in disproportionately impacted populations.

- **Transparency and Accountability** – Incentive programs need to include transparent, comprehensible metrics for emission reduction and cost/benefit quantification methods that are made publicly available for review and comment. Incentive programs must include routine public

[1]California Air Resources Board *Mobile Source Strategy*, May 2016

accounting of the actual performance of the incentive measured by metrics established when the incentive expenditure was approved. The factors used for determining success and for meeting the stated goals need to be clearly articulated. In cases where cost effectiveness is not the main factor for funding of a program, the metrics need to be tied to the stated goals. All incentive programs should incorporate regular evaluations to justify continued funding; preferably using independent evaluators with public input. If evaluation of the program shows that goals are not being achieved, then re-configuration, or transition to a more effective program is warranted.

- **Equitable Funding** – Funding should be prioritized to benefit the most environmentally burdened communities and low-income populations wherever possible so that these communities receive the air quality, public health, and economic benefits of these investments.

- **Monetary and Non-Monetary Incentives –** Monetary and non-monetary incentives are both critical tools for addressing the challenges of transitioning the transportation sector to cleaner technologies. Upfront costs for cleaner technologies are often higher than existing technologies. Incentives help fleets and consumers reduce these costs and justify choosing a cleaner technology. Non-monetary incentives are also impactful; with access to carpool (high occupancy vehicle-HOV) lanes as an example of an effective non-monetary incentive.

- **California Manufacturing and Workforce Development** – Incentive programs should support, but not require, strategies and efforts to increase manufacturing and workforce development related to the technology, fuel, or infrastructure supply chain within California. The programs should promote the availability and training of skilled labor to attain clean air objectives and reduce GHG emissions.

- **Balancing Near- and Long-Term Objectives and Leveraging Private Investment** – Incentive programs should be configured to support both near-term expansion of commercially available cleaner technology options and longer-term transformative technologies that offer greater benefits at maturity. Incentives should be designed to spur the growth of cleaner technologies by reducing costs through increased research and development, innovation, and economy of scale manufacturing that increase demand for clean technology products and accelerate business models triggering increased private investment.

- **A Technology Neutral Approach** – The goal of mobile source incentive funding should be to achieve emission reduction mandates in a manner that does not predetermine a technology approach. Funding should be directed in a technology neutral manner that best achieves air quality and climate objectives across the portfolio of public incentive programs.

In closing, the Clean Air Dialogue urges the Governor, the State Legislature, and public agencies to consider the policy principles put forward in this document for sustained and effective incentive programs to help California achieve its clean air and climate change goals.