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Clerk of the Board
California Air Resources Board
1001 I Street Sacramento, CA 95814

RE: Comments from the Union of Concerned Scientists on the Proposed Fiscal Year 2016-2017 Funding Plan for the Low Carbon Transportation and Fuels Investments and the Air Quality Improvement Program

Dear Chair Nichols and Members of the Board,

The Union of Concerned Scientists (UCS) submits the following comments to the staff of the Air Resources Board (ARB) on the proposed Fiscal Year 2016-2017 Funding Plan for the Air Quality Improvement Program (AQIP) and Low Carbon Transportation and Fuels Greenhouse Gas Reduction Fund (GGRF) Investments.

Prior funding plans have played an important role in supporting the purchase of over 140,000 electric light-duty vehicles and 2,000 medium and heavy-duty trucks, as well as implementing low emissions advanced technology demonstration projects. These incentive programs, along with other AQIP programs have successfully reduced criteria pollutant exposure, global warming emissions, and petroleum use.

This funding plan developed by ARB staff supports the further development and implementation of less-polluting, lower carbon transportation technologies and will help accelerate the necessary transformation to low and zero emission transportation systems. UCS thanks ARB staff for the developing a well-reasoned plan and strongly supports this draft plan to fund a variety of light-duty, heavy-duty, and freight related projects with a focus on delivering benefits in disadvantaged communities.

Light-Duty Vehicle Investments

Clean Vehicle Rebate Program

We support the decision to continue the Clean Vehicle Rebate Program (CVRP) incentive and agree with ARB staff's assessment that the ZEV market is not yet at the point where rebates should be phased out. We also support the proposed funding level, incentive structure, and eligibility guidelines for CVRP.

We support the allocation of $175 million for the FY16-17 CVRP program. The increased funding from the prior year is needed to allow for likely increased demand from the introduction of new electric vehicle models. Increased funding is also required to provide increased rebate amounts to low and moderate-income (LMI) CVRP participants. We estimate that program costs would increase approximately $5 million if CVRP applicants' incomes were similar to those reported in past surveys of rebate recipients.[1] However, we expect that the increased rebate amounts, when coupled with outreach efforts, will increase rebate demand compared to last year. Therefore, we recommend ARB plan for success of the LMI program with $10 million assigned to fund additional LMI CVRP program costs.

We support the additional outreach to raise awareness of clean transportation options in disadvantaged communities (DACs). Outreach efforts (especially in languages other than English) are vital to increasing program spending in DACs from the current rate of 6 percent. The addition of increased LMI CVRP rebates will help increase spending in DACs, but are not specifically targeted to the DACs identified by CalEPA. Outreach, therefore, is an important tool to increase DAC resident participation in clean transportation programs and ensure that these communities are aware of the program.

Projects to Benefit Disadvantaged Communities and Low-Income Consumers

We recommend the board adopt point-of-sale rebates and financing assistance programs for lower income buyers to ensure that ZEVs are an option for the broadest range of California vehicle purchasers. We are particularly excited to see the possibility of a financing program such as a loan-loss reserve program for EV purchases. The financing assistance process could be used to deliver point-of-sale or down-payment reductions. A financing program is also attractive as it is self-limiting to buyers that are truly in need of assistance, as more affluent purchasers will likely already have access to funds for down payments and sufficient credit to obtain a vehicle loan or lease.

We support the investment in the Enhanced Fleet Modernization Program (EFMP) enhancements. We agree with ARB's proposed flexibility in allocating funds between the air districts already administering EFMP and air districts that are in the process of establishing EFMP programs. This flexibility will ensure that funds do not go unspent if delays occur in the establishment of new EFMP programs.

Heavy-Duty Vehicle and Off-Road Equipment Investments

We strongly support the investment of $175 million in the freight, off-road, and heavy-duty vehicle sector to advance new technology development and deploy lower emission truck, buses, and other equipment. Because only $5 million of the $148 million investments identified in the fiscal year 2015-2016 Funding Plan were allocated for heavy-duty vehicles and equipment, the investments proposed for fiscal year 2016-2017 represent two years' worth of critical projects. These investments will help modernize the freight system in California, benefiting public health and helping communities in California meet air quality standards and reduce climate change emissions.

Zero-emission technologies in the heavy-duty sector are critical for the health of our communities and meeting air quality and climate goals. We support ARB's efforts to bring these technologies to market and incentivize early deployment across various sectors and vehicle classes to meet the requirements of SB 1204.

Freight and heavy-duty transportation sources disproportionately impact communities near rail yards, warehousing, freeways, ports and logistics centers. We strongly support and

[1] Center for Sustainable Energy (2016), California Air Resources Board Clean Vehicle Rebate Project, "EV Consumer Survey Dashboard." http://cleanvehiclerebate.org/survey-dashboard/ev.

applaud ARB's efforts to fund projects directly in these communities and projects that provide benefits to these communities.

Low NOx Engine Incentives

The pollution reductions needed from the heavy-duty sector to meet California's air quality and climate goals will require a combination of technologies and fuels. Renewable, low-carbon fueled electric truck and bus technologies can reduce tailpipe emissions in impacted communities and climate emissions. As part of the low NOx engine incentive, we support the requirement that projects funded by cap-and-trade auction proceeds, which target carbon emission reduction projects, use 100 percent renewable low-carbon fuels to minimize the greenhouse gas emissions from these engines.

As funding for low NOx conventionally fueled engines is disbursed, it will be important for ARB to continue to assess the appropriateness of the incentive amounts as well as which funding programs are best suited for supporting conventionally fueled low NOx engines. Continued assessment is critical as there is only one low NOx engine (8.9 liter) currently certified. The $23 million allocation would fund 1,200 vehicles with low NOx engines with a rebate of $18,000 per vehicle. If these engines are not available or if there is not adequate demand in fiscal year 2016-2017, we support using these funds for other heavy-duty vehicle investments identified by ARB, especially given the high demand from worthy projects that were not funded in fiscal year 2015-2016.

ARB should also undertake an assessment of early sales of low NOx engines to better understand the technology costs and appropriateness of future incentive amounts. The proposed $18,000 per vehicle, which can be combined with funding from other sources such as the Carl Moyer program, is being established with little to no commercial sale of low NOx technologies to date. In addition, in public workshops, fuel providers and fuel customers have discussed that biogas comes at no greater expense than fossil-based natural gas due to financial incentives from the Renewable Fuel Standard (RFS) and Low Carbon Fuel Standard (LCFS). Additional compensation for renewable natural gas may not be appropriate or necessary to achieve the goals of the low NOx program.

Long Term Plan for CVRP and Light-Duty Vehicle Incentives

The discussion draft lays out a long-term plan for the CVRP program and other light-duty incentives, consistent with the requirements of SB1275. However, we believe that the estimated funding needs for the programs (given current program eligibility and incentive parameters) are underestimated. The high estimate for CVRP costs only grows by $30 million in FY17-18 and $40 million in FY18-19, or approximately 15,000 and 20,000 rebates respectively. These estimates are based on a linear extrapolation of historical rebate funding demand. However, new models of both plug-in and fuel cell vehicles will be available in the next 3 years and have the potential to significantly increase rebate demand. For example, the Volkswagen eGolf, a new entrant to the market, was responsible for over 3,000 CVRP rebates in the last 12 months and Chevy Volt purchases, for which a substantially updated model was introduced in late 2015, were responsible for nearly 900 rebates <u>per month</u> for November 2015 through February 2016. Therefore, the projected demand only anticipates 2-4 new models of CVRP eligible vehicles and little to no growth in demand from existing models. We believe this is inconsistent with the stated production plans of manufacturers like Hyundai (Ioniq PHEV and BEV), BMW (multiple PHEVs), GM (Chevy Bolt), Mitsubishi (Outlander PHEV) and Tesla (Model 3). We also note that there is no difference in the growth assumed from the second year to third year between the "low" and "high" growth scenarios (both increase by $40 million).

The linear growth in rebate demand is also inconsistent with the model of ZEV adoption (diffusion of innovation theory) on page 117 of the plan. In this model of technological adoption, exponential growth in adoption is predicted while in the "early adopters" stage of growth. If the ZEV market follows this trend, we would expect rebate demand to accelerate and grow at a rate higher than linear growth during the next three years. We urge ARB to consider higher funding demand from light-duty incentive programs for fiscal year 2017-2018 and fiscal year 2018-2019, especially in the "high growth" scenario.

UCS thanks the ARB staff for producing a robust plan for supporting the implementation of cleaner light-duty and heavy-duty vehicles, and for providing many opportunities for public comment during the discussion process. We believe the final plan will provide air quality and climate benefits for the entire state and provide specific benefits to disadvantaged communities.

Sincerely,

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