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Clean Energy

The Honorable Mary Nichols
Chair, California Air Resources Board
Post Office Box 2815
Sacramento, CA 95812

November 8, 2017

Re: Comments on Utilization from the VW Settlement, Appendix D

Dear Chair Nichols:

On behalf of Clean Energy, please accept these recommendations as the process begins in earnest to maximize the utilization of proceeds for Appendix D from the Volkswagen settlement. These funds present an extraordinary opportunity to move us out of polluting diesel-powered trucks and buses into clean advanced alternatives such as near-zero emission vehicles powered by low carbon renewable fuels:

- **Recommendation #1:** 75% of Appendix D funds be used for the Prop. 1B program so class 7 and 8 trucks can be deployed immediately. Prop. 1B is the optimal approach for funds utilization as it is an investment style program which values cost-effective NOx mitigation. Cost-effectiveness will be critical to tackle the NOx pollution created by VW's violations and to maximize the benefits achieved by these finite funds.

  This is consistent with the ARB's own *Mobile Source Strategy*, which calls for incentives sufficient to deploy 15,000 – 20,000 ultra-low NOx trucks per year through 2031. While we support electric vehicles (EVs) when a policy is technology neutral, it is important to recognize most of Appendix D funds should go toward commercial trucks and bus projects since Appendix C allocates $800 million from the settlement for light duty EV projects, as does a substantial amount from ARB to many other EV-related programs.

  Appendix D funds provide a unique opportunity to transform the medium and heavy-duty truck sector by deploying the most cutting edge engine technologies to address NOx emissions. While new diesel engines simply meet the required 2010 federal NOx standard, many natural gas engines have gone farther and are certified to the California Air Resources Board's optional low NOx or near-zero emissions standards. These engines are therefore certified to produce 50-90 percent fewer NOx emissions than new diesels, respectively.

  Additionally, a recent study[1] conducted by the University of California Riverside (UCR), found the actual in-use NOx emissions of the near-zero natural gas engine to be up to 95 percent cleaner than diesel (0.001g/bhp-hr). At the same time, similar studies by UCR and Southwest Research have found that the cleanest diesels certified to the 2010 federal heavy-duty standards exceed such standards by 5-9 times when in drayage or local delivery modes. Given that Appendix D has been created because of the NOx pollution associated with non-compliant diesel vehicles, we believe that the majority of the

[1]" Ultra Low-NOx Natural Gas Vehicle Evaluation ISL G NZ", College of Engineering for Environmental Research and Technology, University of California at Riverside, February 2016.

funding should be set aside for vehicle projects which make improvements beyond the current federal NOx standards and move away from diesel: a fuel identified by multiple health organizations and California as containing chemicals known to cause cancer or reproductive harm.

- **Recommendation #2**: A "first come, first served" policy is detrimental to the appropriation. There is no a guarantee that the best projects to cost-effectively reduce harmful NOx will receive the much needed incentives to achieve CARB's goal to fully mitigate VW's harmful and unlawful environmental damage. We must remain mindful that Appendix D is a mitigation fund to mitigate dirty diesel pollution that has already significantly impacted the health of our collective communities. It should not be viewed as a technology investment or incubating program as some would suggest. In addition, such a policy may leave out sectors of the transportation space that desperately need turnover (goods movement/freight) and over-allocate dollars into sectors that are already relatively clean;

- **Recommendation #3**: Concerning scrappage flexibility, we hope ARB will allow larger fleets with newer model year trucks to purchase or swap older model year trucks from smaller fleets to participate in the program. By doing so, ARB will be able to achieve greater NOx benefits;

- **Recommendation #4:** Allocate funds to local air districts which can further prioritize the funding to fully implement their Air Quality Management Plans in order to reach NOx attainment. As you know, just the South Coast AQMD estimates they will need to identify $15B over the next 14 years to reach federal NOx attainment goals. This further illustrates the critical need to spend the dollars wisely to deliver clean air;

- **Recommendation #5:** If set-asides will be used, the greatest bang for the state's buck to tackle diesel-generated NOx pollution would be heavy-duty trucks, particularly in the Class 8 category. In fact, both the South Coast and the San Joaquin Valley air districts single out heavy-duty diesel trucks as the largest source of NOx pollution in these extreme non-attainment zones;

  Further, recent research has found even so-called "clean diesels" are emitting 5-9 times higher NOx emissions than the 2010 heavy-duty truck standards. Not only does this tell us to steer clear from diesel repowers, it tells us to double-down on advanced clean technologies that can achieve at least near zero emissions levels. The approved *State Implementation Plan* and *Mobile Source Strategy* documents call for 900,000 on-road near-zero vehicles that meet a 0.02g/bhp-hr NOx standard to achieve NOx attainment. So a set-aside of 75% of these funds would be a great start. In addition, such a strong allocation would send a strong message to the Ports of Los Angeles and Long Beach, which recently adopted a Clean Air Action Plan showing a strong preference for near zero and zero emission trucks. After all, the San Pedro Bay Port Complex is often referred to the "diesel death zone" because it has the highest cancer risk in the basin (1,500 in a million);

- **Recommendation #6:** The legislature made its intent very clear in September they want to eliminate the harmful health effects of diesel, particularly from heavy-duty vehicles, such as port-drayage, long-haul, and local delivery vehicles which have a significant impact upon disadvantaged communities. We can no longer hold these monies hostage for the hope of future technologies which have yet to commercialize. ARB already has funding programs that push the envelope on technology. We don't need another one. We also reject any assertion that near zero is a bridge technology. Based on extensive research and analysis, near zero strategies will be the key strategy to the elimination of harmful NOx emissions from heavy-duty truck source categories for decades to come;

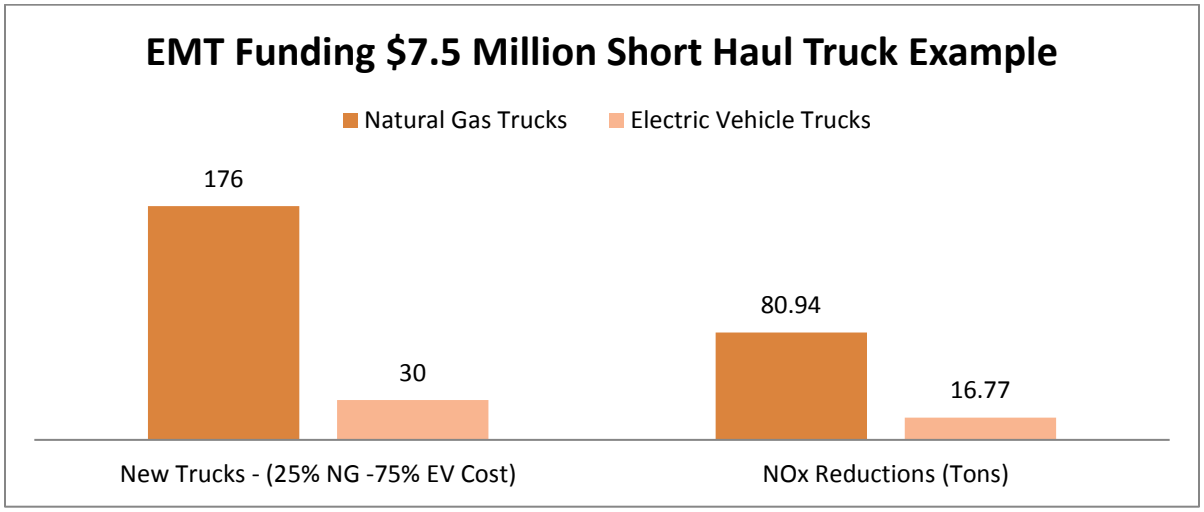
- **Recommendation #7:** Cost-effectiveness: grants should cover the same percentage of the vehicle cost for all alternative fueled vehicles which perform below today's federal NOx emissions standard.

  A report from the California Energy Commission indicates that the 0.02g NOx engine produced by Cummins-Westport can reduce the life-cycle emissions of heavy duty vehicles to levels near or equal to those of zero emission electric vehicles. For example, the South Coast Air Quality Management

District views the near-zero NOx standard to be zero emission equivalent based on the District's mix of electric generation supplying their grid.

Moreover, their electric generation mix is one of the cleanest in the country. While comparable in regard to NOx emissions, 0.02 NOx vehicles and electric vehicles (EVs) are miles apart on cost. An all-electric medium or heavy duty vehicle can **cost twice the amount** or more of a similar vehicle powered by a 0.02 NOx engine. Yet, under EMT guidance, EVs may receive a grant up to **75 percent** of the total vehicle cost while 0.02 NOx vehicles may only receive a grant for up to **25 percent** of the total vehicle cost.

Funding the more expensive EV and at a greater percentage will result in fewer vehicles being deployed and therefore fewer reductions in NOx emissions. Below is a chart illustrating these points by showing the benefits of a $7.5 million investment in 0.02 NOx vehicles versus that same investment in EVs:



Source: NGVAmerica compiled from Gladstien, Neandross and Associates Game Changer Report Data

There is no policy reason for providing a 500% larger incentive (in terms of dollars) for an EV truck which has similar life-cycle NOx emissions as a 0.02 NOx truck.

Recommendation #8: Either no more than 20 percent of all funds be used for government fleets or the funding percentage for government vehicles should be reduced to 50 percent of the total cost.

The 100 percent funding level for government vehicles provides a great opportunity for public fleets to reduce their emissions. However, the allure of "free" vehicles for the government should not be permitted to dissipate the greater potential deployment of cleaner vehicles in the private sector. The full funding of government vehicles results in fewer vehicles being deployed per dollar and therefore a reasonable cap must be put in place. A proper balance can be achieved by limiting the funding for government fleets to 20 percent of all EMT funds or by reducing the funding per vehicle to 50 percent of the total cost.

Recommendation #9: Mass transit, para transit and refuse fleets should be the main focus of funding for government vehicles, which are high mileage fleets and are therefore a key target for achieving meaningful NOx reductions. They also directly serve the community thereby making them highly visible investments.

Moreover, these fleets also return to a central hub for refueling which makes them ideal for cleaner alternative fuel applications since only a single station is required rather than an expansive network. Over the past decade many mass transit agencies have recognized the unique positioning of their fleets for utilization of alternative fuels. L.A. Metro operates the largest natural gas bus fleet with over 2,000 buses. It is important to note that grants for public mass transit buses should take into consideration the 80 percent matching funds from the federal government for capital maintenance investments.

Therefore, public mass transit grants should not exceed 20 percent of the vehicle cost where the federal match is applicable. In the refuse industry, over half of all newly purchased trucks now operate on natural gas due in part by funding made available by states.

Finally, as this process proceeds we have several questions we would like ARB to answer at some point soon:

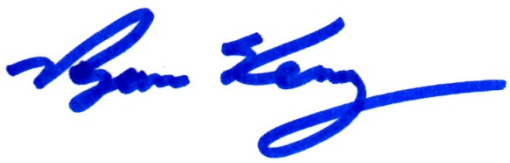
- Can ARB confirm that for on-road projects, will vehicles being scrapped or repowered be required to be diesel (i.e. fleets could not scrap CNG vehicles)?
- Does ARB have the flexibility to place 100% of the funds into one single category (i.e., electric forklifts)?
- Will ARB take into account in-use diesel emissions for the cost-effectiveness calculations?
- How does the Appendix D appropriation fit with the GGRF Funding Plan? If ARB believes demand will be met in fiscal year 2017-18 for the 9L and 12L engines, how will the VW money fit?
- Slide 26 of the staff PowerPoint presentation mentioned ARB will consult with the legislature. What will be asked of the legislature, in what form, how and when?
- If some funds will not go to existing ARB programs, what might the scenario be if they do not?

Conclusion

0.02g NOx vehicles produce 50-95 percent fewer NOx emissions than diesel vehicles and are the most economical alternative. From an implementation standpoint, these vehicles are the only alternative fuel vehicle option that offers commercially available vehicles for all the categories that qualify for funding under the settlement.

Therefore, we urge ARB to provide significant funding for the immediate deployment of medium and heavy-duty vehicles and take into consideration these important recommendations. Thank you.

Sincerely,



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