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December 11, 2017

Chair Mary Nichols and Members of the Board  
California Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812

Re: Proposed Fiscal Year 2017-2018 Funding Plan for Clean Transportation Incentives

Dear Chair Nichols and Members of the Air Resources Board

Advanced Energy Machines is pleased to share our comments on the Proposed Fiscal Year 2017-2018 Funding Plan for Clean Transportation Incentives (Funding Plan). Advanced Energy Machines commends California for its leadership in accelerating the development and early commercial deployment of the cleanest mobile source technologies.

Advanced Energy Machines (AEM) develops and manufactures battery electric transport refrigeration units (TRU) with solar range extenders for refrigerated trailers. AEM has been running 50 prototype units as a near-zero retrofit version for the past three years with four (4) fleets for development, validation and reliability testing in California. These test units have accumulated nearly 300,000 run hours, driven over 3,000,000 miles, and delivered several million cases and demonstrated excellent quality and reliability in field testing. AEM's technology is advancing and coming to market to deliver an excellent return on investment (ROI) for refrigerated fleets. With our pleasure we submit these comments:

Zero-Emission Off-Road Freight Voucher Incentive Project:

AEM applauds ARB for the Zero-Emission Off-Road Freight Voucher Incentive Project as proposed for the FY2017-2018 funding plan. We are pleased to see the development of a voucher type system that applies to off-road equipment, specifically with including TRUs. We look forward to learning more about this in the work group process.

Zero- and Near Zero-Emission Warehouse / Freight Facilities:

AEM looks forward to incorporating zero-emission transport refrigeration units in freight facilities. The \$50 million allocated by SB 132 towards zero- and near-zero emission warehouse and technologies is important to showcase clean technologies at warehouses for local/regional delivery. Solar and storage, both mobile on refrigerated trailers and stationary in infrastructure, can be integrated to potentially mitigate costs for fleet end-users. We look forward to learning more about this in the work group process.



### TRUs in Three Year Investment Strategy

Transport refrigeration is a sector where CARB’s investment for technology development has been under-funded and under-resourced. Food production and food processing are integral to California’s economy with a year-round growing climate, and the food sector is vital to the health and well-being of California’s citizens with food and beverage processing as the third largest manufacturing sector.<sup>1</sup> The food industry is a major driver of California’s economy with \$220 billion in total value output and 198,000 direct full- and part-time jobs, and another 520,000 jobs through indirect and induced activity. Transport refrigeration plays a vital role in transporting food products for industry, while also providing a necessary resource to feed California residents and the rest of the world.

While we are pleased that transport refrigeration units (TRUs) are identified in the Three-Year Plan, however we are concerned that TRUs are only mentioned in Recommendations for Investment Priorities to Advance Long-Term Pathways in Table II-1 on page II-45 in the FY2020-2021 funding year. Battery electric TRUs, including all-electric TRUs with range extension strategies like solar panels and fuel cells must receive investment earlier to support ARB’s control measure timelines.

Elevated priority is necessary to support CARB’s control measure concepts in development known as the “Airborne Toxic Control Measure to Limit Stationary Internal Combustion Engine Operating Time and Transition to Zero-Emission Technology for TRUs.” Incentive support of zero-emission TRUs is a necessary investment to realize the California Sustainable Freight Strategy, the Mobile Source Strategy, and other such policies to achieve CARB’s clean air goals.

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In summary, we commend CARB on its leadership and we look forward to working with CARB on implementing clean transport refrigeration technologies.

Sincerely,  
Advanced Energy Machines

Ronald Koelsch, Ph.D.

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<sup>1</sup> California League of Food Producers, “The Economic Impact of Food and Beverage Processing in California and Its Cities and Counties” January 2015. [http://clfp.com/wp-content/uploads/CLFP\\_FINAL\\_Report\\_1\\_29\\_15.pdf](http://clfp.com/wp-content/uploads/CLFP_FINAL_Report_1_29_15.pdf), accessed December 7, 2017.