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Comment Received From: Jean-Baptiste Gallo
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Cummins comments on 2019-20 CTP Investment Plan

Additional submitted attachment is included below.

September 12, 2019

California Energy Commission
1516 9th Street
Sacramento, CA 95814

RE: 2019-2020 Investment Plan Update for the Clean Transportation Program – Second Revised Lead Commissioner Report (Docket Number: 18-ALT-01)

Dear Energy Commissioners and Staff,

Cummins Inc. (Cummins) appreciates the opportunity to provide comments on the Energy Commission's 2019-2020 Investment Plan Update for the Clean Transportation Program.

Cummins, a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service a broad portfolio of power solutions. The company's products range from diesel and natural gas engines to hybrid and electric platforms, as well as related technologies, including battery systems, fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, Indiana (U.S.A.), since its founding in 1919, Cummins employs approximately 62,600 people committed to powering a more prosperous world through three global corporate responsibility priorities critical to healthy communities: education, environment and equality of opportunity. Cummins serves customers in approximately 190 countries and territories through a network of approximately 600 company-owned and independent distributor locations and over 7,600 dealer locations and earned about $2.1 billion on sales of $23.8 billion in 2018. Cummins has operated in California since 1933 and we currently have 691 employees in 14 locations around the state. In addition to our vast network of Sales and Service locations that support our customers and dealers, we are also developing and manufacturing the latest electrified heavy-duty powertrains at our newest locations in Milpitas and Dixon.

Cummins' vision is innovating for our customers to power their success. We do this by investing in a range of technologies from diesel and natural gas internal combustion engines to fully-electric and fuel cell solutions. Based on this unique market perspective and our deep understanding of our customers needs, we suggest that the Energy Commission consider continuing its investment in vehicle demonstration projects and hydrogen fueling infrastructure. In particular, we suggest:

Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure

Cummins supports the proposed allocation of $30 million for medium- and heavy-duty zero-emission vehicles and infrastructure and encourages the Energy Commission to continue funding vehicle demonstration projects for near zero- and zero-emission technologies that are on the cusp of commercialization or are significantly further behind on the commercialization arc. Specifically, Cummins recommends funding hybrid-electric demonstration projects where there remains a need for a combustion engine for power or sustained energy and where fuel

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cell technology is not either available or convenient. This includes TRUs, work trucks, ambulance and first responder vehicles as well as off-road equipment where achieving low NOx emissions remains a technical challenge.

Hybrid systems represent a viable near-term solution for California to electrify medium- and heavy-duty vehicles and could impact a larger share of the commercial vehicle market compared to battery electric vehicles. For instance, extended range architectures for medium- and heavy-duty vehicle applications represent a cost-effective zero-emission capable solution for customers looking to electrify their fleets. Over the past twelve months, several companies involved in the demonstration and pilot deployment of battery electric vehicles have expressed their interest in testing extended range electric vehicles in long range applications, heavy weight duty cycles, or those work cycles requiring continuous operation or multiple-shift operation where recharging may not be an option. Extended range electric vehicles can greatly reduce criteria and greenhouse gas emissions without range limitations, the requirement to park vehicles for extended periods of time to recharge batteries and the need for expensive fast or ultra-fast charging infrastructure. Hybrid systems also have the potential, on a duty cycle or work cycle basis, to also greatly reduce NOx emissions assuming the engines and after treatment systems are sufficiently integrated with the hybrid components and operation.

Cummins also recommends funding one or two large and focused fuel cell electrification projects that develop regional hydrogen ecosystems capable of supporting a range of applications. Very few medium- and heavy-duty fuel cell electric vehicles exist today and no option is currently eligible in HVIP. In addition, the fuel cell transit bus models currently available remain more expensive than battery electric options. Fuel cell electric vehicles represent a natural progression from extended range electric vehicles but are further behind on the commercialization arc and would benefit from demonstration projects that not only prove the technical viability of fuel cell technologies but also their long-term commercial viability. Such demonstration projects should include viable large-scale hydrogen infrastructure that can provide much lower cost of hydrogen fuel production. Such high-volume centralized fueling could serve as a base for a range of applications, such as port equipment, marine vessels and drayage trucks as well as other regional applications.

Hydrogen Refueling Infrastructure

Cummins supports the $20 million allocation for hydrogen refueling infrastructure and suggests funding be targeted at higher capacity and more cost-effective stations serving medium- and heavy-duty vehicles. Projects collocating refueling for commercial vehicles and buses with light-duty vehicle refueling should be encouraged and scored more favorably in the technical evaluation criteria. Cummins seconds CALSTART's recommendation "that hydrogen fueling infrastructure for M-HDV [should not] come out of the "M-HDV vehicles and infrastructure" proposed fund of $30 million, but rather through the funding designated for hydrogen." Cummins also supports CALSTART's recommendation to develop "a Hydrogen Refueling Station Development and Technology Demonstration Program that would encourage public/private partnerships to build and expand refueling stations for hydrogen."

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Workforce Development

Cummins operates twelve Sales and Service Centers in California and has trained over 100 technicians and field engineers to support an increasing number of electrified power products from customers like Gillig or Blue Bird. Providing superior service and support to early adopters of clean transportation technologies is critical and Cummins will need to continuously retrain its service technicians and field engineers and hire new talents as the market for clean transportation technologies grows in California and beyond. Cummins supports the $2.5 million allocation for workforce training projects and encourages the Energy Commission to find ways to engage private companies like Cummins to continue training and develop California's alternative fuel workforce.

Clean Transportation Program Advisory Committee

Cummins encourages the Energy Commission to solicit greater participation in future investment plans from the clean transportation industry at large. While Cummins understands the potential for perceived or real conflicts of interest, the active participation in the Clean Transportation Program Advisory Committee or a subset of this Committee of truck and bus OEMs and clean transportation technology providers would greatly benefit the process and ensure optimal information sharing.

Lastly, Cummins encourages the Energy Commission to coordinate its activities with the Air Resources Board, Public Utilities Commission and other relevant state, regional and local government agencies to ensure public funds are maximized and continue to be used to develop, demonstrate and commercialize clean transportation technologies.

Cummins is proud of its collaboration with the Energy Commission and supports the Energy Commission's 2019-2020 Investment Plan Update for the Clean Transportation Program. We look forward to continuing to work with Energy Commission staff to help implement this important program.

Sincerely,

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