



April 20, 2015

California Air Resources Board (CARB)
1001 "I" Street
Sacramento, CA 95814

Re: Sustainable Freight Initiative Discussion Draft

**Clean Transportation
Technologies and Solutions**

www.calstart.org

Board of Directors

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CALSTART

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United Parcel Service

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Trucks, buses, and off-road vehicles must play a significant role in reducing California's greenhouse gas (GHG) and criteria pollution over the coming decades. Technology improvements, cleaner fuels, and system-wide efficiency measures can dramatically reduce both petroleum use and emissions from this sector. However, the significant transformation required to drive GHG and nitrogen oxide emissions down by more than 80 percent will require an extraordinary integration of smart policies combined with sustained public investment in technology development and deployment.

In that context, CALSTART supports and applauds the California Air Resources Board efforts to proactively, and together with industry, define and shape this critical strategy. We believe the sustainable freight process, including the technology and fuels assessments, are vitally important in developing a rapid, realistic and actionable strategy for reducing emissions from heavy vehicles. CALSTART appreciates the opportunity to provide initial, high-level comments at this early stage. The comments below draw on the work we performed for the California Hybrid, Efficient, and Advanced Truck Research Center (CalHEAT) and also on several reports focused on the feasibility of and commercialization plans for zero emission goods movement in the I-710 region.

Move Forward with a Comprehensive, Long-term, and Clear Policy Approach

The freight sector is large and complicated, and transforming this sector will require a comprehensive policy approach:

- **Performance standards and regulations:** Industry and investors need certainty about where state policy is headed. Targets for vehicle efficiency, greenhouse gas reductions, and petroleum reduction can help drive investment. The discussion document also contains mention of several additional regulatory levers that could potentially help drive change. Coupled with public incentives, industry also needs clear, long-term signals of the seriousness of California intent and the potential requirements that may be in place in the future to help inform investment and product strategies.
- **Standards and certifications:** streamlined certification procedures for new technologies are critical to moving new products into the market and will enable rather than unintentionally hindering innovation. Also, with the emphasis on zero-emission outcomes, establishing the charging standards and protocols are desperately needed for heavy vehicles and their large energy storage.
- **Public sector investments:** incentive funding of all types is vitally important for accelerating technology development, demonstration, and deployment in this sector, and as a signal of direction. Incentives should target key needs for zero- and near-

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zero emission vehicle technologies, infrastructure, and low-carbon fuels. It will be equally critical to provide funding for “enabling” sub-systems that provide the stepping-stone capability to reach full zero-emission operations, such as electrified components. Incentives can also be used effectively to demonstrate and also enable system-wide, not just vehicle-based, efficiencies.

We were pleased to see reference to a broad suite of policies, including both “carrot and stick,” in the staff draft. Ensuring coordination and regulatory certainty in both policy development and implementation will be important.

Support a Diversified Portfolio of Technologies

The discussion document states that the end goal is “zero emissions everywhere feasible, and near-zero emissions with renewable fuels everywhere else.” Our work suggests that we will need a diverse portfolio of technologies for the long term. There is no “silver bullet” (including zero-emission battery and fuel cell technologies) that can meet the needs for all vehicle sizes, configurations, and applications. We therefore stress the need to continue supporting near-zero emission technologies such as renewable and lower carbon diesel and natural gas technologies, in addition to other innovative bio- and renewable- low-carbon liquid and gaseous fuels. The CalHEAT report identifies renewable fuels combined with ultra-high efficiency tractors as one of the strategies for line haul to meet the 2050 goals. When then combined with connected and autonomous vehicle technologies in a smart freight system, the total efficiencies and emissions reductions can achieve California’s needs.

Ensure That the End Goals Support and Allow for Actionable Pathways for Success

The draft states that “By focusing on the ultimate technology endpoint (zero emissions) that satisfies all of our air quality goals and supporting needed engineering advances, we can provide the certainty businesses need for long-term planning.” It is useful for stakeholders to understand that this is the vision driving plan development. However, we want to strongly stress the need for structuring phased steps toward meeting these expectations around technology development pathways and timelines.

Our past work on the CalHEAT Roadmap as well as the I710 zero emission commercialization study goes into detail on technology development pathways and enabling technologies. We were pleased to see mention of how “stepping stone” technologies such as series hybrids can directly reduce emissions while also serving as a pathway to zero emission operations.

Vehicle technologies move through sequential stages from concept development to commercial production. A successful progression through developmental stages requires funding, policy and validation support at each stage, or “gate”. The process can be accelerated through intelligent funding, policy and market creation activities, but it is important not to discard stages that lead to products that can be supported in the field. Therefore it is important to set a series of staged, realistic expectations, understand that this is an iterative process, and accept that there will likely be some failed investments



along the pathways to the ultimate goal. Interim stages and goals can be helpful signals and aiming points in such a process.

We look forward to remaining engaged in this process and providing more detailed comments in future workshops and in response to the draft technology assessments. It is clear that the development and implementation of this plan will require long term commitment and substantive involvement from stakeholders. In the near-term increased public investment in clean vehicles, fuels, and infrastructure is needed to maintain momentum.

Sincerely,

Jamie Hall

Policy Director