DATE: December 16, 2016
TO: California Air Resources Board
FROM: Ryan Schuchard, Policy Director
RE: Scoping Plan

Thank you for this opportunity to provide comments on the Discussion Draft for the 2030 Scoping Plan Update dated December 2, 2016 (The Draft). CALSTART supports the overall recommendations made in The Draft and commends the California Air Resources Board (ARB) for offering a comprehensive vision with careful thought to different options, tradeoffs, and interdependencies.

General Strategy

We continue to advocate for a Scoping Plan centered on Cap-and-Trade. Cap-and-Trade provides the highest certainty that California will achieve its climate targets and the greatest flexibility for industry to reduce the emissions needed. Also, staying the course with Cap-and-Trade, compared to switching to other options, creates the most continuity for the many institutions and investors who are essential to achieving California's climate goals, while keeping the option open to add targeted complementary measures. Therefore, with respect to the three main model scenarios presented (p. 86), we favor the first option, "Target Scoping Plan Scenario with Cap-and-Trade."

Overall we agree with the transportation sustainability goals for Vehicle Miles Traveled (VMT), vehicle technology, fuel, and sustainable freight. (pp. 51-52). We also support an enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies and greater use of low-carbon fuels (p. 12) for the 2020-30 period.

Funding

We agree that more predictable and sustained funding is needed for transportation (p. 56). Current levels and the predictability of incentive funding for clean vehicles and fuels are insufficient.

California needs around $650-700 million per year for clean and low-carbon vehicle and fuel incentive funding for at least the next few years.[1] We expect this amount to continue to be needed through around 2025, though the makeup of funding needs will change over this period. We project that funding needs for Light Duty Vehicles (LDVs) will taper and then decline by the middle of the 2020s, while funding needs for emerging Medium and Heavy Duty Vehicles (MHDVs) and advanced fuels will increase during the same period.

The net effect, assuming that low oil prices continue and federal funding and other planned policies remain relatively constant, is that we expect the overall sum of incentive funding required to support California's climate and air quality goals to remain roughly similar to now ($650-700 million annually in today's dollars) through 2025.

Light Duty Vehicles

When the GM Bolt EV and Tesla Model 3 are introduced in 2017, California will enter the era of "EV 2.0," when electric cars with more than 200 miles of range are available for

[1] See CALSTART (2016). California's Clean Transportation Technology Industry: Time to Shift into High Gear.

around $35,000 prior to rebates. Battery prices will continue to drop. As they head for $100/KWh, we can expect long-range batteries to become the norm for average-priced cars. With continued public investment, we expect California to reach the target of 15% of new EV sales by 2025, and then press beyond.

The Draft considers measures that would support these goals and additional LDV ZEV adoption (p. 55). Among these measures, we are the most enthusiastic about reliable purchase incentives and marketing/outreach activities through 2025, as well as continued significant investments in charging and ZEV refueling infrastructure through the whole decade. We would also support investments in more comprehensive and coordinated workplace charging campaigns.

We note a reference to a measure that includes free electricity. We would like to better understand the intent and strategy for such a measure.

We agree with the need to find new pathways for state-level Vehicle Miles Travel (VMT) reduction. Despite gains in vehicle efficiency, we are concerned that continued low gas prices as well as automation technologies may lead to increased VMT which could greatly outstrip GHG reductions made elsewhere.

The current gas tax is problematic since the increasing numbers of ZEVs which we anticipate correspond to a decreasing consumption of gas, and also because the gas tax does not directly price pollution or congestion. We believe that ARB should explore opportunities for a mileage fee that additionally prices pollution (and hence encourages increased ZEVs) and congestion. Such a policy could support development in accordance with SB 375, and key potential concerns could be addressed. For example, the technology exists to transmit annual mileage while keeping other information private, and accommodations could be made for low/moderate income people who have little choice but to commute long distances for work.

Medium and Heavy Duty Vehicles

We have seen much progress with MHDVs. The first generation of ZE transit and early MD last mile goods movement has arrived, which we expect to make way for ZE urban MD and then HD regional delivery vocations. The first iteration of ultra-low NOx (0.02 g/bhp-hr) engines is also now here, with the engine family set to grow and new in-state production systems for renewable natural gas to fuel them coming on line. And we are now seeing the reemergence of hybrid vehicles with significantly improved technology in key MHD vocations, e.g. class 3 panel vans that use high mileage.

With the sufficient public investment, by 2030 we can envision ZEV vehicles in operation to reach 15-20% for transit, 10% for MD delivery, and 25% drayage, while seeing a meaningful start for Class 8 ZEVs in urban settings. At the same time, we also imagine significant growth of ultra-low NOx MHDs fueled by Renewable Natural Gas (RNG).

However, this vision depends on public support for a wide array of technologies during multiple subsequent phases of commercialization, and regulations that are performance-based and technology-neutral. For MHDVs especially, a portfolio of advanced tech is needed across ZE and NZE categories, driven by a ratcheting of standards for combined GHG, NOx, and PM reduction.

The Draft outlines current goals for Advanced Clean Transit and Last Mile Delivery (p. 83). We generally believe technology is on track to enable these plans, but incentive support is needed to drive purchases. We encourage ARB to allow incentive funding in conjunction with the regulations, at least in the near-term and for early movers.

Additionally, achieving MHD ZEV goals will be highly dependent on the timely establishment of measures to rate-base (or otherwise publicly-fund) MHD charging infrastructure up to the make-ready stub, and to provide commercial electric vehicle rates with significantly increased "carrots" relative to the "sticks" with demand charges. This will require multiple agencies, in particular, ARB, California Public Utilities Commission (CPUC), California Energy Commission (CEC), GoBiz, and regional air districts to move forward in close coordination.

We agree with The Draft that further development of Vehicle-Grid-Integration (VGI), "charging control and optimization," and the use of storage as a grid service are important. However, a limiting factor to further development of these technologies is a low volume of MHD EVs on the road, which translates to limited empirical study. More vehicles need to be deployed in order to provide a larger base of data on use cases. In other words, it is less the case that there is an obvious VGI value proposition which will drive the market for vehicle purchases, and more the case that more vehicles on the road are needed to enable more experimentation with VGI.

In that light, we encourage ARB to steadfastly commit to increasing incentives at the point of commercial vehicle purchases, as well as to work carefully with partner agencies, notably the CPUC, to closely monitor the progress and the interdependencies between vehicle and infrastructure development. As part of this, we encourage increased investments in commercial fuel cell vehicles, which are indeed electric vehicles, yet were not included in the CPUC's recent proposed decision for the SB 350 proceeding that directed utilities to file applications in support of widespread transportation electrification.

Finally, as commercial ZEV deployment volumes increase, more policy support will be needed to ensure that workshops and workforces have the sufficient training and equipment to provide after-sales service and parts support to fleet vehicles. In order for fleets to continue to invest in commercial ZEVs, training for service and support as well as parts centers will need to significantly expand.

Clean, Low-Carbon Fuels

A strong Low Carbon Fuel Standard (LCFS) is a centerpiece of California's climate commitments, both in terms of being a vital tool to achieve the Golden State's own emissions reductions, and as an example and an "anchor" policy for other states to follow and potentially connect into. The Draft contemplates reduction targets for the LCFS between 18-25%, with the higher levels coming into play for the scenarios that do not have Cap and Trade. We believe that the LCFS, which has proven to be an effective inducement for transit agencies and fuel producers, should have an aggressive target at the high end of that range regardless of the scenario.

We support the goal of 50% low emissions diesel by 2030 (p. 56). This goal, which is focused on diesel consumed, should be matched with policies that drive the production of clean, low carbon fuel to California, with the aim of making the state a larger base of

production. However, doing so will require that in addition to a regulatory target for the use of fuels, that the state makes higher levels of predictable incentive funding for in-state siting which encourages off-take agreements, and that the states takes measures to thoroughly understand and address barriers to in-state investment.

Finally, as California is the #1 source of biomethane among US states, it must continue to commit to develop RNG. We believe that the state should seek to develop RNG specifically as a transportation fuel, especially for the heaviest-duty vehicles in the San Joaquin Valley. We enthusiastically support R&D and pathways to market for dairy digesters, including pipeline injection and interconnection (p. 69) as well as the development of transportation fuel production at digestion facilities to generate renewable transportation fuels (p. 75).

Automated Vehicles (Not in The Draft)

We believe that a rapid increase in the deployment of automated vehicles over the next 5-10 years is inevitable, and this may profoundly affect progress against the goals of The Draft. Automation may foreseeably lead to improved fuel economy, access, and safety. However, successful automation should also make driving cheaper and more convenient, which could lead to dramatically increased VMT, congestion, and new sprawl. While it may be tempting to take a "wait-and-see" approach to automation since technologies are new and the future is uncertain, we believe that it is important to define what goals automation should serve and what risks it must avoid early on in order to start guiding the marketplace.

(end)