

May 26, 2020

Clerk's Office  
California Air Resources Board  
Board 1001 I Street  
Sacramento, CA 95812

*Submitted via on-line portal*

Re: 30-day changes to the Proposed Advanced Clean Truck Regulation

Dear Chair Nichols and Honorable Board Members:

The Strong Plug-in Hybrid Electric Vehicle (SPHEV) Coalition's advocacy team appreciates this opportunity to SUPPORT the proposed Advanced Clean Truck (ACT) Regulation and provide feedback for CARB staff consideration on the 30-day changes. This letter largely supports the proposed draft regulation order as amended and provides some suggested modifications for your consideration.

The Strong PHEV Coalition established July, 2019 represents a group of over 20 electric car and truck experts with over 300 years of collective EV professional experience representing most aspects of the EV industry including academia, electric vehicle manufacturing, research, government, utility EV programs, advocacy, EV fleet / charging station management, and consulting. Our members are available to provide technical and market information in support of CARB's staff analysis.

With the specific goal to support California's and the United States' efforts to reduce GHG emissions, our coalition educates regarding PHEVs, especially Strong PHEVs (i.e., mid-range to long-range PHEVs) that drive most of their miles powered by clean electricity. The Coalition's advocacy team also advocates for regulations and incentives that encourage the strongest PHEVs. We believe the ACT regulation, once adopted, will have a large impact on the rest of the world. Thus, it is important for the ACT regulation to send the correct signals to the world's truck makers regarding PHEVs and especially the need for Strong PHEVs.

We believe that regulations and incentives have not tried hard enough to encourage mid-range to long-range plug-in hybrid cars and trucks especially those that can achieve 90% to nearly 100% of their annual miles using electricity. We believe mid-range PHEV cars and trucks and especially long-range PHEVs, in combination with battery electric cars and trucks, are better in the near- and long-term than a scenario with only BEVs.

- A combined strategy (Strong PHEVs + BEVs) is a faster path for the world to adopt vehicles with zero greenhouse gases and a way for regulators to hedge their bets on the future.<sup>1</sup>
- Strong PHEV trucks are a better solution (because they are dual fuel) to survive in long-term catastrophes such as wildfires, earthquakes, hurricanes, floods, windstorms, riots, and public service power shut offs. This is especially important for trucks used by public and private utilities, government, and other essential services (e.g., delivery, refuse and drayage). Strong PHEVs can also provide back-up power and help provide resiliency to the electric grid.
- Strong PHEV trucks are a better solution for commercial fleets and personal vehicles that are renters and change home-base locations frequently.
- Strong PHEV trucks are a better solution for owners of used trucks who are often low-income independent contractors.
- Strong PHEV trucks have much less cost impact to the grid and have lower demand charges.
- Strong PHEV trucks are a better option for the portion of the world that covers small and mid-size towns where trip distances (when needed) exceed urban megacity regions and in regions with extreme cold weather.
- Strong PHEV trucks will have important long-term adopters globally regardless of their cost and at least a few truck makers will want to sell strong PHEVs.
- Strong PHEV trucks as they age will have higher and higher annual electric mile percentages because their total annual miles decrease.<sup>2</sup>
- Because of the large numbers of personal, non-commercial vehicles in class 2b-8 trucks (over 50% of class 2b)<sup>3</sup>, the above points apply beyond commercial fleets.

We are pleased to provide CARB with the following specific comments on the 30-day change proposal. The attachment to this letter provides justification for our recommendations below and sets the stage for future discussions with CARB and industry participants. The Strong PHEV coalition's advocacy team:

- Supports the ACT's 30-day change proposal for PHEVs (NZEVs) to be eligible to generate credits from 2031 to 2035 if the truck has an all-electric range per charge (AER) of 75 miles, if this range is revisited with five years with an assessment of real-world data. A 75-mile AER is a good starting point for ACT, but it may not be appropriate in the long-term for all duty cycles and applications within the broad category of Class 2b -8 vehicles.

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<sup>1</sup> Long-range PHEV trucks with 90% of annual miles electric and 10% existing biofuels are likely a long-term solution.

<sup>2</sup> The battery's range will also go down but not as much as the total annual miles.

<sup>3</sup> Almost 30% of class 2b-8 trucks are non-commercial trucks for personal use.

- Requests the ACT's 30-day change proposal for PHEVs (NZEVs) to be eligible to generate credits be extended from 2035 to 2045 with a 75-mile AER in order to better match the upcoming ACT fleet rule which is proposed out to 2045 and because most fleets need the flexibility provided by a dual fuel PHEV during catastrophes (e.g., public and private utilities, government, drayage, step vans, last mile delivery, refuse, school buses, box trucks and similar fleets).
- Requests the ACT's 30-day change for PHEVs (NZEVs) to be eligible to generate credits be extended past 2045 provide the PHEV has a 75-mile AER and is only capable of using or can be shown to use only an ultra-low carbon fuel for its secondary propulsion system (e.g. engine or fuel cell.)<sup>4</sup> This approach shows a commitment to a zero carbon approach, does not pick winners or losers, allows for the creativity of engineers and scientists to be unleashed, better positions California to lead the world and recognizes the importance of a dual fuel approach for some applications especially during catastrophes.
- Requests the ACT's 30-day change proposal capping the amount of credits in a class from PHEVs (NZEVs) be modified. Specifically, the proposed limit of 50% of class 2b-3 and class 4-8 straight truck credits from NZEVs should be increased to 75% especially in the years after 2030 when NZEVs must have a 75-mile AER.
- Believes it is important for the ACT regulation crediting system to encourage truck makers to produce and fleets to use plug-in hybrid electric trucks that can provide more than 75% of their miles from an electric off-board power source through a new after-the-fact credit system based on proving that up to 95% of annual miles are all-electric.
- Believes that CARB staff's proposed survey questions of fleets should add additional questions in order to better understand and collect data on fleet services, the communities' trucks serve and their use cases to ensure accurate understanding of all-electric range (AER) potential of PHEV trucks, the need for dual fuel PHEV trucks for catastrophes and how battery electric and PHEV trucks can be used.
- Requests that the ACT regulation also include a voluntary method to collect real-world data from fleets and not only rely on survey data.
- Supports the ACT's 30-day change proposal to increase the stringency of the production requirements from 2024 to 2035.

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<sup>4</sup> Examples of ultra-low carbon fuel might include advanced biofuels, renewable diesel, renewable gasoline, renewable natural gas or renewable hydrogen.

- Supports the ACT's 30-day change proposal to increase the weight class credit modifier for class 2b-3 and Class 7-8 tractor vehicles.

Finally, the Strong PHEV Coalition defines a Strong PHEV as follows:

- *A Strong PHEV is a mid-range PHEV and long-range PHEV (car, truck or commercial vehicle) that drives most, or almost all, of its average annual miles from low-emission electricity. The second propulsion system can be an internal combustion engine or fuel cell and should be capable of using a very low carbon fuel. In addition, strong PHEVs should be safe and road worthy in any driving mode, mostly eliminate daily cold starts and be tested for performance and emissions on the most real-world, established test cycle. A Strong PHEV's engine should rarely or never come on when there's ample battery state-of-charge. A long-range PHEV should have zero to minimal - engine maintenance for the life of the vehicle. A commercial PHEV should be able to use a common established connector for DC charging.*

Thank you for your commitment to zero-emission mile technology and the development of the ACT regulation and for the opportunity to comment. Our coalition looks forward to dialogue.

Sincerely,

Bob Graham and Chelsea Sexton  
Acting Co-Chairs of the Strong PHEV Coalition

Cc: Tony Brasil, Jack Kitowski, Steve Cliff, Richard Corey

Attachment

## Attachment 1.

### Justification for the Strong PHEV Coalition Advocacy team's recommendations

**Need to reward PHEV trucks that can provide 75% to 100% of their miles electric**  
The Strong PHEV Coalition's advocacy team believes it is important for the ACT regulation crediting system to encourage truck makers to produce and fleets to use plug-in hybrid electric (PHEV) trucks that can provide more than 75% of their miles from an electric off-board power source.

However, we are not suggesting changing the progressive crediting system described above. Instead we are proposing that truck OEMs earn additional credit if they can show after being on the road for a while that they sold electrify between 75 and 95% of their annual miles (e.g. using telematics, on-board diagnostic devices or data recorders). Another option would be for fleets to earn additional credit in the upcoming ACT fleet requirement rule for doing the same thing. Providing bonus credits to fleets has the added advantage of encouraging the charging of PHEVs. We like both approaches because the collection of real-world usage data proves that electric miles occurred.

While it is unknown whether Strong PHEV trucks that can electrify almost all of their miles will be produced, we believe that the experience of the Advanced Clean Cars (ACC) regulation shows that CARB should try to encourage Strong PHEV trucks to be manufactured. The ACC regulation's crediting system encouraged production of the PHEV from BMW<sup>5</sup> with 126 mile all electric range (AER). Also, PHEVs such as the 1<sup>st</sup> and 2<sup>nd</sup> generation Chevy Volt PHEVs proved they can electrify more annual miles than some short-range, all-electric cars, and CARB's crediting system successfully encouraged this type of PHEV. Similarly, the Strong PHEV Coalition's advocacy team believes CARB should take a similar approach in the ACT regulation to encourage PHEV trucks that can electrify 75% to 95% of their annual miles.

### Need for Strong PHEV trucks beyond 2030

The Strong PHEV Coalition's advocacy team respectfully requests that the sunset date for new PHEVs to earn credits for regulated truck manufacturers be extended 10 years - from 2030 to 2045 for PHEV trucks with a 75-mile AER and past 2045 if also linked to an ultra-low carbon fuel for the second propulsion system. We have several reasons for our request:

- ***Because of the urgency of the climate and air pollution crises worldwide, it is important to take an all-hands-on-deck approach and have multiple types of***

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<sup>5</sup> The ACC regulation allows a certain type of long-range PHEV (called a BEVx) to earn extra credit and count toward meeting BEV requirements rather than counting as a PHEV.

### ***zero-emission truck technologies including traditional PHEVs and Strong PHEVs***

- Strong PHEVs offer more options for consumers which means a faster path to zero CO2 worldwide
- Many areas of the world are relying on CARB's leadership to commercialize new zero carbon solutions to transportation such as Strong PHEVs
- Between 2030 and 2045 the requirements on eligible PHEVs could be very stringent in order to encourage the strongest types of PHEVs
- The longer-term goal should be PHEVs with 100% zero carbon electricity generation for almost all of their electric miles, and advanced biofuels or other ultra-low carbon fuel for the remaining miles
- ***Allowing the Strongest PHEV trucks to be eligible after 2030 provides a better solution for commercial vehicles that provide services during major catastrophes and daily emergencies***
  - Because Strong PHEV trucks are dual fuel that means they are particularly suited to provide services for society to recover from wildfires, earthquakes, hurricanes, floods, riots, and other catastrophes, as well as provide needed services in more typical daily emergencies (e.g. police, ambulance, fire, power outage recovery)
- ***Allowing the Strongest PHEV trucks to be eligible after 2030 helps low-income truck drivers***
  - We believe the used electric truck market is an important consideration in developing the ACT regulation, as many low-income truck drivers use or own used trucks. As such, the flexible nature of Strong PHEV trucks makes them an important solution for low-income professionals who rely on used trucks
  - For used trucks which typically have lower annual mileage, Strong PHEV trucks can provide an even greater percentage of annual electric miles than when they are new.<sup>6</sup>
- ***Strong PHEV trucks are an excellent solution for many parts of the world and a 20-year commercialization period (maybe longer) is needed to scale-up this technology***
  - In addition, we believe that at least some truck manufacturers will find a better business case to reach scale and get higher levels of vehicle adoption by producing both PHEV trucks and battery electric trucks than only producing battery electric trucks. Such a result is good for truck maker competition, for consumers and the planet
- ***Strong PHEV trucks are an excellent solution for the unique needs of rural areas***

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<sup>6</sup> As explained in footnote 2, we believe that fewer miles due to battery degradation will be less than reduction in total miles that occurs as the truck ages.

- Strong PHEV trucks are potentially a better option for the portion of the US and other countries that cover small and mid-size towns where trip distances (when needed) exceed urban megacity regions
- ***Allowing the Strongest PHEV trucks to be eligible after 2030 should result in less need and cost for away-from home charging stations for commercial fleets***
  - Strong PHEVs do not need public charging and can rely on fleet-only charging which reduces the societal cost (e.g., grid upgrades, public incentives for charging stations)
  - Strong PHEVs charging in fleet applications have less cost to the grid because they charge at lower levels than battery electric trucks.

### **Need for additional questions on the mandatory reporting requirements on fleets**

The Strong PHEV Coalition’s advocacy team believes that CARB staff’s proposed questions to fleets need improvements and additions especially to better understand fleet services, the communities that trucks serve and their use cases. Specifically, we recommend asking fleets:

- whether their current vehicle is used to help society recover after a catastrophe whether their current vehicle is used in daily emergency uses (e.g., ambulances or power outages, fire/ police services)
- about the amount of average daily and annual miles per category of vehicle and monthly hours of operation per category of vehicle
- the percentage of short trips vs long trips by category of vehicle
- how many vehicles in single shift, double shift or triple shift operations?
- for an estimate of the percentage of daily or annual miles within disadvantaged communities.

### **Need for some use of non-survey data collection tools to get real-world data**

The Strong PHEV Coalition’s advocacy team respectfully requests that CARB come up with a method to collect real-world data from fleets and we are open to the exact solution. Perhaps, fleets who participate and provide such data from on-board diagnostics, telematics or other data recorder devices could be rewarded with extra compliance credits in the upcoming ACT regulation on fleets. Whatever the solution, we believe that real-world data is more important in most cases than the survey data questions proposed by CARB in the August 21 workshop, and should be encouraged.