**September 20, 2019**

Craig Duehring
Paul Arneja
California Air Resources Board
Sacramento CA 95814

Sent via e-mail

**Re: Plug-in Hybrid EV provisions in the draft Advanced Clean Trucks regulation**

Dear Mr. Duehring and Mr. Arneja

On behalf of the Strong Plug-in Hybrid Electric Vehicle (PHEV) Coalition, we are pleased to submit the following comments regarding the August 21 workshop on the Advanced Clean Truck (ACT) regulation. 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 truck and car manufacturing, research institutes, government, utilities, advocacy groups and NGOs, EV fleet / charging station management, and consulting.

Our coalition educates about PHEVs and advocates for regulations and incentives supporting them- especially Strong PHEVs that drive most of their miles powered by clean electricity. 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 are pleased to provide CARB with the following specific comments. 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:

- Strongly supports the new ACT proposal for a sliding scale of PHEV credits as shown on slides 22 and 23 in the August 21 workshop presentation.

- Believes it is important for the ACT regulation crediting system to encourage truck makers to produce —and fleets to use— plug-in hybrid electric (PHE) trucks that can provide more than 75% of their miles from an electric off-board power source.

- Requests that the sunset date for new PHEVs to earn credits for regulated truck manufacturers be extended 10 years – from 2030 to 2040, especially for Strong PHEVs.

- Believes that CARB staff's proposed survey questions of fleets should focus attention 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 and how e-trucks can be used.

- Requests that the ACT regulation also include a method to collect real-world data from fleets and not only rely on survey data.

- Recommends a higher minimum floor than the 10 mile AER shown for 2021 to 2023 production years (see slide 38 in the ACT workshop deck for August 21) if raising it does not negatively impact the progressive crediting system.

- Believes that, as a way to encourage stronger PHEVs, that manufacturers of Strong PHEVs in truck class 2b should be able to generate and use or sell these credits for compliance in either the Advanced Clean Cars regulation or the ACT regulation.

Thank you for your commitment to zero-emission mile technology and the development of the ACT regulation and for the opportunity to comment on the August 21 workshop. Our coalition looks forward to dialogue with CARB staff.

Sincerely,

Chelsea Sexton
Acting Chair, Strong Plug-in Hybrid EV Coalition

Cc: Tony Brasil, Jack Kitowski, Steve Cliff

Attachment

**Attachment 1.**

**Justification for the Strong PHEV Coalition's recommendations**

**Support for the progressive crediting system on Slides 22 and 23**
The Strong PHEV Coalition strongly supports the new proposal for a sliding scale of PHEV credits as shown on slides 22 and 23 in the August 21 workshop presentation. This progressive system is a dramatic improvement over the prior proposal for a flat credit system. Because PHEVs with very large battery packs can electrify most of annual average miles driven during the course of a single day, they deserve increasing compliance credits.

**Need to reward PHEV trucks that can provide 75% to 100% of their miles in electric mode**
The Strong PHEV Coalition believes it is important for the ACT regulation crediting system to encourage truck makers to produce and fleets to use plug-in hybrid electric (PHE) 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 the trucks 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 PHE 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 PHE trucks to be manufactured. The ACC regulation's crediting system encouraged production of the PHEV from BMW[1] with 126 mile all electric range (AER). Also, PHEVs such as the 1st and 2nd 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 believes CARB should take a similar approach in the ACT regulation to encourage PHE trucks that can electrify 75% to 95% of their annual miles.

**Need for Strong PHE trucks beyond 2030**

[1] xxx

The Strong PHEV Coalition respectfully requests that the sunset date for new PHEVs to earn credits for regulated truck manufacturers be extended 10 years – from 2030 to 2040, especially for Strong PHE trucks. 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 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 2040 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 for the remaining miles
- ***Allowing the Strongest PHE trucks to be eligible from 2030 to 2040 provides a better solution for commercial vehicles that provide services during major catastrophes and daily emergencies***
    - Because Strong PHE 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 PHE trucks to be eligible from 2030 to 2040 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 PHE trucks makes them an important solution for low-income professionals who rely on used trucks
- ***Strong PHE trucks are an excellent solution for many parts of the world and a 20 year commercialization period (2020-2040) 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 PHE 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 PHE trucks are an excellent solution for the unique needs of rural areas***
    - Strong PHE 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 PHE trucks to be eligible from 2030 to 2040 should result in less need and cost for away-from home charging stations for commercial fleets***
    - Strong PHEVs don't 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 can charge at lower power levels than battery electric trucks.

**Need for additional questions on the mandatory reporting requirements on fleets**
The Strong PHEV Coalition believes that CARB staff's proposed questions to fleets need improvements and additions especially to better understand fleet services, the communities trucks serve and their use cases. Specifically we recommend asking fleets:

- whether their current vehicle is used to help a community recover after a catastrophe, and/or is used in daily emergency uses (e.g., storm or power outages, fire/police services)
- the number 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
- 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 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.

**Need for a higher minimum all-electric range (AER) for PHEVs**
The Strong PHEV Coalition respectfully requests a higher minimum floor than the 10 mile AER shown for 2021 to 2023 production years (see slide 38 in the ACT workshop deck for August 21) if raising it does not negatively impact the progressive crediting system presented at the August 21 workshop. As our name suggests, we favor strong PHEVs. We also believe that truck manufacturers may want to start with milder PHEVs with less AER, comparable to what car manufacturers did with PHEVs. However, given the current and expected reduction in battery prices, starting with 10 mile all electric range seems too low.

**Need for to encourage one class of strong PHE trucks with compliance flexibility**
The Strong PHEV Coalition believes that as a way to encourage stronger PHEVs that manufacturers of Strong PHEVs in truck class 2b should be able to generate and use or generate and sell these credits for compliance in either the ACC regulation or the ACT regulation. We are open to the details of how to do this, but believe that this is a simple way to encourage Strong PHEVs that are substantially better than PHEVs at the lower end of the AER scale.