

PORSCHE

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California Air Resources Board
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Comments to the Second Public Workshop for Future Amendments to the California Advanced Clean Cars II Regulation

Ms. Scodel,

Porsche Cars North America, Inc. (PCNA) appreciates the opportunity to submit the following comments to the California Air Resources Board (CARB) regarding potential future amendments to the Advanced Clean Cars II (ACC2) suite of regulations. These comments are in response to early-stage concepts communicated at the second public workshop in June 2024 and are submitted by PCNA for itself and on behalf of Porsche AG (collectively, "Porsche"). In addition to these comments, Porsche also participated in the development of comments submitted by the Alliance for Automotive Innovation (AFAI) and supports those positions.

Porsche is an original equipment manufacturer of light-duty vehicles and trucks and imports a variety of premium electrified and advanced combustion vehicles for sale in the State of California and other Section 177 States. As Porsche does not currently market medium-duty vehicles, these comments are primarily focused on topics related to light-duty requirements that Porsche vehicles will be subjected to.

Porsche appreciates staff presenting their updated concepts for potential ACC2 amendments at the second public workshop. As stated in our previous letter in January, this early dialogue is helpful and provides stakeholders with the opportunity to generate constructive feedback and technical information that can help support the Board's review and approval projected to take place in CY2025.

The importance of aligned and achievable Federal and State regulations.

Since CARB's first workshop in late 2023, Federal policies across multiple agencies have finalized broad pollution and greenhouse gas reductions and stringent fuel economy increases through 2032. Each of these Federal programs, while being technology neutral, estimate that vehicle electrification will increasingly become the predominant technology pathway needed to achieve compliance. As Federal programs regulate the entirety of US sales, the Environmental Protection Agency's (EPA) Multipollutant Rule (MPR) and National Highway Traffic Safety Administrations' (NHTSA) Corporate Average Fuel Economy (CAFE) updates the stringency of requirements for vehicles sold nationwide, including vehicles marketed in California and other Section 177 States.

Concurrently, those same vehicles sold in California and Section 177 States will simultaneously be regulated by California's ACC1 and ACC2 regulations. As illustrated below in Figure 1, these parallel Federal and State programs result in a multidomain, layered regulatory construct comprising six unique and independently managed regulations. This overlapping structure creates inherent backstops within the system such that changes to any single regulation would be unlikely to result in an instantaneous backslide in emissions performance. Federal and State policies are now generally pulling in the same direction with similar environmental goals, each of which are increasingly leveraging electrification as the predominant, if not mandatory (i.e., ZEV), means for compliance.

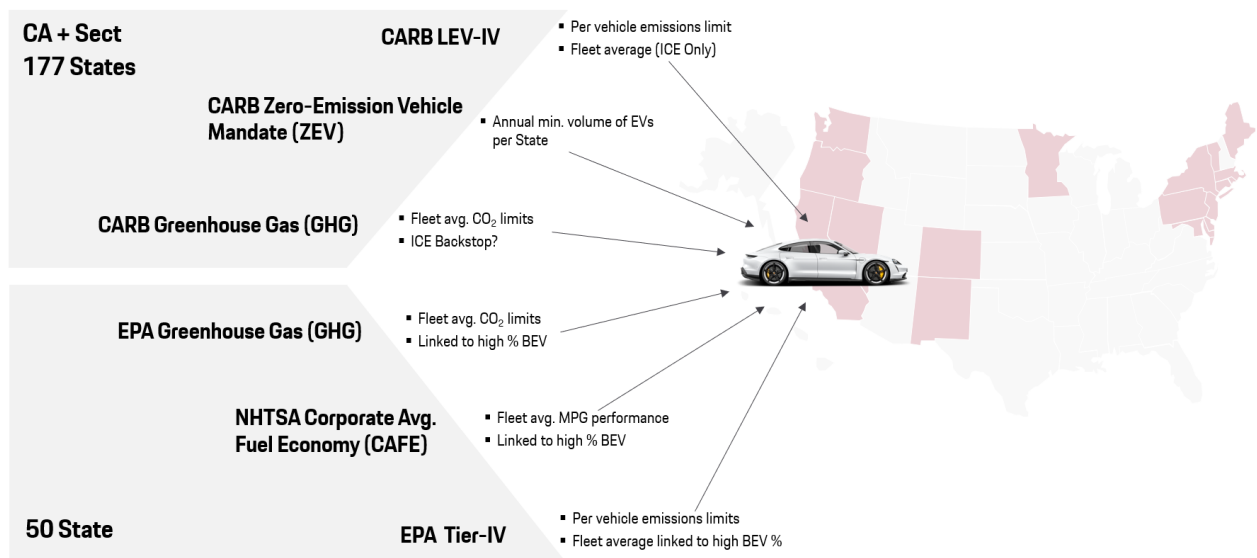


Figure 1 Overlapping and parallel Federal and State regulatory control of vehicles marketed in California and Section 177 States

Nevertheless, each of these programs contains a myriad of details in their structure and implementation which can create complications for managing compliance. Manufacturers such as Porsche must account for the unique variances between these six programs when planning a compliant portfolio of future products and technologies. Minimizing these

differences is the key to reducing unnecessary complexity and enabling more efficient planning. Manufacturers coming to market with a nationwide fleet of low emission and electrified products should count on the ability to efficiently achieve simultaneous compliance across the range of Federal and State regulations without getting distracted by conflicting details which have minimal bearing on policy outcomes. As reflected throughout AFAl comments, and reiterated by Porsche, alignment is a central principle that should guide the development of these ACC2 amendments and form the basis for CARB's ACC2 GHG proposal.

This window for amending ACC2 is an important opportunity to drive comprehensive alignment with finalized Federal standards and reduce unnecessary complexity. Manufacturers are in the midst of delivering broad portfolio transformations towards electrification and face enough complexity with technology development, supply chains, infrastructure challenges, and recent consumer adoption headwinds. Streamlining the regulatory environment through these amendments would be a positive outcome which would help manufacturers focus efforts to bring products faster to market and at a lower cost for consumers.

Given the central role of electromobility in Federal and State policies, robust policy support remains important.

With the importance of electrification now being clearly solidified within Federal and State regulations, it is more important than ever to ensure continued growth of EVs in the marketplace. Federal and State support for EVs and EV charging has a proven track record at driving consumer interest and market growth, however the gains in EV marketshare are facing recent headwinds and uncertainty. AFAl's most recent Q1 2024 nationwide sales data, shown below in Figure 2, highlights recent pullbacks in the momentum of EV sales growth. Interest in electrification remains positive, and Porsche, like all OEMs, is constantly assessing local market conditions and identifying opportunities for continued electrification growth. Manufacturers have and will continue to bring an increasing range of EV products to market with a wide variety of performance, utility and price. Consumers have never had as much choice as they do today. Nevertheless, the data illustrates that consumers continue to face challenges in EV adoption, be it continued high costs or frustration with inadequate, or underperforming, charging infrastructure. Regardless of the reason, monitoring the nationwide EV sales performance and identifying more ways to continue robust policy support clearly remain important.



Figure 2 Nationwide EV marketshare (Alliance for Automotive Innovation, 2024 Q1 Electric Vehicle Quarterly Report)

Despite the recent challenges in broad adoption, California’s marketshare for new light-duty EV sales continues to lead the nation. This success reflects the State’s long-standing support for EVs and investment into charging infrastructure. However, this sales success continues to not be shared across many other Section-177 ZEV States. Regardless of nationwide tax incentives, ubiquitous availability of EVs, vastly increased portfolio offerings, and broad consumer awareness, sales rates in many ZEV states have simply been unable to breakout of single-digit marketshare, in some cases even lagging nationwide averages. The first compliance year for ACC2 ZEV begins in less than six months with the requirement for each manufacturer to achieve 35% marketshare of EVs and advanced PHEVs. While near-term flexibilities will be helpful, given the restrictions and caps on use, these are likely to be quickly overwhelmed early in the program due to the rapid increases in year-over-year minimum annual EV sales. Porsche recognizes that CARB has so far not included a review of ZEV requirements in workshop materials. Nevertheless, Porsche recommends that CARB continue with efforts to monitor progress with ZEV compliance in California, and across every ZEV state as the regulation kicks off under ACC2. In addition, each ZEV State must continue to find programs and policies that will ignite consumer interest and drive rapid market growth of EVs on par with the requirements that they have adopted. Programs must be of sufficient scale and with sustained support to quickly bring marketshare in all ZEV states near that of California. Furthermore, coordinated monitoring of infrastructure deployment (and reliable operation), and other supplemental policies that are critical to the success of ZEV adoption.

Adoption of California standards by Section 177 States remains complex and dynamic.

In the previous workshop follow-up letter to CARB, Porsche highlighted possible challenges associated with compliance planning due to States entering and exiting California regulations (under Section 177) during the ACC2 timeline. Porsche continues to recognize that each State must account for statutory lead time in terms of earliest start dates, and that States, for any reason, may choose to exit California standards at any point in time, or in some predetermined point in the future (e.g., 2032). Porsche had provided several recommendations to CARB following the first workshop to

formalize regulations to help provide certainty around this varying adoption or exit timelines. Understanding that these points may be addressed in future draft regulatory language, Porsche nevertheless reiterates those points below for reference.

1. Formalize flexibilities for earning credits in State implementation “gap” years.

As a program flexibility, provide regulatory certainty for manufacturers to earn credits in States that are between applicable California regulatory programs.

2. Align the duration of available flexibilities with program start dates in State implementations in order to provide equal duration of flexibilities.

For program flexibilities that are associated with specific model years, determine if the availability of those flexibilities should rather be in relation to program start years in order to ensure that manufacturers can fully utilize flexibilities over the same total number of model years.

3. Develop credit pooling flexibilities for overcompliance in States that are exiting California regulations.

For manufacturers with credit balances in States that are exiting California regulations, CARB should consider providing the opportunity for over-compliance values to be shifted into other States that will be continuing with California standards.

4. Develop credit/deficit end-of-program management provisions for States exiting California regulations.

For manufacturers who may have deficits in States that are exiting California standards, ACC2 regulations should implement measures that provide manufacturers with the same duration of deficit management as allowed in California and other States continuing with the regulations.

5. Ensure CRDT is maintained to provide for full and comprehensive support of ACC2 reporting.

Update CRDT for complete and comprehensive ACC1 and ACC2 reporting for the MY2026 model year and beyond.

Comments specific to potential amendments to ACC2 Zero Emission Vehicle Standards for Model Years 2026 and Later

In addition to supporting comments submitted by the AFAI, Porsche introduces some additional points below and reiterates several points outlined in Porsche's January letter. Porsche recognizes that staff may already be considering these topics and that the points may simply not have been included in the most recent workshop.

1. Porsche recommends delaying battery labeling requirements until at the earliest the 2027 model year.

Porsche appreciates CARB's review of the battery label requirements and concurs with the agency's assessment that the vehicle, battery pack, and battery module label do not need to be the same. This is due to the modular nature of battery cells and packs being used in different vehicles that renders use of a single label impracticable. Given the range of open points being discussed, and that the 2026 model year vehicles can start production as early as January 2025, any amendments to the battery labeling regulations would not be in effect in time to meet start of production. As such, the requirements for labeling should be delayed until at least the 2027 model year. Additional delays may be necessary depending on the timing of final regulatory language. Such a delay would have no negative environmental impact on the ACC2 program as the labeling is intended to support end-of-life recycling which is unlikely to start in volume for several decades after the vehicles are produced.

Recommendation:

Delay applicability of the battery labeling requirements to a model year following completion of final amended regulatory text, which at the earliest could be model year 2027.

2. Porsche recommends aligning updates to the Environmental Performance Label with EPA to produce consistent, meaningful information for consumers.

Porsche appreciates CARB's inclusion of BEV labeling survey results in the recent workshop. Based on customer feedback, Porsche concurs that highway range is an important data point for consumers considering the purchase of an EV. However, Porsche is not confident that consumers would seek out or find useful information on 'worst case' range. It is unclear what condition "worst case" would be seeking to replicate, if the same condition would be equally applicable to all EV technologies, and whether "worst case" is a condition experienced enough to be meaningful to drivers. At its core, fuel economy labeling, and by extension EPL, is intended to provide an "apples-to-apples" comparison of vehicles to help consumers differentiate between otherwise similar models. It is unclear if the range of different EV drive motors, batteries, and other electrified systems would have the same "worst case" to make the comparison meaningful or consistent with the purpose of labeling. This would likely lead to more customer confusion and not fully reflect the performance of all the variations on EV drive and battery technologies. Using tailored worst cases for each car would also fail to provide the normalized comparison between models.

Porsche would also like to further discuss the charge rate metrics mentioned. Porsche recognizes value in informing customers of the ability for vehicles to charge at high rates, and more importantly, to maintain the high rate of charging. However, Porsche also wants to ensure that the already burdensome testing regime of BEVs does not become even more burdensome by including tests merely to create this additional label metric.

Furthermore, EPA's MSTRS was charged with also reviewing the label and label information for BEVs. Prior to finalized regulatory updates to the EPL, Porsche encourages CARB to participate in this process in order to arrive at a common, harmonized label between the two agencies. This would ensure that both labels are consistent, avoids creating

confusion, and does not proliferate testing or analysis unnecessarily. Given the proliferation of online range surveys and non-standardized characterization of EVs, it is important that CARB and EPA are aligned and present a consistent message to consumers on performance.

Finally, Porsche reiterates the position that CARB should seek engagement with the Federal Trade Commission to ensure that use of new CARB specific range and/or charging information comports with advertisement guidelines under 16 CFR 259. Maintaining alignment of information between a future EPL and EPA would reduce the potential for CARB specific information to be viewed as conflicting or misleading compared to EPA data.

Recommendation:

Align EPL strategy and updates with EPA MSTRS committee findings and possible future rulemaking. Ensure a single labeling strategy to deliver information that is valuable for consumers without proliferating confusion.

3. Porsche recommends updating Incorporation by Reference of external standards.

Porsche encourages CARB to review and update their references to external test procedures and specs to the latest versions of any referenced standard. CARB should furthermore add language to address any backward compatibility issues to avoid existing systems needing sudden updates. For instance, incorporating the latest SAE J1979DA update immediately might cause substantial software or even hardware changes. In this case, Industry might need lead time to implement potential changes.

4. Porsche recommends ISO 12906 and Interoperability assessments led by CharIN.

Porsche recognizes the importance of a positive EV charging experience and that avoiding charging issues is essential to the long-term viability and consumer acceptance of these vehicles. Porsche supports efforts to ensure interoperability of vehicles and charging systems. Given the ongoing industry efforts aimed at ensuring interoperability, it is unclear if this activity needs to be codified through regulation. Nevertheless, given CARB's consideration of this topic, Porsche recommends that CARB use ISO12906 to evaluate charging rather than SAE J2953/4. The ISO standard will be finalized in a matter of weeks and many OEMs and EVSE suppliers have already committed to following this standard. Regarding testing of interoperability, the non-profit CharIN group has proposed test processes that are more streamlined and less resource intensive than SAE J2953/3 and Porsche would recommend these CharIN procedures over J2953/3. This recommendation is specific to DC charging which comprises the majority of public charging sessions. Porsche maintains that interoperability for AC charging will be less of a priority given that the majority of AC charging occurs at home.

5. Porsche supports rounding of SOH and other data for ease of display.

CARB has proposed to round customer-facing State of Health to the nearest whole number. Porsche supports this proposal as it simplifies the display of complex data. Porsche recommends ALL customer facing battery data be also rounded, for example, charging rate. This will allow harmonization and simplified communication.

6. Porsche reiterates the recommendation to CARB review the phase-in timing for Data Standardization requirements 1962.5.

In the January 2024 letter following the first workshop, Porsche had recommended CARB reconsider and extend the phase-in timing for data standardization requirements in 1962.5. As noted in the earlier letter:

Porsche recognizes the value of this policy, but also notes the high level of technical complexity in fully meeting the various requirements in the timeframe allotted. Porsche recommends that CARB review the progress of manufacturers and their projected outlook for complying with the allocated phase-ins and whether a minor extension, or additional flexibility in the timelines may be warranted. The goal would be to determine if data standardization, while useful for service and customer information, may be impacting plans for manufacturers to bring more electrified models to market as soon as possible. Alternatively, or in combination with a modified phase-in, CARB may consider reviewing deficiency allowances in (g) to determine if greater flexibility in this space could be helpful.

Porsche continues to recommend that CARB review the phase-in requirements with an eye to modification of the phase-in to allow more BEVs into the marketplace quicker.

7. Porsche recommends CARB align SOH and EPA SOCE.

Similarly, creating harmony between the EPA and CARB requirements regarding batteries and battery data, a component with zero emissions, is very important. As it stands, EPA requires the SOCE (state of certified energy) to be determined based on UN-ECE GTR22, April 17, 2022. The calculation method and update frequency of SOCE can be aligned with CARB's SOH-indicator. A manufacturer can use a voluntarily lowered UBE certified for the SOCE calculation. This flexibility is important as manufacturers such as Porsche learn about the ageing of these innovative products. Since Porsche tends to only produce one version of a vehicle for the whole US market, having the same requirements in both Federal and State programs is very important. Porsche recommends that CARB revise the regulation to allow voluntary decrease of the UBE to allow for minor uncertainties and small potential changes from battery installation to customer delivery.

8. Porsche recommends CARB adopt OBD certification deficiency provisions to ZEV Data Standardization:

CARB OBD regulations for ICE and PHEV vehicles provide for deficiency provisions with OBD monitors that allow vehicles to be certified in cases where monitors have implementation challenges. Given the complexity and stringency of CARB OBD requirements, these deficiency provisions have proven to be a pragmatic regulatory flexibility that provides certification certainty and removes what could amount to a technical barrier to bring vehicles to market.

CARB's ACC2 ZEV Data Standardization requirements are similar in nature to OBD in that the regulation is driving the implementation of highly complex updates to onboard systems in order to deliver the data streams in the format and timeline required by regulation. This complexity is resulting in significant uncertainty for manufacturers such as Porsche and potential noncompliance with data standardization is posing a risk to EV market availability. Provided that the Data Standardization has no direct bearing on emissions reductions and is intended as a customer assurance measure, Porsche believes that data standardization complications should not create a barrier to market for EVs in California and Section 177 States. As such, including deficiency provisions will provide a flexibility for both OEMs and CARB to provide a pathway to ensure EVs can be certified and brought to market in a timely manner.

Recommendation:

Porsche recommends that CARB deficiency provisions be included for ZEVs in 1968.2(k) into 1962.5.

9. Porsche recommends CARB clarify accounting of energy losses between DC and AC charging and to be consistent with SAE standards.

Current regulation requires to consider only the energy that enters the battery when charging using Direct Current (DC) which excludes electrical losses between grid and battery and energy that is directly used by the vehicle. For AC-charging all energy that is supplied to the on-board charger has to be considered: including electrical losses and energy consumers. This should be harmonized no matter which charging is utilized. The vehicle operation tracking requirements for AC-charging in CCR 1962.5 (c)(4)(D)(1)(p). should be changed accordingly to exclude electrical losses between grid and battery and energy that is directly used by the vehicle. The values in SAE J1979DA exclude the electrical losses. Porsche assumes that since CARB has indicated they will adopt the latest SAE standards that the agency will subsequently update the regulation.

10. Porsche recommends a modification to the onboard vehicle charging requirements in 1962.3 to eliminate the need to install A/C charger inlet and associated charging equipment for limited, low-volume models.

Porsche requests CARB to consider including a flexibility within 1962.3 for a manufacturer to omit the installation of an *Alternating Current (AC) Charger Inlet* and associated charging equipment as would otherwise be required in 1962.3(c)(1) and (2). The purpose of this would be to reduce vehicle weight and system complexity for a limited line (i.e., low-volume) of EVs which may be specifically developed for high-performance use. Given the Industry's fluid

transition in charge ports and connectors, Porsche looks forward to continued dialog with CARB on future hardware requirements.

Recommendation:

For electric vehicle models with sales up to two thousand units per year in California, manufacturers may omit compliance with 1962.3(c)(1) and (2).

11. Porsche recommends additional flexibility in the provision of charging cables as required in 1962.3(c)(3)

Porsche recommends that CARB consider modifying the cable requirement in 1962.3(c)(3) to require that cables must be made available to consumers at the time of vehicle purchase (or delivery). With this approach, consumers can “opt in” for the cable if they feel that the cable would be useful, or “opt-out” should they already be satisfied with their current charging options. This approach would be akin to making the cable a “no cost accessory” as opposed to being standard equipment in the car.

Recommendation:

Update 1962.3(c)(3) to be that manufacturers shall make available charging cables to new electrified vehicle purchasers. If customers select to take possession at purchase, dealers shall supply the cables to the purchaser at delivery.

Comments specific to potential amendments to LEV-IV Criteria Exhaust Emission Standards for Model Years 2026 and Later

Porsche supports the extensive input provided by AFIA with specific recommendations for amendments to the LEV-IV regulations. As noted by AFIA, many of the amendments are seeking to align LEV-IV with the recently finalized EPA Tier-4 program. As noted earlier, aligning standards across the State and Federal domain is important for reducing complexity and streamlining compliance.

In addition to the comments provided by AFIA, Porsche recommends the following suggestion:

1. Porsche recommends CARB align LEV-IV bins with those in Tier-4.

CARB should fully align the available emission BINs in LEV-IV with those in EPA's Tier 4. Creating harmony with BIN structure is not resource intensive and allows streamlining of certification and reporting by the OEMs. The goal for

Porsche is to manage compliance planning and demonstration to the same BIN in all fifty states. Having that opportunity frees resources internally to continue the transition to electrified transportation. Using valuable time and technical support to keep track of the same vehicle certified to two different BINs in each program is not a good use of resources and only results in complexity and potential confusion. Also, the Federal Cleaner Car provision has outlived its usefulness and needs to be eliminated. The Cleaner Car provision denies certification of a model in California to a higher BIN than the vehicle certified Federally.

The following examples demonstrate that eliminating the cleaner car provision is necessary and will not result in backsliding or increases of emissions. It is important that CARB eliminates the outdated Cleaner Car provision in the updated LEV IV criteria emissions program. In the age of ultra-clean low emitting vehicles, there is no longer a business case to de-content vehicles in a portion of the US. There is no jeopardy to the air quality in California for a vehicle that has a mis-match in BIN structures between CARB and EPA programs simply because of this provision. Furthermore, if the BINs between the programs were equal, the provision would be moot.

For example, consider this fictional fleet in Tier 4

BIN	Sales	Total
40	100	4000
35	100	3500
25	1000	25000
10	500	5000
5	500	2500
		Fleet Average: 18/2 mg/mile

Now consider this same fleet if these same vehicles were to be sold in CA.

BIN	Sales	Total
40 (same)	100	4000
35 (must choose 30)	100	3000
25 (same)	1000	25000
10 (no LEV-IV BIN for this car)	0	0
5 (no LEV-IV BIN for this car)	0	0
	<i>Sales Decrease 1000</i>	Fleet Avg: 26.7 mg/mile

Under the current cleanest vehicle provision, these BIN 5 & BIN 10 vehicles, which may also be PHEVs, will not have a certification option in California. These clean vehicles will not be available to the consumers. This manufacturer would have to certify the BIN 5 & BIN 10 federally as a BIN 25 to enable sales in California under this provision. This robs both programs of valuable emissions benefits. Similarly, if the BIN 30 vehicle were capable of a robust 30 mg/mi in Tier 4, the OEM would probably have chosen that BIN in the first place. If it were not capable of 30 mg/mi, the OEM would also

need to consider not offering this model in California, further reducing the consumer choice of vehicles. Aligning the BIN structures and eliminating this Cleaner Vehicle provision is directionally correct for achieving California's climate goals.

2. Porsche recommends a minor extension of the maximum allowable ZEVs in the NMOG+NOx fleet average.

One of the key changes within LEV-IV was the removal of ZEVs from the NMOG+NOx annual fleet average calculation. Porsche recognizes the policy decisions CARB took in passing this new approach. To provide compliance flexibility for manufacturers transitioning from LEV-III to LEV-IV, CARB included an allowance within 1961.2(d)(1)(A) for manufacturers to include a declining portion of ZEVs within the calculation. Porsche requested during the deliberations on LEV-IV amendments that CARB review the progress of manufacturers and their projected outlook for complying with the SULEV fleet average. For manufacturers such as Porsche, with a limited range of remaining ICE models, it may be appropriate for CARB to consider a minor extension of this phase-down allowance with a linear ramp rate reduction from 2026MY to 2030MY. This additional flexibility could assist manufacturers who are managing competing resources and planning for EV transitions.

Recommendation:

Porsche recommends a review and extension of the "*Maximum Percent ZEVs+emission-adjusted PHEVs*" as allowed in 1961.2(d)(1)(A)

Comments specific to potential Light-Duty Vehicle and Light-Duty Truck ACC2 Greenhouse Gas standards.

In the 2023 workshop, CARB outlined concepts for using an ACC2 GHG program as a "backstop" on ICE CO₂ emissions. The premise being that manufacturers who would be producing high levels of EVs as mandated by ZEV would maximize ICE CO₂ emissions under a fleet average program. In the previous letter to CARB, Porsche outlined concerns related to a CO₂ anti-backsliding program and how various forms of implementation could result in unintended consequences or constraints on model planning.

In the second workshop, CARB provided a graph illustrating how the recently finalized EPA GHG program, combined with CARB's ZEV mandate, should result in the overall California fleet of vehicles delivering a greater percentage of CO₂ reduction than the US fleet as a whole. This graph demonstrates how EPA's nationwide control of CO₂ emissions will control ICE vehicles while California's ZEV mandate will accelerate CO₂ reductions due to the fact that the mandate will increasingly restrict and eventually ban ICE and HEV vehicles in California and other Section 177 States.

Despite the projected overperformance relative to national GHG standards, in the second workshop, CARB again reflected on the possibility of needing a future ACC2 GHG regulation to prevent ICE backsliding. The viewpoint being that, regardless of the fact that these same vehicles would be controlled by strong Federal programs, manufacturers may suddenly alter the course of these ICE vehicles and maximize the CO₂ emissions given the extra room that the ZEV mandate may provide within a fleet average. A subsequent graph in the workshop slides projected that a manufacturer theoretically could double their ICE CO₂ emissions for vehicles sold in California, again, even though those vehicles would also need to be decreasing their emissions under broader Federal programs. As discussed earlier, all ICE vehicles sold in California and Section 177 States would be subject to six parallel fleet regulations and the premise that there would be room to so significantly alter the technology course for ICE vehicles in California while at the same time complying with the other fleet programs seems implausible and a "spreadsheet" exercise. Nevertheless, the focus on anti-backsliding appears to continue to be a policy focus for a future ACC2 GHG.

However, separate from ACC2 GHG being a backstop program, the workshop slides went on to describe how ACC2 GHG could drive additional CO₂ reductions from ICE vehicles via technologies such as weight reduction, powertrain improvements, or increased hybridization. This indicates that the program, instead of being a backstop, could in fact be a more traditionally structured CO₂ regulation that seeks broad reductions by driving technology investment into ICE vehicles. This indicates that the vision may be to drive CO₂ reduction investments and costs in ICE vehicles in parallel with the mandates that will increase EVs and eliminate ICE vehicles from the California and Section 177 market entirely. A regulation focusing on backstopping technology, versus a regulation that seeks long-term reductions, are two different policies, and it remains unclear which will be guiding the proposed regulatory language projected to be released in Fall 2024.

With regards to a backstop program, Porsche provided comments to CARB in the January 2024 letter following the initial workshop. Porsche outlined challenges that a backstop program could create in terms of restricting electrification decisions or impacting option content on specific ICE vehicles. With regards to impacting electrification decisions, Porsche described how a backstop program that uses fleet averaging of the remaining ICE vehicles could impart a barrier to electrifying lower-emitting vehicles first. This could restrict decisions by product planners as to which models to electrify, which would reduce consumer choice in the EV marketplace. In the workshop, CARB described a possible flexibility of using "ZEV over compliance" credits as a way to minimize this negative consequence. CARB indicated that should a manufacturer chose to electrify lower emitting CO₂ vehicles first, the manufacturer could then use ZEV overcompliance credits to help offset CO₂ emissions from the remaining higher emitting vehicles, despite the fact that those vehicles would themselves have not backslid in emissions. While this approach may seem plausible in theory, given the highly aggressive ACC2 ZEV ramp rate and the challenges noted earlier in EV adoption across the range of section 177 states, it is unclear if this proposed flexibility is plausible or likely to be realistically usable as a compliance element within a future GHG program.

Furthermore, throughout the two workshops, the future ACC2 GHG program has been described as being "ICE only" with ZEVs being excluded. Bring ZEV credits into and "ICE only" GHG program introduces several challenges that would need to be addressed. The first being that California and Section 177 State GHG and ZEV programs are misaligned in that not

all Section 177 States adopt ZEV. CARB would have to somehow normalize the two distinct fleet volumes in order to create a fair basis for credit transfer between the two programs. As GHG typically operates on a “ton” basis which is directly associated with vehicle volumes, CARB would need to develop a normalization factor across the two programs. In addition, given that GHG is a pooled compliance program, while ZEV is by designed operated on a State-by-State compliance basis, it is unclear how “ZEV overcompliance” would be assessed and administered across an aggregated domain of California and Section 177 ZEV states.

Despite these implementation details, introducing ZEV credits into the GHG program starts to upend the notion of the program being “ICE only.” This opens the question as to whether the structure of the ACC2 GHG program should simply be broader and include ZEVs similar to the way that EPA operates their program. If ACC2 GHG were expanded to include ZEVs and effectively function similar to EPA, then the question would become whether it would make sense for the State to simply align with EPA and reduce the duplicity and complexity of multiple overlapping programs entirely. As the workshop slides themselves demonstrated, the California fleet of vehicles regulated by both EPA GHG and ZEV are projected to outperform the national average already. Aligning the states’ GHG program with that of EPA clearly shows no loss in effective control of CO₂.

If the purpose of the proposed ACC2 GHG regulation is to drive further CO₂ reductions from ICE vehicles, this opens several new questions. The first being if CARB is envisioning departing from the technology pathways projected by EPA that were used as the basis for the finalized MPR regulation. EPA projected minor technological improvements in ICE vehicles given the increasing rates of electrification, rates which in part were defined by CARB’s own ZEV mandate. While EPA’s projections do not define what manufacturers must or will do to comply, the analysis reflects the notion that manufacturers investing in and deploying increased electrification are unlikely to also assign capital to improve ICE vehicles that are becoming a minority portion of the fleet. CARB did not address in the workshop if the intention is to depart from the analysis of EPA, despite CARB’s ZEV mandate factoring into EPA’s analysis and that EPA included vehicles in California and Section 177 states. If in contrast to EPA, CARB sees opportunity to drive investments into ICE vehicles, while at the same time removing those vehicles from the market, Porsche requests CARB to demonstrate how this investment would be economically efficient. To be clear, California’s ZEV mandate is scheduled to eliminate ICE and HEV vehicles from the new car market in California and Section 177 ZEV States by 2035. This would mean that any investment in ICE technology required by ACC2 GHG would only effectively have six years of market presence and with declining volumes over which to amortize such costs. It is unlikely that driving investments in ICE reductions would be justified from a cost-benefit basis given that ICE technology has already significantly reduced emissions and any such incremental CO₂ reductions would pale in comparison to those already being delivered by ZEV.

In summary, it remains unclear as to what the intention of a future ACC2 GHG program is seeking to achieve, especially in light of recently finalized Federal standards. Porsche recommends further dialogue with CARB on this topic with clear intentions outlined and issues discussed prior to drafting of proposed regulatory language by the Fall 2024. It may be prudent for the GHG portion of this regulatory package to be split into a separate timeline that will provide more room for discussion and analysis. This will provide more time to explore issues and identify possible unintended consequences.

Porsche recommends that CARB continue to recognize the CO₂ reduction of electrified operation for PHEVs.

Porsche provided comment to CARB regarding PHEVs following the first workshop. Porsche continues to believe that PHEVs are an important carbon emission reducing technology and that ACC2 should continue to provide a regulatory incentive for this technology.

It is important to recognize that EPA analyzed the same situation in the development of the MPR GHG standards for 2027-2032 and in conclusion noted challenges with relying on the BAR dataset to make an immediate decision on modifying the Fleet Utility Factor. Instead, EPA will further analyze PHEV real-world performance.

Following this decision by EPA, SAE is kicking off the Utility Factor Update Task Force lead by Argonne National Lab which will include OEMs, Idaho National Lab, other stakeholders, including EPA. This work will generate the methodology for determining a modern utility factor based on modern PHEVs in real world situations. Potentially using real time on-board data streams can create a more complete picture of PHEV charging. Porsche strongly recommends that CARB participate in this workstream and defer decision on PHEVs until such work is complete and to align with EPA's future decision on the utility factor.

It is also important to reflect that one of the purposes of regulation is to drive system outcomes that may not be achieved through normal market forces. One such method regulations can do to achieve this is to incentives to spur development and deployment of specific technologies that can contribute to policy goals but may otherwise face market headwinds. PHEV technology remains complex and costly for consumers but can contribute significant CO₂ reduction by providing consumers with zero-emission operation. Regulatory incentives for PHEVs can help to continue to drive investment and technological improvements which will in turn help to reduce costs and expand the zero-emission capability for consumers.

The SAE working group will analyze real-world usage which can help inform in part how PHEVs may be treated in regulation, but the outcome should remain that the technology continues to be incentivized appropriately to help drive even further adoption. PHEVs remain an important electrification technology especially for consumers who may be unable or unwilling to commit to full electrification. Dismissing the contribution that PHEVs can and do make to overall CO₂ reduction undervalues the technology and ignores the important role that PHEVs can play in expanding consumer choice for electrification.

Summary of Porsche input to the range of potential ACC2 amendments

Porsche appreciates the opportunity to provide these comments to CARB as staff continues the process to consider future amendments to the ACC2 program. Thank you for your consideration of these comments. Should you have any questions, please contact me at nicholas.tamborra@porsche.us, or 248-464-1836.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Tamborra". The signature is fluid and cursive, with a long horizontal stroke at the end.

Nick Tamborra
Manager, Regulatory Affairs, AfterSales
Porsche Cars North America, Inc.