VOLKSWAGEN

GROUP OF AMERICA

Chair Lianne Randolph,
California Air Resources Board
Advanced Clean Cars II Electronic Submission
1001 I Street
Sacramento, CA 95814

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Subject: Volkswagen Group of America Comments to Advanced Clean Cars II Proposal

Dear Chair Randolph,

On behalf of Volkswagen Group of America, Inc., ("Volkswagen") I hereby submit the following comments to the Advanced Clean Cars II (ACC2) proposal. In addition to these comments, Volkswagen participated in the development of comments submitted by the Alliance for Automotive Innovation (Alliance).

Volkswagen appreciates the open and transparent process employed by staff during the development of the ACC2 proposals. The public workshops and release of early draft documents was helpful for our technical development teams to provide timely and constructive feedback to staff. Volkswagen offers the following brief comments as a supplement to our comments provided within comments from the Alliance.

Clarification on Traction Battery Labeling Requirements in 1962.6

Volkswagen requests clarification on the applicability of the traction battery labeling requirements on aftermarket or service battery parts that may be used to repair electric vehicle battery packs. Volkswagen recognizes that the underlying basis for labeling (facilitating repair, recycling and second use) could be equally applicable for cells or modules that are used to repair an OEM original equipment pack. If the repair parts are OEM sourced, the expectation could be that the repair parts would share the same online database and physical label contents as the original parts, except with new manufacturing dates. However, for parts that are sourced from aftermarket providers, those parts would require labels and online database information that is provided by the supplier and would not be able to leverage OEM information or point users to OEM listed database entries.

Proposed Modifications to ZEV Requirement Shortfall Provision for Converted ACC I Credits

As outlined in the Alliance comments, Volkswagen is supportive of the flexibility to convert Advanced Clean Cars I (ACC1) ZEV credits at the end of the 2025 model year and for those credits to be available as allowances in ACC2 for model year 2026 and later. Credits banked under the ACC1 regulation will play an important role in ZEV compliance planning for Volkswagen in California and the other Section 177 ZEV states. As with many other fleet related regulations, flexibilities help enable cost-effective, predictable, and reliable compliance planning for standards that feature ongoing stringency increases.

Volkswagen believes it is also important to recognize that many of these ACC1 credits were generated by BEVs that were brought to market during the time-period in which BEV technology was at a much higher cost and when

overall market acceptance of BEVs was lower than today. While some observers have characterized ACC1 credits as being "old" or of "lesser" value, Volkswagen believes these credits should be recognized as pioneering. ACC1 BEVs helped create the initial volume that spurred early supply chain investments in battery and electric drive technologies. These early investments seeded the current and future capacity and production innovation that is projected to deliver the reduced costs envisioned during the ACC2 timeframe. Component cost reductions do not simply happen due to time, they are created through investment, volume and innovation. Early production vehicles, especially early ACC1 BEVs, had to carry much higher costs for batteries and advanced components, which resulted in frequently negative business cases for these vehicles. These vehicles were introduced far ahead of the range of "cost parity" timelines that many observers have projected will occur during the ACC2 timeframe. . ACC1 BEVs played a key role in helping to create the success and momentum in the marketplace we are all benefiting from today, momentum that will need to continue to accelerate to help ensure a successful ACC2 program.

Volkswagen supports the proposal from staff included within 1962.4(g)(2)(A) for converting ACC1 ZEV and PHEV credits. However, Volkswagen proposes that staff consider an alternative calculation that could optionally be selected by a manufacturer in lieu of 1962.4(g)(2)(A). This alternative approach is based on the development of a "blended" average ZEV and TZEV credit value that would be used in the denominator for both ZEV and PHEV conversion.

Volkswagen considered the development of a single, blended average credit value that could account for the historic mixture of minimum ZEV and maximum TZEV obligations and average credit values for ZEVs and TZEVs that were delivered by manufacturers who featured both powertrain technologies (full-line manufacturers). Using the data shown in the table below (sourced from CARB's publically available ZEV data), Volkswagen has projected that a single average credit value can be determined to be 2.4.

Model Year	Total ZEV %	BEV Min %	TZEV Max %	ZEV Avg. Credit per Vehicle	TZEV Avg. Credit per Vehicle
2018	4.5%	2.0%	2.5%	3.4	0.67
2019	7.0%	4.0%	3.0%		
2020	9.5%	6.0%	3.5%		
2021	12.0%	8.0%	4.0%		
2022	14.5%	10.0%	4.5%		
2023	17.0%	12.0%	5.0%		
2024	19.5%	14.0%	5.5%		
2025	22.0%	16.0%	6.0%		

Volkswagen proposes an alternative, optional approach be added to 1962.4 as (g)(2)(B) which would allow manufacturers to convert the ZEV and PHEV ACC1 credit values by a single denominator value of 2.4. This approach is outlined below. The resulting ZEV and PHEV allowances for ACC2 would continue to be subject to the same restrictions as the current converted credits, meaning that these credits would continue to only be eligible for use in filling in deficits and that PHEV converted credits would count against the overall 20% limit on the use of ACC2 PHEV allowances. This alternative approach would provide manufacturers with additional flexibility in determining the total ACC1 credit conversions and planning for ACC2 compliance.

Volkswagen proposed to modify 1962.4 by inserting section (g)(2)(B)

(B) As an optional alternative to (g)(2)(A), Manufacturers may calculate converted ZEV and PHEV allowances using the following equations:

$$Converted\ ZEVs = \frac{2025\ MY\ ZEV\ Credit\ Balance}{Blended\ Average\ Credit}$$

$$Converted\ PHEVs = \frac{2025\ MY\ PHEV\ Credit\ Balance}{Blended\ Average\ Credit}$$

Where:

Converted ZEVs = value of ZEV and BEVx credit balances at the conclusion of 2025 model year, after conversion, rounded to the nearest whole number, in units of vehicle values

2025 MY ZEV Credit Balance = manufacturer's cumulative ZEV credit balance, at the conclusion of 2025 model year

Converted PHEVs = value of PHEV credit balances at the conclusion of 2025 model year, after conversion, rounded to the nearest whole number, in units of vehicle values

2025 MY PHEV Credit Balance = manufacturer's cumulative PHEV credit balance, at the conclusion of the 2025 model year

Blended Average Credit = 2.4

Volkswagen appreciates the opportunity to provide these comments to ACC2. Should you have any questions regarding technical content of these comments, please contact myself at (248) 464-1836.

Sincerely,

Nick Tamborra

Manager