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Belinda Chen
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Lucid Comments on the Advanced Clean Cars II (ACC II) Amendments Kick-Off Workshop

Dear Ms. Chen:

Lucid Group, Inc. ("Lucid") appreciates the opportunity to comment on the November 15, 2023 ACC II Amendments Kick-Off Workshop. Even after adopting the ACC II zero emission vehicle (ZEV) regulations in 2022, it is important for CARB to amend the rule further. We support CARB revisiting ACC II to incorporate criteria air pollutants, GHG emissions, new ZEV labeling metrics, and additional ZEV-related items to accelerate ZEV deployment and advance the State's environmental and equity goals. Specifically, we:

1. Support California expanding the scope of the ACC II rule to include criteria air pollutant and greenhouse gas (GHG) emissions, including strong emissions standards that align with the State's air quality and climate change mandates and avoid backsliding on GHG emissions from internal combustion engine (ICE) vehicles.
2. Encourage CARB to reconsider the stringency of regulatory requirements for ZEV sales to increase stringency, given that the market in 2023 is already outpacing sales requirements for the first year of the regulation[1], and to ensure the regulation serves to accelerate the adoption of ZEVs in California, above and beyond expected industry activities.
3. Strongly support including ZEV efficiency metrics on consumer-facing vehicle labels, including metrics that clearly distinguish efficiency performance among ZEVs, in addition to the comparison with conventional vehicles.
4. Urge CARB to consider amending the requirement in the ACC II ZEV regulation regarding the use of the Combined Charging System standard to allow for vehicles to use the North American Charging Standard (NACS).

[1] In November 2023, Governor Newsom announced that 26.7% of new car sales in California were ZEVs in Q3 2023. This exceeds minimum regulatory requirements in 2026 under the ACC II ZEV regulations, when flexible compliance mechanisms are included. https://www.gov.ca.gov/2023/11/02/26-7-of-all-new-cars-sold-in-california-were-zero-emission/

About Lucid

Lucid is a California-based electric vehicle company, with headquarters in Newark, CA and manufacturing in Arizona. The Lucid Air is the most energy-efficient electric sedan on the market today, as measured by miles/kwh. Its longest-range variant, the Grand Touring, has 500 miles of EPA-estimated driving range and can charge up to 200 miles of range in about 12 minutes. Last month, the Lucid Air Pure was named to Car and Driver's 10 Best List for 2024 in its first year of eligibility. In November 2023, we introduced the Lucid Gravity, a full-sized, three-row SUV with an unprecedented combination of attributes and a projected range in excess of 440 mile, which will be available in late 2024. Lucid also recently announced that it would integrate the North American Charging Standard (NACS) into future vehicles beginning in 2025.

We have a clear vision for transitioning our market-leading technology to increasingly mainstream market segments. Importantly, our technology leadership – especially on efficiency – will be key to enabling electrification of heavy-duty sectors and unlocking low-cost, mass market, no-compromise ZEVs.

1. **More Stringent Criteria Air Pollutant, GHG Emissions Standards Needed to Meet State Goals**

California's regulatory framework is critical to reducing pollution and protecting public health in the State and other Section 177 states. As noted in the workshop, California's current vehicle GHG standards need to be updated to align with the State's goals, protect against federal volatility, and avoid backsliding as more ZEVs enter the fleet. Further, as noted in the workshop, a significant portion of the fleet (about 55 percent) will remain internal combustion engines (ICE) in 2035, when ACC II requires 100 percent of new car sales to be ZEVs, and even in 2045 (close to 20 percent), when California must achieve net-zero greenhouse gas emissions.[2] As identified in the 2022 Scoping Plan[3], virtually all remaining emissions in 2045 will have to be balanced with carbon removals via direct air capture (DAC), which is currently, and expected to continue to be, one of the most expensive carbon reduction strategies available.[4] Accordingly, the GHG standards set in this rulemaking will not only have an important impact on GHG emissions in the mid-term (and California's ability to meet our 2030 climate change targets), but also through mid-century, and the costs and pace with which we achieve carbon neutrality in the State.

We support amending ACC II to strengthen GHG standards in a manner that aligns with California's climate goals and:

[2] Workshop presentation, slide 14.
[3] https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf
[4] CARB estimates DAC will cost $1,000/metric ton CO_2 sequestered in 2030, declining to $236/metric ton CO_2 sequestered in 2045. See 'Fuel Production Worksheet' at https://ww2.arb.ca.gov/sites/default/files/2023-08/scenario_inputs_Aug2023_0.xlsx

- Maximizes cumulative greenhouse gas reductions and aligns with statutory requirements to achieve carbon neutrality in the State as soon as possible, and no later than 2045.[5]
- Ensures continual improvements in ICE vehicle emissions and avoids backsliding as more ZEVs enter the fleet.
- Improves representation of the emissions benefits of PHEV technologies and reflects their real-world emissions benefits, which are often lower than current regulatory programs assume.[6]
- Accounts for the costs of direct air capture associated with remaining emissions from ICE vehicles.

2. GHG Standards should Account for Actual and Expected ZEV Sales, Not Regulatory Minimums

Throughout development of the ACC II ZEV Regulations, we have consistently encouraged CARB to develop market-shaping regulations that would not merely backstop against existing automaker plans and activities, but incentivize additional ZEV deployment this decade and automaker investments in affordable, long-range, no-compromise ZEVs that are necessary to achieve 100 percent ZEV sales by no later than 2035.[7] The ACC II ZEV Regulation ultimately did not reflect that ambition,[8] and indeed, new ZEV sales are already outpacing regulatory requirements for the 2026 Model Year.[9]

We would principally advocate for re-evaluating stringency metrics. In addition to this, we believe a review of certain ZEV assurance measures is warranted in light of technology improvements – including improved Vehicle-to-Grid capabilities. Specifically, these measures include: minimum range, warranty requirements and potentially market-moving crediting schemes for long-range, low-cost ZEVs. We respectfully urge CARB to avoid any additional changes to stringency, assurance measures, or crediting flexibilities that would further weaken requirements to deploy ZEVs on California's roads. We appreciate, however, that changes to the broad framework of the ACC II ZEV Regulation are likely beyond the scope of the upcoming ACC II amendments.

Still, in designing the GHG standards, we encourage CARB to include current and expected ZEV sales in its analysis, rather than regulatory minimums. This would leverage the fact that market is already at least three years ahead of regulatory requirements, and reflect the achievable

[5] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1279
[6] Workshop presentation, slide 21.
[7] For example, see https://www.arb.ca.gov/lists/com-attach/468-accii2022-UDxSIVMxBz0DYVMM.pdf
[8] For example, the ACC II ISOR confirms that stringency through at least 2030 is expected to be below business as usual (BAU) ZEV sales levels that would otherwise exist in the absence of the rule, noting that the regulatory stringency through 2030 aligns with automaker projections for ZEV and PHEV deployment that were submitted *prior to* future regulations being adopted, which means they "do not consider the effect of more stringent GHG tailpipe emission regulations nor this ACC II proposal." (pp. 39-40) https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/isor.pdf
[9] See Footnote 1.

fleet-average GHG standards and build on that progress. The standards should also reflect expected future sales that will likely continue to outpace the ACC II ZEV Regulations into the future. For example, while the Scoping Plan reflects the ACC II regulations and envisions fewer than six million ZEVs on the road in 2030 and fewer than 13 million in 2035,[10] CEC's more recent analysis estimates there will be over 7.1 million ZEVs on the road in 2030 and over 15 million in 2035.[11]

3. New ZEV Label Metrics Should Include Efficiency, Cost Comparisons vs. Conventional Vehicles as Well as Average ZEVs

We strongly support new ZEV metrics that provide clear and concise information regarding the efficiency and other performance characteristics of ZEVs, and the comparative benefits in terms of cost, range, and upstream emissions of a ZEV – not only compared against average new ICE vehicles, but also against average new ZEVs. Highlighting these metrics will help consumers understand the role that vehicle efficiency continues to play in terms of total costs of ownership and environmental impacts associated with their vehicle choice, even when choosing among ZEV options. These metrics should include:

- ZEV efficiency, measured in miles/kWh, and compared to the average new ZEV.
- Maximum DC fast charging speeds, measured in kW, and compared to the average new ZEV.
- Average charging costs, measured in $/year, and compared to the average new ZEV.
- ZEV-specific global warming score, showing the relative efficiency-weighted greenhouse gas emissions associated with fuel use (e.g., electricity emissions) among ZEVs.
- An indicator or score which identifies the bidirectional capabilities of the vehicle (Vehicle-to-Grid, Vehicle-to-Load, etc.)

Just like conventional vehicles, improved ZEV efficiency delivers significant consumer and societal benefits – including improved environmental performance, enhanced national security, and lower operating costs. It reduces electricity grid impacts, upstream emissions, and the amount of additional energy resources needed to support the State's electrification priorities. It reduces demand for lithium and critical materials, along with potential supply chain bottlenecks. Unlike for conventional vehicles, where improved efficiency tends to increase production costs, ZEV efficiency has the added benefit of reducing vehicle production costs and purchase prices, by reducing the amount of batteries needed to achieve a targeted range and reducing the cost of the battery itself by putting downward pressure on commodity prices for lithium and other critical materials.

[10] See 'LDV Stocks' Worksheet at https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-PATHWAYS-data-E3.xlsx

[11] https://www.energy.ca.gov/data-reports/reports/electric-vehicle-charging-infrastructure-assessment-ab-2127

4. **Automaker requirements in ACCII should recognize current market trends and support industry developments.**

CARB should amend the current ACC II requirements to reflect the recent industry adoption of the North American Charging Standard (NACS). Automakers comprising most of the American EV market, including Lucid, have adopted the standard for current or future vehicles. Lucid will integrate NACS into vehicles starting in 2025. Lucid remains committed to enhancing the charging experience for its customers and accelerating the adoption of electric vehicles, and recognizing this shift in charging standards in ACC II will prove efficient and cost effective for industry.

We support the transition to NACS as expeditiously as possible. However, critically, we wish to emphasize that publicly funded DC charging infrastructure should support both SAE J1772 and SAE J3400 to limit the necessity and use of charging adapters. There are thousands of vehicles on the road with CCS-compatible ports at the risk of being stranded if the transition to NACS does not take this into account.

Conclusion

Thank you again for the opportunity to comment on the ACC II Amendments Kick-Off Workshop. We appreciate the early opportunity to weigh in on the scope and details of potential ACC II amendments, as well as your ongoing efforts to reduce mobile source emissions and support the growing ZEV market. We look forward to working with you through this process to support strong rules that are maximally protective of public health while remaining practical to implement.

Thank you,

Daniel Witt
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Lucid Motors