



TOYOTA MOTOR NORTH AMERICA, INC.

Sustainability and Regulatory Affairs
1630 W. 186th Street, Gardena, CA 90248

September 24, 2021

Chairwoman Liane M. Randolph and Members of the Board
California Air Resources Board
1001 I Street
Sacramento, CA, 95812

RE: Comments Related to Proposed Advanced Clean Fleets Regulation

Dear Chair Randolph and Members of the Board,

Toyota Motor North America appreciates the opportunity to provide comment on CARB's Advanced Clean Fleets Proposed Draft Regulation Language for High Priority and Federal Fleet Requirements published on September 9, 2021 (new section 95692, title 17, CCR), and CARB's Draft Advanced Clean Fleets Total Cost of Ownership Discussion Document, also published on September 9, 2021. In addition, Toyota would like to provide open comment regarding ZE infrastructure.

Toyota is on a path to Carbon Neutrality

Toyota is on the path to an electrified future, and the company is committed to widespread use of ZEV technologies. Recently, Toyota announced battery electric vehicles (BEVs) and fuel cell electric vehicles will make up 15% of its U.S. sales by 2030. Along with the company's hybrids (HEV) and plug-in hybrids (PHEV), 70% of the Toyota and Lexus combined sales mix will be electrified by 2030. On a global basis, Toyota expects to sell approximately 8 million electrified vehicles by 2030, of which 2 million will be BEVs and FCEVs.

Toyota's electrified scope is not limited to just light-duty vehicle application. Toyota is increasingly exploring adoption of ZEV technologies for medium duty & heavy-duty vehicle applications as well as off-road applications. Toyota is strong advocate that hydrogen fuel cell technology is viable solution for heavy-duty truck market shift towards zero emission powertrain. Recently, Toyota, along with Kenworth and Shell, teamed up with the Ports of Los Angeles to establish a fuel cell electric technology network for freight transport to move goods from "Shore to Store." On the road today are 10 new Toyota-powered fuel cell electric Class 8 Kenworth trucks delivering goods and vehicles throughout Southern California. In addition, Toyota is actively pursuing adoption of Toyota's E-Palette battery electric commercial vehicle in various global markets with autonomous capability.

Toyota's HD Fleet Profile in California

From a business perspective, Toyota has various logistic operations, utilizing Class 8 tractors, throughout California. Our logistic operations support 149 California Lexus / Toyota dealers

with vehicles and parts deliveries. In addition, Toyota has logistic operations to support our manufacturing presences within and near Southern California. Therefore, Toyota is, both, a fleet operator, and a purchaser of contracted fleet operations and is deeply interested in regulatory certainty with CARB's Advanced Clean Fleets regulation.

Comments on the Proposed Draft Regulation Language

Section 95692.2 High Priority and Federal Fleets Exemptions and Extensions

The draft regulation offers exemptions and extensions to the compliance requirements to high priority and federal fleets under certain requirements.

Vehicle Exemptions are allowed for:

- Backup Vehicle Exemption
- Daily Mileage Exemption
- Emergency Response Vehicle Exemption

The exemptions all require individual applications and individual review, requiring Executive Officer approval. Toyota views this exemption process as cumbersome, time consuming, and a source of uncertainty to fleet operators. Furthermore, there is no clarity as to "by when" CARB would need to provide response for exemption application.

Toyota recommends a simplified process by offering fleets a blanket 20% exemption allowance that can be used for any of the three vehicle exemptions. If fleet needs more than 20% allowance, then they should request an Executive Officer review.

Section 95692.4 High Priority and Federal Fleets Reporting

The proposal requires annual fleet reporting vehicle information. In addition, the proposal also requires 30-day reporting for vehicles added or deleted from the fleet. Toyota believes the 30-day reporting is redundant given the proposed annual reporting requires information on all vehicles.

Toyota requests deletion of the 30-day reporting and recommends fleets to highlight new vehicle additions and deletions as part of the annual reporting.

Section 95692.5 High Priority and Federal Fleets Recordkeeping

Toyota request clarification as to how many years documentations is needed to be kept since the regulatory proposal provides no clarity on duration of recordkeeping.

Comments on the Draft Advanced Clean Fleets Total Cost of Ownership Discussion Document

Section V. Vehicle Costs

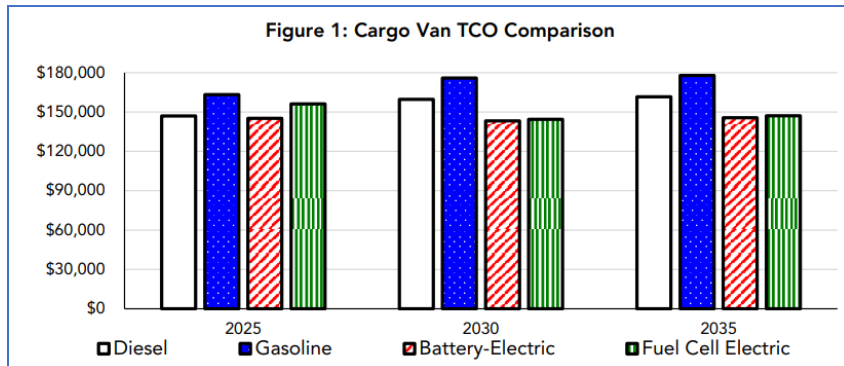
Table 5 (below) of the Total Cost of Ownership document, shows CARB’s vehicle price forecast.

Table 5: New Vehicle Price Forecast

Vehicle	2025 MY	2030 MY	2035 MY
Class 2b Cargo Van – Diesel	\$39,963	\$40,364	\$40,364
Class 2b Cargo Van – Gasoline	\$35,963	\$36,364	\$36,364
Class 2b Cargo Van – Battery-Electric	\$52,447	\$48,001	\$47,174
Class 2b Cargo Van – Fuel Cell Electric	\$79,405	\$67,592	\$67,489
Class 5 Walk-in Van – Diesel	\$90,709	\$94,403	\$95,703
Class 5 Walk-in Van – Natural Gas	\$107,028	\$107,983	\$108,177
Class 5 Walk-in Van – Battery-Electric	\$113,571	\$105,167	\$105,167
Class 5 Walk-in Van – Fuel Cell Electric	\$129,422	\$119,397	\$119,397
Class 6 Bucket Truck – Diesel	\$130,491	\$134,725	\$135,585
Class 6 Bucket Truck – Battery-Electric	\$156,349	\$144,073	\$139,903
Class 6 Bucket Truck – Fuel Cell Electric	\$176,695	\$161,317	\$157,147
Class 8 Refuse Packer – Diesel	\$231,783	\$236,085	\$237,140
Class 8 Refuse Packer – Natural Gas	\$258,823	\$259,778	\$259,972
Class 8 Refuse Packer – Battery-Electric	\$299,932	\$276,029	\$266,929
Class 8 Refuse Packer – Fuel Cell Electric	\$316,578	\$294,380	\$285,280
Class 8 Day Cab – Diesel	\$143,862	\$149,865	\$150,920
Class 8 Day Cab – Natural Gas	\$195,607	\$198,263	\$198,457
Class 8 Day Cab – Battery-Electric	\$201,999	\$176,028	\$176,028
Class 8 Day Cab – Fuel Cell Electric	\$212,353	\$190,155	\$190,155
Class 8 Sleeper Cab – Diesel	\$153,862	\$159,865	\$160,920
Class 8 Sleeper Cab – Natural Gas	\$240,607	\$243,263	\$243,457
Class 8 Sleeper Cab – Battery-Electric	\$304,629	\$247,638	\$247,638
Class 8 Sleeper Cab – Fuel Cell Electric	\$251,403	\$226,272	\$226,272

Toyota request staff to review CARB’s Zero Emission Drayage Truck and Infrastructure Pilot Project (ZEDTIPP) responses from OEMs in referencing fuel cell / battery electric truck cost. ZEDTIPP cost for Class 8 fuel cell / battery electric trucks are considerably higher than CARB’s forecast shown on table 5.

Furthermore, with regards to Class 2b ZE Cargo Van TCO (shown on figure 1), Toyota believes CARB’s calculations are optimistic. Toyota, as part of market exploratory work, have tabulated various responses from fleets. Toyota’s TCO calculation shows CARB’s calculation on ZE cargo van is marginally higher. However, fleets are making significant vehicle performance trade-off with respect to range, payload, speed, and other performance attributes vs. traditional ICE cargo van.



Open Comment on ZE Infrastructure to support ZE Trucks

Toyota is critically concerned with ZE-HD/MD infrastructure development. No roadmap or development plans for ZE-HD/MD charging or hydrogen refueling have been offered by any California agency, regulator, or commission. Toyota understands that California has a desire to create working groups to focus on ZE-HD/MD infrastructure development which we believe is positive step forward. Furthermore, Toyota is also aware CEC funding proposal is placing significant focus on ZE-HD/MD infrastructure.

However, given our experience with light-duty ZEV infrastructure, we would like to highlight challenges related to infrastructure development:

- Long lead time due to construction and permitting delays
- Long lead time related to equipment delivery delays
- Unexpected cost increases, especially given high real-estate prices within urban locations

Furthermore, challenges are not only limited to infrastructure development, but also with operations / performance; namely uptime and reliability of stations / chargers:

- Lack of fuel / electricity due to production issues or transmission issues
- Delivery / distribution disruption; recent episodes include Hurricane Ida disrupting H2 supply to Northern California
- Quality control issues with chargers or H2 refueler component can lead to prolong down time
- Incompatibility with existing EV chargers can hinder BEV truck charging

Toyota believes infrastructure must come first before vehicles or it creates slower and shallower ZE truck adoption, and uncertainty and operational challenges for ZE truck owners and users.

Infrastructure Investment Alternative Proposal

Toyota would like to suggest an alternative compliance path that allows high priority fleets to choose between purchase requirements or investing in ZEV infrastructure (together with the state of California) to accelerate the feasibility for fully ZEV fleets. The Infrastructure Investment Alternative is designed to combine less-stringent purchase requirements with improvements focused on zero emission zones.

Components of this alternative:

- Zero emission zone development should be prioritized around disadvantage communities
- Opt-in alternative to the normal ZEV requirements for fleets with:
 - o At least 100 vehicles
 - o 10% of fleet already being ZEV
 - o Fleet operations in designated zero-emission zone areas
- Fleets that opt-in must actively contribute to development of ZE infrastructure in the ZE zone area in one of two ways:
 - o Allowance of ZE infrastructure development & access on owned property OR
 - o Financial contribution towards pooled fund (matches CEC / CARB funding)
- Fleets that opt-in must contribute, in the above ways, in proportion to the size of their non-ZEV fleet such that investment value is at least equal to 1/10 the value of the non-ZEV fleet each year
- The alternative program will persist until the ZE zone area infrastructure is judged by a CARB panel (that includes community leaders within ZE Zones) to be sufficient for 100% ZEV operations, or 5 years, whichever is judged appropriate.

Summary

In closing, Toyota request consideration of our suggested changes and proposal. Toyota is willing and interested in having further dialogue with staff on our comments. For further questions, please contact Glenn Choe, Principal Engineer, at glenn.choe@toyota.com or 502-542-9078. Thank you.

Sincerely



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