



Harley-Davidson Motor Company
Product Development Center
Product Regulatory Affairs, Environmental
11800 West Capitol Drive
Wauwatosa, WI 53222-1007

October 28, 2024

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, California 95814

Subject: Proposed Amendments to On-Road Motorcycle Emissions Standards and Test Procedures and Adoption of New On-Board Diagnostics and Zero-Emission Motorcycle Regulations

Harley-Davidson Motor Company (HDMC) again welcomes this opportunity to comment on the recent modifications to the proposed Amendments to the On-Road Motorcycle (ONMC) Emission Standards and Test Procedures and Adoption of New On-Board Diagnostics and Zero-Emission Motorcycle Requirements that will be considered by the California Air Resources Board (CARB) at the November 7, 2024 hearing.

HDMC continues to be supportive of the effort to update the amendments to address public health concerns and provide safe clean air to all Californians. While HDMC appreciates the modifications that address some notable concerns, there are still multiple significant issues that CARB did not appear to acknowledge that are detrimental to manufacturers' certification costs and timing.

On the ZEM proposals:

HDMC supports the ongoing development of the electric motorcycle market. Having significantly invested in the LiveWire electric motorcycle company, Harley-Davidson Motor Company calls upon all California institutions, regulators and lawmakers to support the uptake of these vehicles through purchase incentives for consumers and investment in sufficient charging infrastructures, including outside of urban areas. However, concerning the proposals by CARB for 50% of motorcycle sales to be ZEMs in 2035, HDMC still has major reservations.

Reviewing the ZEM market assumptions made by CARB in the analysis, on which the current proposals are based, HDMC believes that 2024's total ZEM market sales in California will be less than one third of the anticipated numbers in CARB's calculations. Significantly lower than expected consumer demand for electric motorcycles should be a serious consideration by CARB, and this needs to be reflected in the rule making, year-on-year, as more data is gathered.

CARB's ZEM proposals, the first of their kind globally for a sector that represents only 3% of registered vehicles in California, may have appeared realistic a couple of years ago but are proving to be overly ambitious based upon current two-wheel EV adoption rates, EV incentives, and charging infrastructure development. Moreover, due to the physical space available and the handling and dynamic requirements of motorcycle design, electrification of larger motorcycles is especially challenging. To make a range of products, that sufficient numbers of customers will buy, the motorcycle industry will need greater battery densities and significant time for the costs of new technologies to come down. The motorcycle industry simply does not benefit from the buying power and economies of scale of the auto industry that can be leveraged with battery suppliers.

To allow for an effective transition, annual reviews of this policy will be necessary, so that appropriate and swift adjustments can be made if consumer purchasing decisions continue not to follow CARB's expectations. If a realistic, fact-based flexible approach is not taken, this policy risks significant harm to motorcycle businesses in California and ultimately to the ability of the two-wheeled industry to develop ZEMs.

HDMC and LiveWire remain committed to the development of electric motorcycles that appeal to our customers and meet all of their expectations. We hope to continue to work with CARB on ensuring the framework of regulations for ZEMs supports the growth of this sector and the many jobs that depend on motorcycle sales in dealerships and their suppliers across California.

Amendment-specific comments:

Upon review of the modified proposed amendments, HDMC respectfully offers the following comments:

1. Modified effective date of new standards and test procedures for motorcycles with internal combustion engines is delayed by one year.

HDMC is pleased with the newly proposed implementation dates from MY 2028-2030 to MY 2029-2031 as referenced in section §1958, 1958.2, 1958.3, 1976, and 2112. HDMC believes that the additional time aids our resource planning abilities to prepare for the new standard and test procedures.

2. Modified IUMPR data submittal and additional submission time allowance consistent with EU 44/2014.

In Section §1958.2 (e)(2)(C), HDMC is pleased that CARB harmonized with EU 44/2014 regarding data collection and submittal requirements and removed the vague conditions that previously existed. With clear direction, manufacturers will have the opportunity to provide a robust design and potentially avoid an unintended non-compliance that may have cost time, money, and resources.

In addition, HDMC is also pleased with new section §1958.2 (e)(2)(F), that allows for an extension for up to 18 months for IUMPR data submittal, if approved by the Executive Officer. Consistency with the EU 44/2014 is appreciated along with the added time to help mitigate the possible difficulty in collecting IUMPR data.

3. New provision to allow conditional certification prior to conclusion of confirmatory testing.

HDMC is pleased with new section D18 in Part I in test procedure “California 2029 and Subsequent Model Year Exhaust Emissions Standards and Test Procedures for On-Road Motorcycles” that establishes procedures for conditional Executive Order (EO) issuance, at the request of the manufacturer, prior to the completion of confirmatory testing by CARB. HDMC agrees that this mitigates the potential unexpected delay in the manufacturer’s ability to sell in the California market due to administrative or logistical circumstances at the test laboratories.

4. Continued concern with IUMPR methodology to determine sample size.

HDMC supports CARB’s alignment with functional In-Use Performance Monitoring Requirements (IUMPR) as specified in (EU) No. 44/2014, however, HDMC still has concerns with one of the proposed unique requirements.

- a. In Section §1958.2 (e)(2)(C) and per the table below, CARB proposes utilizing the annual sales of motorcycles in California, in a given model year, as the mechanism to calculate the IUMPR sample size for each certified OBD family. CARB defines “annual sales” as the total number of street-use motorcycles produced and delivered for sale in California in a given model year. HDMC produces and delivers street-use motorcycles for sale to HDMC dealerships in California who are then positioned to sell to end-customers at their own discretion.

Minimum Sample Size for IUMPR

<u>Total Annual Sales of OBD Family</u>	<u>Minimum IUMPR Sample Size</u>
<100	No IUMPR Data Submittal Required
100-249	3 motorcycles
250-499	6 motorcycles
500+	10 motorcycles

IUMPR, by definition, requires collecting data from bikes that have experienced on-road usage to obtain the required minimum ratio of 0.100. It is not reasonable to consider “annual sales” of motorcycles by the OEM. This suggests that the population may include unsold motorcycles located at the dealerships, which would not yet have any on-road usage. Including such vehicles in the sample size requirement calculation may require manufacturers to test a larger quantity of vehicles. It may also cause difficulties for manufacturers to obtain the required quantity of motorcycles with on-road usage data even with the additional time provided in new section §1958.2 (e)(2)(F) depending on the size of the OBD family. EU 44/2014 requires vehicles which have been registered to be subject to IUMPR testing, therefore ensuring on-road usage data is available and subsequently applying a practical approach to satisfying the requirement.

- To mitigate these concerns and to support the successful implementation of IUMPR in California, HDMC still believes that CARB should replicate the IUMPR requirements as specified in EU 44/2014, concerning the use of “registered” vehicles for the sample size.

5. Continued burden of lengthy and costly new evaporative emissions test procedures. More stringent HC limits would be as effective, considerably more efficient, and more in-line with CARB's stated aims of pursuing “cost-effective reductions”.

HDMC appreciates the modest clarifications and clerical updates in the latest draft of TP-934. However, HDMC is concerned that CARB did not consider the overall certification timing impact and cost of the significantly lengthy evaporative emissions test procedure.

Section §1976. (c)(4) reads in part: *The test procedures for determining compliance with standards applicable to 2029 and subsequent model year vehicles are set forth in TP-934, “Test Procedure for Determining Evaporative Emissions for On-Road Motorcycles”, adopted by the state board on [Adoption Date], which is incorporated herein by reference.*

- a) **Test Duration:** HDMC estimates that the overall proposed test procedure is at least 40 times longer than the EU 134/2014 evaporative procedure due to the extensive component and preconditioning requirements aside from the 3-day diurnal test. The length of the test itself requires producing certification test vehicles at least 3 months earlier than today. This will cause a significant shift to product development timelines that will be difficult to absorb. Additionally, the time needed to complete a TP-934

evaporative emissions test in time to accommodate CARB's 90-day application review requirement and still meet planned introduction to commerce dates into the California market will be extremely challenging. Any delays to the introduction of new vehicles into the California market will have a substantial negative financial impact.

- b) **Costs:** HDMC estimates a spend of \$5.7M in product development costs, test facility upgrades, and additional full-time employees just to implement the proposed TP-934 and be prepared for MY29 certification. HDMC will also incur sizable expenses due to the test fuel specifications in §1.4. LEV III and LEV IV which are unique and costly test fuels for only California. HDMC anticipates large quantities will have to be purchased to take advantage of the abbreviated precondition options to alleviate some of the burdensome test duration mentioned above. LEV III and LEV IV is at least 3 times more expensive than Petrol E5 fuel that is allowed as an option for exhaust emissions testing in Part I, section D-17 in "California 2029 and Subsequent Model Year Exhaust Emissions Standards and Test Procedures for On-Road Motorcycles". HDMC also anticipates the need to utilize a second and separate test vehicle just for evaporative testing to test in parallel with exhaust emissions due to the duration adding even more costs. Lastly, it contradicts CARB's overall stated objectives of minimizing costs by aligning standards with other jurisdictions where possible and requiring additional cost-effective reductions in subsequent years.
- To mitigate these concerns, HDMC primarily suggests that CARB continues to harmonize with EU evaporative emissions test procedures. HDMC strongly recommends CARB evaluates a more stringent limit to achieve a greater reduction in HC emissions that would attain similar multi-day diurnal result. This method would greatly reduce the financial and resource burden on manufacturers and provide more cost-effective options to meet the more stringent limit. The significant money and resources to implement TP-934, as currently proposed, will reduce focus on developing electric motorcycle product offerings, an area CARB is encouraging manufacturers to develop.
 - HDMC secondarily suggests a streamlined TP-934 evaporative testing procedure with several relevant recommendations. Please re-consider the required LEV III or IV test fuel specification in TP-934 or at least the place in the test procedure that LEV III/IV is introduced into the vehicle and eliminate the minimum 30 calendar day soak penalty prior to the start of pre-conditioning. Both E5 and E10 pump fuel have a higher volatility than LEV III/IV test fuel and better represent customer conditioning. Utilizing LEV III/IV fuel may provide manufacturers with marginal evap systems an advantage to passing TP-934 due to the lower volatility. This essentially makes the test less difficult to pass, which would adversely contribute to California's air quality in practice. HDMC recommends revising TP-934 section 1.4 to allow E5 or E10 pump fuel for evaporative testing. This would subtract the minimum 30 calendar day soak requirement in section 5 from certification testing time, reduce costs and may help utilize the exhaust test bike for evaporative testing instead of utilizing a second test bike just for evaporative emissions. However, if CARB is adamant on utilizing LEV III/IV test fuel, HDMC recommends introducing it at the start of section 6, the start of evaporative testing. This would also eliminate minimum 30 calendar day soak requirement, streamlining the test procedure, and potentially eliminate a 2nd test bike just for evaporative emissions testing. Again, introducing LEV III or IV fuel earlier in the evaporative system and earlier in the test procedure may provide advantages in passing TP-934 for manufacturers with inferior evaporative systems, HDMC struggles to understand the reason for this and why CARB would find this acceptable.

Please also reconsider revising section 8.3 of TP-901 or section 4 of TP-934 by adding language to omit the UV radiation exposure test requirements for metal fuel tanks and plastic tanks that do not use

a surface barrier treatment. Metal fuel tanks and plastic tanks that do not use a surface barrier treatment do not permeate, and thus do not adversely impact emissions. HDMC believes this test unnecessary and excessive. Eliminating it would save approximately 20 days in a manufacturer's certification testing timeline.

Please also reconsider requiring the fuel tank and carbon canister from the evaporative emissions test vehicle to be used to satisfy the requirements in section 4 and section 4.1. Allow manufacturers to perform fuel tank and carbon canister durability testing on general test articles that can be tested separately, aside from the time of evaporative emissions testing. This allowance would streamline the evaporative test procedure by another 35 days approximately. HDMC requests CARB to provide requirements on the frequency of component durability testing and data submission, including the ability to carryover data.

6. Continued costly and burdensome duplicative testing by both CARB and the EPA must be avoided through CARB's application for a waiver of the preemption to enforce the new standards.

During the June 7th, 2023, *Public workshop to discuss proposed On-Road Motorcycle (ONMC) Regulatory Amendments*, it was stated that manufacturers will be required to demonstrate compliance with both EPA and CARB regulations for motorcycles for sale in California even though the CARB regulations will be more stringent. This duplicative testing is an additional and significant burden of work and expense on manufacturers. Not all manufacturers will offer the same emissions hardware and software configured motorcycles for California and the rest of the United States.

- To mitigate these concerns, when California applies a waiver of the preemption to enforce these new standards, CARB should emphasize that the proposed regulations will be significantly more stringent than EPA standards and even though the CARB/EU certification protocols differ from those of the EPA, manufacturers should not be penalized with duplicative testing.

Conclusion:

Once again, HDMC appreciates CARB considering our feedback on the above amendments to the On-Road Motorcycle (ONMC) Emission Standards and Test Procedures and Adoption of New On-Board Diagnostics and Zero-Emission Motorcycle Requirements. While we believe the overall framework and approach is solid, there are still some very real needs and opportunities to refine in the modified draft to achieve CARB's intended objectives. We look forward to continued engagement with CARB on the issues raised herein.

Best Regards,

Leslie Slavik

Leslie Slavik

Lead Regulatory Affairs

Harley-Davidson Motor Company