

21st December, 2020

Mr. William Ott Compliance Division Office of Transportation and Air Quality U.S. Environmental Protection Agency 2000 Traverwood Drive Ann Arbor, MI 48105 U.S.A.

Ref. No. LCE-20/144

Subject: Request for Greenhouse Gas Credits of High Efficiency Exterior Light Based on Alternative Methodology

Per 40 CFR § 86.1869-12 (d) (1), MAZDA requests EPA approval of the GHG credits for high efficiency exterior lights for the 2020MY and beyond based on the methodology described in Attachment A. In addition, MAZDA is requesting approval of the waiver of the notice and comment requirements pursuant to 40 CFR § 86.1869-12 (d) (2).

If you have any questions or comments regarding this request, please contact Mr. Hirotsugu Honda of Mazda North American Operations at 248-295-7864. Thank you for your attention.

Sincerely yours,

Tua

for Mitsuhide Kikkawa General Manager Environmental & Safety Engineering Department Mazda Motor Corporation

CC: Mazda North American Operations - Wixom Center Mazda North American Operations - Irvine R&D Mazda North American Operations - Washington DC

Attachment A: High Efficiency Exterior Light

Definition:

High efficiency exterior lighting means a lighting technology that, when installed on the vehicle, is expected to reduce the total electrical demand of the exterior lighting system when compared to conventional lighting systems.

Credits:

Credits are determined by comparing wattage of new high efficiency exterior lights to the wattage of the baseline lights that are replaced.

Description of MAZDA System:

MAZDA uses light-emitting diode (LED) lamps, which is one of the most energy-efficient lighting sources. LEDs are increasingly being purchased to replace other types of lamps. LEDs are relatively more expensive than other types of bulbs, but are very cost-effective because they use only a fraction of the electricity of traditional lighting methods and can last far longer.

MAZDA Methodology:

The MAZDA methodology is substantially identical to the Ford methodology which is previously approved by EPA. (March 20, 2015)

MAZDA currently uses high efficiency exterior lights on the following lighting components:

- Low beam
- High beam
- Parking/position
- Turn signal, front
- Side marker, front
- Tail
- Turn signal, rear
- Side marker, rear
- License plate

1. Credit Calculation

The credits MAZDA is requesting are calculated by using following EPA's formula from the Joint Technical Support Document based on our new light wattage.

High Efficiency Exterior Lighting Credit =

(Baseline lighting wattage – high efficiency lighting wattage) x usage rate x VMT fraction x 3.2 g/mi CO2 100 watts;

Where:

Baseline lighting wattage: see (a) of this section High efficiency lighting wattage: lighting wattage of the high efficiency exterior light Usage rate: see (b) of this section VMT fraction: see (b) of this section MAZDA was advised on this alternative methodology by EPA on February 5th, 2020:

To use this formula (provided on page 5-72 of the 2017-2025 GHG Technical Support Document), Mazda must use the Federal Register method of calculating these off-cycle credits, e.g. using Mazda values instead of the values shown in Table 5-21 on page 5-71 of the Technical Support Document. Note that Mazda needs to justify the values in this table for applicable Mazda vehicles (or provide different values which are applicable to Mazda vehicles). For example, the "Baseline" values shown in that table are based on values for incandescent lights---which may be different from Mazda baseline values.

(a) Baseline Lighting Wattage

The baseline lighting wattages are the same ones written in the Joint TSD. This is because the traditional lighting available for MAZDA vehicles is halogen lights. Since halogen lights have the same characteristic as incandescent lights in terms of the lighting wattages and MAZDA believes the lighting wattages in the Joint TSD are representative for the baseline for the MAZDA's credit calculation.

(b) Usage rate and VMT fraction

The usage rate and the VMT fraction values are the same ones written in the Joint TSD. This is because there is no uniqueness in the usage nor the function of MAZDA's lighting controls and components.

2. Credit Values

The fleet credit will be calculated based on credit for each type of vehicle, vehicle lifetime miles and U.S. sales volume for applicable 2020 and beyond model year products. The credit values and the credit calculation information will be submitted in the model year reports.

The calculated credits for MAZDA's 2020MY vehicles are as follows. Please note the lighting wattage values may be updated based on the supplier's awaiting final test report.

Waiver of the Notice and Comment Requirements: §86.1869-12 (d) (2) (ii)

The MAZDA methodology is substantially identical to the Ford methodology which is previously approved by EPA (March 20, 2015). Pursuant to 1869-12 (d) (2) (ii), MAZDA request the waiver of notice and comment requirements on this alternative methodology.

• The cite of the previously approved Ford methodology;

https://www.epa.gov/sites/production/files/2016-09/documents/ford-request-2012-2013-ghg-credits-2015-03-2 0.pdf

• The cite of the administrator's decision; https://nepis.epa.gov/Exe/ZyPDF.cgi/P100N19E.PDF?Dockey=P100N19E.PDF

(End)