

HONDA

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Electronic submission to: <http://www.arb.ca.gov/lispub/comm/bclist.php>

Postal submission to:

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

Dear California Air Resources Board (CARB):

American Honda Motor Company, Inc. (AHM) appreciates the opportunity to provide comments on CARB's amendments to motor vehicle test procedures for exhaust emissions, evaporative emissions, and refueling emissions, and new requirements for certification of aftermarket conversion systems for plug-in hybrid electric vehicles.

Honda comments on

APPENDIX D PROPOSED AMENDMENTS TO THE HYBRID EXHAUST EMISSION TEST PROCEDURES, MODEL YEAR 2009 AND SUBSEQUENT

1. Pages E-2, Section 3.1.2

Determination of Urban **All-Electric Range** for Fuel Cell Vehicles and Hybrid Fuel Cell Vehicles.

Honda comment: The phrase "All-Electric Range" is misleading. Fuel cell vehicles use hydrogen as the energy source, and hence it's not an "All-Electric Range".

Honda proposes to replace "All-Electric Range" with "**ZEV Range**" to avoid confusion and be consistent with Section 1962.1 of ZEV Regulation.

2. Page E-3, Section 3.2.2

Determination of Highway **All-Electric Range** for Fuel Cell Vehicles and Hybrid Fuel Cell Vehicles.

Honda comment: The phrase "All-Electric Range" is misleading. Fuel cell vehicles use hydrogen as the energy source, and hence it's not an "All-Electric Range".

Honda proposes to replace "All-Electric Range" with "**ZEV Range**" to avoid confusion and be consistent with Section 1962.1 of ZEV Regulation.

3. Page C-1, Section 3.3(a)

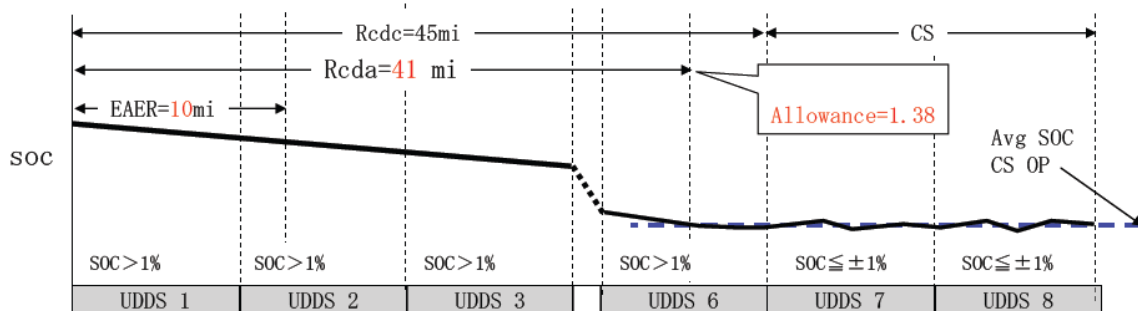
Zero-Emission VMT PZEV Allowance.

Urban Equivalent All Electric Range (EAER)	Zero-emission VMT Allowance
$EAER_u < 10$ miles	0.0
$EAER_u \geq 10$ miles and $R_{cda} = 10$ miles to 100 <u>40</u> miles	$EAER_u \times (1 - UF_{R_{cda}}) / 11.6 11.028$
$R_{cda} > 100 40$ miles	1.58 $EAER_u / 29.63$

Honda comment:

Using R_{cda} in the left column is not appropriate for several reasons:

1. R_{cda} might change from test to test depending on the two final Charge Sustaining UDDS SOC levels, resulting in test-to-test R_{cda} variability and inconsistency with EAER which is calculated by multiplying the difference between Charge-depleting and Charge-sustaining CO2 emissions ratio by R_{cdu} .
2. PHEVs employing Blended strategy could increase the R_{cda} Range to exceed 40 miles to qualify for much higher credits while its EAER is less than 40 miles. This scenario will create an unlevel playing field among PHEVs employing different strategies and the possibility of "gaming". This unfair scenario is described in the graph below.



As an example:

Vehicle A: $EAER_u = 10$ miles; $R_{cda} = 40$ miles; $UF_{R_{cda}} \rightarrow UF_{40} = 0.62$
 Zero-emission VMT Allowance = $10 \times (1 - 0.62) / 11.028 = \mathbf{0.345}$ credits.

Vehicle B: $EAER_u = 10$ miles; $R_{cda} = 41$ miles
 Zero-emission VMT Allowance = $EAER_u / 29.63 = 40 / 29.63 = \mathbf{1.35}$ credits.

The only difference between Vehicles A and B is a mere 1 mile of R_{cda} , but the difference on the credit earned is **1.005** credits! **The use of R_{cda} in the left column clearly does not work!**

Honda proposal:

Delete R_{cda} , use $EAER_u$ consistently in the left column as shown below:

Urban Equivalent All Electric Range (EAER)	Zero-emission VMT Allowance
$EAER_u < 10$ miles	0.0
$EAER_u \geq 10$ miles and $R_{cda} = 10$ miles to 100 40 miles	$EAER_u \times (1 - UF_{R_{cda}}) / 14.6$ <u>11.028</u>
$R_{cda} > 100$ 4 $EAER_u > 40$ mile	1.58 <u>$EAER_u / 29.63$</u>

Question #1: In the December 5, 2008 version, for $R_{cda} > 40$ miles, the VMT PZEV Allowance became $EAER_u$ instead of a fixed value at $EAER_{40}$ as in the October 2008 version. What was the reason behind this change?

Question #2: How was this cap $EAER_{u40} / 29.63$ determined?

Question #3: How was this equation $EAER_u \times (1 - UF_{R_{cda}}) / 14.6$ 11.028 determined?

Honda comments on:

**APPENDIX E
PROPOSED AMENDMENTS TO THE
EVAPORATIVE EMISSION TEST PROCEDURES**

1. Page III-20. Section 1.5

1.5. The vehicle preconditioning drive shall be performed in accordance with **40 CFR §86.132-90**, except that following the initial fuel drain and fill step in this test sequence vehicle fueling step at , as specified in **40 CFR §86.132-90(a)(1)**, an initial preconditioning minimum soak period of a minimum of 6 hours shall be provided to allow the vehicle to stabilize to ambient temperature prior to the preconditioning drive.

Honda comment: The reference CFR 86.132-90 is outdated and superseded by section 86.132-00. Therefore, use 86.132-00 as the reference. The old Section 86.132-90 can not be found on the e-CFR website anymore. [http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=99c830c0831adcc87312fab7b874a01b&tpl=/ecfrbrowse/Title40/40cfr86a_main_02.tpl]

2. Page III-21. Section 1.6

1.6. Except for 2011 and subsequent model-year off-vehicle charge capable hybrid electric vehicles that are equipped with non-integrated refueling canister-only systems, following the vehicle preconditioning drive, a second fuel drain and fill step shall be performed, in accordance with **40 CFR §86.132-90(a)(1)**, The fuel tank shall be filled to the prescribed tank fuel volume of 40 percent of the manufacturer's nominal fuel tank capacity, as specified in 40 CFR §86.1803-01.

Honda comment: The reference CFR 86.132-90 is outdated and superseded by section 86.132-00. Therefore, use 86.132-00 as the reference.

The old Section 86.132-90 can not be found on the e-CFR website anymore.

[http://ecfr.gpoaccess.gov/cgi/t/text/text-](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=99c830c0831adcc87312fab7b874a01b&tpl=/ecfrbrowse/Title40/40cfr86a_main_02.tpl)

[idx?c=ecfr&sid=99c830c0831adcc87312fab7b874a01b&tpl=/ecfrbrowse/Title40/40cfr86a_main_02.tpl](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=99c830c0831adcc87312fab7b874a01b&tpl=/ecfrbrowse/Title40/40cfr86a_main_02.tpl)

Honda comment on:

**APPENDIX F
PROPOSED AMENDMENTS TO THE
ON ROAD VAPOR RECOVERY TEST PROCEDURES**

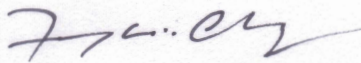
1. On the title page.

**PROPOSED AMENDMENTS TO THE
ON ROAD VAPOR RECOVERY TEST PROCEDURES**

Honda comment: Typographical error. Replace "ON ROAD" with "**ONBOARD**".

Please feel free to contact me at 734-222-5965 if you have any questions regarding the comments. Thank you very much.

Best regards,



Tommy Chang
Manager
Ann Arbor Laboratory
Product Regulatory Office
American Honda Motor Company, Inc.