

**State of California  
AIR RESOURCES BOARD**

**AMENDMENTS TO THE ZERO EMISSION VEHICLE REGULATION**

**Final Statement of Reasons**

**August 2015**

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State of California  
AIR RESOURCES BOARD

**Final Statement of Reasons for Rulemaking,  
Including Summary of Comments and Agency Response**

PUBLIC HEARING TO CONSIDER AMENDMENTS  
TO THE ZERO EMISSION VEHICLE REGULATION

Public Hearing Date: May 21, 2015  
Agenda Item No.: 15-4-2

**I. GENERAL**

**A. Action Taken in This Rulemaking**

The Staff Report: Initial Statement of Reasons for Rulemaking, entitled “Proposed 2014 Amendments to the Zero Emission Vehicle Regulation” (Staff Report or ISOR), released September 2, 2014, is incorporated by reference herein. The Staff Report contained a description of the rationale for the proposed amendments. On September 5, 2014, all references relied upon and identified in the staff report were made available to the public.

In this rulemaking, the Air Resources Board (ARB or the Board) is adopting amendments to the Zero Emission Vehicle Regulation (Regulation) and associated test procedures. The Regulation and test procedures relate to the Board’s Zero Emission Vehicle (ZEV) program, which requires automotive manufacturers to develop and commercialize ZEV technologies. The amendments are designed to provide additional compliance flexibility to Intermediate Volume Manufacturers (IVM) in response to Board direction provided during the 2012 Advanced Clean Cars (ACC) Program rulemaking. The ARB is also making non-substantial modifications that correct reference, grammar, and spelling errors. The amendments are codified in California Code of Regulations title 13, sections 1962.1 and 1962.2, and the associated test procedures.

The amendments to the Regulation were initiated with the publication of a notice in the California Notice Register on September 5, 2014, and notice of public hearing scheduled for October 23, 2014.<sup>1</sup> The Staff Report, the full text of the proposed regulatory amendments, and other supporting documentation were made available for public review and comment starting on September 5, 2014, running for 45 days through to October 20, 2014. The regulatory amendments as originally proposed would have:

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<sup>1</sup> California Air Resources Board. Notice of Public Hearing to Consider 2014 Amendments to the Zero Emission Vehicle Regulation. Posted September 2, 2014. Available online at: <http://www.arb.ca.gov/regact/2014/zev2014/zev2014.htm>

- Modified the IVM definition to add a global revenue test;
- Provided a pathway for IVMs to pool compliance obligations in Section 177 states;
- Provided IVMs additional production lead time;
- Provided all automakers additional credit deficit recovery time; and
- Established lower ZEV Percentage Requirement obligations for IVMs.

Based on Board concerns and comments received at the October 23, 2014 public hearing, the Board did not adopt the amendments as proposed; instead, the Board directed the Executive Officer to continue to work with stakeholders on a revised proposal that would retain the stringency of the ACC Program as adopted in 2012 and to present the Regulation to the Board for further consideration. The Board also directed that any additional appropriate changes to the Regulation be made available for a minimum of 15 days in a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information (First Notice). The First Notice comment period commenced on April 20, 2015, and ended on May 5, 2015.<sup>2</sup>

At a subsequent public hearing held on May 21, 2015, the Board approved Resolution 15-7, making required CEQA and other findings, and adopting the final regulatory amendments. The proposed regulatory amendments:

- Modify the IVM definition to add a global revenue test;
- Provide a pathway for IVMs to pool compliance obligations in Section 177 states
- Provide IVMs additional production lead time; and
- Provide IVMs additional credit deficit recovery time;

The Resolution also directed the Executive Officer to make the modified regulatory language, and any additional conforming modifications, available for public comment, with any additional supporting documents and information, for a period of at least 15 days. This was done in a second and third Notice of Public Availability of Modified Text (Second and Third Notice). The Second Notice comment period commenced on June 9, 2015, and ended on June 24, 2015. The Third Notice comment period commenced on August 17, 2015, and ended on September 1, 2015. Finally, the Resolution stated that the Executive Officer may present the regulation to the Board for further consideration if warranted, and if not, directed the Executive Officer to take final action to adopt the Regulation after addressing all appropriate modifications.

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying, and providing the rationale for, the modifications made to the originally proposed regulatory text. The FSOR also contains a summary of the comments received on the proposed regulatory amendments during the formal regulatory process and ARB's responses to those comments.

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<sup>2</sup> All public comments received on the proposed amendments can be found online at: <http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=zev2014>

## **B. Mandates and Fiscal Impacts to Local Governments and School Districts**

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action would not create costs or savings to any State agency or in federal funding to the State, costs or mandate to any local agency or school district, whether or not reimbursable by the State pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500), or other nondiscretionary cost or savings to State or local agencies.

## **C. Consideration of Alternatives**

For the reasons set forth in the Staff Report, in staff's comments and responses at the hearings, and in this FSOR, the Board determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed, or would be as effective as and less burdensome to affected private persons, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law than the action taken by the Board.

## **II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL**

### **A. Modifications Directed at the October 23, 2014, Board Hearing and Provided for in the First 15-Day Comment Period**

Pursuant to the direction provided by the Board during the October 23, 2014, hearing, and after extensive consultation with stakeholders, ARB released the First Notice on April 20, 2015. The following summarizes the substantive modifications contained within the First Notice and the rationale for making such modifications.

- ARB proposed additional regulatory language to clarify that the \$40 Billion global revenue test, introduced at the October 23, 2014 Board hearing, is based on "automotive-related global revenue." This change reflects the fact that revenues from an automaker's non-automotive units and parent company are not available to the automaker for automotive purposes such as research and development and thus should not be considered a translatable metric of vehicle development capability.
- ARB proposed additional language to clarify that: (1) the lead time clock does not run when automotive related global revenue is less than or equal to \$40 Billion, and (2) the first three-year production volume average that can count toward transition to LVM requirements is the 2015 through 2017 model year period that corresponds with the 2018 reporting year.
- ARB proposed additional language to establish an opt-in sunset date for IVMs that choose to elect the optional Section 177 State compliance path in 2018 and subsequent model years. This modification addressed an omission in the regulatory

language as Section 1962.1(d)(5)(E) already contains an opt-in sunset date for the 2009 through 2017 model years.

- ARB staff initially proposed to allow automakers up to three model years to make up ZEV credit deficits. ARB proposed additional language to exclude LVMs from the three-year deficit provisions. Instead, LVMs would continue to be subject to the existing one-year deficit provisions. This modification addresses ARB concerns about the potential for LVMs to developing sizable or insurmountable deficits under the three-year proposal.
- ARB staff initially proposed a ZEV credit obligation for IVMs equivalent to the entire LVM optional TZEZ obligation plus one fifth of the LVM pure ZEV obligation. ARB proposed additional language striking the initially proposed language so that the ZEV Percentage Requirement remains as adopted as part of the 2012 ACC Program rulemaking.
- ARB proposed additional language harmonizing the TZEZ definition language within Section B.1 of California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes with that in section 1962.2(i)(16).

The following summarizes the non-substantive modifications contained within the First Notice and the rationale for making such modifications.

- Section 1962.2(c)(3)(A)1: The section references section G.7.5 of California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes. The section is corrected to reference section G.7.3.
- Section 1962.2(d)(5)(E)2.b: The section references sections 1962.2(d)(5)(E)2.a.i and 1962.2(d)(5)(E)2.a.ii. The section is corrected to reference 1962.2(d)(5)(E)2.b.i and 1962.2(d)(5)(E)2.b.ii., respectively.
- Section 1962.2(i)(16): The section references sections 1962.2(c)(3)(D) and 1962.2(c)(3)(E). The section is corrected to reference 1962.2(c)(3)(A).
- Section C.3.3(a)(1) of California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes: The section references section G.7.5. The section is corrected to reference section G.7.3.
- Section C.4.5(e)(2)(B) of California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes: The section references sections C.4.5(e)(2)(A)i and C.4.5(e)(2)(A)ii. The section is corrected to reference sections C.4.5(e)(2)(B)i and C.4.5(e)(2)(B)ii., respectively.

## **B. Modifications Approved at the May 21, 2015, Board Hearing and Provided for in the Second 15-Day Comment Period**

After consideration of the public comments received in response to the First Notice, and pursuant to the direction provided by the Board during the May 21, 2015, hearing, additional modifications to the regulatory text were released for a public comment period on June 9, 2015 (Second Notice). The following summarizes the substantive modifications contained within the Second Notice and the rationale for making such modifications.

- ARB proposed language removing regulatory text (“same model year”) that appeared in sections 1962.2(d)(5)(E)2.c.i. and (d)(5)(E)2.c.ii. in Appendix A to the Staff Report, and in the subsequent Errata attachment. The text was inadvertently, and incorrectly included from an earlier version of the ZEV Regulation.
- ARB proposed language highlighting text (“large volume”) that had been added to section 1962.2(d)(5)(E)2.f. in Appendix A of the Staff Report and the attachment to the Errata (dated October 13, 2014) without indicating it was new language by using standard underline convention. (Note: There is no change to section C.4.5(e)(2)(F), the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, as that section correctly reflects the addition of the “large volume” phrase.)

The following summarizes the non-substantive modifications contained within the Second Notice and the rationale for making such modifications.

- Section 1962.2(c)(3)(A): The current regulatory text (effective July 10, 2014) references a last amended date of May 30, 2014. The last amended date is being changed to “[insert date of adoption]” so that this date can be updated once these modifications are adopted. (Note: There is no corresponding provision in the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.)
- Section 1962.2(c)(3)(A)1: The current regulatory text (effective July 10, 2014) was modified under the First Notice to update the reference from section G.7.5 to section G.7.3 of California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes. This reference is not correct for the currently adopted regulatory language, but will become correct when the currently proposed changes to these test procedures are adopted. Thus, the last amended date is being changed to “[insert date of adoption]” so that the reference will be correct upon adoption of the modifications. (Note: There is no corresponding provision in the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid

Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.)

- Section 1962.2(d)(5)(E)2.b.i: The regulatory text proposed in the attachment to the Errata (dated October 13, 2014) references section 1962.2(d)(5)(E)2.b. The reference has been corrected to reference 1962.2(d)(5)(E)2.a. (Note: There is no change to section C.4.5(e)(2)(B)i, the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, as that section correctly references section C.4.5(e)(2)(A).)
- Section 1962.2(d)(5)(E)2.d.ii: The regulatory text proposed in the attachment to the Errata (dated October 13, 2014) incorrectly references only 1962.2(d)(5)(E)2.a. That section has been corrected to reference 1962.2(d)(5)(E)2.a, 2b, and 2.c. (Note: There is no change to section C.4.5(e)(2)(D)2, the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes, as that section correctly references C.4.5(e)(2)(A), (B), and (C).)
- Section 1962.2(d)(5)(E)2.f: The third sentence of the second paragraph of the regulatory text proposed in the attachment to the Errata (dated October 13, 2014) incorrectly references (d)(5)(E)2.a. The section now correctly references sections 1962.2(d)(5)(E)2.b.i. and 1962.2(d)(5)(E)2.b.ii. Section C.4.5(e)(2)(F), the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, originally referenced section C.4.5(e)(2)(A). That section has been corrected to reference sections C.4.5(e)(2)(B)i. and C.4.5(e)(2)(B)ii.
- Section 1962.2(i)(16): This section of the regulatory text proposed in Attachment A to the First Notice (dated April 20, 2015) only referenced section 1962.2(c)(3)(A). The section should have also referenced section 1962.2(c)(3)(E) as reflected in the attachment to the Errata (dated October 13, 2014). The section has been corrected so that in addition to referencing section 1962.2(c)(3)(A), it also references section 1962.2(c)(3)(E). The corresponding definition within Section B.1 of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, only referenced C.3.3(a). The reference has been corrected to read C.3.3(a) and (e).

### **C. Modifications Provided for in the Third 15-Day Comment Period**

The following summarizes the substantive modification contained within the Third Notice and the rationale for making such modification. The Second Notice included an “Attachment B” which contained modified text for the “California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck, and

Medium-Duty Vehicle Classes,” as last amended May 30, 2014 (Test Procedures). Within the Test Procedures, the definition of “TZEV” did not properly mirror the definition as written in the corresponding regulation text. Accordingly, with the Third 15-Day Notice ARB modified the Test Procedure text to properly mirror the regulation text.

### **III. DOCUMENTS INCORPORATED BY REFERENCE**

The Regulation and the incorporated test procedures adopted by the Executive Officer incorporate by reference the following documents:

1. “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles in the Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicle Classes,” as of July 10, 2014 (last amended May 30, 2014), [http://www.arb.ca.gov/msprog/levprog/test\\_proc.htm](http://www.arb.ca.gov/msprog/levprog/test_proc.htm)
2. “California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles in the Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicle Classes,” as of July 10, 2014 (last amended May 30, 2014). [http://www.arb.ca.gov/msprog/levprog/test\\_proc.htm](http://www.arb.ca.gov/msprog/levprog/test_proc.htm)

These documents were incorporated by reference because it would be cumbersome, unduly expensive, and otherwise impractical to publish them in the California Code of Regulations. In addition, some of the documents are copyrighted, and cannot be reprinted or distributed without violating the licensing agreements. The documents are lengthy and highly technical test methods and engineering documents that would add unnecessary additional volume to the regulation. Distribution to all recipients of the California Code of Regulations is not needed because the interested audience for these documents is limited to the technical staff at a portion of reporting facilities, most of whom are already familiar with these methods and documents. Also, the incorporated documents were made available by ARB upon request during the rulemaking action and will continue to be available in the future. The documents are also available from college and public libraries, or may be purchased directly from the publishers.

### **IV. SUMMARY OF COMMENTS MADE DURING THE 45-DAY COMMENT PERIOD AND OCTOBER 23, 2014 BOARD HEARING AND AGENCY RESPONSES**

Chapter IV of this FSOR contains all written comments submitted during the 45-day public comment period that commenced with the September 2, 2014 public hearing notice and ended on October 20, 2014. This chapter also contains oral and written comments that were presented at the October 23, 2014 Board hearing. Listed below

are the organizations and individuals that provided comments either during the 45-day public comment period or at the October 23, 2014 Board hearing:

### A. List of Commenters

Table IV-1 below lists commenters that either submitted written comments on the proposed amendments during the 45-day public comment period or submitted oral/written comments at the October 23, 2014 Board hearing or both. It also identifies the form of their comment and shows the abbreviation assigned to each.

**Table IV-1**

<b>Abbreviation</b>	<b>Commenter</b>	<b>45-Day</b>	<b>Hearing</b>
ALA	Will Barrett, American Lung Association of California		✓
Alliance	Steven Douglas, Alliance of Automobile Manufacturers		✓
Beall	Jim Beall, California State Senator		✓
Berg	Peter Berg, Private citizen	✓	
BMW	Azita Khalili, BMW of North America		✓
CaIETC	Eileen Tutt, California Electric Transportation Coalition	✓	
CALSTART	Jamie Hall, CALSTART	✓	
CCA	Joseph Lyou, Coalition for Clean Air		✓
CEERT	John Shears, Center for Energy Efficiency and Renewable Technologies	✓	✓
CMUA	Anthony Andreoni, California Municipal Utilities Association	✓	
Corbett	Ellen Corbett, California State Senator		✓
EC	Michelle Kinman, Environment California Research and Policy Center	✓	✓
FCA	Michael Hartrick, Fiat Chrysler Automobiles	✓	✓
FST	Donald MacAllister, Fast Swap Technologies, Inc.	✓	✓
Global	Julia Rege, Association of Global Automakers		✓
Griffith	Patrick Griffith, Private citizen	✓	
JLR	Clinton Blair, Jaguar Land Rover		✓
Japan	Harry H. Horinouchi, Consul General of Japan	✓	
LABC	Lorraine Paskett, Los Angeles Business Council		✓
LACOC	Elizabeth Ramseyer, Los Angeles Area Chamber of Commerce	✓	
LAEDC	Bill Allen, Los Angeles County Economic Development Corporation	✓	

<b>Abbreviation</b>	<b>Commenter</b>	<b>45-Day</b>	<b>Hearing</b>
Mazda	Daniel Ryan, Mazda	✓	✓
Mitsubishi	David Patterson, Mitsubishi Motors R&D of North America		✓
NESCAUM	Matt Solomon, Northeast States for Coordinated Air Management representing Connecticut Maryland, Massachusetts, New York, Oregon, Rhode Island, Vermont (S177 Signatory States)		✓
NRDC	Simon Mui, Natural Resources Defense Council		✓
NYSDEC	David Shaw, New York State Department of Environmental Conservation	✓	
OEC	Jana Gastellum, Oregon Environmental Council	✓	
SCAQMD	Barry Wallerstein, South Coast Air Quality Management District		✓
SCC	Kathryn Phillips, Sierra Club California	✓	
Subaru	David Barker, Subaru (representing the IVMS identified in Comment 1)		✓
Tesla	Ken Morgan, Tesla Motors	✓	✓
UCS	David Reichmuth, Union of Concerned Scientists		✓
Volvo	Katherine Yehl, Volvo (representing the IVMS identified in Comment 1)		✓

Set forth below is a summary of each objection or recommendation made regarding the specific adoption, amendment, or repeal proposed, together with an explanation of how the proposed action has been changed to accommodate each objection or recommendation, or the reasons for making no change. Only objections or recommendations directed at the agency's proposed action or the procedures followed by the agency in proposing or adopting the action are summarized as permitted by Code of California Regulations, title 2, section 11346.9. Repetitive or irrelevant comments have been aggregated and summarized as a group. A comment is "irrelevant" if it is not specifically directed at the agency's proposed action or to the procedures followed by the agency in proposing or adopting the action. The comments have been grouped by topic whenever applicable.

When comments have been grouped, a brief summary of the comment is given to relay the content of all the comments in the group. All other comments are taken verbatim from documents submitted during the 45-day comment period, or from the October 23, 2014 Board hearing transcript. Acronyms exclusively used by commenters have been defined by [brackets] throughout this section.

## B. Comments of Support

### 1. Comments:

Please accept this letter urging the California Air Resources Board (ARB) to adopt the proposed modifications to ARB's Zero Emission Vehicle (ZEV) Regulation that were negotiated between ARB and a coalition of five intermediate volume vehicle manufacturers ("IVM5"): Jaguar Land Rover; Mazda; Mitsubishi Motors; Subaru; and Volvo. (LAEDC)

There is great concern that if this ruling does not allow several Japan-affiliated automakers a feasible and even-handed route for remaining engaged in the California market, while making the investments they need to achieve CARB requirements, they will suffer significant impacts. The regulatory certainty and implementation milestones they require are found within the compromise agreement they have been negotiating with CARB over the past 18 months, or so. My request is for CARB to make it possible for them to maintain the full scope of their operations in California by providing these firms with the pathway and the certainty they need in order for them to keep contributing to achieve California's air quality and climate change goals. (Japan)

Subject to the recommendations provided in this letter, we support the proposed 2014 Amendments to the Zero Emission Vehicle (ZEV) Regulations as detailed in ARB Staff's Initial Statement of Reasons for Rulemaking (ISOR) dated September 2, 2014. For IVM companies, the proposal is tough, but fair in that it provides the kind of regulatory certainty that LVMS obtained in 2012. We support the proposed 2014 Amendments to the Zero Emission Vehicle (ZEV) Regulations as detailed in ARB Staff's Initial Statement of Reasons for Rulemaking (ISOR) dated September 2, 2014. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

We respectfully request that the California Air Resources Board, during your upcoming October 23rd Board Meeting, adopt the compromise proposal negotiated between CARB and the IVM5; to allow the IVM5 to make timely investments in an environment of regulatory certainty, and in support of CARB's long term ZEV goals. (LACOC)

Global Automakers supports regulatory efforts that enhance compliance flexibility and feasibility, while maintaining regulatory goals. And we believe ARB's proposed amendments meet this intent. (Global)

With some reservation, these states support Staff's proposed modifications to the ZEV regulation. (NESCAUM)

New York State supports California's continuing efforts to establish a zero emission vehicle market by implementing a strong regulatory program. But we also recognize that smaller manufacturers have not had the need or resources to

develop marketable ZEVs in the same time frames. We reluctantly agree that the proposed changes are necessary and offer a fair and equitable path for the smaller manufacturers to follow in introducing new advanced technology vehicles in their lines. In conclusion, we support the Board staff's proposal to establish lower credit requirements for intermediate volume manufacturers and longer schedules for those transitioning from intermediate to large volumes. (NYSDEC)

Agency Response: ARB appreciates support for the staff's recommended changes to the ZEV regulation. Do note that in accordance with the Board direction received on October 23, 2014, only a subset of the initially proposed changes is being finalized.

### **C. Retain Current Program**

#### **2. Comments:**

According to staff analysis, the provisions would lead to a shortfall of about 25,800 ZEV vehicles by 2025. Other vehicle manufacturers' analyses put the shortfall at about 90,000 vehicles. Whether the higher or lower number, the shortfall is significant. Additionally, the proposal furthers the "death by a thousand cuts" stigma that surrounded the ZEV Program in the late 1990s and early 2000s. (ALA, CCA, CEERT, NRDC, SCC, UCS)

We believe that the Board has the opportunity to send a clear message that California intends to stay the course. (ALA, CCA, CEERT, NRDC, SCC, UCS)

I encourage you to maintain the integrity of the ZEV mandate. Any weakening of the mandate will not only stifle the progress we've made toward electrifying transportation but could irreparably damage the future of electric vehicle transportation in California. (Beall)

Stand firm with the initial ZEV regulations as that is the only way to move our state forward in terms of a cleaner and more efficient vehicle fleet. Delaying the transition will not help anyone in the end. The overall ZEV/TZEV vehicle numbers should not be reduced. (Berg).

The overall ZEV/TZEV vehicle numbers should not be reduced from the initial ZEV regulations. (Berg)

Now is not the time to reduce the number of ZEVs and the accompanying greenhouse gas (GHG) reductions. (CMUA)

Many vehicle manufacturers, including the Large Vehicle Manufacturers (LVM), and smaller companies like Tesla are meeting the current ZEV standard. Reducing the LVM's potential amount of ZEVs over the next 11 years in California will not help California reach its total PEV deployment goal and GHG reduction goals. In reference to Figure 1, on page 9 of the 2014 ARB ZEV Staff report, the

proposed amendments reduce TZEVs and ZEVs on the road from IVMs by roughly 50 percent by 2025. (CMUA)

We must hold the line on the ZEV mandate. If the mandate starts to crack, it will send the wrong message to other states and countries that look to California when implementing their own climate change policies. (Corbett)

I urge the Board to continue building on this positive momentum, stay the course on ZEVs, and not send a conflicting policy signal regarding the timing or stringency of the ZEV program. (EC)

Environment California Research & Policy Center urges the Board to not send a conflicting policy signal regarding timing and stringency of the ZEV program. (EC)

We encourage the ARB Board to stay the course and reject the proposed revisions to the ZEV Regulation that would both delay the compliance timeline for intermediate volume manufacturers and reduce their ZEV credit percentage obligation from 2018-2025 model years. (LABC)

The IVM proposal – and the ARB staff proposal that has since resulted – would slow progress toward the ZEV program goals and goes too far. (NRDC, UCS)

As the ZEV rule remains the primary motivation for most manufacturers to develop and improve ZEV technologies, any reduction in stringency is disappointing and something we wish could be avoided. (NESCAUM)

The Oregon Environmental Council (OEC) is writing in support of maintaining strong ZEV rules. (OEC)

A strong ZEV program is critical for Oregon to meet our climate and air quality goals. Oregon's Statewide Transportation Strategy calls for dramatic increases in electric vehicle market share, the 10-Year Energy Action Plan supports fleet conversion to cleaner fuels, and many air quality plans depend on a cleaner vehicle pool. Undermining ZEV undermines these critical goals. (OEC)

We urge you to consider the following points that support the case that the ZEV mandate is achievable in its current form: (1) IVMs have already demonstrated the ability to develop and launch plug-in vehicles, (2) IVMs are delivering plug-in vehicles in Europe and Asia in volumes that far exceed even the 2018 ZEV standards, (3) manufacturers can partner to develop clean vehicles more quickly and with less cost, (4) IVMs have billions of dollars in cash on hand to fund clean vehicle development, (5) IVMs can reduce their ZEV requirement by up to 50% with the GHG over-compliance option, and (6) the cost of hedging using ZEV credits is extremely small relative to IVM profits. (Tesla)

Please stay the course. As you heard earlier, we need as many emissions reductions as possible. And we also need the right signals to industry to continue to produce the vehicles and get the vehicles into California. And if there is anything we need to do at all, it is to accelerate the program. (SCAQMD)

Agency Response: At its October 23, 2014 hearing, the Board expressed concern that the staff proposal misinterpreted Board direction and thus offered the IVMs greater flexibility than was intended, primarily with regard to the stringency of the ZEV Percentage Requirement within the regulation. The Board elected to forego making a motion on the proposal and did not issue a resolution; instead, the Board directed staff to continue to work with stakeholders on a proposal that would retain the stringency of the ACC Program as adopted in 2012. The revised proposal, which was presented to the Board at the May 21, 2015, hearing, retained the 2012 ACC ZEV Percentage Requirements.

#### **D. The Governor's ZEV Goals**

3. Comments:

The amendments proposed by staff in the Initial Statement of Reasons seem to contradict recently passed California laws and the leadership on ZEVs demonstrated by the Governor and legislature. (ALA, CCA, CEERT, NRDC, SCC, UCS)

Changing the ZEV manufacturing goals at this time... runs counter to state climate and clean air policy as demonstrated by recent legislation and the Governor's actions. (ALA, CCA, CEERT, NRDC, SCC, UCS)

The ZEV mandate is critical to pushing the automotive industry to achieve Governor Brown's goal of delivering 1.5 million electric vehicles by 2025. (Beall)

With Governor Brown's 2023 goal of placing a million ZEVs and near-zero emission vehicles on California's roadways, and his goal of 1.5 million electric vehicles on the road by 2025, it is imperative that vehicle manufacturers produce the cleanest fuel powered vehicles sooner to allow for charging infrastructure expansion. (CMUA)

The ZEV mandate is absolutely critical to the success of Governor Brown's goal of delivering 1.5 million electric vehicles by 2025, as well as the clean vehicle goals of nine other states that have adopted California standards. (Corbett)

The amendments proposed by staff in sections III.B, III.C, and III.E seem to contradict the leadership on ZEVs demonstrated by the Governor and legislature. (LABC)

Any changes to the ZEV mandate that move us away from Governor Brown's goal of 1.5 million electric vehicles should be carefully scrutinized and only allowed if supported by sound data and analysis. (Tesla)

Agency Response: At the October 23, 2014 Board hearing, staff estimated that, as a result of its proposal, California could see an approximate decrease in vehicle deliveries of 1.7 percent. However, the uncertainty associated with the various compliance pathways available to IVMs means that staying the course could actually result in fewer vehicles if the IVMs complied through the purchase of credits from other manufacturers. Regardless, as mentioned previously in the Agency Response to Comment 2, the Board directed staff to continue to work with stakeholders on a proposal that would retain the 2012 ACC ZEV Percentage Requirements and thus not impact the Governor's ZEV goals.

4. Comment: Some also argue that ARB has underestimated the potential loss of ZEVs if this proposal were adopted. Those groups have used different assumptions, different estimates, and different forecasts than ARB staff. ARB's proposal and analysis reflect the same logic, databases, and sources that they have used in other ZEV regulatory proposals. The staff proposal creates requirements that will encourage IVM companies to comply with vehicles, not purchased credits. The use of purchased credits for compliance does nothing to support the overall goal of putting more ZEVs on the road. Further, the IVMs recommendation supports the Governor's Goal of 1.5M vehicles by 2025 while maintaining an equivalent percentage vehicle requirement to LVMs. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: ARB appreciates the IVM comment. The Board directed staff to consider how the forthcoming Midterm Review informs any changes to stringency for the IVMs.

## **E. Timing of Stringency Assessment; Midterm Review Activities**

5. Comments:

Changing the ZEV manufacturing goals at this time is wrong [because] it is being done independent of the Midterm Review scheduled for 2016-17. This is a substantial change in direction that shouldn't be undertaken outside of that scheduled review. (ALA, CCA, CEERT, NRDC, SCC, UCS)

Staff's proposal significantly reduces the ZEV credit requirement for IVMs and therefore the number of vehicles the ZEV Program will deliver. The proposed modifications also raise policy and analytical questions that should not be up for consideration at this time and that are properly housed as part of the agreed-upon Midterm Review. The Midterm Review's deliberative, data-driven process will ensure any regulatory changes are informed by a strong technical and analytical foundation. Handling IVM issues now amounts to a piecemeal change that is both unnecessary and harmful to the goals of the program. In

addition, other automakers are now proposing that ARB move the historic compliance credit approach to an entirely new system, based on electric-powered vehicle miles traveled, which could significantly increase credits for TZEVs. The combined effects of switching IVMs to a TZEV-only pathway, together with reducing their stringency, and the potential for further increases in credits for TZEVs represent large, major changes to the program. (NRDC, UCS)

We support the Board staff's proposal to establish lower credit requirements for intermediate volume manufacturers and longer schedules for those transitioning from intermediate to large volumes. We ask the Board to refrain from any further adjustments to credit requirements until the scheduled mid-term review of the program. (NYSDEC)

The current IVM proposal under consideration is not within the scope of the midterm review. This is truly an adjustment being made to complete the 2012 ZEV regulatory process. IVM's need regulatory certainty now. We need to know what to build and when. We can't make product decisions and investments of billions of dollars based on incomplete information. We don't feel it's fair to leave the IVMs in limbo regarding the requirement. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: The Board directed staff to review how the 2012 ACC Regulation affects IVMs transitioning into large volume manufacturer (LVM) requirements in the 2018 model year and return to the Board by December 31, 2014, with a recommendation regarding more fair treatment of these manufacturers. The IVMs comment that the component of this recommendation affecting changes to stringency appropriately reflects a necessary adjustment to the 2012 ZEV regulatory process. The Board does not agree with this assertion, but instead agrees with other commenters that any changes to stringency, either for IVMs, or LVMs, or both must be informed by the results of the forthcoming Midterm Review.

## **F. Revised IVM Definition and Revenue Test**

### **6. Comments:**

We ask that you adopt the portions of the proposed amendments that would change the definition of IVM status to add a metric based on global revenues to complement the existing California fleet sales metric. We see these changes as being consistent with the Board's direction to staff in 2013. (ALA, CCA, CEERT, NRDC, SCC, UCS)

We support the amended definition of IVM status to add a metric based on global revenues to complement the existing California fleet sales metric. (NRDC, UCS) We generally support the pooling provisions and the definitional modifications. (CalETC)

The \$40 billion global revenue number is an important new metric that we think provides us with some good flexibility (JLR, Mazda, Mitsubishi, Subaru, Volvo)

We do support the adoption of portions of the proposed amendments that would reasonably change the definition of IVM status to include an additional metric based on global (sic.) and the proposal to provide more flexibility for pooling in Section 177 states. (LABC)

Agency Response: ARB appreciates support for the staff's recommended changes to the ZEV regulation. Within the First Notice, the Board clarified that the revenue test is based on "automotive-related global revenue."

7. Comment: Comparing IVMs to LVMs is not appropriate; instead the ARB should compare the financial capacity of IVMs and their parent companies to the actual cost of launching PEV programs. Smaller businesses in California, with less annual revenue earned are producing ZEVs and creating jobs in our state today. (CMUA)

Agency Response: ARB disagrees with the commenter. ARB understands that the revenues from an automaker's non-automotive units and parent company are not available to the automaker for automotive purposes such as research and development and thus should not be considered a translatable metric of vehicle development capability. That is why ARB identified research and development budgets of both IVMs and LVMs as an appropriate surrogate of their respective development capabilities.

## **G. S177 State Pooling**

8. Comments:

We ask that you support the proposal to provide more flexibility for pooling in Sec. 177 states. We see these changes as being consistent with the Board's direction to staff in 2013. (ALA, CCA, CEERT, NRDC, SCC, UCS)

We also support staff's proposal to provide more flexibility for pooling in Section 177 ZEV states. (NRDC, UCS)

We generally support the pooling provisions and the definitional modifications. (CalETC)

We do support the adoption of portions of the proposed amendments that would reasonably change the definition of IVM status to include an additional metric based on global (sic.) and the proposal to provide more flexibility for pooling in Section 177 states. (LABC)

Agency Response: ARB appreciates support for the staff's recommended changes to the ZEV regulation. Within the First Notice, the Board additionally proposed language to establish an opt-in sunset date for IVMs that choose the

optional Section 177 State compliance path. This sunset date for model years 2018 and subsequent is consistent with the existing opt-in sunset date for model years 2009 through 2017.

## H. Lead-Time Proposal

### 9. Comments:

We find three [this] provisions of the proposed amendments to the ZEV regulation particularly troubling. (ALA, CCA, CEERT, NRDC, SCC, UCS)

The Coalition for Clean Air opposes any relaxation of the standard, relaxing the lead-time provisions, reducing the ZEV percentage requirement for allowing for additional time to make up the ZEV credit deficits. (CCA)

We ask that you reject proposed amendments outlined in sections III.B, III.C, and III.E of the Initial Statement of Reasons issued on September 2, 2014. (LABC)

While we support some aspects of the staff proposal, we respectfully oppose several key provisions due to their negative effects on the ZEV Program in model years 2018-2025 and beyond. (NRDC, UCS)

We oppose extension of the transition time from IVM to LVM (3 to 5 years). Given that ARB is proposing to modify the definition around IVMs to include global revenue as a threshold, even greater certainty will be afforded to those IVMs. Providing a longer transition time is unnecessary. Particularly for some of the rapidly growing IVMs, sales and revenue could quickly exceed that of current or transitioning LVMs under some scenarios. (NRDC, UCS)

We request that the Board consider rejecting the proposals to extend the transition time from three to five years, oppose reducing the stringency for IVM requirements, and oppose extending the deficit make up period. (OEC)

Agency Response: At the October 23, 2014 hearing, ARB staff proposed that an IVM comply with the ZEV requirements for LVMs beginning with the fifth consecutive three-year production volume average in excess of 20,000 vehicles. The additional two consecutive three-year production volume averages recognize the typical product development time frame and are consistent with the lead-time provisions established for those IVMs that transitioned to LVM status prior to 2018 in the ZEV Regulation, as it existed prior to the 2012 ACC rulemaking.

At the hearing, the Board expressed concern that the proposed lead-time provisions offered the IVMs greater flexibility than the Board intended. The Board did not adopt the amendments as proposed; instead, the Board directed staff to continue to work with stakeholders on a revised proposal that would retain the stringency of the ACC Program as adopted in 2012.

The Board subsequently determined that: (1) additional lead time would more closely align with the existing IVM product development cycle, and (2) it was appropriate to provide IVMs this additional lead time to allow compliance with the already existing ZEV credit requirements in recognition of the Board decision not to reduce the ZEV credit requirement. In recognition of these facts, and after consultation with stakeholders, the Board signaled at the May 21, 2015, hearing that it would retain the lead-time provisions as originally presented.

## I. Credit Recovery Proposal

### 10. Comments:

We find three [this] provisions of the proposed amendments to the ZEV regulation particularly troubling. (ALA, CCA, CEERT, NRDC, SCC, UCS)

The Coalition for Clean Air opposes any relaxation of the standard, relaxing the lead time provisions, reducing the ZEV percentage requirement for allowing for additional time to make up the ZEV credit deficits. (CCA)

We ask that you reject proposed amendments outlined in sections III.B, III.C, and III.E of the Initial Statement of Reasons issued on September 2, 2014. (LABC)

While we support some aspects of the staff proposal, we respectfully oppose several key provisions due to their negative effects on the ZEV Program in model years 2018-2025 and beyond. (NRDC, UCS)

We oppose staff's proposal to extend the deficit "make-up" period from one year to three years for IVMs and LVMs. Modifications to the LVM requirements were not in the scope of the Board's request to analyze the IVM-related issues. The proposed changes are harmful to the program's goals. (NRDC, UCS)

We request that the Board consider rejecting the proposals to extend the transition time from three to five years, oppose reducing the stringency for IVM requirements, and oppose extending the deficit make up period. (OEC)

It is a reasonable flexibility for an uncertain market and flatly no vehicles are lost in this provision. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: At the October 23, 2014, Board hearing, ARB staff proposed that automakers be provided up to three model years to make up ZEV credit deficits. This proposal was consistent with the NMOG credit deficit provisions within the ACC Program regulations. It also responded to the greater challenge faced by IVMs because they are in a less advanced stage of development as compared to LVMs, have fewer vehicles in the marketplace and fewer banked ZEV credits to rely upon.

ARB believes that many of the stakeholders who expressed comments of concern regarding the credit deficit provision misunderstood its workings. After further stakeholder discussion and the additional proposal within the First Notice to exclude LVMs from the three-year deficit provisions and instead have them continue to be subject to the existing one-year deficit provisions, these same stakeholders are supportive of this provision.

11. Comment: The Alliance and Global Automakers note that although the ISOR is written from the perspective of only providing the three year ZEV credit deficit recovery period for IVMs, it is our understanding based on the proposed regulatory text and conversations with staff that this flexibility would apply to all manufacturers. We support the three year period to make up a ZEV credit deficit for all manufacturers. (Alliance, Global)

Agency Response: ARB is concerned about LVMs developing sizable or insurmountable deficits under the three-year proposal. Consequently, ARB proposed, within the First Notice, to exclude LVMs from the three-year deficit provisions. Instead, LVMs would continue to be subject to the existing one-year deficit provisions.

12. Comment: LVMs are permitted to meet their ZEV Credit obligation with a mixture of ZEVs and TZEVs. Allowing a manufacturer to use TZEV credits to satisfy a shortfall of credits in a previous model year that could have been met with TZEVs is consistent with the flexibilities provided to LVMs and with the flexibility proposed for IVMs. We recommend that all manufacturers be allowed to make up a TZEV credit deficit with TZEV credits to the extent that would have been allowed during the compliance model year. (Alliance, Global)

Agency Response: ARB disagrees with the commenter. The existing regulation prescribes a pure ZEV obligation for automakers, a portion of which may be met with other technologies such as TZEVs. As a result of the pure ZEV obligation, the ZEV Regulation requires automakers to make up credit deficits solely with pure ZEVs. However, the ZEV Regulation allows IVMs the flexibility to fully meet their compliance obligation with TZEVs. As IVMs are not required to produce pure ZEVs to comply with the ZEV Regulation, it does not make sense to require them to make up a credit deficit with pure ZEVs. As such, the Board believes it is prudent to limit the flexibility to make up credit deficits with TZEV to IVMs.

13. Comment: Staff is proposing to allow IVMs to use TZEV credits as part of a carry back plan to cover a prior year shortfall. Staff reasons that because IVMs are permitted to use TZEV credits for compliance, they should have the same flexibility in making up a deficit. Large volume manufacturers are also permitted to use TZEV credits for compliance, albeit in a more limited fashion. Chrysler therefore recommends that the same flexibility to carry back TZEV credits be granted to large volume manufacturers, but only to the limited extent that an LVM can make use of TZEV credits in the original compliance year. (FCA)

Agency Response: See the Agency Response to Comment 12.

## **J. ZEV Percentage Requirement Proposal**

### 14. Comments:

We request that the Board consider rejecting the proposals to extend the transition time from three to five years, oppose reducing the stringency for IVM requirements, and oppose extending the deficit make up period. (OEC)

We find three [this] provisions of the proposed amendments to the ZEV regulation particularly troubling. (ALA, CCA, CEERT, NRDC, SCC, UCS)

The Coalition for Clean Air opposes any relaxation of the standard, relaxing the lead time provisions, reducing the ZEV percentage requirement for allowing for additional time to make up the ZEV credit deficits. (CCA)

We ask that you reject proposed amendments outlined in sections III.B, III.C, and III.E of the Initial Statement of Reasons issued on September 2, 2014. (LABC)

We encourage the ARB Board to stay the course and reject the proposed revisions to the ZEV Regulation that would both delay the compliance timeline for intermediate volume manufacturers and reduce their ZEV credit percentage obligation from 2018-2025 model years. (LABC)

While we support some aspects of the staff proposal, we respectfully oppose several key provisions due to their negative effects on the ZEV Program in model years 2018-2025 and beyond. (NRDC, UCS)

Staff's proposal significantly reduces the ZEV credit requirement for IVMs and therefore the number of vehicles the ZEV Program will deliver. The proposed modifications also raise policy and analytical questions that should not be up for consideration at this time and that are properly housed as part of the agreed-upon Midterm Review. (NRDC, UCS)

Agency Response: See the Agency Response to Comment 2.

### 15. Comment: The ISOR does not provide proper justification for the decision to lower the ZEV credit requirement nor does it provide a rationale for the level of reductions proposed. The staff proposal makes significant changes to the fundamental sales-based credit requirement of the ZEV Program. In order to determine that the IVM requirement cannot be complied with (either by ZEV sales or credit acquisition), analysis must be completed to show a negative change in vehicle technology or availability in the time since the adoption of the 2012 Advanced Clean Car Regulations.

We also have concerns about the use of Figure 1 in the 2014 ISOR as justification for the reduction in credit requirements. This chart is used both as justification that the current IVM credit requirement is too high and that the

proposed changes result in compliance similar to the LVM requirement. However, the chart is inconsistent with previous analysis of ZEV credits and also the calculations provided by ARB staff. The lines shown in the ISOR figure assume a TZEZV credit of 0.5 and pure ZEV credit of 1.5. The ZEV calculator posted by staff to calculate the change in vehicle production, however, uses a TZEZV credit of 0.7 and ZEV credit that increases from 1.7 to 2.5. (NRDC, UCS)

Agency Response: The ZEV and TZEZV credit values used in the chart in Figure 1 of the Staff Report are incorrect. A revised chart using corrected ZEV and TZEZV credit values was part of the presentation made to the Board at the October 23, 2014, hearing. Additionally, as discussed in the Agency Response to Comment 2, the Board took no action on the staff proposal at that hearing.

16. Comment: The ISOR likely underestimates the credit value of current and future vehicles, resulting in overestimates of the vehicle sales required. The ISOR states that Figure 1 shows “how this amendment translates into percent of vehicles sales for LVMs and IVMs and shows that IVMs would be producing slightly fewer advanced technology vehicles (on a percent of new cars sales basis) compared to LVMs.” Using the ARB likely compliance scenario credit values, this is no longer true. Even these curves likely overestimate the percentages, as 0.7 credits represents a 20-mile UDDS range PHEV with all-electric US06 drive cycle capability. As electric drive technology (particularly battery energy density and cost) improves, the average 2025 PHEV will likely exceed 20 mile range. Currently two of the IVMs are already selling PHEVs in Europe that have an all-electric range greater than 30 miles. If the proposed changes are adopted and the average PHEV range increases such that the average TZEZV credit approaches 1.0, IVMs could comply while producing less than 10 percent TZEZV (and 0 percent ZEV) in 2025.

The number of vehicles needed to satisfy the ZEV credit requirement is highly dependent on the assumptions about the type and range of the vehicles produced. For a manufacturer producing 10,000 vehicles in 2025, compliance with only TZEZVs could vary from 708 vehicles in the case of 80-mile electric range to 2,300 vehicles for a 10 mile electric range vehicle. As shown in Figure 5, if ZEVs are produced, fewer than 400 could satisfy the requirement. Because of the strong dependence of vehicle numbers on the vehicle credit assumptions, no change in the ZEV credit requirement should be made without an updated analysis of the likely vehicle credit scenarios. (NRDC, UCS)

Agency Response: The ARB consistently uses the same tools to assess how automakers will comply with the ZEV Regulation. Those tools include the EMFAC model, which was used in identifying compliance scenarios for the 2012 ACC Program rulemaking. It would be inappropriate to change either the tools or the methodology with which ARB determines compliance scenarios midstream. With regard to the change to the ZEV credit requirement, see the Agency Response to Comment 2.

17. Comment: The ISOR also justifies a lower credit requirement by citing the lower number of models currently offered by each IVM: “An IVM with sufficient revenue could offer both a ZEV and a TZEV model to decrease the percent of sales that would have to be met with advanced technology vehicles, but being that each of the IVM5 automakers offers only 3 to 4 passenger car models that means a greater percentage of their vehicle offerings would have to be higher-cost advanced technology models.” “In other words, under the existing regulation the IVMs’ ZEV models needed to comply with the ZEV Regulation would constitute a greater proportion of the IVM’s total model offerings.” We disagree with both the number of models available and the presumption that model number would increase the difficulty of compliance. All IVMs currently offer more than four light-duty models. These IVMs also produce other vehicle models in markets outside the United States.

The ZEV credit requirement is based on sales, not number of models. All manufacturers have flexibility to decide to how many ZEV models are needed to meet the credit requirement. For example, an automaker could meet its ZEV obligation with one model that sells in sufficient volume or by offering a ZEV drivetrain option on all models sold. Currently, about half of ZEV vehicles currently sold in California are a drivetrain variant of a gasoline or hybrid model, showing that adding a ZEV drivetrain option to [a] vehicle model is a reasonable compliance strategy. The number of models offered by a manufacturer would not limit compliance using this approach. (NRDC, UCS)

Agency Response: The commenter disagrees with the number of IVM models available. ARB suspects this is because they are characterizing an automaker’s offerings differently than does ARB. For example, Volvo offers 30 series, 60 series, 70 series, and 80 series models. ARB considers this to be four model offerings without regard to whether the model can be obtained in coupe versus four door, sedan versus hatchback, or, in the case of Subaru, shorter versus taller suspension.

Similar to Volvo, Mazda also offers four models: 2, 3, 6, and MX-5. The three remaining IVM5 only offer three models each. Jaguar Land Rover offers the XF, XJ, and XK series; Mitsubishi offers the Eclipse, Galant, and Lancer; and Subaru offers the Impreza, Impreza WRX, and Legacy. In the case of Subaru’s offerings, the Outback is still considered a Legacy, with the only difference being the lower body cladding and suspension height.

The ARB also does not consider an IVM’s vehicle model offerings outside the United States (U.S.) as an indicator of their ability to comply with the ZEV Regulation because these vehicles are not homologated for U.S. sale and to do so often involves significant reengineering and cost (see the Agency Response to Comment 24).

The commenter states that the “number of models offered by a manufacturer would not limit compliance using this approach.” However, the Staff Report

discussion regarding the number of models an IVM produces only informed the original decision-making to allow an IVM to meet its entire ZEV obligation with TZEVs. It was this earlier decision-making that resulted in IVMs having to make a greater percentage of their vehicle sales advanced technology because of the reduced credit value of TZEVs vis-à-vis ZEVs. Thus, ARB stands by its assertion that the number of vehicle model offerings has made IVM compliance more difficult when considered in conjunction with the volume of TZEVs needed to comply. However, the changes approved at the May 21, 2015, Board hearing will provide IVMs additional compliance flexibility.

18. Comment: Figure 1 of the published Statement of Reasons shows that 44% of IVM sales would need to be PHEVs in order to meet the 2025 ZEV standard. This chart should be updated to reflect more realistic assumptions. Specifically, the current chart assumes that the IVMs can only produce a 20 mile range PHEV in 2018, with no improvement in electric range from 2018 – 2025 and no growth in sales volume over that period. Current PHEV technology already exceeds 20 miles of range, and manufacturers can build fewer PHEVs by increasing the range of the models they sell. Advancements in battery energy density are contributing to a 7% annual improvement in electric range, not to mention the fact that range can be improved through design changes such as reducing vehicle weight and improving aerodynamics. Lastly, IHS projects 2% sales growth for the IVMs over this period, which should be factored into the model. (Tesla)

Agency Response: See the Agency Response to Comment 16.

19. Comment: In 2012, recognizing IVMs have limited resources for concurrently developing vehicles, ARB proposed that IVMs be able to comply with TZEVs. The problem is the effect of this flexibility was not fully realized, and we ask this be resolved. Currently, we must comply with the same regulatory requirements as the large companies. We would have to proportionally sell 100 percent more vehicles than the large companies. What we're asking for today is just equity. We would like to be able to comply with TZEVs at the same level as the large volume companies. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: By requesting to “comply with TZEVs at the same level as the large volume companies,” the IVMs are essentially requesting a ZEV Percentage Requirement half as large as that of the LVMs. The Board does not agree with this request, but instead believes – as do the majority of commenters – that any changes to stringency must be informed by the results of the forthcoming Midterm Review.

## **K. Economic Impacts**

20. Comments:

As ARB assesses the respective costs and benefits associated with its original ZEV Regulation proposals versus the negotiated modifications, we ask that ARB

not simply weigh the presumed public benefits against only the estimated private costs to the affected Automakers (e.g., OEMs). This is a wholly imbalanced and prejudicial cost/benefit comparison, especially when one considers the significant economic contribution of all the upstream inputs (supply chain purchases, labor expenditures) and downstream impacts (consumers and others who rely on this industry's services/products) associated with the state's Automotive Industry. Point being, there are major "public" costs that would be incurred (and thus must be considered) with ARB's ZEV (and other) regulatory proposals.

From our perspective as Southern California's premier economic development leadership organization, it is important to keep these five automakers in our market. It is especially important to keep Mazda and Mitsubishi Motors headquartered here, along with the approximately 800 workers these two companies employ in their headquarters here. In April, we lost Toyota's headquarters and eventually about 3,000 jobs to Texas. And in 2006, we lost Nissan and about 1,300 jobs to Tennessee. We simply cannot afford to lose anymore California-based automotive headquarters to other states without irreparable revenue and job loss damage to, and a rapid exodus of, many of our automotive suppliers, designers and other automotive industry support infrastructure. (LAEDC)

Our problem has never been with the noble ZEV Regulation goals; but rather, our concern is how California gets to those goals. ARB has an affirmative duty, under the express language of the Act [AB 32], to design emissions reduction measures in a manner that both "minimizes costs and maximizes benefits for California's economy. (LAEDC)

Agency Response: The ZEV Regulation has been developed in discrete increments since 1990. Each iteration has assessed the impact of that increment not only on automakers, but also on allied industries, government entities, and consumers. The 2014 modifications to the ZEV Regulation were actually designed to impart additional flexibility to the IVMs, thus making for a more favorable or business-friendly economic environment in California.

21. Comment: The proposed amendments significantly weaken the ZEV standards and will have a material adverse impact on Tesla's business; a business that is directly advancing the goals of the ZEV mandate and supporting California's economy with over 7,500 jobs in the state. (Tesla)

Agency Response: At its October 23, 2014 hearing, the Board directed staff to continue to work with stakeholders on a proposal that would retain the stringency of the ACC Program as adopted in 2012. The revised proposal, which was presented to the Board at the May 21, 2015, hearing, retained the 2012 ACC ZEV Percentage Requirements. Tesla will still have the same opportunities to sell ZEV credits to other manufacturers under the same compliance requirement adopted in 2012. Additionally, many California businesses are affected by changes to the ZEV Regulation. To the extent that ARB provides IVMs additional

flexibility in complying with the requirements, it allows them to continue to contribute to California's economy while expanding the market for advanced technology vehicles to consumers with greater price sensitivity.

22. Comment: Any decision to weaken the ZEV mandate will have a significant adverse impact on California's electric vehicle business, and will impact the industry's progress toward a future of sustainable transportation. (Beall)

Agency Response: See the Agency Response to Comment 21.

## **L. Air Quality Impacts**

23. Comments:

We disagree with the statements in the ISOR that reductions in the ZEV program will result in no loss of air quality benefits. While we agree that the provisions do not modify current fleet-average emission standards which serve as a "floor" or minimum for automaker's fleets, it is technology-forcing standards like the ZEV program that have enabled the levels established in subsequent fleet-average emission standards. The ISOR does not take into account the dynamic nature of technology-forcing standards and subsequent standard setting processes which underlies some of ARB's most important achievements to date. For example, the ZEV program has helped to drive PZEV technologies to be developed and more widely deployed, such that SULEV standards have largely become implemented in the latest LEV III standards. One could likely demonstrate that, absent the ZEV program, technologies utilized to meet the LEV III fleet emission standards would not have been as readily available or deployed. The ISOR also fails to note other analysis by ARB and the air districts that have shown that ZEVs will be a prerequisite to meet federal air quality standards and GHG emission targets. Fleet-wide emission standards are complementary with ZEV, but insufficient to achieve and deploy ZEV technologies at a level and scale needed to meet these federal and state goals.

In addition, given that automakers will generally over-comply (or have a cushion) in meeting fleet-average standards with gasoline vehicles, the ZEV program may, in some cases, allow automakers to have even greater over-compliance. Thus, the absence of ZEVs may result in that over-compliance cushion becoming smaller in practice. Third, despite improvements in on-board diagnostics and emission control systems for internal combustion engine vehicles, the very real problem of internal combustion vehicles that become "gross emitters" due to modification to or failure of emission control systems are largely avoided by the deployment of pure ZEVs. Finally, while air quality is a regional issue, direct exposure to tailpipe pollution has direct health risks to local populations, particularly to disadvantaged communities near freeways and areas of heavy traffic. More ZEVs on the road results in reduced local exposure, greater technical capacity for tighter standards going forward, a greater ability to exceed

fleet-average standards, and increases the likelihood that air quality and GHG emission targets will be met. (NRDC, UCS)

Unnecessary delays in bringing ZEVs to the market will affect emissions for years after the 2025 end of its [2012 ACC Rulemaking] phase-in. (NYSDEC)

Agency Response: ARB disagrees with the statements made by NRDC and UCS. IVMs only represent 7 percent of the market and the modifications proposed at the October 23, 2014, Board hearing would have represented just a 2 percent decrease in advanced technology vehicle deliveries. ARB does not believe the “dynamic nature of technology-forcing standards” would be affected by the originally proposed modifications because those standards would still apply to the LVMs, which not only represent the other 93 percent of the market, but are also the furthest ahead in the development of advanced technology vehicles. Additionally, a scenario exists where a more stringent pure ZEV requirement could force IVMs to meet a portion of their compliance obligation with purchased credits. The real world result could easily be that IVMs deliver fewer pure ZEVs than assumed under the original proposal, resulting in ZEVs constituting a smaller portion of the light duty vehicle fleet.

Similarly, with regard to the NYSDEC comment, the ARB again notes that IVMs only represent seven percent of the market and it is most likely, based on their extensive experience in developing advanced technology vehicles to date, that LVMs will continue to be the ones to respond the fastest to ARB’s technology-forcing standards.

Ultimately, the concerns about air quality impacts are unfounded because they were based on the proposal made at the October 23, 2014 Board hearing, to reduce the stringency of the ZEV Percentage Requirement within the regulation. The revised proposal, which was presented to the Board at the May 21, 2015, hearing, retained the 2012 ACC ZEV Percentage Requirements, and thus, the air quality benefits identified within the 2012 ACC Program rulemaking. In addition, the LEV criteria standards do require a manufacturer’s fleet to meet a specific emission requirement on average when considering all of its vehicle models. So that means some can be higher emitting than others as long as it averages out overall.

## **M. IVMs Are Already Producing ZEVs/TZEVs**

### 24. Comments:

Changing the ZEV manufacturing goals at this time is wrong [because] the IVMs have proven through their robust European marketing and manufacturing that they have the wherewithal to manufacture and sell sufficient numbers of vehicles to meet the ZEV program’s current goals. (ALA, CCA, CEERT, NRDC, SCC, UCS)

Currently two of the IVMs are already selling PHEVs in Europe that have an all-electric range greater than 30 miles. The IVMs have proven through their robust European marketing and manufacturing that they have the wherewithal to manufacture and sell sufficient numbers of vehicles to meet the ZEV program's current. (ALA, CCA, CEERT, NRDC, SCC, UCS)

The IVMs are already delivering PHEVs in other countries. For example, Volvo and Mitsubishi are delivering thousands of PHEVs in Europe and Asia. (CMUA)

IVMs are already proving that high ZEV car sales are possible. (OEC)

IVMs have already demonstrated the ability to develop and launch plug-in vehicles and are delivering them in Europe and Asia in volumes that far exceed even the 2018 ZEV standards. (Tesla)

I also wanted to comment quickly about a few people have mentioned about some of our companies selling cars overseas. I think everybody knows that the U.S. and probably California in particular is one of the toughest or the toughest market to meet the regulatory requirements, specifically for emissions, for OBD. And our companies are smaller. We don't necessarily have the resources to do all those things. And that's why some of these vehicles aren't here. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: Commenters note that at least two IVMs are already producing advanced technology vehicles in Europe. ARB fully expects that these vehicles will make their way to California. But the lesser research and development budgets of the IVMs means that they are often constrained to developing one advanced technology vehicle at a time and they may not have the resources to concurrently develop a domestic battery electric vehicle and homologate a European plug-in hybrid vehicle for California delivery. In addition, California has significantly more stringent certification requirements, primarily onboard diagnostics that trigger a higher level of development.

## **N. Flexibility – Including ZEV Credit Purchasing – Already Exists**

### 25. Comments:

The IVMs have billions of dollars in cash on hand to invest in clean vehicles, and if needed, can raise money to invest in California's programs the same way start-up businesses have. (CMUA)

Intermediate Volume Manufacturers have flexibilities in the program that allow a variety of approaches to overcome technology and resource hurdles. We acknowledge that, as automotive companies, IVMs are not as large as LVMs. For this reason, we support the definition changes that ensure their status remains as IVMs. However, the IVMs have been aware of the program and its requirements for years and were put on notice with the Board's 2012 vote that

they should begin planning to meet the same requirements as their larger competitors, albeit on their separate schedule.

Arguments made in the ISOR that LVMs originally had the transition path that IVMs are being now offered may have been relevant for the 1990s and early 2000s, but the technology progress and readiness, market dynamics, environmental necessity, and goals of the state – as directed by the Governor and the legislature – are tremendously different today. There is little justification to assume that IVMs need to have all the flexibilities afforded in earlier days of the ZEV program.

The IVMs, despite being smaller, still remain multi-billion dollar companies, and have the ability to integrate plug-in technologies into existing and future platforms; develop ground-up battery, plug-in hybrid, or fuel cell vehicles; enter into technology partnerships with other manufacturers to do such; or purchase ZEV credits. Other LVMs have already followed either one of these paths or a combination of these paths and some IVMs are doing this already. (NRDC, UCS)

We agree with staff that purchasing ZEV credits should not become the main compliance path, however we note that this is a flexibility and “market” provision that can and should be utilized to help address timing and investment issues. At the end of September 2013 there were already enough banked credits available to comply with the standard through MY2017 for the entire industry. The latest banked credit data, ending September 2014, shows a 26% increase in banked credits, suggesting the industry could even comply into the MY2018 period without producing vehicles absent strong standards from MY2018 through MY2025. Just a small portion of these credits could go a long way to helping meet any timing issues among IVMs. (NRDC, UCS)

The ZEV program already provides flexibility – including the ability for manufacturers to purchase credits (which never expire) from companies that over-comply – as well as the pooling proposal under consideration. As part of staff’s proposal, ARB should consider the ability of IVMs to comply using flexibilities in the regulations, such as greenhouse gas (“GHG”) over-compliance and ZEV credit trading, before making a decision to change the standards. (Tesla)

We urge you to consider the following points that support the case that the ZEV mandate is achievable in its current form: (1) IVMs have already demonstrated the ability to develop and launch plug-in vehicles, (2) IVMs are delivering plug-in vehicles in Europe and Asia in volumes that far exceed even the 2018 ZEV standards, (3) manufacturers can partner to develop clean vehicles more quickly and with less cost, (4) IVMs have billions of dollars in cash on hand to fund clean vehicle development, (5) IVMs can reduce their ZEV requirement by up to 50%

with the GHG over-compliance option, and (6) the cost of hedging using ZEV credits is extremely small relative to IVM profits. (Tesla)

Agency Response: All of these commenters believe that IVMs already have the capability to bring advanced technology vehicles to market for one or both of the following reasons: (1) they already can take advantage of available flexibilities, including the ability to purchase ZEV credits, or (2) they have substantial financial reserves or the ability to borrow.

Ultimately, the debate about existing flexibility and resources was made irrelevant to the discussion at the October 23, 2014, Board hearing when the Board directed staff to return with a proposal that retained the stringency of the ZEV Percentage Requirement within the regulation.

26. Comment: Some also argue that ARB has underestimated the potential loss of ZEVs if this proposal were adopted. Those groups have used different assumptions, different estimates, and different forecasts than ARB staff. ARB's proposal and analysis reflect the same logic, databases, and sources that they have used in other ZEV regulatory proposals. The staff proposal creates requirements that will encourage IVM companies to comply with vehicles, not purchased credits. The use of purchased credits for compliance does nothing to support the overall goal of putting more ZEVs on the road. Further, the IVMs recommendation supports the Governor's Goal of 1.5M vehicles by 2025 while maintaining an equivalent percentage vehicle requirement to LVMs. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: ARB appreciates the IVM comment and believes that the approved amendments enable all automakers to move toward ZEV commercialization.

## **O. Second Sign-up Period for Optional Compliance Path**

27. Comments:

BMW respectfully requests ARB consider allowing a second phase for signing up for the Optional Compliance Path [for Section 177 State Pooling] between September 2, 2014 – September 1, 2015. We propose manufacturers opting in [to] the Optional Compliance Path in this second phase forgo the reduced 2015 MY TZEVs available to those who signed up in the first phase. (BMW)

Automakers were required to submit written notification for choosing the Optional Path no later than September 1, 2014. The deadline appeared particularly problematic for manufacturers transitioning from an Intermediate Volume Manufacturer (IVM) to a Large Volume Manufacturer status and just introducing or soon to introduce new ZEV models to the market. For this reason, the Associations ask ARB to consider allowing another signup period for the Optional Path between September 2, 2014 and September 1, 2015. Automakers opting in

during the later period would forgo the reduced MY 2015 TZEV requirement available to those that signed up by September 1, 2014 (Alliance, Global)

Agency Response: At the October 23, 2014 Board hearing, ARB counsel determined that this request was outside the scope of the 45-day notice, and the Executive Officer didn't have the discretion to do it without the rulemaking. Counsel directed that this change would need to be addressed in a separate rulemaking.

## **P. Miscellaneous**

28. Comment: Section 11346.5 requires state agencies to consider alternatives that are less burdensome on California business when proposing regulatory changes. As we have already mentioned, GHG over-compliance and ZEV credit trading are viable alternatives for manufacturers to obtain more time to launch their ZEV programs. These alternatives provide substantial flexibility for the IVMs and minimize the impact on California business. These alternatives were not addressed in the published Statement of Reasons. (Tesla)

Agency Response: Tesla states that GHG over-compliance and ZEV credit trading are viable alternatives for manufacturers to obtain more time to launch their ZEV programs. ARB concurs with this statement. The flexibility provided by these alternatives already exists within the ZEV Regulation and is included in the "No Action" alternative. This alternative was not selected because IVMs would have to produce a higher number of TZEVs and some would transition to LVM status and be required to produce ZEVs in 2018 or soon thereafter. They would have less flexibility when participating in the Section 177 State alternative compliance path and would receive less time to address credit deficits. Finally, under the "No Action" alternative, the existing fast refueling definition does not clearly provide automakers the full 12-month accumulation period agreed upon in negotiations. This alternative was rejected because it did not provide the IVMs the flexibility needed when transitioning to LVM status.

29. Comment: IVMs are concerned that only automotive related revenue should be accounted [sic]. Some IVMs have business interests unrelated to their Automotive activities and requested that this was clearly separated. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: The Board added an "automotive-related" clarifier in the First Notice and adopted it at the May 21, 2015, hearing.

30. Comment: While the exact reduction in the number of vehicles is uncertain, a reduction in the credit requirement will either reduce the number of vehicles produced or the capability of the vehicles produced. The ISOR does not analyze the impact of a reduction in ZEV vehicle production (or a reduction in the capabilities of the vehicles) on the ZEV R&D, suppliers, and the utilization of ZEV

infrastructure. A reduction in ZEV requirements could also reduce the choice of ZEV models available to consumers in California. (NRDC, UCS)

Agency Response: For the same reasons discussed in the Agency Response to Comment 23, the ARB does not believe there will be an impact on “the ZEV R&D, suppliers, and the utilization of ZEV infrastructure” nor a reduction in “the choice of ZEV models available to consumers in California.”

31. Comment: The staff proposal fails to provide sufficient ramp-up to ensure IVM success in the ZEV market in 2026 and beyond. ARB’s own technical analysis of the 2030 and 2050 greenhouse gas (GHG) reduction targets – and separate independent studies conducted by other researchers – demonstrate ZEV sales must increase rapidly in 2026 and beyond to meet both GHG emission reduction targets and air quality requirements. By cutting the stringency and therefore the number of vehicles required, the proposal will make it difficult if not impossible for IVMs to meet the ZEV target after 2025. In particular, because the proposed percentages are calculated as a fraction of the pure ZEV requirement, the gap between the IVM and LVM requirements grows over time. In 2025, the proposed IVM credit requirement is 9.2 percent, or less than half the LVM credit requirement of 22 percent. In 2026, IVMs would face a very steep transition from 9.2 percent to 22 percent. We believe staff’s proposal fails to provide the needed transition path, and instead invites an impossibly steep ramp post-2025 for IVMs. (NRDC, UCS)

Agency Response: See the Agency Response to Comment 2.

32. Comment: This proposal sets a bad precedent of creating lax standards for one segment of the industry. ARB has a history of applying its regulations in a manner that is fair to all regulated parties. On numerous occasions, staff and Board members have noted the importance of all automakers participating in the ZEV program and doing their part. Full participation is necessary for ZEVs to transition from a demonstration market to a sustainable market. (NRDC, UCS)

Agency Response: NRDC and UCS argue that the standards are lax based on advanced technology vehicle placements in Europe by two IVM5 members and the introduction of hybrid technologies in the U.S. by a third member. This argument does not address the difficulties of either homologating the European advanced technology vehicles or designing one or more platforms from the ground up for California placement. It also does not address the lack of success of the introduction of hybrid technologies by the third automaker. If anything, it successfully argues the point of the proposed amendments.

In any case, one cannot argue that the standards are lax when they result in IVMs delivering the same percentage of advanced technology vehicles as LVMs, just not the same percentage of pure zero emission vehicles. Additionally, the proposed amendments respond to Board direction to ensure that the requirements for IVMs were equitable, based on the fact that they had fewer

vehicle models, fewer credits, and fewer resources for research and development. The proposed amendments were addressing an existing inequity.

Ultimately, the points became irrelevant to the discussion at the October 23, 2014, Board hearing when the Board directed staff to return with a proposal that retained the stringency of the ZEV Percentage Requirement within the regulation.

33. Comment: The financial (sic) metric of revenue is not solely indicative of a manufacturer's ability to bring advanced technology vehicles to market. If the proposed global revenue test were used as an indicator of a manufacturer's ability (or lack thereof) to bring advanced technology vehicles to market, especially as applied to manufacturers of the size to produce only intermediate volumes, we observe that it is difficult to explain how all of the intermediate volume manufacturers listed in the ISOR have a global revenue of less than \$40 billion, yet have sufficient resources to actively design, manufacture, and sell plug-in vehicles (Mazda and Mitsubishi), or are already in the process of developing them (Jaguar Land Rover, Subaru, and Volvo). Clearly other financial and corporate policy factors can also play an important role in a manufacturer's willingness and/or ability to invest in advanced technology vehicles. For example, net profitability, engineering resources, or available capital for investment, may be additional considerations.

Financial constraints can apply to all manufacturers, small or large. Many, if not all, full line manufacturers will be challenged to meet aggressive zero emission vehicle, greenhouse gas, and criteria pollutant requirements simultaneously. These three regulations (collectively "Advanced Clean Cars") require significant investment in every new or renewed product design, constraining funding available to design, build, and market advanced technology vehicles that due to the public's unwillingness to pay for such features are generally sold at a loss.

Chrysler therefore recommends that ARB continue to work with all manufacturers, intermediate and large, to better understand the financial constraints manufacturers operate under and to develop appropriate future requirements and flexibilities as part of future ZEV rulemakings [such as the midterm review]. (FCA)

Agency Response: The proposed modifications do not change the requirements for large volume manufacturers. However, the ARB agrees that the Midterm Review should consider the financial constraints faced by both intermediate and large volume manufacturers.

34. Comment: We recommend that staff review the intent of these references [within the definition of "Transitional Zero Emission Vehicle"] and correct them as necessary, as well as correcting the minor grammatical error. (Alliance, Global)

Agency Response: The requested corrections were made in the First Notice.

35. Comment: The proposed ZEV amendments create added uncertainty for our members that have invested in infrastructure. Local electric utilities want more PEVs in the market to justify making additional charging infrastructure investment. Reducing the total volume of PEVs will cause uncertainty in the market and reduce our local utilities desire to invest in charging infrastructure. (CMUA)

Agency Response: See the Agency Responses to Comments 2 and 23.

36. Comment: The proposed ZEV amendments send the wrong message to companies (small businesses in California) that are developing PEV service companies, and also send the wrong signal to further PEV deployment. (CMUA)

Agency Response: See the Agency Response to Comment 23.

37. Comment: The Intermediate Volume Manufacturers (IVMs) have listed several factors that could create additional compliance challenges. As the Board considers how best to balance these concerns with the goals of the state, we recommend looking at what can be done with incentives to help the IVMs sell vehicles. The ongoing availability of Clean Vehicle Rebate Project funding is important but may not be sufficient. We also believe that additional “green stickers” could help these manufacturers sell TZEVs in California. We therefore recommend asking the legislature to authorize 10,000 additional green HOV lane stickers, reserved for the IVMs. (CALSTART)

Agency Response: ARB appreciates CALSTART’s comment. On June 24, 2015, the Governor signed legislation authorizing an additional 15,000 TZEV decals. However, this legislation did not reserve these decals specifically for IVMs.

38. Comments:

We recommend the Board direct ARB staff to investigate two distinct issues – (1) the different starting points for California and the states outside of California and; (2) the inherent differences in the markets. The regulatory requirements should reflect these differences. (Alliance, Global)

We believe that market differences between California and the northeast states warrant a more timely regulatory review by ARB and that reasonable adjustments can be implemented without sacrificing substantial growth or even pressure to grow in the applicable Section 177 states. (Global)

Agency Response: ARB will visit these issues in association with the Midterm Review.

39. Comment: The errata notice posted on ARB’s website on October 14, 2014, corrected most of the inconsistent text [in the proposed regulation order].

However, the phrase “same model year” is still shown in three places... and should be deleted. (Alliance, Global)

Agency Response: The Board proposed this change in the First Notice and adopted it at the May 21, 2015, hearing.

40. Comments:

And we are simply asking the staff to take a look at the [eVMT] data that we have. (Alliance)

We’re asking for equally challenging requirements in California and outside California. And I think that warrants some review of the data. (Alliance)

Agency Response: ARB will visit these issues in association with the Midterm Review.

41. Comment: But there are over 150,000 banked pure ZEV credits in California alone today, just in California. This is a challenge we need to address, because this basically satisfies the entire industry’s compliance with the ZEV mandate for a number of years. So we would actually urge the Board to recommend that staff consider proposals to actually strengthen the ZEV mandate, not weaken it and to come back in a year to look at those findings. (Tesla)

Agency Response: Although there is currently a large credit bank, automaker credit obligations ramp up rapidly beginning with the 2018 model year. The current bank may act to smooth the forthcoming ramp up. Staff will be considering the impact of credit banks during the midterm review and make recommendations if appropriate at that time.

42. Comment: While we support the proposed amendments, we note the importance of regulatory certainty as the ZEV program moves into its next phase. Manufacturers need confidence in the regulatory landscape in order to develop cost-effective compliance plans. Similarly, states need evidence that manufacturers will increase their efforts to promote and place ZEVs in the Northeast market in order to most effectively implement the Action Plan and to justify increased spending on infrastructure and consumer incentives. With the proposed adjustments, the ZEV rules will be better calibrated and more equitable to all parties. We strongly urge the Board to avoid any additional modifications to the requirements. (NESCAUM)

Agency Response: ARB appreciates NESCAUM’s comment.

## **Q. Comments Outside the Scope of this Rulemaking**

43. Comment: Although the CARB Board has long recognized the benefits of transportation electrification from an environmental perspective, the benefits to electricity ratepayers have only been qualitatively discussed. CalETC believes it

will be important to incorporate the broader breadth of benefits of electrification in the context of policy making in the state. (CalETC)

Agency Response: The Board does not have the authority to regulate for other than environmental benefits and therefore this comment falls outside the scope of the rulemaking.

44. Comment: Chrysler maintains that reducing emissions from vehicles is not enough to realize the 2050 greenhouse gas reduction goal. Reducing the upstream and downstream carbon content of all transportation fuels is absolutely necessary to achieve our common goal. (FCA)

Agency Response: The Board has already taken actions to reduce upstream and in-use emissions from transportation fuels through regulations such as the Low Carbon Fuel Standard Program and the Cap-and-Trade Program, both established pursuant to California Assembly Bill 32. However, transportation fuel modifications are outside the scope of this rulemaking.

45. Comment: One of the greatest impediments to EV adoption by consumers is the unacceptably long timespan required for EV refueling. The refueling speed impediment can be entirely eliminated by technologies that reduce the length of refuel time to a fraction of the time needed for a gasoline car to be refueled. The manufacturer of a qualifying ultra-fast refueling zero-emission vehicle should receive two additional zero-emission vehicle ("ZEV") credits. To qualify, a ZEV must be able to accumulate at least 150 miles of urban dynamometer driving cycle ("UDDS") range in 45 seconds or less. (FST)

Agency Response: This request was outside the scope of the 45-day notice. This change would need to be addressed in a separate rulemaking.

46. Comment: Please consider "pay-wall" barriers to public recharging stations. Free charging stations should have higher value – if there are credits for these stations in the ZEV regulation or other regulations – than fee-based stations. (Griffith)

Agency Response: The Board does not have the authority to regulate for other than environmental benefits and therefore this comment falls outside the scope of the rulemaking.

47. Comment: If the regulation offers credits for EVs based on the potential range capable under electric power, please consider whether or not the ranges stated by manufacturers are for a fresh battery or for a battery after many recharging cycles when its range is greatly diminished. For example, the EV I own had a much higher range off the lot than it does now. Consider also that even with the existing purchasing incentives, the cost of ownership is still much higher than for a comparable gasoline powered vehicle. Battery replacement costs (likely in my case) should be considered – these will certainly wipe out any "advantage" from the state/federal incentives. Consider regulation if battery life is diminished by a

certain percentage within a certain time window (i.e., if range is reduced by 40% within two years or 40,000 miles, battery replacement costs should be borne by the manufacturers. (Griffith)

Agency Response: ARB appreciates the comment. However, this request was outside the scope of the 45-day notice. This change would need to be addressed in a separate rulemaking.

## V. SUMMARY OF COMMENTS MADE DURING THE FIRST 15-DAY COMMENT PERIOD AND MAY 21, 2015 BOARD HEARING AND AGENCY RESPONSES

Chapter V of this FSOR contains all written comments submitted during the 15-day public comment period that commenced on April 20, 2015, and ended on May 5, 2015. This chapter also contains oral and written comments that were presented at the May 21, 2015, Board hearing. Listed below are the organizations and individuals that provided comments either during the First Notice comment period or at the May 21, 2015, Board hearing:

### A. List of Commenters

Table V-1 below lists commenters that either submitted written comments on the proposed amendments during the first 15-day public comment period or submitted oral/written comments at the May 21, 2015 Board hearing or both. It also identifies the form of their comment and shows the abbreviation assigned to each.

**Table V-1**

<b>Abbreviation</b>	<b>Commenter</b>	<b>1<sup>st</sup> 15-Day</b>	<b>Hearing</b>
ALA	Bonnie Holmes-Gen, American Lung Association of California	✓	
CalETC	Eileen Tutt, California Electric Transportation Coalition	✓	
CalETC	John Caldwell, California Electric Transportation Coalition		✓
CALSTART	Jamie Hall, CALSTART		✓
CCA	Bill Magavern, Coalition for Clean Air	✓	✓
CCCC	Ruben Aronin, California Clean Cars Coalition (representing ALA, CCA, CEERT, NRDC, SCC, and UCS)	✓	
ChargePoint	Anne Smart, ChargePoint		✓
CEERT	John Shears, Center for Energy Efficiency and Renewable Technologies	✓	
FCA	Vaughn Burns, Fiat Chrysler Automobiles	✓	

<b>Abbreviation</b>	<b>Commenter</b>	<b>1<sup>st</sup> 15-Day</b>	<b>Hearing</b>
Global	Julia Rege, Association of Global Automakers	✓	
GM	Jim Ehlmann, General Motors	✓	
JLR	Clinton Blair, Jaguar Land Rover (representing the IVMs identified in 45-Day Comment 1)	✓	✓
Mazda	Daniel Ryan, Mazda (representing the IVMs identified in 45-Day Comment 1)	✓	✓
Mitsubishi	David Patterson, Mitsubishi Motors R&D of North America (representing the IVMs identified in 45-Day Comment 1)	✓	
NESCAUM	Arthur Marin, Northeast States for Coordinated Air Management representing Connecticut Maryland, Massachusetts, New York, Oregon, Rhode Island, Vermont (Signatory States)	✓	
NESCAUM	Elaine O'Grady, Northeast States for Coordinated Air Management representing Connecticut Maryland, Massachusetts, New York, Oregon, Rhode Island, Vermont (Signatory States)		✓
NRDC	Simon Mui, Natural Resources Defense Council	✓	✓
SCAQMD	Henry Hogo, South Coast Air Quality Management District		✓
SCC	Kathryn Phillips, Sierra Club California	✓	✓
Subaru	Maurice Arcangelli, Subaru (representing the IVMs identified in 45-Day Comment 1)	✓	
Tesla	Ken Morgan, Tesla Motors	✓	✓
UCS	David Reichmuth, Union of Concerned Scientists	✓	✓
Volvo	Katherine Yehl, Volvo (representing the IVMs identified in 45-Day Comment 1)	✓	

Set forth below is a summary of each objection or recommendation made regarding the specific adoption, amendment, or repeal proposed, together with an explanation of how the proposed action has been changed to accommodate each objection or recommendation, or the reasons for making no change. Only objections or recommendations directed at the agency's proposed action or the procedures followed by the agency in proposing or adopting the action are summarized as permitted by Code of California Regulations, title 2, section 11346.9. Repetitive or irrelevant comments have been aggregated and summarized as a group. A comment is "irrelevant" if it is not specifically directed at the agency's proposed action or to the procedures followed by the agency in proposing or adopting the action. The comments have been grouped by topic whenever applicable.

When comments have been grouped, a brief summary of the comment is given to relay the content of all the comments in the group. All other comments are taken verbatim from documents submitted during the 15-day comment period or from the

May 21, 2015, Board hearing transcript. Acronyms exclusively used by commenters have been defined by [brackets] throughout this section.

## **B. Comments of Support**

### 1. Comments:

The Section 177 ZEV MOU states support the proposed modifications to the ZEV Regulation amendments presented to the Air Resources Board on October 23, 2014. The proposed modifications improve on the original October 2014 proposal by addressing the challenges IVMs face without relaxing the ZEV percentage requirements for new car sales for this group of manufacturers. (NESCAUM)

We appreciate the opportunity to comment in SUPPORT of the Minor Modifications to the Zero Emission Vehicle Regulation. (CalETC)

The IVM5 support the Staff's proposed 15-Day changes for the IVM Definition, Lead Time, Deficit Recovery, and Pooling. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

We are in full support of staff's proposal as it is today. We look forward to working with you on this and we urge you to adopt the staff's proposal. (SCAQMD)

We support the proposal on the definition of IVMs as well as the pooling agreement with the 177 states. We very much support the continuation – the no decrease in the stringency of the credits for the – of the credit requirements for the reasons that I mentioned. And on the credit provisions, you've tightened the language so that the flexibility is now restricted to the IVMs; and we very much agree with that. (CCA)

We support, as Bill mentioned, the proposed changes in this item, and we urge the Board to adopt staff's proposal. (UCS)

I'm here today in support of the revised proposal. (CALSTART)

So I think, like others have said, NRDC supports the overall 15-Day change package. (NRDC)

We are writing in support of regulatory efforts that enhance compliance flexibility and to reiterate the importance of regulatory reviews. (Global)

Agency Response: ARB appreciates the comments of support.

## **C. Revised IVM Definition and Revenue Test**

### 2. Comments:

We continue to support this proposal. (ALA, CCA, CEERT, NRDC, SCC, UCS)

CalETC supports the definitional and pooling modifications. (CalETC)

Agency Response: ARB appreciates the comments of support.

3. Comment: We request that the section 1900. Definitions, (9) “Intermediate volume manufacturer,” be revised adding language including the additional criteria: (1) the \$40 billion global revenue test, and (2) five three model year sale volume rolling-average test . (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: ARB disagrees with the commenter. The additional criteria are specific to the ZEV Regulation and are properly included in section 1962.2(i). The definitions in Section 1900 apply to additional regulations.

4. Comment: The regulatory language in section 1962.2(b)(7)(A) could be read to confuse the revenue threshold. We request that the last sentence of the third paragraph of the section be revised to align it with sales volume regulatory language clearly stating that this calculation is based on a three year rolling average. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: The paragraph containing this sentence already states that annual automotive-related global revenues for the 2018-2020 fiscal years are based upon the immediately prior and consecutive three fiscal years. ARB believes no further clarification or revision is necessary.

#### **D. S177 State Pooling**

5. Comments:

We continue to support this proposal to provide flexibility to IVMs. (ALA, CCA, CEERT, NRDC, SCC, UCS)

CalETC supports the definitional and pooling modifications. (CalETC)

Agency Response: ARB appreciates the comments of support.

#### **E. Lead Time Proposal**

6. Comment: CalETC supports the additional lead time for intermediate-volume manufacturers and the credit deficit provision which recognized the challenges intermediate-volume manufacturers face with a three-year deficit provision. (CalETC)

Agency Response: ARB appreciates the comments of support.

7. Comment: We request clarification regarding when an IVM is required to comply with the ZEV requirements for LVMs. The First Notice says “beginning with the fifth consecutive three-year production volume average in excess of 20,000 vehicles,” but the proposed regulatory language states “beginning with the next

model year after the model year corresponding to the fifth consecutive three-year average.” (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: The proposed regulatory language contained in Attachment A to the First Notice is correct. There is no need to correct the language in the First Notice as it carries no legal weight.

## **F. Credit Recovery Proposal**

### 8. Comments:

We appreciate that staff’s 15-Day Change proposal tightens the language for application of the longer credit make-up period by now limiting this new flexibility to the five IVMs. We encourage the Board to ensure that the process for IVMs to request longer credit make-up periods is an open and transparent process, with a public memo from the Executive Officer explaining acceptance or rejection of the IVM credit compliance plan. (ALA, CCA, CEERT, NRDC, SCC, UCS)

CalETC supports the additional lead time for intermediate-volume manufacturers and the credit deficit provision which recognized the challenges intermediate-volume manufacturers face with a three-year deficit provision. (CalETC)

Agency Response: ARB appreciates the comments and will work to ensure that the process associated with credit deficits is transparent.

## **G. ZEV Percentage Requirement Proposal**

### 9. Comments:

We strongly support this revision [not to reduce the credit requirements for IVMs]. (ALA, CCA, CEERT, NRDC, SCC, UCS)

In the ZEV MOU states, the transportation sector is collectively the largest source of (sic) category of greenhouse gas emissions and ozone-forming pollutants. Electrification of the transportation sector is essential to meeting our air quality goals, climate goals, and renewable energy goals. It will not occur without a robust ZEV Program. Therefore maintaining overall stringency of the ZEV requirements is a high priority for our states. We believe the revised proposal being presented today improves on the original proposal presented last fall, as it addresses the equity concerns raised by the IVMs without relaxing the ZEV percentage requirements. The ZEV MOU Section 177 States strongly support retaining the ZEV percentage requirements for IVMs as adopted in 2012, and we urge the Board to reject any future requests that would weaken the ZEV regulation’s fundamental purpose. (NESCAUM)

Agency Response: ARB appreciates the comments of support.

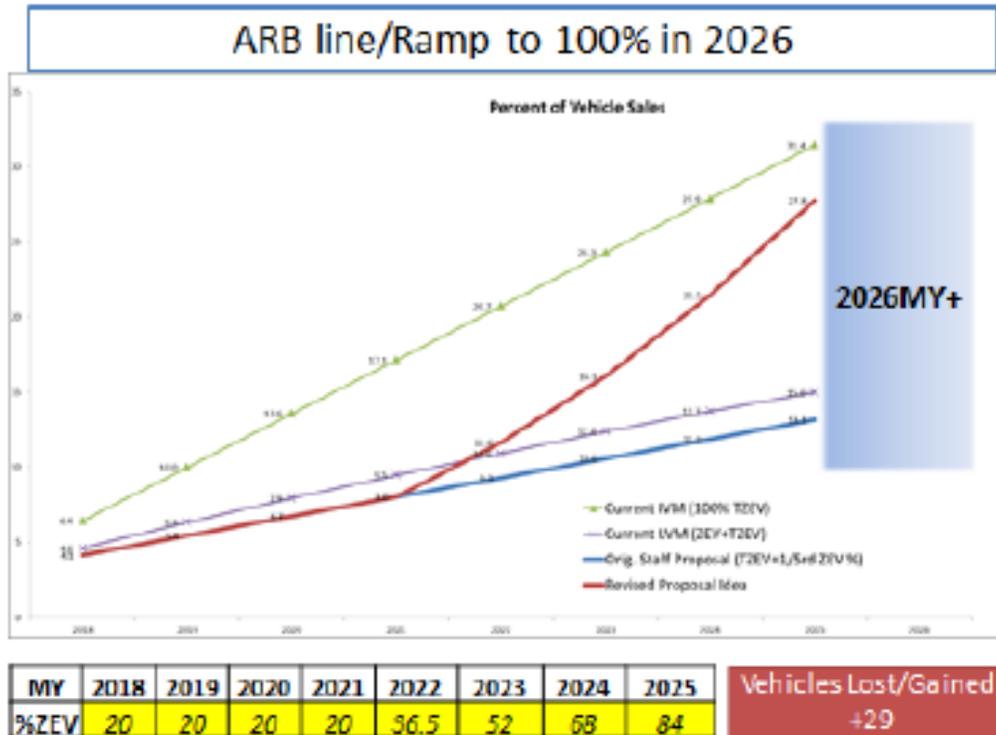
10. Comment: The IVM5 do not agree with the Staff's proposed 15-Day changes regarding the Compliance Requirement. If the 15-Day changes are enacted, the IVM credit requirements will be unchanged from the 2012 regulation and exactly the same as the LVMs leaving the IVM5 with compliance requirements that can be more stringent than LVMs with respect to TZEVs. It is clear that the TZEV-only compliance path is more expensive and difficult than any of the alternatives. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: At the October 23, 2014, Board hearing, ARB staff proposed a suite of five recommended modifications to provide IVMs greater flexibility in complying with the provisions of the ZEV Regulation. These modifications recognized the difficulty that an IVM would have in complying with the ZEV Regulation if they attempted to do so solely with TZEVs.

At the hearing, the Board clearly indicated that they did not believe their direction to provide additional flexibility included changes to the ZEV percentage requirement and they directed that the stringency of the ACC Program be retained as adopted in 2012. The revised proposal, which was presented to the Board at the May 21, 2015, hearing, retained four of the five recommended modifications from the October 23, 2014, hearing, but removed the proposed modifications to the 2012 ACC ZEV Percentage Requirements.

As a stand-alone provision, the TZEV option provided within the 2012 ACC rulemaking may not appear to provide the IVMs the additional flexibility they have requested. However, ARB believes that in aggregate, the TZEV flexibility, the new pooling provisions, and the additional time provided by (1) the global automotive-related revenue test, (2) the extended lead time provisions, and (3) the credit deficit provisions, provide IVMs the flexibility necessary to comply with the provisions of the ZEV Regulation. Additionally, IVMs are not constrained to meeting their ZEV credit obligations solely with TZEVs. As they begin fielding greater all-electric range TZEVs and pure ZEVs, IVMs will find it progressively less challenging to meet their ZEV credit obligations. Going forward, the midterm review will inform any potential modifications to the compliance requirements, both for IVMs and LVMs.

11. Comment: The IVM5 request the ARB Staff to consider a compromise similar to the above proposal [image below] that provides IVMs an appropriate compliance requirement with respect to their resources to develop and successfully market ZEVs. (JLR, Mazda, Mitsubishi, Subaru, Volvo)



Agency Response: At the October 23, 2014, hearing, the Board clearly directed that the stringency of the ACC Program be retained as adopted in 2012. Going forward, the midterm review will inform any potential modifications to the stringency of the ACC Program, both for IVMs and LVMs.

**H. Evaluate the Oversupply of ZEV Credits During the Midterm Review; Strengthen the ZEV Program**

12. Comments:

There is a large and increasing oversupply of California ZEV credits. Now the problem with this is that unless the standards are adjusted and strengthened and this oversupply is reduced, it will only guide the industry to 600,000 cumulative ZEV deliveries by 2025, which represents only 40 percent of Governor Brown’s goal. We believe that the mid-term review provides an excellent opportunity for ARB to consider changes that could be made to the mandate to put the industry back on track to achieve the Governor’s goal of one and a half million cumulative deliveries by 2025. (Tesla)

With ZEV credit balances at all-time highs, we believe it is the right time for the Air Resources Board to propose amendments that dramatically strengthen the ZEV mandate, not weaken it. (Tesla)

This [rulemaking] has been an opportunity for us to think more about what we can expect and what we need in 2016 when we go through the review; and I think it suggest that that review will be an opportunity to strengthen the ZEV

compliance requirement and provide some motivation for the IVMs and the LVMs to be the best they can be and to improve their products and especially improve their marketing. We've had an opportunity to have a lot of conversations over the last couple of months because of the delay in this effort, and so it's actually given me a lot of hope that we can come out of 2016 with a much stronger ZEV Program. (SCC)

We really need to speed up on ZEVs in order to meet the Governor's goals for greenhouse gas reduction for 2030 and 2050, as well as his petroleum reduction target for 2030; and most importantly from our perspective, in order to come into air quality attainment as required by federal and state law. So we think that we actually need to hit the accelerator, the electric vehicle accelerator on ZEVs, rather than hitting the brakes. (CCA)

We urge you to continue to evaluate ZEV requirements; because, as I said, going forward, we think that we're going to need to look at the possibilities for making sure that we get more ZEVs on the road, that we're not just having a big overhang of credits, and that we're actually getting the cars out there. (CCA)

UCS believes that the values used in previous rulemakings probably underestimate the credits per vehicle that are and will be generated by both LVMs and IVMs. And this, combined with the credits already banked in the current travel provision in the ZEV regulation, means that the State may currently be on track to miss this goal of 1.5 million ZEVs and 3.3 million ZEVs in the multi-state MOU region.

So as part of the mid-term review, the ARB should assess the likelihood of the State meeting ZEV deployment goals given the current credit balances and the range of vehicles for sale and announced. And the ZEV regulation needs to make sure that we – ensure that we have both the number and types of vehicles that are needed to put us on the path to meet air quality, climate, and petroleum-reduction goals, both in 2025 and in the 2030 and 2050 time points. (UCS)

As we look ahead to the mid-term review, it's important to continue pushing to accelerate this market.

We do, I think, need to look at the credit oversupply issue that a few people have mentioned today; but I think that's better done as part of the mid-term review. (CALSTART)

But going forward, all manufacturers will need to transition the ZEV market and expand their vehicle offerings. There isn't consensus on the best way to get there or how quickly. But as I said last October, we should consider any type of major amendments to the program in the context of the mid-term review that they're better housed there and looked at collectively rather than piecemeal.

As part of that, I wanted to identify some of the areas where I think the Board and ARB can work together with all stakeholders around to improve our understanding overall. One is sales. Are the current compliance scenarios for the ZEV Program and TZEV programs consistent and sufficient to achieve our state's 2030 climate and petroleum-reduction goals? Our initial technical analyses are showing that all parties will need to work collectively to literally and figuratively go further and faster. (NRDC)

Any revisions that are being proposed I think it should be considered as part of the mid-term review. (SCAQMD)

There is a big missing piece that's not here today; and that is a continuation to relook at the underlying compliance requirement. We think that that merits further review. And leading up to the mid-term review we really want to keep working with the staff and the Board to continue to reassess that question. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

The four items in the staff proposal are very important, and we urge your support for them. But work needs to continue in the mid-term review, and we look forward to working with all the stakeholders as this process continues, and we look forward to doing our part to help California achieve its air quality goals. (JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: ARB will, as part of the midterm review, assess the impact that banked ZEV credits may have on achieving the Governor's goal of 1.5 million electric vehicles in California by 2025. ARB will also assess whether the stringency of the ZEV Program needs to be increased to accomplish that goal.

## I. Miscellaneous

13. Comment: Over the next year, we encourage ARB to continue assessing the ZEV program against our state's 2030 climate and petroleum reduction goals. This includes understanding the TZEV and ZEV volumes necessary to reach those goals; updating of the likely compliance scenarios for the industry and each automaker; evaluating the impacts of the large compliance variability, which currently ranges from 5.5% to 25% of sales by 2025 depending on whether a LVM produces only fuel cells or a mix of shorter range TZEVs and BEVs. To reach mid and long-term climate and air quality goals, we will need to increase certainty around the ZEV program, maximize the number of electric-drive vehicles on the road, and ensure we achieve the program's environmental benefits. (ALA, CCA, CEERT, NRDC, SCC, UCS)

Agency Response: See the Agency Response to 15-Day Comment 12.

14. Comment: Regulatory certainty going forward is essential to justify the level of investment needed to develop and bring new technology to market. Similarly, the

Section 177 ZEV MOU states require assurance that manufacturers will increase their efforts to promote and place ZEVs in our states in order to justify continued spending on charging infrastructure, consumer incentives, outreach and other activities to accelerate widespread adoption of ZEVs in our states. (NESCAUM)

Agency Response: ARB believes the results of the forthcoming midterm review will inform decision-making and result in greater regulatory certainty.

15. Comments:

GM requests that the last amended date in Section 1962.2(c)(3)(A)1. be updated to reflect the fact that the separate rulemaking referencing section G.7.3 is not yet finalized. (GM)

FCA US recommends that a placeholder be substituted for the May 30, 2014 approval date. (FCA)

The 15-Day Notice modifies the Test Procedures reference for the US06 test cycle range capability to “G.7.3.” The US06 test procedures are currently at the original G.7.5, requiring no modification. Although FCA US understands that there is also a separate rulemaking ongoing which could further modify the Test Procedures to make this reference correct, it is inappropriate to make such a change at this time given that the separate rulemaking has not completed the approval process yet. FCA US recommends maintaining the reference as in the original and modifying through a subsequent notice (or within a future de novo rulemaking) after the Test Procedures have been formally approved to make such a change a correct reference. (FCA)

Agency Response: The Second Notice changed the last amended date to “[insert date of adoption]” so that this date can be updated once the other rulemaking modifications are adopted. There is no corresponding provision in the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.

The reference to G.7.3 is not correct for the currently adopted regulatory language, but will become correct when the currently proposed changes to these test procedures are adopted. Thus, the last amended date is being changed to “[insert date of adoption]” so that the reference will be correct upon adoption of the modifications. There is no corresponding provision in the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes.

16. Comment: GM requests that the TZEV definition (Section 1962.2(i)(16)) reference sections (c)(3)(A) or (c)(3)(E). The corresponding language in the test procedures should reference sections C.3.3.(a) or C.3.3.(e). (GM)

Agency Response: The Second Notice corrected section 1962.2(i)(16) so that in addition to referencing section 1962.2(c)(3)(A), it also references section 1962.2(c)(3)(E). The corresponding definition within Section B.1 of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, references C.3.3(a). The Second Notice corrected the reference to read C.3.3(a) and (e).

17. Comment: FCA US recommends that these errors [the appearance of the phrase “same model year” in sections 1962.2(d)(5)(E)2.c.i and ii] be corrected in a subsequent errata notice or by other appropriate means to ensure that they are not inadvertently and without due consideration carried into the final regulation order associated with this rulemaking. (FCA)

Agency Response: The Second Notice deleted this phrase in the three instances where it appeared in sections 1962.2(d)(5)(E)2.c.i and ii. The Second Notice also makes the same correction for the two instances where “same model year” occurs in sections C.4.5(e)(2)(C)i. and C.4.5(e)(2)(C)ii., the corresponding provisions of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes.

18. Comment: FCA US recommends that this error [Section 1962.2(d)(5)(E)2.f includes the phrase “large volume”] be corrected if necessary. If the added text is required for clarity between large volume manufacturer (LVM) and intermediate volume manufacturer (IVM) provisions, it should be clearly marked as a change in an appropriate notice. (FCA)

Agency Response: The Second Notice now shows this phrase in bold double underline to indicate it is new. There is no change to section C.4.5(e)(2)(F), the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, as that section correctly reflects the addition of the “large volume” phrase.

19. Comment: FCA US recommends that staff reexamine the reference [in section 1962.2(d)(5)(E)2.b.i] and correct it appropriately. (FCA)

Agency Response: The Second Notice corrected the reference to read “section 1962.2(d)(5)(E)2.a.” There is no change to section C.4.5(e)(2)(B)i, the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, as that section correctly references section C.4.5(e)(2)(A).

20. Comment: FCA US recommends that ARB staff consider whether the provision [in Section 1962.2(d)(5)(E)2.d.ii] should be applicable to only IVMs as written, or whether it should be applicable to all manufacturers, and to make additional changes if needed. (FCA)

Agency Response: The Second Notice corrected that section to read “section 1962.2(d)(5)(E)2.a, 2b, and 2.c.” There is no change to section C.4.5(e)(2)(D)2, the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes, as that section correctly references C.4.5(e)(2)(A), (B), and (C).

21. Comment: The Errata Notice places the IVM pooling provisions at 1962.2(d)(5)(E)2.b.i and 2.b.ii, not 2.a. FCA US recommends that ARB staff correct this reference error as needed. (FCA)

Agency Response: The Second Notice modified the section to correctly reference 1962.2(d)(5)(E)2.b.i. and 1962.2(d)(5)(E)2.b.ii. Section C.4.5(e)(2)(F), the corresponding provision of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes, references section C.4.5(e)(2)(A). The Second Notice modified that section to correctly reference sections C.4.5(e)(2)(B)i. and C.4.5(e)(2)(B)ii.

22. Comment: In the ADDITIONAL ANALYSIS AND CONSIDERATIONS, Notice of Public Availability of Modified Text, (page 7 and 8), ARB Staff compares the TZEV-only to other possible technologies and found the TZEV only option: (1) \$182 million more expensive than if IVMs just produced and marketed fuel cell vehicles; \$82 million more expensive than the LVM expected mixture of BEVs, FCVs and TZEVs (the Base Case); and Requires IVMs to market 57,500 more vehicles than the Base Case. The IVM5 are unaware of any study that makes this analysis. We are very interested to learn the details of how these calculations are performed and the assumptions. We also have the following questions:

- Are the cost calculations for a single IVM or for all IVMs combined? If a single IVM, what are the assumed annual sales volumes?
- Does the \$182 million savings for the FCV include the R&D of the technology?
- More specifically, how are the costs quoted calculated? For the Base Case, does the calculation include the R&D of three separate vehicles and associated technologies – a BEV, a FCV and a PHEV?  
(JLR, Mazda, Mitsubishi, Subaru, Volvo)

Agency Response: The intent of the ADDITIONAL ANALYSIS AND CONSIDERATIONS discussion within the First Notice was to show that IVMs

have options when planning to meet their ZEV credit obligations. Depending upon the option chosen, an IVM may see savings or additional costs vis-à-vis the costs calculated for the likely compliance scenario within the 2012 ACC Program rulemaking.

The analysis in the First Notice discussion is meant to reflect the savings or costs for all IVMs combined based on the 2012 likely compliance scenario and the average incremental per-vehicle price change<sup>3</sup> identified in Table 5 of the Staff Report (see Table V-2 below). However, the First Notice analysis was incomplete because it inadvertently reflected only the savings or costs for the 2025 model year and not the savings or costs for the entire 2018-2025 period. The shaded portions of Tables V-3 through V-5 below are the source of the 2025 baseline (2012 likely compliance), FCEV-only, and TZEV-only scenario savings or costs discussed in the First Notice.

**Table V-2**

<b>Incremental Cost (\$)</b>		
	2020	2025
FCEV	12,400	9,300
BEV	12,900	9,500
TZEV	10,900	8,900

**Table V-3**

<b>Baseline Scenario</b>	<b>2020</b>		<b>2025</b>	
	<b>Units</b>	<b>Cost (\$)</b>	<b>Units</b>	<b>Cost (\$)</b>
FCEV	356	4,414,400	1,460	13,578,000
BEV	1,262	16,279,800	2,191	20,814,500
TZEV	5,960	64,964,000	12,532	111,534,800
<b>Sum</b>	<b>7,578</b>	<b>85,658,200</b>	<b>16,183</b>	<b>145,927,300</b>

<sup>3</sup> The incremental per-vehicle price change includes research and development costs. A more thorough description of the components included in the incremental price change is contained in section 5.2.5 of the Initial Statement of Reasons for the 2012 ACC Program Rulemaking (<http://www.arb.ca.gov/regact/2012/zev2012/zevisor.pdf>).

**Table V-4**

FCEV-only Scenario	2020		2025	
	Units	Cost (\$)	Units	Cost (\$)
FCEV	1,872	23,212,800	4,475	41,617,500
BEV	0	-	0	-
TZEV	0	-	0	-
<b>Sum</b>	<b>1,872</b>	<b>23,212,800</b>	<b>4,475</b>	<b>41,617,500</b>

**Table V-5**

TZEV-only Scenario	2020		2025	
	Units	Cost (\$)	Units	Cost (\$)
FCEV	0	-	0	-
BEV	0	-	0	-
TZEV	10,697	116,597,300	25,572	227,590,800
<b>Sum</b>	<b>10,697</b>	<b>116,597,300</b>	<b>25,572</b>	<b>227,590,800</b>

To more accurately portray the actual savings or costs over the entire 2018-2025 period, one can linearly interpolate between the 2020 and 2025 values and then extrapolate downward to 2018. By doing so, ARB expects that the annual baseline, FCEV-only, and TZEV-only costs would be approximately \$105.6 million, \$29.3 million, and \$153.6 million, respectively. Annual average FCEV-only savings during the 2018-2025 would thus be approximately \$76.3 million and annual average TZEV-only additional costs would be approximately \$48.0 million.

23. Comment: The current proposal provides an 11-year gap between today and when the IVMs would be required to deliver full zero emission vehicles in California. We believe this gap is too significant, particularly when you consider the financial capacity of these companies versus a company like Tesla. The IVMs have billions of dollars in operating profit and billions of dollars in cash on hand, as well as access to the same financial markets that enabled Tesla to raise all of the funding it needed to launch electric vehicles.

In addition to this, if the IVMs were considered large volume manufacturers, the absolute number of EVs they would be required to deliver in California is actually quite low; the average IVM would only be required to deliver less than 2,000 EVs ten years from now in 2025. (Tesla)

Agency Response: ARB disagrees with the commenter. First, while an IVM's obligation under the 2014 ZEV modifications may be considered small by some, it still is not easy, and requires the appropriate use of assets. IVM research and development budgets are not in the billions of dollars. One high volume IVM has fewer than one billion dollars each year to support research and development for their entire product line. Second, the flexibility added by these modifications incentivizes IVMs to bring products to market early, but still provides a safety net

in the event an IVM encounters difficulties or a vehicle model is not well received. ARB expects that several IVMs will bring products to market early based on planning cycle meetings.

24. Comment: The IVMs have also mentioned that they would be forced to deliver 31 percent of sales as plug-in hybrid electric vehicles in 2025 unless the ZEV percentage requirements are reduced. We believe this figure is misleading because the assumptions behind it assume that the IVMs would be required – or would be delivering a 40-mile range plug-in hybrid car in 2018 and would achieve no improvement to that technology over the entire period, a seven-year period. Because ZEV credits are linked to electric range, the IVMs could greatly reduce this percentage requirement by delivering vehicles with simply more range. (Tesla)

Agency Response: The methodology employed by the ARB when developing compliance scenarios must remain consistent from one rulemaking to the next. Thus, the scenarios developed in the 2014 rulemaking incorporate the same tools as were used in the development of the compliance scenarios for the 2012 ACC Program rulemaking – EMFAC 2011 and the 2012 ZEV Calculator. The midterm review will inform whether changes need to be made to the ZEV compliance scenarios.

25. Comments: We remain concerned by the fact that the proposal still allows IVMs to delay their ZEV programs eight years beyond the lead times already provided. Specifically, Mazda and Subaru, two manufacturers that are currently required to deliver ZEVs in small volumes starting in 2018, would now have until 2026 to launch these programs. This delay has been proposed despite the fact that ZEV technology is clearly available today, as demonstrated by the 18 different ZEV products placed on California roads by 13 different automakers, including one of the five IVMs lobbying to delay the ZEV requirement. California's existing ZEV requirement represents an incredibly small number of vehicles when compared to the volumes of emissions-generating cars produced by the IVMs each year. (Tesla)

Agency Response: See the Agency Responses to 15-Day Comments 23.

26. Comment: The analysis conducted in the Initial Statement of Reasons (ISOR) supporting the proposed rulemaking failed to provide a full and accurate picture of the IVM's financial position. Specifically, the ISOR only contained consideration of IVM revenue. A more accurate financial analysis would have also considered cash reserves, forecasting operating profits, and access to both private and public funding. If a small start-up company can achieve volumes of tens of thousands of ZEVs from nothing, surely multi-national, multi-billion dollar manufacturers with decades of automotive experience can deliver the small volumes required by the ZEV mandate.

In the October 2014 Board hearing, the IVMs directed ARB's attention to their size relative to the LVMS. The key consideration is not the size of the IVMs relative to the LVMS, but rather whether the IVMs have sufficient financial capacity to achieve their individual ZEV targets. The data shows that they indeed have more than enough capacity to deliver the volumes required by the mandate.

The current regulations already provide substantial compliance flexibility for the IVMs, primarily through the ability to satisfy up to the full ZEV requirement with purchased credits. The IVMS have commented to ARB that they want "cars, not credits." We urge ARB to consider the fact that credits are only generated as automakers advance the goals of the mandate by placing ZEVs on the road. Furthermore, the very fact that IVMs would otherwise have to purchase credits motivates them to more aggressively pursue their own electric vehicle programs. Delaying the ZEV requirement will remove this key motivating force, and could lead to significant delays in EV technology investments. In fact, providing concessions despite the existence of reasonable and readily accessible regulatory flexibilities sends a signal to the rest of the industry that further concessions can be negotiated.

It is important to note that the same lead time offered in the current regulatory proposal can be achieved through means already present in the existing regulations. IVMs can do this by purchasing ZEV credits at a cost that is incredibly small relative to the profits of these manufacturers. Credit trading, therefore, is a perfectly reasonable flexibility for the IVMs to pursue should they desire more time to launch ZEV programs.

Based on the foregoing data and analysis, we urge you to consider reducing the lead time for the IVMs in you proposal. Furthermore, we believe that the Board never intended for manufacturers to continue to comply after 2026 using only PHEVs. We recommend that ARB add a provision to clarify that all IVMs will be considered LVMS by no later than 2026. (Tesla)

Agency Response: Outside the scope.

27. Comment: We're here to oppose changes to the regulation. For us, we have invested our company to support the Governor's goal of 1.5 million vehicles. The regulatory certainty in this regulation is really important to us. And changes that you make here will have ramifications beyond just the autos in the room. They will impact the charging station investments. They'll impact our ability to expand here and in other states. And in general, we think that it's important that the EV infrastructure investments are also included in this discussion. (ChargePoint)

Agency Response: The changes approved by the ARB at the May 21, 2015, Board hearing retain the stringency of the ZEV Regulation as established in the 2012 ACC Program rulemaking. As such, infrastructure demand will not be diminished.

28. Comment: We believe it is appropriate that the compliance requirements for the intermediate volume manufacturers receive further review during the upcoming mid-term review. (CalETC)

Agency Response: See the Agency Response to 45-Day Comments 5 and 33 and 15-Day Comment 10.

29. Comment: We are concerned that while this 15-Day Notice maintains the optional three-year carry back provision for credits for IVMs, it removes the added flexibility of this allowance for large volume manufacturers (LVMs), which helps enable and smooth out product planning. Retaining a one-year carry back [for LVMs] does not necessarily prevent a manufacturer from developing a large deficit, because deficits could still occur multiple years in a row. Instead, it could unnecessarily penalize a manufacturer for any deficit by requiring purchasing credits or paying penalties after one-year even if they were able to make up the deficit in the second or third year. We recommend that ARB amend the 15-Day Notice to allow the three-year carry back provision to apply to all manufacturers. (Global)

Agency Response: See the Agency Response to 45-day Comment 11.

30. Comment: In October 2013, [ARB] committed to “update the Board every year on the status of the Advanced Clean Cars Program, including the ZEV element, and expect to use those opportunities to discuss any issues that arise or need further attention in the earlier time frame. While ARB provided updates on certain elements of the ZEV program at the October 2014 Board hearing, ARB did not provide a specified annual update. While we understand the “Staff’s assessment...that it would not be feasible to conduct a full review of the ZEV requirements...until early 2015, we believe that the annual update must include many significant elements, such as the status of vehicle sales, infrastructure development, product availability, and market acceptance for California and the Section 177 States. This update would also provide an appropriate time to evaluate how the ZEV program is being implemented, in regards to pooling, credits, and use of credit carry-back and carry forward. (Global)

Agency Response: ARB appreciates the comment from the Association of Global Automakers. ARB staff has provided updates to the Board on the ACC Program (including the ZEV Program) and will continue to provide updates on an annual basis. The updates will include those elements described by Global as appropriate at the time of the update.

## **VI. SUMMARY OF COMMENTS MADE DURING THE SECOND 15-DAY COMMENT PERIOD AND AGENCY RESPONSES**

Chapter VI of this FSOR contains the written comment submitted during the 15-day public comment period that commenced on June 9, 2015, and ended on June 24, 2015.

Listed below is the organization and individual that provided this comment during the Second Notice comment period:

### A. List of Commenters

Table VI-1 below lists the commenter that submitted a written comment on the proposed amendments during the second 15-day public comment period. It also shows the abbreviation assigned to that commenter.

**Table VI-1**

Abbreviation	Commenter
GM	Jim Ehlmann, General Motors

Set forth below is a summary of each objection or recommendation made regarding the specific adoption, amendment, or repeal proposed, together with an explanation of how the proposed action has been changed to accommodate each objection or recommendation, or the reasons for making no change. Only objections or recommendations directed at the agency’s proposed action or the procedures followed by the agency in proposing or adopting the action are summarized as permitted by Code of California Regulations, title 2, section 11346.9. Repetitive or irrelevant comments have been aggregated and summarized as a group. A comment is “irrelevant” if it is not specifically directed at the agency’s proposed action or to the procedures followed by the agency in proposing or adopting the action. The comments have been grouped by topic whenever applicable.

When comments have been grouped, a brief summary of the comment is given to relay the content of all the comments in the group. All other comments are taken verbatim from documents submitted during the second 15-day comment period. Acronyms exclusively used by commenters have been defined by [brackets] throughout this section.

### B. Miscellaneous

#### 1. Comment:

Shouldn’t [the TZEV definition in Section B.1 of] the test procedures say (a) **or** (e) instead of (a) **and** (e) since a TZEV can qualify based on either all electric range (i.e., a PEHV) or as a hydrogen internal combustion engine vehicle? To me “and” means it would need to meet both. I think “or” as used in the 1962.2 language is correct. (GM)

Agency Response: ARB made this change via the Third Notice, correcting the definition within Section B.1 of the California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and

Medium-Duty Vehicle Classes, to reference C.3.3(a) or (e) instead of C.3.3(a) and (e).

## **VII. SUMMARY OF COMMENTS MADE DURING THE THIRD 15-DAY COMMENT PERIOD AND AGENCY RESPONSES**

No written comments were submitted during the third 15-day public comment period that commenced on August 17, 2015, and ended on September 1, 2015.

## **VIII. Peer Review**

Health and Safety Code Section 57004 sets forth requirements for peer review of identified portions of rulemakings proposed by entities within the California Environmental Protection Agency, including ARB. Specifically, the scientific basis or scientific portion of a proposed rule may be subject to this peer review process. Here, ARB determined that the rulemaking at issue does not contain a scientific basis or scientific portion subject to peer review, and thus no peer review as set forth in Section 57004 was or needed to be performed.