

ATTACHMENT A

CALIFORNIA AIR RESOURCES BOARD

**FSOR RESPONSES TO COMMENTS ON APPENDIX B TO THE ISOR
Advanced Clean Cars Environmental Analysis**

FSOR RESPONSES TO COMMENTS ON APPENDIX B TO THE ISOR

Table of Contents

Introduction	1
Requirements for Responses to Comments.....	2
Comments Requiring Substantive Responses	3
Responses to Comments	4
LEV III – L9 Loren Marz Comment and Response	5
LEV III – L10 Klaus Land, Mercedes-Benz Comment and Response	6
LEV III – 15-Day - L11 Ray Minjares, International Council on Clean Transport Comment and Response.....	7
LEV III – L29 Chris Bliley, Growth Energy Comment and Response	7
LEV III – L34 Azita Khalili, BMW Comment and Response.....	8
LEV III – L38 Katherine Yehl, Volvo Car Corporation Comment and Response	11
ZEV – L2 Dan Mars Comment and Response	12
ZEV – L74 Loren Marz Comment and Response.....	13
CFO – L8 John Braeutigam, Valero Comment and Response.....	13
CFO – L15 Daniel Sinks, Conoco Phillips Comment and Response.....	14
CFO – L26 Cathy Reheis-Boyd, Western States Petroleum Association Comment and Response.....	15
CFO – L27 Miles Heller, British Petroleum Comment and Response	43
Transcript – Edward Olson and Jay Bajaria Public Comments – Oral Public Comments and Responses.....	45
ZEV/CFO – Bd L1 Cathy Reheis-Boyd, Western States Petroleum Association Comments and Responses.....	46

FSOR RESPONSES TO COMMENTS ON APPENDIX B

Introduction

To meet the requirements of the California Environmental Quality Act (CEQA) under ARB's Certified Regulatory Program, the California Air Resources Board (ARB) staff prepared and circulated for public review Appendix B, which is the Environmental Analysis (EA) for the Advanced Clean Cars (ACC) Program. The ACC EA analyzed amendments to California's Low-Emission Vehicle Criteria Air Pollutant and Greenhouse Gas (LEV III), Zero Emission Vehicle (ZEV), and Clean Fuels Outlet (CFO) regulations. The ACC EA was released for public review on December 12, 2011 for a 45-day public review and comment period that concluded on January 27, 2012 at the Board Hearing. ARB received 12 comment letters addressing the EA during the 45 – day public review period.

Comment letters received are posted in the comment logs on the ARB website at: <http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=leviiighg2012>, <http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=zv2012>, and <http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=cfo2012>.

ARB also received a number of oral comments at the Board hearing held on January 26 and 27, 2012.

On February 22, staff posted three 15-day change notices of modified regulatory text, one for each regulation that provided modified regulatory language based on staff's further suggested modifications, as released at the Board hearing and the Board's overall direction. One comment related to the EA was submitted during that comment period, which closed on March 8, 2012.

On March 12, 2012, ARB released "Responses to Comments on the Advanced Clean Cars Environmental Analysis" (RTC), which was considered by the Board at the March 22, 2012 public meeting.

One additional comment letter was received on March 21, 2012 comprising a commenter's response to ARB's RTC that was released on March 12, 2012. Although CEQA does not require responses to comments received outside the public comment period, ARB is still required to meet the requirements of the Administrative Procedures Act (APA), and is providing a response in the Final Statement of Reasons (FSOR).

This document presents verbatim the comments received that raise significant environmental issues and ARB's written responses to those comments. All comments have been reviewed and considered by ARB staff in preparing these responses. In accordance with ARB's Certified Regulatory Program and CEQA, the Board will

consider the written responses to comments on the EA for approval prior to taking final action on the regulations that comprise the ACC Program.

This document includes responses to comments on the EA only. Staff will also prepare written responses to all public comments, not just EA comments, for purposes of the Administrative Procedures Act. The complete written responses to all comments will be included in the Final Statement of Reasons (FSORs) prepared for the each rulemaking. Upon their completion, the FSORs will be made available in electronic form on the ARB rulemaking webpage at:

<http://www.arb.ca.gov/regact/2012/leviiiighg2012/leviiiighg2012.htm>,
<http://www.arb.ca.gov/regact/2012/zev2012/zev2012.htm>, and
<http://www.arb.ca.gov/regact/2012/cfo2012/cfo2012.htm>

Requirements for Responses to Comments

Responses to public comments were prepared in compliance with the California Environmental Quality Act (CEQA) and with ARB's certified regulatory program, which states:

Public Resources Code (PRC) section 60007. Response to Environmental Assessment

(a) If comments are received during the evaluation process which raise significant environmental issues associated with the proposed action, the staff shall summarize and respond to the comments either orally or in a supplemental written report. Prior to taking final action on any proposal which significant environmental issues have been raised, the decision maker shall approve a written response to each such issue.

In CEQA, PRC section 21091 also provides direction regarding the consideration and response to public comments. While the provisions refer to environmental impact reports, proposed negative declarations, and mitigated negative declarations, rather than a certified regulatory program document, this section of CEQA contains useful information for preparation of a thorough and meaningful response to comments.

PRC section 21091(d) states:

(1) The lead agency shall consider comments it receives ... if those comments are received within the public review period.

(2) (A) With respect to the consideration of comments received ..., the lead agency shall evaluate comments on environmental issues that are received from persons who have reviewed the draft and shall prepare a written response pursuant to subparagraph (B). The lead agency may also respond to comments that are received after the close of the public review period.

(B) The written response shall describe the disposition of each significant environmental issue that is raised by commenters. The responses shall be prepared consistent with section 15088 of Title 14 of the California Code of Regulations, as those regulations existed on June 1, 1993.

Title 14 of the California Code of Regulations (CCR) (State CEQA Guidelines) section 15088 contains useful information and guidance for preparation of a thorough and meaningful response to comments. It states, in relevant part, that specific comments and suggestions about the environmental analysis that are at variance from the lead agency's position must be addressed in detail with reasons why specific comments and suggestions were not accepted. Responses must reflect a good faith, reasoned analysis of the comments.

Title 14 CCR section 15088 (a – c) states:

(a) The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The Lead Agency shall respond to comments received during the noticed comment period and any extensions and may respond to late comments.

(b) The lead agency shall provide a written proposed response to a public agency on comments made by that public agency at least 10 days prior to certifying an environmental impact report.

(c) The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice.

Comments Requiring Substantive Responses

Substantive responses are limited to comments that “raise significant environmental issues associated with the proposed action,” as required by PRC section 60007(a). Therefore, responses specific to comments made on the EA prepared for the ACC Program are provided, consistent with the provisions of PRC section 60007. As explained above, other substantive comments are responded to in writing in the FSORs. Where a comment raises both an issue related to and issues not related to the EA, the EA-related comments are responded to in this document and the reader is referred to the non-EA- related responses in the FSORs. ARB conservatively included comments and responses in this document if the comment raises an environmental issue even if the comment does not directly pertain to the adequacy of the EA.

As previously indicated, one additional comment letter was received on March 21, 2012 comprising a commenter's response to ARB's RTC that was released on March 12, 2012. ARB is providing a response in accordance with APA's requirements.

Responses to Comments

ARB received 12 comment letters that included comments that raised environmental issues and several oral comments during the January Board Hearing. An additional comment letter was received after the public comment period closed and was not posted. The pdf file is included in lieu of the link. The list in Table 1 identifies the commenters that submitted environmental comments and commenter information. The specific EA-related written comments are reproduced here verbatim from the comment letters. The comment letters are provided below in hyperlinked text. The associated attachments to the comment letters are provided at:

<http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=leviiighg2012>,
<http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=zev2012>, and
<http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=cfo2012>.

Table 1. List of Commenters

Comment Number on ARB website	Commenter/ Affiliation	Link
Low-Emission Vehicle Criteria Air Pollutant and Greenhouse Gas (LEV III) Regulation		
LEV III - L9	Loren Marz	http://www.arb.ca.gov/lispub/comm/bccomdisp.php?listname=leviiighg2012&comment_num=16&virt_num=9
LEV III - L10	Klaus Land, Mercedes-Benz	www.arb.ca.gov/lists/leviiighg2012/17-klaus_land_testimony_1-26-2012.doc
LEV III - L11 15-Day	Ray Minjares, International Council on Clean Transport	http://www.arb.ca.gov/lispub/comm/bccomdisp.php?listname=leviiighg2012&comment_num=88&virt_num=11
LEV III - L29	Chris Bliley, Growth Energy	http://www.arb.ca.gov/lists/leviiighg2012/37-carb_comments_01252012.pdf
LEV III - L34	Azita Khalili, BMW	http://www.arb.ca.gov/lists/leviiighg2012/44-20120125_bmw_comments_ghg_leviii_final.pdf
LEV III - L38	Katherine Yehl, Volvo Car Corporation	www.arb.ca.gov/lists/leviiighg2012/49-carb_clean_cars_package_vcc_comments_final.pdf
Zero Emission Vehicle Regulation		
ZEV - L2	Dan Mars	http://www.arb.ca.gov/lispub/comm/bccomdisp.php?listname=zev2012&comment_num=4&virt_num=2
ZEV - L74	Loren Marz	http://www.arb.ca.gov/lispub/comm/bccomdisp.php?listname=zev2012&comment_num=97&virt_num=74
Clean Fuels Outlet Regulation		

Table 1. List of Commenters

Comment Number on ARB website	Commenter/ Affiliation	Link
CFO - L8	John Braeutigam, Valero	www.arb.ca.gov/lists/cfo2012/10-valero_comments_2012_proposed_amendments_to_the_clean_fuels_outlet_regulation.pdf
CFO - L15	Daniel Sinks, Conoco Phillips	www.arb.ca.gov/lists/cfo2012/21-conocophillips_comments_1_2012_cfo_hearing.pdf
CFO - L26	Cathy Reheis-Boyd, Western States Petroleum Association	http://www.arb.ca.gov/lispub/comm/bccomdisp.php?listname=cfo2012&comment_num=34&virt_num=26
CFO - L27	Miles Heller, British Petroleum	www.arb.ca.gov/lists/cfo2012/35-bp_comments_to_carb_for_clean_fuel_outlet_regulation_-_final_1-25-2012.pdf
Transcript	Edward Olson, Jay Balaria	http://www.arb.ca.gov/board/mt/2012/mt012712.pdf
ZEV/CFO Bd - L1	Cathy Reheis-Boyd, Western States Petroleum Association	 WSPA Comments CARB Board Hearing

LEV III – L9 Loren Marz Comment and Response

9-1 The commenter expresses that “While fully supporting the spirit of the proposed LEV III Regulation, it doesn’t appear that the impacts of a significant shift to “ZEV” technology such as electric vehicles (EV) have been fully considered.” According to a National Academies report (National Academies, "Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use.")...

"...Electric vehicles and grid-dependent (plug-in) hybrid vehicles showed somewhat higher nonclimate damages than many other technologies for both 2005 and 2030. Operating these vehicles produces few or no emissions, but producing the electricity to power them currently relies heavily on fossil fuels; also, energy used in creating the battery and electric motor adds up to 20 percent to the manufacturing part of life-cycle damages...."

ARB prepared an EA for the proposed ACC Program (Appendix B) in accordance with CEQA and its certified regulatory program. The EA analyzes the potential environmental impacts associated with the reasonably foreseeable compliance responses of the regulated community. Discussions related to increased electricity charging infrastructure and demand is located on pages 125 and 126

of Appendix B. ARB found that the charging of battery electric vehicles (BEVs) and transitional zero emission vehicles (TZEVs) has the potential for both positive and negative effects to the electric grid for which timing of charging is a key determining factor. For residential charging, the general case is that the vehicle will begin charging after it arrives at home and is plugged in, typically 5-6 p.m.; however, only about 12 percent of vehicles arrive home during this hour, leading to a distribution of charging onset times. This results in an effective peak charging load of about 700 watts per vehicle. Thus, while residential charging power levels vary from about 1.4 to 7.7 kilowatts, the average effect of a single vehicle on the electric system is far lower. There are significant efforts underway to alter the load shape generated by vehicle charging, whether by use of electricity pricing incentives, actively managed or smart charging, or onboard programming of charging times. These would have the effect of moving the load off the peak. At a system level, due to diversity, the electricity demand of these types of vehicles is relatively low, resulting in minimal effects to utility generation and transmission assets, particularly in the near term. According to the Electric Power Research Institute, the potential stresses on the electric grid can be avoided through asset management, system design practices, and managed charging to shift a significant amount of the load away from system peak (Electric Power Research Institute 2011). Please also refer to response LEV III – L34-1.

LEV III – L10 Klaus Land, Mercedes-Benz Comment and Response

- 10-1 The commenter expresses that “ARB staff is proposing a new US06 PM Standard of approx. 90% reduction. Due to very short notice industry is still trying to determine the possibility to reach this extremely low standard. Where we and also independent research institutes have concerns is the effect this standard will have on new technologies, especially low-powered, downsized engine technologies and range extenders that will be necessary to meet the new Green House Gas standards. Recent vehicle testing has shown that these PM standards are not achievable for vehicles with these new technologies. We recommend a PM standard for passenger cars and light duty trucks of 25 mg/mi or as an alternative a SFTP standard of 10 mg/mi composite. This composite formula is also used for other limited criteria pollutants in the LEV III regulation. Real world data from EPA and industry show that US citizen don’t drive like the US06 test cycle and therefore there is no negative impact on the environment if ARB will agree to this proposal. On the other side the CO₂ benefit will be extremely high by bringing low powered vehicles into the US market as they are available in the European Union with more than 20 different models.”

Although this comment does not directly relate to the adequacy of the EA prepared for the proposed ACC Program, and therefore, no written response is required in accordance with ARB’s certified regulatory program at CCR section 60007, subdivision (a), this comment is responded to in this document because it mentions potential impacts on the environment.

The SFTP PM standards were based on testing of a wide range of vehicles, which showed that, even at high mileage on some older vehicles with gasoline direct injection (GDI), there is no evidence that manufacturers will have difficulty meeting the proposed 10 mg/mi standard. Although Mercedes-Benz has raised the concern that potential future vehicles with low power-to-weight ratios may not be able to meet the proposed standard, based on testing at ARB facilities and discussions with other manufacturers, staff firmly believes that with properly designed engines the 10 mg/mi standard is achievable, even considering power-to-weight ratios. Therefore, staff does not support Mercedes Benz's recommended alternate standards which would loosen their stringency. Additionally, data shows that vehicles in the real world are sometimes driven in the aggressive manner accounted for by the US06 cycle. For this reason, staff believes that the US06 cycle is appropriate.

LEV III – 15-Day - L11 Ray Minjares, International Council on Clean Transport Comment and Response

11-1 The commenter expresses that “Under the proposed scheme, a manufacturer would be permitted to introduce no more than 22% of new vehicles meeting a 3 mg/mi standard in the year 2020, as opposed to the 70% that would be required under the current phase-in schedule. In addition, an automaker may choose to meet this with essentially no change to existing vehicle or engine technology until 2021. Even more, an automaker would be permitted to introduce higher emitting vehicles in each of the five years leading up to 2021. These vehicles would be permitted to emit as much as 10 mg/mi, which some gasoline direct injection engines could approach¹. In a worst-case scenario, the proposed alternative compliance scheme could result in a significant net increase in particulate emissions compared with the current phase-in schedule.

Although this comment does not relate directly to the adequacy of the EA or its impact analysis, this comment is being responded to in this document because the commenter asserts that there may be an increase in criteria pollutant emissions as a result of the Alternative Compliance Phase-in provision. The Alternative Compliance Phase-in is designed to provide equivalent emissions reductions, and an increase in emissions is highly unlikely. However, in fall of 2012, when a National greenhouse gas program is in place, ARB will revisit the Alternative Particulate Phase-in provision, and clarify that 100 percent compliance is required for the final year of phasing.

LEV III – L29 Chris Bliley, Growth Energy Comment and Response

29-1 The commenter expresses that “...CARB and the EPA have long recognized that vehicle technology and the fuel employed with that technology need to work in concert as an integrated “system” so that vehicles can operate efficiently and achieve the lowest technologic(ally) emission targets. We believe that CARB did

not completely examine the impact of fuel parameter changes that could enable additional engine technologies to improve efficiency and ultimately improve engines. Specifically, we are recommending one new fuel for vehicles model year 2017 and later (in addition to legacy FFVs) with an octane rating of 94 accomplished with a 30 percent blend of ethanol (E30). This new fuel used in conjunction with new engine technologies would provide even more clean air benefits than CARB is currently proposing. CARB is obligated by the California Government Code, the California Environmental Quality Act, and the California Health and Safety Code to propose and adopt only those regulations that maximize public benefits, minimize public and private costs, and afford maximum protection to the environment in a cost-effective manner. Those requirements can only be met by reducing vehicular emissions through new fuel standards.”

The commenter advocates a new fuel standard to reduce vehicular emissions that falls outside the scope of the proposed ACC Program analyzed in the EA. The EA was prepared for the ACC Program in accordance with ARB’s certified regulatory program and CEQA. This comment and a response is included in this document because it mentions the California Environmental Quality Act. However, this comment does not directly relate to the adequacy of this EA prepared for the proposed ACC Program, therefore, no further written response is required in accordance with ARB’s certified regulatory program at Title 17 CCR section 60007, subdivision (a). Please refer to the FSOR prepared for the LEV III regulation for staff response as to why this recommendation is rejected.

LEV III – L34 Azita Khalili, BMW Comment and Response

- 34-1 The commenter expresses that “Upstream Emissions – Proper Allocations of Responsibilities ARB’s view is not justified, that within a national context there are expected to be significant lower shares of electric and fuel cell vehicles than in California and higher national grid GHG emissions, and therefore any non-zero upstream crediting serves as a lesser relative incentive for BEV and PHEV than the proposed ARB GHG crediting based on California’s low-GHG grid. Manufacturers are not able to influence the grid mix and therefore differentiating between CARB States and the others in regard to upstream emissions should be avoided. Every such vehicle needs to be counted as zero upstream emissions. Any crediting above zero is a disincentive.

It is a principle question whether automakers are responsible for inclusion of upstream emissions in the compliance calculations or not, and this question is independent from the emission level of the electricity grid. BMW accepts the responsibility of car makers for the vehicle efficiency by which their products use energy – no matter which fuel or energy source. But manufacturers have no control over the carbon content of electricity generation and cannot be held responsible for energy mix decisions made decades ago.

While it is also acknowledged that the upstream impact of electricity generation needs to be addressed politically at the point of responsibility in order to ensure the credibility of a policy supporting the electrification of road transport, strategic decisions to be taken by car manufacturers for the decades to come should not be burdened by past decisions taken in other sectors: If upstream emissions would be allocated, the comparative advantage of electric vehicles dwindles. Clean Diesel in this case may achieve similar GHG emission reduction results at a much lower cost. The attractiveness of electric vehicles for vehicle manufacturers would significantly decrease. Therefore, BMW continues to maintain that electric vehicles on the merits of their own carbon use, should be counted as zero grams-per-mile vehicles in the greenhouse gas regulations for 2017-2025.” Please see the comment letter shown above for other issues raised.

Although this comment does not directly relate to the adequacy of the EA prepared for the proposed ACC Program, and therefore, no written response is required in accordance with ARB’s certified regulatory program at CCR section 60007, subdivision (a), this comment is responded to in this document because it mentions a potential impact on emissions. The principle difference between California’s program and U.S. EPA’s is the ZEV mandate. Whether or not inclusion of upstream emissions of ZEVs will act as a disincentive to the manufacturers is irrelevant. The mandate requires a certain percentage of these vehicles to be marketed in California and the 177 states, regardless of how manufacturers choose to comply with California’s GHG standards. Regarding the emission impact, under the California program any upstream emissions from ZEVs have to be offset by lower emissions from non-ZEVs. Therefore, removing the requirement would result in higher emissions in California. The LEVIII Staff Report indicates that ARB staff is proposing to credit electric- and hydrogen-powered vehicles according to their incremental emission impact from California-specific low-GHG upstream energy sources that are most likely in the timeframe of the regulation. Advanced electric-drive vehicles, including plug-in hybrid electric vehicle, battery electric vehicle, and fuel cell electric vehicle technology, can be driven primarily or entirely without tailpipe CO₂ emission emissions. Their associated GHG emissions are, instead, upstream from the vehicle at primary energy processing facilities, at electricity generation plants, and throughout the fuel and electricity distribution network. In order to structure the GHG program for the long-term for a diversity of vehicle fuel types, the regulation proposes the implementation of standards that incorporate the relative GHG emissions from battery electric vehicle, plug-in hybrid electric vehicle, and fuel cell electric vehicle technologies as compared to the conventional vehicles that primarily utilize gasoline. The intent then is to establish straightforward performance-based GHG emission provisions that accurately count the upstream emissions in a technology-neutral way that provides industry certainty to plan for GHG requirements as these more advanced ultra-low-GHG technologies enter the market.

Staff notes that its proposed crediting provision for battery-electric vehicle, plug-in hybrid electric vehicle, and fuel cell electric vehicle technology differs from the expected federal U.S. EPA GHG regulatory program. However, as directed by the Board in Resolution 12-11, staff "...will return to the Board with a new regulatory proposal to accept compliance with the 2017 through 2025 model year National Program as compliance with California's greenhouse gas emission standards in the 2017 through 2025 model years, if the Executive Officer determines that U.S. EPA has adopted a final rule that at a minimum preserves the greenhouse reduction benefits set forth in U.S. EPA's December 1, 2011 Notice of Proposed Rulemaking for 2017 through 2025 model year passenger vehicles." Accordingly, staff intends to propose two compliance options: (1) an automaker chooses to comply directly with California's standards including upstream accounting as specified here or (2) an automaker chooses to comply with the federal U.S. EPA standards; utilizes the federal accounting provisions for battery electric vehicle, plug-in hybrid electric vehicle, and fuel cell electric vehicle technologies in the federal standards; and receives the same federal accounting for these technologies within the California regulation. Staff believes that, consistent with their comments on the ACC program, manufacturers will ultimately choose compliance with the National Program, rendering the upstream emission issue moot.

Staff's non-zero-emission accounting for these technologies' incremental upstream emissions is justified for several reasons. Primarily, the ZEV regulation already requires electric-drive vehicles in California, therefore obviating the need for special artificial crediting incentives. In addition, ARB's proposed GHG crediting more accurately depicts the science regarding known GHG impacts, more adequately sets the precedent for a future with increasingly more alternative fuel vehicles for 2025 and beyond, more assuredly protects against the environmental repercussions of foregone GHG emissions allowed from battery electric vehicle emission incentives, and better continues ARB's objective in keeping its performance standards technology-neutral. In addition, this accounting reflects California's purpose and intent to evaluate and reduce all GHG emissions – beyond tailpipe CO₂ – from all principal phases of passenger motor vehicle powering and use.

ARB's position on incorporating the incremental upstream emissions of electric and hydrogen fuel cell vehicles is further justified by several California-specific details that are different from the national US situation. The greater deployment of these advanced technologies in California fundamentally differentiates the State from the US context. The California ZEV regulation as proposed for amendment mandates that over 10% of the new vehicle fleet be some form of battery electric vehicle, plug-in hybrid electric vehicle, or fuel cell electric vehicle technology in 2025. In addition, California has complimentary programs (e.g., Low Carbon Fuel Standard and Renewable Portfolio Standard) that reduce upstream GHG emissions over time, rigorously track these emissions, and provide the basis for accurate GHG emissions accounting. According to staff's analysis, for California's relatively low-GHG electricity and hydrogen, these ZEV-

type vehicles will achieve very low GHG emission ratings and therefore would naturally achieve substantially lower GHG emissions than any other known vehicle technologies (e.g., hybrids) by a large margin without artificial incentives.

Nevertheless, staff notes that accepting federal compliance (i.e., with federal upstream crediting incentives) remains valid, owing to the 50-state GHG reduction benefit greatly outweighing the California-alone GHG standard compliance, thus achieving additional emissions reductions benefiting California. Please also refer to response to LEV- III L9-1.

LEV III – L38 Katherine Yehl, Volvo Car Corporation Comment and Response

- 38-1 The commenter expresses that “Higher octane fuel would enable manufacturers to pursue strategies that better support development and introduction of advance vehicle technologies, and a consequent reduction in greenhouse gases and criteria emissions. To optimize engine fuel efficiency and minimize emissions, transitioning to higher octane regular and premium grade market gasoline may be necessary. VCC would support establishment of a minimum blend stock octane. In this way, adding ethanol would raise fuel octane without risk that blenders would make corresponding reductions in base blend stock octane, thereby undoing the octane benefit of ethanol addition. We recommend the Board direct staff to assess the environmental benefits of higher octane gasoline.”

Although this comment does not directly relate to the adequacy of the EA prepared for the proposed ACC Program, and therefore, no written response is required in accordance with ARB’s certified regulatory program at CCR section 60007, subdivision (a), this comment is responded to in this document because it mentions potential environmental benefits. Staff designed the certification fuel to be reflective of the current in-use fuel. According to the EIA , in California, among the total 5.4 million gallons per day of gasoline sold to end users in May 2011, 4.2 million gallons per day of gasoline (77%) were regular (87 AKI), 500 thousand gallons per day of gasoline (9%) were mid-grade (89 AKI), and 800 thousand gallons per day of gasoline (14%) were premium (91 AKI). Therefore, the certification fuel is designed around an 87 AKI and for those vehicles that have a warranty that requires 91 AKI, ARB allows for the vehicle to be tested using the certification fuel at 91 AKI.

The Department of Measurement Standards regulates octane level for in-use fuels. Octane is considered a consumer protection issue to prevent knocking and poor vehicle performance. ARB does not and has not regulated octane in gasoline because there is no evidence to suggest that octane affects emissions in and of itself. Staff is unaware of any studies that have been designed to isolate octane as an independent effect. It is very difficult to isolate octane at the same composition and volatility levels.

Increasing octane would; however, provide a CO₂ benefit if the vehicle was designed to take advantage of it; but it may not have an accompanied criteria pollutant benefit. Since the vehicle modeling supporting the proposed ACC Program was conducted on octane levels of current commercial gasoline, increased octane fuel is not needed to meet the proposed standards. In addition, because commercial gasoline specifications were not part of the regulatory package, the commenter's proposal is out of the scope of this rulemaking.

ZEV – L2 Dan Mars Comment and Response

- 2-1 The commenter expresses that “I am very much in favor of feebates to encourage the use of plug-in hybrid, and all-electric vehicles. Charge a fee for inefficient vehicles and use that money to give rebates to buyers of clean vehicles that plug-in. There are many advantages for the individuals as well as society as a whole.”

This comment and a response is included in this document because the commenter advocates a feebate program as an alternative. The EA prepared for the proposed ACC Program analyzed a feebate regulation as a potential alternative. Although it was considered, it was rejected as infeasible (see page 196 of Appendix B). A feebate is a new car pricing scheme where consumers who purchase high-emitting vehicles would pay an extra fee that would be used to fund rebates to consumers who purchase low-emitting vehicles. ARB sponsored research on the potential benefits of a feebate program for new vehicles and eliminated it as an option for a number of reasons. First, given the aggressive performance standards proposed for new vehicles, the additional reductions that could result from a feebate program are likely to be minimal. Manufacturers would already need to install all available, cost-effective emission-reducing technology, as well as adopt their own internal pricing strategies to comply with the standards. A feebate program would replace this internal pricing strategy and would only induce substantial, additional emission reductions if fees and rebates were very high, leading to greater impacts on consumers. Furthermore, a California-only program within a national market could result in more higher emitting vehicles being sold out of state and negating any in-state emission reductions. In terms of implementation, maintaining a revenue-neutral regulation would likely be a significant challenge given that vehicle purchase behavior would vary based on current economic conditions, but fee and rebate levels would need to be set in advance. More importantly, ARB may not have the legal authority to pursue feebates and could face challenges similar to pursuing a carbon fee or tax. In addition to legal opposition, there may be public opposition because some consumers would have to pay more for new vehicles. The administration of a feebate program would require ARB to collect revenues and then disperse funds. ARB may need additional authority from the Legislature to both disperse funds and collect feebate revenues. Consequently, in light of the legal and administrative challenges for minimal emissions reductions, ARB did not pursue the further evaluation of this alternative.

Of note, the ARB's Clean Vehicle Rebate Project (CVRP), funded through the AB 118 Air Quality Improvement Program, provides funding for consumer rebates of up to \$2500 for zero-emission and plug-in hybrid light-duty vehicles. As of January 2012, the CVRP has provided rebates for over 4700 vehicles totaling about \$17 million. More information on the CVRP may be found on ARB's website at <http://www.arb.ca.gov/msprog/aqip/cvrp.htm>.

ZEV – L74 Loren Marz Comment and Response

74-1 The commenter expresses that “While fully supporting the spirit of the proposed LEV III Regulation, it doesn’t appear that the impacts of a significant shift to “ZEV” technology such as electric vehicles (EV) have been fully considered.” According to a National Academies report (National Academies, "Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use.")...

"...Electric vehicles and grid-dependent (plug-in) hybrid vehicles showed somewhat higher nonclimate damages than many other technologies for both 2005 and 2030. Operating these vehicles produces few or no emissions, but producing the electricity to power them currently relies heavily on fossil fuels; also, energy used in creating the battery and electric motor adds up to 20 percent to the manufacturing part of life-cycle damages...."

Please refer to response for LEV III - L9-1.

CFO – L8 John Braeutigam, Valero Comment and Response

8-1 The commenter expresses that “The ISOR overlooks the environmental and safety impacts associated with hydrogen fuel manufacture and supply. The proposed CFO revisions will just raise cost to all California consumers with little or no benefit. There are still emissions when hydrogen is produced and electricity generated, they are just not at the tailpipe. Further, the ISOR is dismissive of the risks associated with onsite hydrogen storage, fueling and perhaps manufacture.”

ARB disagrees. Contrary to the commenter's concerns, the EA for the proposed ACC Program (Appendix B), which ARB prepared in accordance with CEQA and its certified regulatory program, both evaluates environmental and safety impacts that may be associated with hydrogen fuel manufacturing, supply, storage, and fueling.

The EA analyses potential environmental impacts associated with the reasonably foreseeable compliance responses of the regulated community. Chapter 3 of the EA provides a discussion of the existing physical conditions and the regulatory framework relevant to each environmental resource area potentially affected by the proposed ACC Program. The chapter includes a section pertaining to hazards. This section describes characteristics of hazardous materials as toxic

(causes human health effects), ignitable (has ability to burn, such as hydrogen), corrosive (causes severe burns or damage to material and reactive (causes explosions or generates toxic gases). California's hazardous waste regulations provide the means to determine whether or not a waste is hazardous. The section also provides a table of applicable federal and state laws and regulations governing hazards and hazardous materials.

Chapter 4 of the EA describes the foreseeable regulated community compliance responses, and includes discussions related to hydrogen supply and the potential for modification of hydrogen production plants. This section discloses that modification of existing hydrogen production plants may be necessary to accommodate an increase in demand. The EA indicates that using the fast-rate scenario for FCVs entering the vehicle fleet, the total hydrogen demand when the 10,000 FCV trigger is activated in the South Coast Air Basin could represent 1.1 percent of the hydrogen supply in that area. Under the same fast-entry scenario, total statewide demand in 2020 would represent 3.9 percent of the merchant hydrogen supply, and in 2024, it could represent 9.2 percent. The EA also indicates that once the statewide demand for hydrogen reaches 3.5 million kilograms per year, the California standards for hydrogen will be in place, which require that 33 percent of the hydrogen that is produced for transportation be made from eligible renewable resources (CPUC Code Section 399.12) This requirement will eventually present a business case for the construction of new hydrogen plants that produce hydrogen from renewable resources.

Chapter 5 of the EA provides a programmatic impact and mitigation analysis, using the CEQA Checklist as a tool for determining whether an impact may result. It describes potential impacts associated with the entire ACC program and includes a discussion of construction of new facilities or modification of existing facilities, which may include hydrogen production plants. Such actions would be subject to site-specific analysis under CEQA. As for emissions related to hydrogen production, those emissions would be regulated by the local air district.

CFO – L15 Daniel Sinks, Conoco Phillips Comment and Response

- 15-1** The commenter expresses that “ConocoPhillips also is a member of the Western States Petroleum Association (WSPA) and supports the comments submitted by WSPA for this hearing and rulemaking. Rather than repeat WSPA's detailed comments here, we incorporate them by reference into this letter. ConocoPhillips specifically opposes the proposed modifications to the CFO regulation that shifts the burden of motor fuel hydrogen infrastructure on to major refiner/importers of gasoline for the following reasons.

Legal Authority

As described in detail by WSPA in its comments, if amended as proposed the CFO regulation will violate several laws and/or legal authorities:

- the U.S. Constitution (both the Takings Clause of the Fifth Amendment as applied to the states via the Fourteenth Amendment and the Commerce Clause);
- the requirement of an administrative agency to remain within the scope of its statutory authority and not promulgate rules ultra vires;
- Proposition 26; and
- CEQA.”

Please refer to responses CFO – L26. Regarding the statement that the CFO Regulation violates CEQA, ARB disagrees. ARB prepared an EA for the proposed ACC Program (Appendix B) in accordance with CEQA and its certified regulatory program. The EA analyses potential environmental impacts associated with the reasonably foreseeable compliance responses of the regulated community, identified mitigation where impacts were identified, and analyzed a reasonable range of alternatives. CEQA does not preclude ARB from pursuing a regulation that improves air quality in California or determining an appropriate regulated community. See also responses to this comment provided in the FSOR prepared for CFO regulation.

CFO – L26 Cathy Reheis-Boyd, Western States Petroleum Association Comment and Response

26-1 The commenter expresses that “ARB Failed to Properly Comply with CEQA.

As ARB recognizes, the California Environmental Quality Act (CEQA) requires a study of environmental impacts before adopting regulations such as the proposed amendments to the Clean Fuels Outlet (CFO) regulation. It is well-settled that, even when an agency adopts a rule to protect or improve the environment, any adverse side-effects must be evaluated under CEQA.

ARB has adopted its own procedures for CEQA compliance under its certified regulatory program, but still must satisfy the fundamentals of the statute. Thus, ARB must identify potentially significant impacts, consider mitigation measures and a reasonable range of alternatives to avoid or reduce such impacts, and consider and respond to comments from the public and other agencies. Finally, ARB must adopt mitigation measures or alternatives unless they are infeasible and overriding benefits justify adopting the regulation despite its significant and unavoidable impacts.

To comply with CEQA, ARB's Initial Statement of Reasons (ISOR) for the CFO amendments includes Appendix B, a draft Environmental Analysis (EA) prepared

as the functional equivalent of an Environmental Impact Report. The air quality evaluation in the EA is supported by ISOR Appendix D, an Emission Impact Analysis (EIA). However, the EA and EIA are seriously flawed and cannot be relied on to satisfy ARB's CEQA obligations."

This comment provides a general introduction to commenter's more specific comments that follow. ARB disagrees with the comment that ARB failed to properly comply with CEQA and with the commenter's statement that the EA and EIA cannot be relied upon to satisfy ARB's CEQA obligations. ARB prepared an EA for the proposed ACC Program (Appendix B) in accordance with CEQA and its certified regulatory program. The EA analyses potential environmental impacts associated with the reasonably foreseeable compliance responses of the regulated community. Chapter 3 of the EA provides discussion of existing conditions and the regulatory setting for each of the resource areas potentially affected by the proposed ACC Program. Chapter 5 of the EA provides a programmatic impact and mitigation analysis, using the CEQA Checklist as a tool for determining whether an impact may result. Please refer to the following L26 responses for specifics regarding CEQA compliance and the purported flaws in the EA.

- 26-2 The commenter expresses that there was "Failure to Fully Disclose Programmatic Impacts. Throughout the EA, ARB finds that local authorities will conduct future project-level CEQA review when approving and issuing permits for individual hydrogen fueling station projects. Through project-level review, the local agencies will be responsible for implementing ARB's recommended mitigation measures and others that they may identify and incorporate in permit conditions. While expecting that local authorities will do so, ARB cannot be certain that mitigation which is beyond its control will be implemented successfully. Accordingly, the EA finds such impacts to be potentially "significant and unavoidable", though justified by the benefits of the CFO rule. Although in general this "programmatic" or "tiered" approach is authorized for CEQA review at the rulemaking stage, the EA takes the tiered approach too far.

Even impacts that are significant and unavoidable at the programmatic stage must be fully disclosed, to provide a meaningful opportunity for the public to comment and to propose further feasible mitigation measures. Such issues also must be fully disclosed to enable informed decision-making, a central objective of CEQA. The ARB Board is responsible for considering and balancing benefits and adverse side-effects in deciding whether to adopt the CFO amendments. For each significant and unavoidable impact, ARB must find "overriding considerations", i.e., that specific benefits outweigh each adverse side-effect. But overriding considerations cannot be legally or factually supportable if the decision-makers have insufficient information to understand the extent of the side-effects they are deciding to accept. Weighing benefits and impacts is impossible when the impact side of the balance is insufficiently disclosed. In short, programmatic "significant and unavoidable" determinations are not a shield for the casual narrative evaluations and conclusions throughout the EA."

Appendix B is an environmental analysis prepared as in accordance with Public Resources Code section 21080.5, subdivision (d)(3) and ARB's regulations at CCR sections 60005 through 60007. The programmatic approach to the analysis is informed by CEQA Guidelines section 15168, which describes the parameters for a program EIR. Section 5 of Appendix B (Impact Analysis and Mitigation) discloses impacts to the resource areas identified on the CEQA checklist.

The commenter acknowledges that CEQA authorizes a programmatic approach and indicates that ARB takes the tiered approach "too far" but is not specific as to which resource area impacts are insufficiently disclosed. The EA discloses potential environment impacts related to the foreseeable compliance responses by the regulated community on a statewide level, and identifies mitigation. The level of specificity required in an environmental analysis depends on the degree of specificity of the activity under review. For example, an EIR for a construction project must be more specific and detailed than an EIR for a general plan or other general policy. An EIR for a policy or plan focuses on the indirect secondary effects of that plan or policy and cannot be as detailed as a subsequent EIR on the specific construction projects that are expected to follow. (See CEQA Guidelines section 15146, sub (b).) ARB's preparation of the EA for the ACC Program is similar to the approach for an EIR prepared for a plan or policy. In preparing the EA for the ACC Program, ARB cannot speculate about details that will be provided in any subsequent project specific environmental analyses.

*ARB's programmatic approach to its analysis on the potential indirect impacts related to the regulated communities' foreseeable compliance responses is necessarily general, programmatic and qualitative in nature. A more detailed analysis is not reasonably feasible because it is unknown what specific future actions will be and any site-specific impacts cannot be known and assessed with any level of specificity at this time. Therefore, details of project level impacts are properly deferred to future project level review when those details can be known. This is an appropriate approach under CEQA. (See *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143.)*

When potentially significant environmental impacts are identified in the EA, feasible mitigation measures have been presented to substantially reduce the effects. As stated in the EA, ARB does not possess the authority to require project-specific mitigation measures for facilities approved by other land use or permitting agencies if impacts are identified for those projects. Because the authority to determine project-level impacts and require project-level mitigation lies with the land use and/or permitting agency for individual projects, and project-specific details about the impacts and mitigation cannot be known at this stage, there is inherent uncertainty in the degree of impacts identified and mitigation ultimately implemented. Consequently, the EA took the conservative approach in its analysis of potential impacts and in its post-mitigation significance conclusions (i.e., tending to overstate impacts) and, for CEQA compliance

purposes, discloses that potentially significant impacts related to the development of fueling stations and new or modified manufacturing facilities may be significant and unavoidable. ARB expects, however, that as the proposed ACC Program is carried out, these significant impacts can and should be resolved and reduced to insignificance by other government agencies, in accordance with their authorities and project review procedures

- 26-3 The commenter states that there is “Over-Reliance on Future Project-Level CEQA Review. Moreover, in following the programmatic approach, the EA relies heavily on project-level CEQA review that supposedly will be conducted by local agencies undertaking or permitting individual hydrogen fueling facility projects. However, it is quite likely that many local agencies will conduct no CEQA review at all. On an individual basis – especially if ARB is correct in assuming that most new hydrogen fueling station projects will be located at existing gas stations – many of these small projects will be exempt from CEQA, under the categorical exemption for minor alterations to existing facilities or other exemptions. Yet ISOR Table IV-2b (p. 50) projects that over 450 new stations will be required under the CFO rule. Of course, capturing impacts that are insignificant for each project considered separately, but significant when nearly five hundred projects are considered together, is the purpose of cumulative impacts analysis under CEQA.”

Appendix B acknowledges that the proposed ACC Program could result in the construction and operation of over 100 new hydrogen fueling stations, along with modifications to existing hydrogen production plants. The EA found that these would likely occur within existing footprints or in areas with consistent zoning. The EA includes a Cumulative Impacts section in Chapter 6, which analyzes the potential for cumulative impacts for resource topics. These are disclosed in general qualitative terms as they pertain to reasonably foreseeable compliance responses because of the programmatic nature of the EA. See response to Comment 26-2. As with all of the environmental effects and issue areas, the precise nature and magnitude of impacts will depend on the types of projects associated with implementation of the proposed ACC Program, their locations, their aerial extent, and a variety of site-specific factors that are not known at this time but that would be addressed by environmental reviews at the project-level.

The commenter indicates, it is “...quite likely that many local agencies will conduct no CEQA review at all. On an individual basis new hydrogen fueling station projects that would be located at existing gas stations may be exempt from CEQA, under the categorical exemption for minor alterations to existing facilities or other exemptions.” The commenter attached documents to demonstrate this point including two Notices of Exemption and a mitigated negative declaration. These submissions support finding that impacts from such projects are insignificant and do not contradict the conclusions in the EA even

though the EA took a conservative approach to determining potential impacts at this programmatic level.

The commenter also expresses that “the EA does acknowledge impacts to be addressed by local agencies as significant and unavoidable:

Because the authority to determine project-level impacts and require project-level mitigation lies with the land use and/or permitting agency for individual projects, and programmatic analysis does not allow project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation ultimately implemented to reduce the potentially significant impacts. Consequently, this EA takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate impacts) and, for CEQA compliance purposes, discloses that potentially significant impacts related to the development of fueling stations and new or modified manufacturing facilities may be significant and unavoidable.

ISOR App. B, p. 8. Nevertheless, the EA reassures the public and decision-makers that:

ARB expects, however, that as the proposed ACC Program is carried out, these significant impacts can and should be resolved and reduced to insignificance by other government agencies, in accordance with their authorities and project review procedures.

Id. This reassurance is hollow, however, since the EA does not disclose to the public and decision-makers the extent to which local agencies can be expected to rely on categorical exemptions and not consider CEQA mitigation in the first place. Thus, rather than being conservative, the EA hides the true magnitude of anticipated significant and unavoidable impacts. If unmitigated through project-level review due to CEQA exemptions, the adverse impacts will be greater than the EA admits. This error also further undercuts the basis for overriding considerations, since the adverse impacts side of the balance is understated by assuming more project-level mitigation than can reasonably be expected.”

The commenter asserts that the EA hides the true magnitude of anticipated significant and unavoidable impacts, apparently by not disclosing the extent to which local agencies can be expected to rely on categorical exemptions. The commenter states that local agencies can be expected to rely on CEQA categorical exemptions for particular fueling stations and that the reliance on categorical exemptions somehow results in impacts because no mitigation is considered when an exemption is used, and therefore, these projects will result in cumulative impacts. The commenter submitted several references during the 45-day public comment period, including copies of Notices of Exemptions and a Mitigated Negative Declaration for hydrogen fueling stations. The categorical exemptions submitted are under CEQA Guidelines sections 15301(e) and 15302

because the facilities were preexisting and the projects were considered ministerial under a public agency's statutes and ordinances. Public Resources Code 21083 and 21084 were also cited in the documents submitted.

Categorical exemptions (found at CEQA Guidelines sections 15300-15329) are classes of projects fully exempt from CEQA. These classes of projects are identified by the Secretary of Natural Resources as exempt from CEQA because the Secretary has found these projects have no significant effect on the environment. (See Public Resources Code section 21084, subdivision (a).) A project otherwise eligible for a categorical exemption may not claim the exemption if "the cumulative impact of successive projects of the same type in the same place over time is significant." (CEQA Guidelines section 15300.2, subd. (b).) Therefore, any new hydrogen fueling station projects that might otherwise fall under a categorical exemption may not use the categorical exemption if the cumulative impact of successive fueling station projects in the area is significant. The commenter's assertion that local agencies will use categorical exemptions suggests then there must be no cumulative impacts from such facilities or else the exemption is not available for these projects. Therefore, commenter's assertion, and the materials submitted, support a finding no cumulative impacts from the building of such facilities and not a finding of a greater magnitude of impacts as asserted by commenter. Therefore, the EA's conservative approach, which did not assume the use of categorical exemptions, does not mask the magnitude of potential impacts as the commenter asserts, but instead tends to overstate potential impacts.

The commenter's submitted information supports the analysis in the EA and does not require a revision to the EA, nor does it trigger the obligation to recirculate the EA under CEQA because it does not identify significant new information, as defined by CEQA.

- 26-4 The commenter expresses that there was "Failure to Consider Available Information on Foreseeable Project-Level Impacts. Even at the programmatic or first-tier level, CEQA requires evaluation of all issues that are ripe for review, where feasible and where information is available. Yet, while claiming that extensive analysis must be deferred to the project level, the EA ignores CEQA documents for hydrogen fueling projects that are already in place. Although some existing hydrogen facilities were approved based on CEQA exemptions, CEQA review documents do exist for other projects. Such documents provide concrete, readily available information on matters as to which the EA merely speculates.

For example, the City of Burbank prepared a Mitigated Negative Declaration for its Hydrogen Fueling Station Project, attached. It is true that some impact analyses in Burbank's Negative Declaration are based on project-specific details (e.g., visual impacts of the facility's profile in the specific setting) not appropriate for evaluation at the programmatic stage. Nevertheless, some impact analyses in the Negative Declaration provide valuable information on issues inherent to

hydrogen fueling facilities – in particular, on the hazards of hydrogen itself (see comment on hazards below). Other impacts likely to be common to hydrogen facilities wherever they are located include air emissions, noise, public services (including fire protection), and transportation and traffic, from both facility construction and operation.

It is also true that the City of Burbank, after full analysis and disclosure, found that all potential impacts could be mitigated to less than significant – but only for that individual project. Findings of insignificance are by no means assured when scaling up the impacts identified in the Burbank Negative Declaration to over 450 new hydrogen stations anticipated as a result of the CFO amendments. Yet the EA could have analyzed reasonably foreseeable means of compliance by considering available information from CEQA documents for existing hydrogen fueling facilities. It was ARB’s responsibility to identify and consider such available information, but not one such project-level CEQA document is cited in the EA references.”

The commenter asserts that the EA is inadequate because ARB did not cite to CEQA review documents for other fuel station projects such as the City of Burbank document attached to the commenter’s letter.

ARB is not required by its CRP or CEQA to cite other environmental document in the preparation of its EA. It may do so if such documents are helpful.

As noted by commenter, the impact analysis in Burbank’s Negative Declaration is based on project-specific details. These details are not appropriate for ARB’s programmatic level of analysis of the potential impacts of implementation of its regulations. As the commenter notes, impacts are specific to each facility and its setting. ARB’s EA speaks generally to the general types of impacts that may occur (see response to Comment 26-2 for explanation of level of detail appropriate for the EA). The commenter asserts that some impacts discussed in the Burbank document are likely to be common to hydrogen facilities wherever they are located, such as air emissions, noise, public services (including fire protection), and transportation and traffic. Contrary to commenter’s assertion, the whole focus of the EA analysis was to consider impacts that would be common to hydrogen facilities wherever they are located such as air emissions, noise, public services (including fire protection), and transportation and traffic (see EA Chapter 5 Impacts Analysis and Mitigation).

The Burbank document submitted by commenter does not provide any more specific or helpful information than what is already included in the EA about potential impacts that would be common to hydrogen facilities. For example, the EA analysis of potential air emissions provides a reasonable accounting of the types of air quality impacts that could occur with new hydrogen fueling stations or modifications to existing facilities (see EA at page 141-152). The EA discloses that during the construction phase, air pollutants could be generated, including site grading and excavation activities which could generate fugitive PM dust

emissions and exhaust emissions from off-road construction equipment, material delivery trips, and construction worker-commute trips. As disclosed in the EA, actual emissions can vary as a function of parameters such as soil silt content and moisture, wind speed, acreage of disturbance area, and the intensity of activity performed with construction equipment. These parameters are specific to individual facilities and cannot be known at this time. The Burbank document submitted does not provide more detailed information, and is not specific to that particular project that could be used to revise the analysis or conclusions in the EA.

Furthermore, the documents provided by the commenter demonstrate that such projects tend to have less than significant impacts. However, the EA takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate impacts) and, for CEQA compliance purposes, discloses that potentially significant impacts related to the development of fueling stations and new or modified manufacturing facilities may be significant and unavoidable. ARB expects, however, that as the proposed ACC Program is carried out, these impacts can and should be resolved and reduced to insignificance by other government agencies, in accordance with their authorities and project review procedures. This information supports the analysis in the EA and does not require a revision to the EA nor does it trigger the obligation to recirculate the EA under CEQA, because it does not provide significant new information, as defined by CEQA.

- 26-5 The commenter expresses that there was “Failure to Analyze CFO, ZEV and LEV III Actions As Separate “Projects. Three separate regulatory actions are before ARB: amendments to the CFO regulations and also to the Zero Emission Vehicle (ZEV) and Low Emission Vehicle (LEVI III) regulations. These three actions are collectively referred to as the Advanced Clean Cars (ACC) Program. They are also collectively analyzed in the EA for environmental impacts, as though they were a single “project” for purposes of CEQA. See EA, p. 35. However, the EA’s characterization of the single “project” is inconsistent with ARB’s Notice of Public Hearing to Consider Amendments to the Clean Fuels Outlet Regulation (Nov. 29, 2011), which does not propose a single ACC project. Instead, the proposed regulatory action in the Notice is a stand-alone action on the CFO amendments. The Notice, p. 3, merely notes in passing that the CFO project is “part of the Advanced Clean Cars regulatory proposals” – note that “proposals” is plural – that are to be heard on the same day. Similarly, ARB’s website at <http://www.arb.ca.gov/regact/2012/cfo2012/cfo2012.htm> lists the CFO amendments as a stand-alone proposed regulatory action, and the January 26-27, 2012 meeting agenda lists three separate, albeit consecutive, public hearings rather than one hearing covering three subjects; see <http://www.arb.ca.gov/board/ma/2012/ma012612.htm>.”

ARB disagrees that the CFO regulation should have a stand-alone analysis. The CFO regulation is a complement to the ZEV program, and without it, the ZEV targets may not be met. Further, because the ZEV regulation would be flexible in

that manufacturers could fulfill their requirements by marketing hydrogen FCVs, as well as other types of vehicles, it cannot be determined ahead of time exactly when the CFO regulation would be activated by the regional or statewide trigger levels. This is not a case where one regulation should preclude another. The proposed ACC Program will result in a fleet of vehicles with supporting infrastructure. One cannot occur without the other.

As for noticing, ARB posted a Notice of for the Staff Reports (Initial Statement of Reasons) prepared for the LEV III, ZEV and CFO amendments, which included notice of the coordinated analysis of the potential for environmental impacts and benefits presented in the Appendix B to each staff report. The EA assesses all impacts associated with the entire proposed ACC Program, which is the proposed project. The EA describes the project in Chapter 2 of the EA. The “project” is the collective and integrated set of proposed regulatory amendments that would affect manufacturer design of vehicles and the fueling of a segment thereof to meet these ARB regulations, while also meeting other regulatory requirements. The regulatory amendments are described in detail for CEQA purposes starting on page 33 of the EA. Separately or together, the impact analysis related to the CFO regulation would be the same.

The commenter also expresses that “Certainly, it was appropriate for the EA to consider the cumulative impacts of the three separate CFO, ZEV and LEV III projects. Cumulative impact analysis is the correct means of evaluating the effects of past, present and reasonably foreseeable future projects that overlap in time and may combine to exacerbate their respective impacts.

However, nothing in the Notice or the EA states that ARB will only adopt the CFO amendments if it also simultaneously adopts the ZEV and LEV III changes. Nor does the EA inform the public and decision-makers of the potential environmental consequences should ARB choose to separately adopt the CFO amendments. Accordingly, the EA does not provide a basis for action on the CEQA “project” that is actually proposed.”

ARB agrees that it was appropriate for the EA to consider the cumulative impacts of all regulations in the ACC Program. The EA includes a cumulative assessment of impacts on the environment that could result from the incremental impacts of a proposed project when added to other past, present, and reasonably foreseeable future actions. Such impacts can result from individually minor, but collectively significant actions taking place over time.

The EA provides a detailed description of the project being proposed for approval, which includes the three regulatory actions. The project description should not be a smaller portion of the entire proposed project being considered for approval as the commenter suggests. The EA informs the decision makers of the potential environmental impacts associated with the CFO amendments while providing an integrated, coordinated impacts analysis of all the proposed ACC Program’s amendments. ARB has the authority to define the proposed project.

ARB disagrees that the EA does not provide a basis for action by the Board on the proposed ACC Program. The entire ACC has been fully analyzed and the Board has the discretion to approve the entire project or some portion thereof.

- 26-6 The commenter expresses that there was “Lack of Clarity on Numbers of New Hydrogen Fueling Stations. A CEQA document must contain a clear, stable and complete project description, in order to provide the essential basis for review of the project’s impacts. The EA project description, pp. 33-35, describes the CFO regulation changes themselves but does not describe the reasonably foreseeable means of compliance; i.e., the numbers and locations of new hydrogen fueling stations. Not until pp. 131-133 of the EA is the “compliance response” discussed. Even here, an example for the South Coast is provided, followed by a statement that “Starting in 2016 in the Upper Bound [i.e., fast entry of fuel cell vehicles into the California market] Scenario, the number of vehicles statewide would exceed the 20,000 statewide trigger requiring the construction of 39 additional stations.” But that figure is for a single year, without stating the total effect of the rule provided. The reader must hunt for that information in the ISOR, Table IV-2 on p.50.

However, even there it is not even clear exactly how many new hydrogen fueling stations ARB attributes to the CFO amendments. ISOR Table IV-2b, p. 50, includes a column for Total Stations and a column for Total New Stations Installed Per CFO under the fast-entry Upper Bound FCV Scenario. In the Total New Stations column, 31 stations are indicated prior to the rule and 488 stations by 2024, the difference representing 457 new stations attributable to the rule. However, the sum of the Total New Stations Installed Per CFO, adding the numbers for each year from 2015 to 2024, is 461. This discrepancy is not explained in the document.

The total number of new fueling stations is one of the main drivers of the magnitude of CEQA impacts. The failure to clearly disclose the total number of stations within the EA does not comport with CEQA’s informational purposes.”

The scenario presented on Table IV-2b includes the assumption that four of the hydrogen fueling stations present in 2014 will be decommissioned in the 2015-2020 timeframe. For example, in the 2015 row on this table nine new stations are added bringing the 2015 total to 38, but the total stations in 2014 was 31. This indicates the assumption that two stations would have been decommissioned between 2014 and 2015. Staff made the assumption that some of the stations currently in operation today or under construction would close in this timeframe because of inability to meet increasing fueling demands in the future, and that these smaller capacity stations would be replaced by higher volume newer stations nearby.

As for the total number of new fueling stations being one of the main drivers of the magnitude of CEQA impacts, ARB disagrees with the commenter’s statement that the failure to clearly disclose the total number of stations within

the EA does not comport with CEQA's informational purposes,. The EA appropriately provides a programmatic level of analysis of the potential impacts that would be expected from implementation of the proposed regulation. The number of stations has little or no bearing on the impact analysis, as each station would be subject to local determination of whether there would be adverse environmental impacts, or whether the project would be exempt.

- 26-7 The commenters expresses that there was “Unsupported Assumptions Regarding Locations of New Hydrogen Fueling Stations. The other main driver of the magnitude of impacts is the location of the fueling stations. The EA downplays location-based impacts, assuming that “new individual hydrogen fueling facilities would be constructed at existing public retail gasoline service stations that are already managed by the retail branches of the respective refiners/importers of gasoline. These locations would also likely be in urban areas where they are positioned to serve the most drivers. Thus, it is unlikely that new hydrogen fuel outlets would be located at greenfield sites (land not previously developed), and that they would be built in locations consistent with local zoning.

EA, p. 133. Nothing in the proposed CFO amendments requires this result and the EA cites no evidence to support these assumptions. Instead, since the existing CFO regulations would have directly required gas station owners and operators to locate facilities on their property, ARB simply assumes that the same thing will occur despite shifting the obligation to refiners and importers. This unsupported speculation is the critical basis for conclusions of limited impacts throughout the EA.

In fact, there is reason to doubt the EA's assumptions. Even today, gas stations are the sites of only a small proportion of CFO facilities. The attached spreadsheet identifies 27 hydrogen fueling facilities which currently operate in California and another 15 that are planned. Of the total of 42, only 12 are located in gas service stations. The other 30 are not, including facilities operated by transit agencies, municipalities (for city vehicles) and universities, many not open to the general public.

Moreover, just as ARB does not control the behavior of local governments, the refiners and importers do not control the behavior of station owner/operators. The overwhelming majority of service stations in California are now owned by independent operators who only have a supply contract with a refiner or distributor. There are few remaining lessee dealers who lease service stations owned by refiners. Except in those few cases, a refiner has no ability to require station owner/operators to install equipment to dispense hydrogen. The expense would likely be considerable, both to pay for the equipment and to induce station owner/operator to cooperate and surrender its property for a new line of business without a track record of profitability. Moreover, refiners and importers will be reluctant to install costly equipment at locations where they have no control but may be subject to liability in the event of accidents. Accordingly, refiners may be

more likely to contract with other parties, such as the existing providers who are already in the hydrogen business and with whom refiners already have business relationships, to establish new outlets specializing in hydrogen. At this point, that prospect too may be speculative, but it appears to make economic sense. But those new outlets are unlikely to be sited at existing retail service stations. At the least, ARB has provided no justification for assuming that the development of outlets in new locations will not occur.

In sum, the facts suggest that it is reasonable to expect a significant number of CFO facilities may be located outside existing retail service stations, contrary to the assumption in the EA. As a result, there is no substantial evidence to support the EA's conclusions that are predicated on the restriction of CFO facilities to existing stations, in order to avoid impacts in new locations."

ARB disagrees. The EA discloses that some facilities would be located at existing facilities, some may be located outside existing facilities, or on otherwise developed property, so the commenter's perception of the environmental analysis is not correct. It is reasonable to predict that these locations are likely to be in urban areas where they are positioned to serve the most drivers, and therefore sell the most fuel. Thus, it is unlikely that new hydrogen fuel outlets would be located in non-urban areas on "greenfield" sites (i.e., land not previously developed). Outlets would also be reasonably expected to be built in locations consistent with local zoning, because local governments anticipate fueling stations as allowable uses in appropriate zone districts (e.g., commercial or industrial zone districts).

Regardless of whether a facility is sited at an existing fueling facility versus other locations, the EA discloses the impacts associated with site preparation and construction at a programmatic level.

- 26-8 The commenter expresses that there was "Improper Use of "Hypothetical Future Conditions" Baseline. ARB assumes that the existing conditions or "baseline" for purposes of determining impacts of the CFO amendments (as well as the ZEV and LEV III provisions addressed in the EA and EIA) consists of:

existing vehicle and related fuel emissions programs, policies, and regulations. The existing regulatory condition includes the existing LEV regulation (LEV II), including the GHG requirements that are part of LEV II (known as the Pavley regulations), the EPL regulation, and the existing ZEV regulation, as well as other relevant, previous California rulemakings, such as the LCFS and all comparable federal regulations. . . . In the context of regulatory programs, impacts on the physical environment are the result of compliance responses to regulations. Compliance responses to the existing LEV II, ZEV, and CFO regulations are already in place and underway. The environmental effects of proposed amendments to regulations that reduce CAP and/or GHG emissions from

light- and medium-duty vehicles would build upon the compliance responses to these existing regulations.

ISOR Appendix B, pp. 24-26. On the contrary, the CEQA baseline consists only of the physical environmental conditions that actually exist. Hypothetical conditions that do not physically exist are not properly included in the CEQA baseline, no matter how reasonable the expectation that those conditions will come to pass. Similarly, anticipated future conditions that will exist on completion of plans, rules and compliance responses cited by the EA cannot be included in the baseline here. Instead, impacts of the CFO amendments must be determined by comparison to the physical environment that now exists. By improperly including regulatory developments which are still in progress in the baseline, the EA obscures the actual impacts required to be disclosed under CEQA, by understating changes compared to conditions that exist today.”

As noted by the commenter, the CEQA Guidelines state that the baseline for determining the significance of environmental impacts is normally the existing physical conditions at the time the environmental review is initiated. (See CEQA Guidelines, section 15125 (a).) The existing conditions at the time the EA was initiated include the existing vehicle and related fuel emissions programs, policies, and regulations. Regulations that are currently in place are assumed to be implemented and complied with, and are therefore properly included in the existing conditions.

The EA properly analyzed the potential environmental impacts of the reasonably foreseeable methods of compliance related to the proposed amendments under the ACC Program with the current methods of compliance related to the existing State and federal regulatory framework. (See Black Property Owners Assn. v. City of Berkeley (1994) 22 Cal.App.4th 974, 985 [in updating general plan, city needed only to assess the impacts of the changes or amendments to the plan].)

Situations appearing in the case law relating to hypothetical future conditions are not comparable to the conditions in the EA. The existing conditions include the compliance responses to the existing LEV II, ZEV, and CFO regulations already in place and underway. These are not hypothetical future conditions. The cases concerned with the reliance on hypothetical future conditions are concerned that an illusory baseline masks the severity of impacts of the proposed project. (See Communities for A Better Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310, 322.) This is not the case with the approach to baseline used in the EA analysis. The EA analysis that looks at the potential environmental impacts of the reasonably foreseeable methods of compliance related to the proposed amendments under the ACC Program compared with the current methods of compliance related to the existing State and federal regulatory framework, does not mask or obscure the potential severity of the potential impacts of implementation of the regulatory amendments. The impacts of the CFO amendments are determined by comparison to the physical environment that now exists by analyzing (at a programmatic level) the potential

impacts of the new fueling stations expected by the amendments. Commenter's general assertions about baseline fail to demonstrate specifically how the EA baseline approach obscures impacts required to be disclosed under CEQA.

Other reasonably foreseeable actions that are approved or proposed to take place in the time frame of the proposed ACC Program, but are not yet in effect, are referred to in the EA as "complementary measures" (e.g., Environmental Standards for Hydrogen Production [requires GHG reductions and use of renewables in accordance with SB 1505]). These help define the future, cumulative scenario of reasonably foreseeable compliance measures. The complementary measures are designed to reduce CAPs and GHGs by increasing the efficiency with which California uses all forms of energy and by reducing dependence on the fossil fuels.

- 26-9 The commenter expresses that there was "Failure to Correctly Analyze Air Emissions. Even if ARB were justified in considering the future conditions resulting from compliance with the pre-amendment regulatory regime as the CEQA "baseline", it failed to correctly implement this approach. The Emissions Impact Analysis, ISOR Appendix D, compares scenarios of fast and slow fuel cell vehicle (FCV) deployment to gasoline vehicles only. However, compliance with the existing regulatory regime, including existing ZEV regulations, should result in the deployment of battery electric vehicles (BEVs) instead. Accordingly, the CFO amendments, fostering the development of the FCV market by ensuring the availability of hydrogen fuel, would be expected to result in the replacement of BEVs with FCVs. Therefore, the EIA should have focused on the differences in air emissions between BEVs and FCVs, the emissions associated with the generation and distribution of electricity and hydrogen, and any secondary issues associated with the use of conventional vehicles for long-distance travel by owners of both BEVs (which require frequent battery charging) and FCVs (which require proximity to hydrogen fueling stations). In particular, utilizing the EA's claimed baseline, the EIA should have compared hydrogen production to electricity generation emissions, rather than to those of gasoline production. These comparisons not only affect the claim of overriding benefits to justify significant and unavoidable impacts, but also have implications for the analysis of adverse impacts. Hydrogen generation, whether at central facilities or at fueling stations, generally can be expected to occur in developed areas, which are more likely to be in non-attainment of ambient air quality standards. By contrast, electricity in California is often generated outside urban and developed areas and in some cases outside the state. Emission increases associated with hydrogen thus may be more likely to cause significant air quality impacts."

Please refer to the response to Comment 26-8. The baseline for the EA was determined for the entire ACC Program, which includes the CFO regulation.

ARB disagrees that air emissions were incorrectly analyzed for the CFO regulation. ARB believes that the commenter misinterpreted the EIA presented in the CFO ISOR, which clearly identifies all assumptions and baseline values.

The CFO's EIA evaluated the penetration of FCVs into the existing transportation fuel pool that is dominated by gasoline vehicles. In both the Lower and Upper-Bound scenarios, the number of FCVs anticipated as a result of the ZEV regulation was shown. The Lower-Bound scenario can be interpreted as the number of FCVs that is anticipated if OEMs chose to produce more BEVs. Similarly, the Upper Bound Scenario can be viewed as the case in which they chose to produce fewer BEVs. When the ZEV regulation becomes effective FCVs and BEVs will together be used by OEMs to meet the regulation's requirement. For the CFO EIA, the goal is to a) measure the emissions resulting from the production, transport and use of hydrogen in response to the number of FCVs projected and b) to determine the emissions reductions if the projected number of FCVs successfully penetrated the transportation market and replaced the comparable gasoline counterparts. Regardless of the number of FCVs deployed, whether high or low, it is critical that the emissions measurement be made against the current baselines, which are gasoline and gasoline vehicles. Measuring emissions of one alternative fuel versus another only demonstrates which alternative fuel is cleaner, whether or not the alternative fuel has any emission benefit within the existing transportation sector that is and will continue to be dominated by gasoline vehicles in the timeframe evaluated.

26-10 The commenter expresses that there was "Failure to Analyze and Disclose Air Quality and GHG Impacts from Construction of New Hydrogen Fueling Stations. The EA air quality section, p. 142, states: "Based on typical emission rates and default parameters for above mentioned equipment and activities, construction activities could result in hundreds of pounds of daily NOx and PM, which may exceed general mass emissions limits depending on the exact location of generation." The short-term construction impact (which is not so "short term" when considering construction of over 450 fueling stations) is considered potentially significant, and mitigation is left to the local permitting authorities during project-level CEQA review. However, the EA does not say what those casual references to "typical emission rates" and "default parameters" may mean, nor explain the "general mass emissions limits" which may apply. Neither the EA nor the EIA (ISOR Appendix D, the emissions impact technical analysis) provides any quantitative estimates of air pollutant emissions beyond the vague acknowledgment of "hundreds of pounds of daily NOx and PM." Readers are given no information to understand or comment on whatever basis ARB may have for that order-of-magnitude figure. Moreover, other construction air quality impacts (e.g., toxic air contaminants) are not even described with order-of-magnitude estimates, and neither the EA nor the EIA even mentions greenhouse gas (GHG) emissions from fueling station construction.

As discussed above, the programmatic nature of the EA and the anticipated future project-level review (at least, for those projects not found exempt from CEQA) are not a shield from CEQA's disclosure obligations. Determining the readily identifiable magnitude of emission impacts was not properly left as an exercise for the reader."

The commenter asserts that the air quality analysis should provide quantitative estimates of air pollutant emissions. See response to Comment 26-2 for an explanation of the appropriate level of review for the ACC Program. As stated in that response, the EA analysis is necessarily general, programmatic and qualitative in nature. A more detailed analysis is not reasonably feasible at this time because it is unknown what specific future actions will be and any site-specific impacts, including quantitative estimates of air pollutant emissions for the construction of as of yet unidentified future stations, cannot be known and assessed with any level of specificity at this time.

The Commenter also asserts that neither the EA nor the EIA mentions GHG emissions from fueling station construction. Fueling station construction is just one compliance response of the amendments and the EA analyzes the GHG impacts for the entire ACC Program. Page 149 of the EA indicates that the proposed ACC Program would result in an emissions benefit as compared to current regulations. Table 5-4 shows the GHG emission benefits in 2020, 2025, 2035, and 2050. By 2025, CO₂ equivalent emissions would be reduced by almost 14 MMT/yr, which is 12 percent from baseline levels. The reduction increases in 2035 to 32 MMT/Year, a 27 percent reduction from baseline levels. By 2050, the proposed regulation will reduce emissions by more than 42 MMT/yr, a reduction of 33 percent from baseline levels. Viewed cumulatively over the life of the regulation (2017-2050), the proposed ACC Program would reduce emissions by more than 870 MMT CO₂e. Please refer to discussion of construction impacts in the EA starting on Page 141.

- 26-11 The commenter expresses that there was “Failure to Evaluate Construction and Operation Impacts of New Hydrogen Generating Capacity. The EA (pp. 134-145) acknowledges that compliance with the CFO requirements would require an increase of up to 9.2% in the state’s currently projected supply of merchant hydrogen. The EA also notes that increased hydrogen purity may be required for merchant hydrogen to be suitable for use as fuel for FCVs. Accordingly, the EA explains: “For delivered gaseous hydrogen, modifications of the central plants may be necessary to further purify the hydrogen so that it meets the purity standards required for fuel cell vehicles” and goes on to rely on other agencies for mitigation as it does elsewhere, noting that “the construction work associated with these plant modifications would have to satisfy State and local requirements for permitting, hazardous materials, and other resource areas, which are typically handled by local agencies” (EA, p. 135).

However, the EA fails to indicate what percentage of currently available or forecast merchant hydrogen complies with existing specifications for hydrogen as an alternative vehicle fuel. More important, it does not provide any justification for assuming adding up to 9.2% of higher purity hydrogen to the existing supply can be accomplished merely by “modifications” to existing hydrogen generating plants. In fact, in every reference to impacts associated with meeting hydrogen demand, the EA is careful to assert that the demand will be met with “modifications” of existing plants. See, e.g., EA pp. 139, 141, 148, 151, 152, 155,

158, 161-163, 167-169, 171 (each asserting that “New hydrogen fueling stations could also be constructed and operated along with modifications to existing hydrogen production plants”).

By assuming only modifications to existing facilities, the EA can avoid any impacts from construction and operation of new hydrogen generating capacity, which can be substantial. New merchant scale hydrogen plants are major industrial facilities whose construction and operation, like that of other industrial plants, can have significant environmental impacts requiring evaluation under CEQA. (Among other things, hydrogen generation itself produces GHG emissions, which must be mitigated or offset.) However, the EA provides no basis for the assumption. In fact, it seems unreasonable that so great an increase in supply can be accomplished without new facilities. Moreover, as the EA also notes, pursuant to SB 1505, once statewide demand for hydrogen as a transportation fuel reaches certain levels, state law requires that 33.3 percent of this hydrogen be made from renewable resources. There is no estimate of the amount of hydrogen available from existing sources that meets both this requirement and vehicle fuel specifications. Yet under these circumstances, it seems inevitable that there will be more than a modification of existing facilities.

Just as the EA's unrealistic assumption that all fueling facilities will be located on existing retail service stations serves to understate impacts from new facilities, so does the assumption that only modifications of existing generating capacity are needed. However, given the far larger footprint and environmental effects of new hydrogen generating capacity, the omission has greater consequences for the inadequacy of the EA.”

The commenter asserts the EA analysis underestimates impacts by assuming only modifications to existing facilities and understating the construction and operation of new hydrogen facilities. Contrary to commenter's assertion, the EA impact analysis does address construction and operation of new hydrogen generating capacity. The EA (at page 135) indicates that recently California has favored hydrogen fueling stations using delivered hydrogen with central production over stations that produce hydrogen on site (CEC 2011). The EA also indicates that new hydrogen fueling stations could also be constructed and operated along with modifications to existing hydrogen production plants (see EA page 135). The EA found that these new facilities would likely occur within existing footprints or in areas with consistent zoning. This analysis does not mask or hide potential impacts of new facilities. The commenter is reminded that the EA provides a programmatic level of analysis and discloses impacts associated with the foreseeable compliance responses by the regulated community (see response to Comment 26-2).

26-12 The commenter expresses that there was a “Failure to Analyze Hydrogen Hazards. The EA, p. 158, summarily dismisses impacts related to hazardous materials transport and use, asserting that “New hydrogen fueling stations [and] . . . modifications to existing hydrogen production plants. . . . would likely

occur within existing footprints or in areas with consistent zoning.” As discussed above, there is reason to doubt these speculative and unsupported assumptions. The EA (pp. 158-159) goes on to address explosion risk from electric vehicle batteries (for the ZEV portion of the ACC initiative) but, remarkably, omits any mention of explosion risk from hydrogen transport and use. Still more remarkably, the only risk of spills the EA discusses is minor diesel spills from fueling construction equipment. No potential impacts (not even insignificant impacts) are recognized for hydrogen transport to fueling stations and operations at stations. No mitigation measures are provided for hydrogen hazards, not even recommended measures to be implemented by local authorities in project-level CEQA review for permitting or approvals.”

The commenter asserts the EA failed to discuss the explosion risk from hydrogen transport and use. The Existing Conditions and Regulatory Setting sections of the EA do address the ignitable characteristics of explosive material. The EA also identifies the respective governing laws that, when complied with, would avoid or reduce this potential impact (see EA at pages 80-83)

The EA starting at page 158 discloses that the project could potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and that this impact would be potentially significant. This EA found that this impact could be reduced to a less-than-significant level by mitigation that can and should be implemented by local lead agencies, but the authority to impose mitigation is beyond the authority of the ARB. The commenter asserts additional analysis of the potential for explosion risk from hydrogen transport and use should have been addressed but provides no evidence supporting this type of impact. In fact, the notices of exemptions for hydrogen fueling stations submitted by commenter rely on categorical exemptions, and the submitted mitigated negative declaration support finding no potential for significant impacts from explosion risk from hydrogen transport or use (see response to Comment 26-3). Therefore commenter’s submissions contradict commenter’s assertion that the EA should have addressed in more detail potential hazards from hydrogen.

The commenter also expresses that there was “failure to discuss hazards or the impacts of hazard mitigation strategies in relation to hydrogen transport and refueling facility operation is a significant omission in the EA. The California Energy Commission (CEC) evaluated potential failure modes and the effects of those failures at hydrogen refueling stations, which include failure modes associated with hydrogen delivery vehicles and on-site generation. The U.S. Department of Energy developed an on-line tool for hydrogen hazard and risk analysis. As indicated in these references, the outcomes of many potential failure modes are explosion and fire. Some of the analyzed scenarios have low or moderate frequency but, if they do occur, would have severe consequences.” Both of these references also address potential mitigation measures that are not addressed at all in the EA which might address hazards but could create other

potential environmental impacts not to mention impact refueling facility design, throughput, cost, and other important factors.

The CEC report (p. 6-3) concludes that:

hydrogen is relatively leak prone, particularly considering the fact that it is usually stored at high pressures, flammable mixtures are easily ignited, and it is difficult to detect. These characteristics may make hydrogen less safe than other fuels in some accident scenarios. While hydrogen's industrial-use safety record is good, this application does not include all vehicle fuel and lay person issues. Fortunately, safety research is underway and codes and standards are being developed to address hydrogen vehicle fuel applications.

However, neither the Existing Conditions section (pp. 79-83) nor the Hazards and Hazardous Materials section (pp. 158-160) of the EA describes any such codes and standards, either as part of the regulatory setting or as a source of mitigation measures. Moreover, as recognized in the CEC's allusion to "lay person issues", customers at hydrogen fueling stations cannot be expected to observe safety procedures as rigorously as trained personnel."

Please refer to response 26-12, above.

26-13 The commenter expresses that there was "Failure to Consider Fire Protection/Public Service Impacts. As in the Hazards and Hazardous Materials section, the EA's Public Services section contains no discussion of hydrogen risks. Given that the impacts of failure modes at hydrogen refueling facilities are frequently fire, explosion, or both, the EA's conclusion (p. 168) of a less than significant impact on fire protection public services is untenable.

As shown in the ISOR, Table I-1 (p. 10), there are only ten public hydrogen refueling stations currently open in California. The largest of those ten stations has a capacity of 100 kg/day of hydrogen. Given the lack of existing stations, most fire departments would not be expected to be familiar with nor trained to deal with emergencies at hydrogen refueling stations. These departments could be faced with the need to purchase new equipment, engage in additional training or add additional fire fighters. Moreover, ARB assumes that hydrogen stations attributable to the CFO amendments will be designed for throughputs of 400 kg/day, or four times the capacity of the largest existing station. Even fire departments that are familiar with and trained to deal with emergencies at existing hydrogen stations will be faced with much larger potential fires and explosions at facilities with larger volumes of stored hydrogen and/or the increased number of hydrogen delivery vehicle trips. Finally, the increase in hydrogen transport vehicles on the state's roadway network would introduce increased risks, necessitating training and, potentially, new equipment for fire

departments in locations that do not have fueling stations, as well as those that do.

If the EA were to follow its usual pattern, relying on the authority of local agencies to address increased demands on local fire protection service, then the impact should be found significant and unavoidable, not less than significant. At the least, the impact must be acknowledged and recommended mitigation measures provided. The EA should also recognize that agencies responsible for disaster response (e.g., in the event of earthquake), as well as local fire departments, likely would be affected by the risks associated with over 450 new hydrogen outlets and the delivery trucks necessary to service them.”

Commenter asserts that “given that the impacts of failure modes at hydrogen refueling facilities are frequently fire, explosion, or both, the EA’s conclusion (p. 168) of a less than significant impact on fire protection public services is untenable.” The EA found that hydrogen fueling facilities would be expected to be sited at existing facilities, or in appropriately zoned areas and addressed the potential for hazards (see response to comment 26-12). The EA found that emergency systems for these kinds of projects would already be in place. Commenter asserts refueling facilities are subject to fire and explosion but has not submitted any evidence to support this assumption and the resulting potential for impacts on public service that would result from such fires and explosions. On the contrary, the documents provided by the commenter (categorical exemptions and negative declaration) support a finding of no impact from such facilities including alleged impacts to public services (see response to comment 26-3).

- 26-14 The commenter expresses that there was “Failure to Analyze Population and Housing and Related Impacts. Typical impacts in several areas – e.g., population and housing, land use, recreation, utilities, public services in addition to fire protection, and growth-inducing impacts – relate to the numbers of workers involved in construction and operation of hydrogen facilities. The EA makes broad, unsupported assertions that worker numbers will be low and impacts related to worker numbers accordingly insignificant (see, e.g., EA p. 168). Again, the reader has no basis to know how well-founded such assertions are and it was ARB’s responsibility to provide support for public review and comment.”

The EA concludes that the potential for impacts to population and housing would be less than significant because construction activities associated with new fueling facilities would be anticipated to require relatively small crews as new plants, stations, and modifications would likely occur within existing footprints or in areas with consistent zoning. In addition, demand for these crews would be temporary (e.g., 6-12 months per project). Therefore, it would be anticipated that the need for a substantial amount of construction worker migration would not occur and that a sufficient construction employment base would likely be available. Furthermore, it would not be anticipated that a substantial amount of new personnel would be needed to operate the facilities and that sufficient

employment base would likely be available because these would likely occur within existing footprints or in areas with consistent zoning. The commenter has not submitted any information to contradict the EA analysis of potential for impacts on housing and population. In fact, the documents provided by the commenter (categorical exemptions and negative declaration) support a finding of no impact from such facilities on population and housing (see response to comment 26-3).

- 26-15 The commenter expresses that there was “Failure to Consider a Reasonable Range of Feasible Alternatives. Alternatives analysis is a central aspect of the CEQA review process. A lead agency must consider and evaluate a range of potentially feasible alternatives that will foster informed decision-making and public participation. To accomplish this, the CEQA document must develop and evaluate a range of reasonable alternatives that would feasibly attain most of the basic objectives of the project, but “would avoid or substantially lessen any of the significant effects of the project.” However, with respect to the CFO amendments, the EA fails to meet even the “reasonable range” standard.

Other than the statutorily required no project alternative, the sole alternative to the CFO amendments considered is the Memorandum of Agreement (MOA) with major gasoline refiners and importers to carry out the exactly same objectives provided in the CFO amendments.

Accordingly, the EA concludes (pp. 195-196) that its impacts would be the same or less than those of the proposed project, since potentially “varying levels of commitment” by MOA participants could lead to fewer hydrogen fueling stations being constructed.

WSPA strongly disagrees with the implication that MOA participants would breach the agreement. ARB has no grounds to impugn the intent of MOA participants to fully comply with requirements to which they have committed. Moreover, intent aside, compliance would not be optional. As the EA (p. 195) states, the “MOA would have the binding power of a contract and be legally enforceable.”

The unsupported presumption of inadequate MOA compliance also has an important consequence for the CEQA review of alternatives. The MOA alternative is designed to and can be expected to achieve the same results as the CFO amendments. Accordingly, the EA fails to consider any CFO alternative that is designed to “avoid or substantially lessen any of the significant effects of the project” as required by CEQA. Not every feasible alternative that an agency (or a commenter) can conceive of need be considered. Nevertheless, ARB is obligated to revise the EA to contain, and must then fully and fairly consider, some other alternatives that reasonably can be expected to accomplish actual reductions in significant impacts.

While it is ARB's obligation to develop a reasonable range of alternatives that can avoid or less impacts, at least two potential alternatives appear feasible.

First, as discussed above, the EA analysis assumes that hydrogen fueling facilities will be constructed at existing gasoline service stations. However, ARB could accomplish the same objective, promoting the availability of hydrogen fuel and so encouraging the manufacturing and purchase of FCVs, without assuming that hydrogen fueling will only occur at public fueling stations. Deployment of FCVs could also create a market for in-home hydrogen fueling. In-home fueling for natural gas vehicles already exists. Hydrogen fueling could be accomplished through exchange of canisters, such as is already being tested on light electric vehicles with fuel cells (such as scooters) in Taiwan. FCV fueling by this method could occur at some public fueling stations, but canisters also could be purchased at retail outlets and installed at home. Under this alternative, far fewer than the 450 public hydrogen dispensing facilities assumed by the EA would be necessary, and associated impacts would be reduced.

Second, refiners and importers could be provided the option of meeting CFO obligations through hydrogen dispensing or electric vehicle charging facilities. Electricity is also a clean fuel that could satisfy CFO requirements. The regulatory language in proposed 13 Cal. Code Regs. section 2300(a)(2) defines "clean alternative fuel" as "any fuel used as the certification fuel in a zero-emission vehicle" which includes both electricity and hydrogen. Since this alternative would have the effect of promoting a mixed fleet of FCVs and BEVs, the CEQA evaluation would include consideration of impacts associated with BEV batteries. Nevertheless, BEVs are a more mature technology with which consumers are more familiar than FCVs. At the least, hazard impacts and firefighting public service impacts associated with the use of explosive hydrogen fuel could be reduced. In particular, hydrogen handling by "lay persons" as opposed to trained personnel was recognized as an issue by the CEC (see above). Accordingly, this alternative merits consideration by ARB in a revised EA."

In accordance with the substantive requirements of CEQA, the alternatives in the EA represent a "reasonable range" that could potentially attain most of the basic project objectives while having the potential to reduce or eliminate significant environmental effects. The range of alternatives analyzed in the EA was governed by the "rule of reason," requiring evaluation of those alternatives "necessary to permit a reasoned choice." (See CEQA Guidelines, section 15126.6(f). The candidate alternatives must have the potential to meet the project objectives and be potentially feasible, based on technical, legal and regulatory grounds, to be considered for evaluation.

The project consists of a set of regulations that comprise the proposed ACC Program, of which the CFO regulation is one component. The EA examined the "No Project", a More Stringent Emissions Standard in the Low Emission Vehicles and the Zero Emission Vehicle Regulations, a Less Stringent Emissions

Standard in the Low Emission Vehicles and the Zero Emission Vehicle Regulations, a Clean Fuels Outlet Regulation Based on a Memorandum of Agreement with Major Refiners and Importers of Gasoline, and three other alternatives that were considered by rejected as infeasible. These include a Feebate Regulation, Targeting High-Emitting Vehicles in the Existing Fleet and targeting Battery Electric Vehicles or Hydrogen Fuel Cell Vehicles Only.

The commenter suggests additional alternatives to the CFO regulation that commenter believes ARB should analyzed in an EA. These include in-home fueling, an alternative where hydrogen fueling could be accomplished through exchange of canisters, and another that targets BEVS. The commenter suggests an “exchange of canisters for light electric scooters and micro cars alternative” as a viable alternative to hydrogen fueling infrastructure by automobile manufacturers, government and academic agencies, or other parties involved in researching the advancement of hydrogen and fuel cell vehicles.

It is not clear whether or not the commenter is suggesting that in-home refueling appliances should be considered as an alternative to requiring public infrastructure, and therefore arguably no further response is needed here. In the event it is determined that the commenter did properly present this as an alternative, it is rejected for a number of reasons.

First, ARB has determined that such in-home appliances do not meet the overall objectives of the Advanced Clean Car program, and poses feasibility challenges. The home energy station, such as the one under development by Honda, considers a whole energy approach using natural gas already supplied to the home to provide heat, energy, electricity, and hydrogen. This conceptual system may not be available to all FCV owners, specifically those who do not live in single-family dwellings, those whose homes do not have supplied natural gas or cannot be modified to accommodate such an appliance, and those who cannot afford it. Still in the development stages, this home energy and hydrogen fueling station concept shows promise for some applications, but development has not advanced sufficiently enough to be a likely fuel supply scenario in time for FCV deployments .

The canister alternative would not meet the overall objective of the Advanced Clean Cars program and would not serve the same purpose as the proposed regulation. The suggested alternative would reduce the overall scale of the regulation, and would result in different safety issues and a different suite of potential environmental impacts. Additionally, there could be feasibility issues that could be challenging to address. The alternative would require that NHSTA approve the full- function, highway legal vehicles to use detachable canisters of high pressure hydrogen. FCVs are designed to achieve a driving range similar to today’s vehicles. The mass of storage systems required to achieve this range can be greater than 100 kg. The idea of routinely swapping storage containers weighing greater than 100 kg obtained at retail outlets would likely be impractical to perform at home. In addition, drivers and vehicles used for transporting high-

pressure gas canisters would likely be required to obtain special permitting and licensing, thereby preventing the average fuel cell vehicle owner from purchasing canisters, transporting and storing them for use in their vehicles.

The BEV alternative that the commenter is advocating includes electric vehicle charging and CFO. BEV-only ZEV scenario would place more focus on public fast-charging facilities, and presents several challenges surrounding the necessity for a mandate, the parties who incur the cost, and the establishment of a standard for fast-charging the plug. The CFO ISOR analysis found that a charging infrastructure mandate is unwarranted and could hinder the current development of public charging infrastructure. Staff also found that more information is needed to determine what should be done from a regulatory perspective to increase BEV sales and electric miles traveled as BEVs are experiencing a successful commercial launch today without a public charging mandate. For this reason, and with the support of and input from auto manufacturers and electric vehicle advocates, staff's regulatory proposal included the public charging infrastructure needs assessment (section 2302(c)). At this time, it is uncertain that regulatory mandate for charging infrastructure is necessary to promote BEVs, but ARB intends to find out via the assessment proposed in section 2302(c). If the commenter is suggesting that regulated parties be allowed to choose to build charging stations instead of hydrogen stations, the end result would be insufficient hydrogen stations necessary to promote commercialization of FCVs. If they are suggesting an alternative that mandates fueling infrastructure for all ZEVs, then they would be required to provide both charging infrastructure and hydrogen dispensers based on on-road ZEVs and automaker projections.

Further, and although highly unlikely, battery fires have occurred and the EA discloses the potential for that impact. This contention is in contrast with the documents provided by the commenter that show that no impact would result with hydrogen fueling, per the NOEs and the mitigated negative declaration submitted.

Finally, the commenter repeats several concerns regarding hydrogen safety and public interaction with a new fuel that have been addressed in the EA. At this point, the commenter should be well aware that, regardless of the vehicle or fuel type, commercial introduction of any new technology will depend on strict adherence to codes and standards designed to protect the "lay person" against exposures, fires, explosions, or electrocution.

26-16 The commenter expresses a need for "Revision and Recirculation of the EA. Correcting the deficiencies discussed above would require extensive revisions to the EA. Substantial changes (including the addition of feasible new alternatives that clearly would lessen significant impacts) must be made available for public review and comment. Accordingly, the EA should be revised and recirculated for additional public comment before ARB takes action on the proposed CFO amendments."

ARB disagrees. The EA is not deficient and need not be recirculated. As explained in response to commenter's detailed comments above, the commenter has raised no new issues or provided new information about potentially significant impacts that require ARB to revise the EA. Since no significant new information is being added to the EA after public review, no recirculation is required (see e.g. CEQA Guidelines CCR section 15088.5).

26-17 The commenter expresses "Comments on Appendix B: Environmental Analysis Environmental Analysis Related to Hazards, Hazardous Materials, and Public Services WSPA recommends ARB staff review the deficiencies and issues identified below and augment/correct them in the final regulatory documents. As part of the ARB's Environmental Analysis for the Advanced Clean Cars Program (Appendix B to the Initial Statement of Reasons (ISOR) for the 2012 Proposed Amendments to the Clean Fuel Outlet (CFO) Regulation), the potential impacts of the CFO regulation on Hazards, WSPA combined CFO comments 1-24 legal.doc 32 Hazardous Materials, and Public Services are analyzed along with means to mitigate potentially significant impacts.

Beginning with Hazards and Hazardous Materials ARB analyzed three issues. These are:

1. Routine Transport, Use, or Disposal of Hazardous Materials
2. Upset and Accident Conditions, and
3. Hazardous Emissions, Materials, or Substances Near Schools, Hazardous Material Site, Airport Land Use Plan, Private Airstrip, Emergency Response Plan or Emergency Evacuation Plan, and Wildland Fires."

With respect to Public Services ARB analyzed only the following issue:

4. Response Time for Fire Protection, Police Protection, Schools, Parks, and Other Facilities.

See response to 26-16 above for why the EA does not require any revision. With respect to issues 1 and 4, the EA concluded that impacts would be less than significant. More generally, the public was not deprived of a meaningful opportunity to comment. Please refer to the description provided in the Introduction of this document of the public review process.

With respect to issue 2, the EA identified the potential for fuel spillage associated with the refueling of construction equipment as a potentially significant impact but went on to indicate "...this impact could be reduced to a less-than-significant level by mitigation that can and should be implemented by local lead agencies, but is beyond the authority of the ARB."

The EA identifies laws and regulations (Regulatory Setting) that assumes but cannot guarantee compliance. Compliance with these laws and regulations are

enforced at the local level. These laws apply to transport of hazardous materials, which include flammable substances. Further, since the fueling stations would likely be located in an appropriately zoned area, public services would already be in place. The EA found the impact to be less than significant and no mitigation is required.

The commenter also expresses “With respect to issue 3, ARB indicates that “impacts...may be significant and unavoidable”. It appears that ARB ignored germane factors that should have been included in the Environmental Analysis for issues 1, 2 and 4 that could have also lead to findings of significant impacts and unavoidable impacts. These factors are related to the potential failure modes and the effects of those failures at hydrogen refueling stations which include failure modes associated with hydrogen delivery vehicles and on-site generation. These factors have been studied extensively and documented, for example, in a report prepared for the California Energy Commission and in an on-line tool for hazard and risk analysis available from the U.S. Department of Energy. As indicate in these references, the outcome of many potential failure modes are “explosion and fire”. This seems to directly contradict ARB’s conclusion that risks with respect to issues 1 and 2 are not significant and do not require mitigation.

Given that the impacts of failure modes at hydrogen refueling facilities are frequently fire, explosion, or fire and explosion, it is difficult to understand how ARB arrived at the conclusion that there would not be significant impacts with regard to fire protection services which are included in issue 4. As described below, it is clear that there will be significant impacts on fire protection services which will require either mitigation or which will have to be deemed to be significant and unavoidable.”

ARB disagrees. Please refer to responses 26-17 above.

The commenter also expresses “As shown in Table I-1 of the CFO ISOR (page 10), there are only ten public hydrogen refueling stations currently open in California and of those ten stations, the highest capacity is 100 kg/day of hydrogen. This is important for at least two reasons. The first is that given the lack of existing stations, most fire departments would not be expected to be familiar with, nor trained, to deal with emergencies at hydrogen refueling stations. These departments could be faced with the need to purchase new equipment, engage in additional training or perhaps add more fire fighters. A similar issue could be raised by the introduction of hydrogen transport vehicles operating in their jurisdictions which could raise new threats necessitating new equipment and/or training. The second reason is that ARB assumes that hydrogen stations created by the CFO will be designed for throughputs of 400 kg/day or four times the capacity of the largest existing station. Given this, even fire departments that are familiar with and trained to deal with emergencies at existing hydrogen stations will be faced with much larger potential fires and explosions owing to the

larger volumes of stored hydrogen and/or the increased number of hydrogen delivery vehicle trips created by the operation of the station.”

Please refer to responses above (e.g., 8-1, 26-3) related to siting assumptions and applicable existing regulations.

The commenter also expresses “Another potential factor that could impact public services that was not identified or analyzed by ARB is the impact of hydrogen refueling stations on disaster response requirements. Given that their numbers are currently very small, the increases required under the CFO regulation could affect public agencies responsible for earthquake response requirements as well as responses required for prolonged outages of electric service potentially resulting from high wind events and other types of disasters.

Returning to issue 3, where ARB did indicate that potentially significant and unavoidable impacts could exist, one way to mitigate the risk associated with a hydrogen refueling station could be for the local lead agencies (which ARB states will be responsible for approving construction of those stations) to simply reject applications for station construction submitted by refiners subject to the CFO regulation precluding their ability to comply with the CFO regulation.”

Please refer to responses above (e.g., 8-1, 26-3) related to siting assumptions and applicable existing regulations.

The commenter also expresses that “As review of the CEC and DOE references cited above quickly indicates, there are different potential failure modes and hence risks associated with different hydrogen refueling station designs. Given this, another potential mitigation measure would be to dictate station design. Given that ARB’s economic model presented in Appendix E to the CFO ISOR indicates significant differences in the cost of station construction as a function of their design, these local lead agency actions could have significant impacts on the costs of compliance with the CFO regulation that CARB staff has failed to take into account.

This comment will be responded to in the FSOR for the CFO regulation. It does not pertain to the EA. However, please see response to 26-17.

With regards to the CFO Environmental Analysis Related to Hydrogen Production, “WSPA recommends ARB staff review the deficiencies and issues identified below and augment/correct them in the final regulatory documents.

As part of ARB’s Environmental Analysis for the Advanced Clean Cars Program (Appendix B to the Initial Statement of Reasons (ISOR) for the 2012 Proposed Amendments to the Clean Fuel Outlet (CFO) Regulation), the compliance response of increased hydrogen generation for fuel for fuel cell vehicles (FCVs) is recognized and discussed. The impacts associated with the compliance response are analyzed with respect to air quality but not with respect to greenhouse gas (GHG) emissions.

With respect to air quality, ARB concludes that compliance with CEQA would ensure that all impacts associated with the construction and operation of hydrogen production facilities are mitigated to a "...less-than-significant level". However, it appears as discussed below that ARB ignored a number of factors in analyzing the air quality and GHG impacts associated with the required increase in hydrogen production for compliance with the CFO regulation."

Please refer to responses above (e.g., 8-1, 26-3) related to siting assumptions and applicable existing regulations.

The commenter expresses that "ARB's discussion of hydrogen production is embedded on pages 134 and 135 of the EA. ARB notes that compliance with the CFO requirements would require increases in the supply of up to 9.2% in the state's currently projected supply of merchant hydrogen. The EA also notes that increased hydrogen purity may also be required for merchant hydrogen to be suitable for use as fuel for FCVs. However, ARB does not indicate what percentage of currently available or forecast merchant hydrogen complies with the agency's existing specifications for hydrogen used as an alternative motor vehicle fuel or what the environmental impacts associated with changes required at hydrogen production facilities to produce sufficiently pure hydrogen could be.

ARB also notes that pursuant to SB 1505, once statewide demand for hydrogen as a transportation fuel reaches certain levels, state law requires that 33.3 percent of this hydrogen be made from "eligible renewable resources as defined in subdivision (a) of section 399.12 of the Public Utilities Code." However, ARB provides no estimate of the current amount of hydrogen that is available that meets both this requirement as well as its motor vehicle fuel specifications and does not include any forecasted estimates.

Finally, ARB assumes the required hydrogen will be available (and in its economic analysis, at prices equivalent to those associated with local production at centralized steam methane reforming facilities). However, no basis is provided for that assumption."

This comment is the same as comments 8-1 and 26-3. Please refer to responses above (e.g., 8-1, 26-3) related to siting assumptions and applicable existing regulations.

The commenter expresses that the "first problem with the ARB analysis is the assumption that all potential air quality impacts will be mitigated to be non-significant as a result of the need for CEQA compliance, and the simultaneous assumption that all of the increase in hydrogen production capacity required for CFO compliance will occur in a timely fashion.

Looking first at central hydrogen production facilities producing local merchant hydrogen, ARB has provided no evidence that refiners either have direct control over these plants or that refiners can somehow compel the expansion of their

capacity. Therefore, the decision with regard to whether or not to expand hydrogen production will likely be made based on economics by the plant owner who will factor the costs of CEQA compliance into that analysis and may well conclude that expansion does not make economic sense, particularly in areas such as the South Coast Air Basin where necessary emissions offsets are difficult to obtain or expensive. If merchant hydrogen meeting ARB's hydrogen fuel specifications is in short supply, costs will likely rise and to the extent that supply is unable to satisfy FCV demand, FCV owners would have to turn to other modes of transportation, most likely conventional vehicles with the result being increases in emissions of both air pollutants as well as GHG emissions.

Similarly, existing merchant hydrogen plants are subject to the AB32 cap-and-trade regulation, which will likely require reductions in GHGs from those plants. Expansion of those plants would increase GHG emissions and force plant operators to purchase additional offsets. Again, this fact would be accounted for in the economic decision-making of hydrogen plant owners and tend to discourage decisions to increase capacity.

ARB also fails to identify the potential impacts of the need to increase hydrogen supply and the specific production methods used on hydrogen prices which in turn may have environmental impacts. As noted by the California Hydrogen Highway Network (see Attachment H) and as CARB staff is aware, the cost of hydrogen produced by different methods varies dramatically, in this case ranging from \$1.44 to more \$7.00 per kilogram. As hydrogen fuel prices will be related to the marginal cost of the source of the last increment of hydrogen needed to satisfy demand, it is crucial that CARB identify the sources of supply it assumes will be added to satisfy the increased demand. The price of hydrogen will be critical to decisions made regarding supply increases and also to FCV purchase decisions made by consumers.”

This comment is the same as comments 8-1 and 26-3. Please refer to responses above (e.g., 8-1, 26-3) related to siting assumptions and applicable existing regulations.

CFO – L27 Miles Heller, British Petroleum Comment and Response

- 27-1 The commenter supports the comments submitted by WSPA. Appendix 1 under the ISOR heading of the comment letter inquires “Do the environmental analyses include the consideration of additional impacts for construction, traffic, etc. for such stations?”

Please refer to responses CFO – L26. Regarding the EA and the impact analysis, Chapter 5 “Impacts and Mitigation” provides a full analysis of potential impacts that may result from establishment of CFO facilities and identifies mitigation.

Transcript – Edward Olson and Jay Bajarria Public Comments – Oral Public Comments and Responses

Edward Olson

The commenter expresses “I have been in gas station business and car wash business over 30 years, owning several gas stations in both Orange County and San Diego County. The first major concern I had with hydrogen pumps is the safety of my customers and employees. The pumps will contain like 5,000 to 10,000 PSI. The risk of explosion, especially with the customers is using a cell phone while pumping or if a customer forgets the nozzle in their car and drive off is very scary. We live in a busy and fast-paced world, and we have this issue of people driving off with the nozzles occur often at my stations. If this occurs with the hydrogen pump, this will not only be costly to the place but can be extremely dangerous to my station and to the customers of our stations.”

Jay Bajarria

The commenter expresses “...And as for the safety of hydrogen, I would not be comfortable having it on my property from a safety and liability perspective. Often see cars driving away from the pump with the nozzle in their car. I can only imagine the damage and destruction that would be caused by a car driving off with a hydrogen nozzle that is under pressure up to 10,000 PSI. I would ask that you please let business owners and property owners to decide what services to provide rather than forcing it on them. .

ARB agrees that hydrogen, as with gasoline, is a fuel that requires very careful handling. The EA Environmental and Regulatory Setting chapters describe hazards associated with hydrogen as well as all applicable laws and regulations. The EA starting at page 158 discloses that the project could potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and that this impact would be potentially significant. This EA found that this impact could be reduced to a less-than-significant level by mitigation that can and should be implemented by local lead agencies, but the authority to impose mitigation is beyond the authority of the ARB. The potential for hazard related to customers driving off with the nozzle still attached would be alleviated because the cars and fueling stations are designed so that they communicate electronically (e.g. when there is a fueling connection, the car and pump communicate electronically and cannot be started up) minimizing the potential for adverse impact.

ZEV/CFO – Bd L1 Cathy Reheis-Boyd, Western States Petroleum Association Comments and Responses

A memorandum from Sidley Austin LLP o/b/o Western States Petroleum Association (WSPA) was attached to Catherine Reheis-Boyd's letter of March 21, 2012 regarding "Comments on the Response to Comments on the Advanced Clean Cars Environmental Analysis".

The commenter incorporates comments L26-1 – L26-17 previously submitted during the 45-day review period. According to the commenter, specific comments on the Response to Comments (RTC) document pertain to L26-5, L26-9, L26-10, L26-12, L26-13, and L26-15.

Comment Regarding L26-1 to L26-17: The responses by ARB staff do not address each of the legal and factual deficiencies identified by WSPA in its comments submitted on January 25, 2012. WSPA Stands by and hereby incorporates each of those comments.

Response: *ARB disagrees. Each of the legal and factual deficiencies that the commenter contends to exist in its previous comment letter (L26) has been responded to, and there are no deficiencies.*

More specifically, WSPA reiterates that ARB is seeking to avoid its regulatory obligations by asserting that its analysis is limited to programmatic issues, whereas, the impacts from the construction of 450 clean fuels outlets should be assessed, one-by-one, at a later date by local governments.

An analysis of the cumulative impacts from the construction of as many as 450 CFOs and the development of additional hydrogen fuel production facilities in California should not be passed off to local governments that would not be in a position to assess the likely overall impact. Doing so amounts to a regulatory shell game.

Response: *ARB disagrees. The programmatic approach is appropriate and acceptable. ARB cannot speculate as to the locations of the fueling stations, whether they would be located at existing facilities or would be located individually. The EA discloses potential environment impacts related to the foreseeable compliance responses by the regulated community on a statewide level, and identifies mitigation. The level of specificity required in an environmental analysis depends on the degree of specificity of the activity under review. For example, an EIR for a construction project must be more specific and detailed than an EIR for a general plan or other general policy. An EIR for a policy or plan focuses on the indirect secondary effects of that plan or policy and cannot be as detailed as a subsequent EIR on the specific construction projects that would be expected to follow. (See CEQA Guidelines section 15146, sub*

(b.) ARB's preparation of the EA for the ACC Program is similar to the approach for an EIR prepared for a plan or policy. In preparing the EA for the ACC Program, ARB cannot speculate about details that would be provided in any subsequent project specific environmental analyses. ARB analyzed construction impacts and took the conservative approach in finding that construction may result in potentially significant and unavoidable impacts.

Appendix B is an environmental analysis prepared as in accordance with Public Resources Code section 21080.5, subdivision (d)(3) and ARB's regulations at CCR sections 60005 through 60007. The programmatic approach to the analysis is informed by CEQA Guidelines section 15168, which describes the parameters for a program EIR. Section 5 of Appendix B (Impact Analysis and Mitigation) discloses impacts to the resource areas identified on the CEQA checklist.

The EA appropriately provides a programmatic level of analysis of the potential impacts that would be expected from implementation of the proposed regulation. The number of stations has little or no bearing on the impact analysis, as each station would be subject to local determination of whether there would be adverse environmental impacts, or whether the project would be exempt. The commenter is also referred to Response to Comment 26-6.

Lastly, construction-related air impacts associated with implementation of the proposed ACC Program are described in the air quality resource section of the EA. The response on page 6 of this document provides additional information regarding the EA's programmatic approach.

Likewise, ARB ignores the possible hazards associated with the development of hydrogen fueling outlets and the impact of those risks on local fire protection and public service agencies.

Response: *ARB disagrees. The commenter asserts that some impacts discussed in the Burbank document are likely to be common to hydrogen facilities wherever they are located, such as air emissions, noise, public services (including fire protection), and transportation and traffic. Contrary to commenter's assertion, a major focus of the EA was to consider impacts that would be common to hydrogen facilities wherever they are located such as air emissions, noise, public services (including fire protection), and transportation and traffic (see EA Chapter 5 Impacts Analysis and Mitigation). The commenter is referred to the response provided for L26-4.*

Comment Regarding L26-5

The response by the ARB does not represent a reasonable response to the comment.

In adopting the Advanced Clean Cars Regulation Package via resolution 12-11, the Board cited, among others, the following sections of the California Health and Safety Code as providing authority for its action:

43013. (a) The state board shall adopt and implement motor vehicle emission standards, in-use performance standards, and motor vehicle fuel specifications for the control of air contaminants and sources of air pollution which the state board has found to be necessary, cost effective, and technologically feasible, to carry out the purposes of this division unless preempted by federal law.

43018. (a) The state board shall endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of the state standards at the earliest practicable date.

43018. (c) In carrying out this section, the state board shall adopt standards and regulations which will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel...

43018.5. (a) No later than January 1, 2005, the state board shall develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles.

All of the above sections clearly require the ARB staff to demonstrate that a proposed regulation or package of regulations, achieve the maximum feasible reductions in emissions of air pollutants and greenhouse gases in the most cost-effective manner possible.

Response: *The commenter ignores the fact that CFO will ultimately be a necessary component of the cost-effective emission reductions to be achieved by the Advanced Clean Cars (ACC) Regulation Program. Accordingly, the commenter's contention that the changes to the CFO Regulation may not be immediately cost effective if adopted without the other components of the ACC Regulation Package does not affect CARB's authority under sections 43013, 43018, and 43018.5.*

In order to satisfy the mandatory obligation imposed by the legislature, the ARB must show how each component of the Advanced Clean Cars Regulation Package fits together with the others, and demonstrate that the combination of the component regulations achieves greater emission reductions in a more cost-effective manner than some other combination of the proposed regulations and/or proposed regulations and alternatives.

Response: *This comment is related to how the regulations fit together and is not directly related to the EA, and emission reduction achievement is addressed in the respective staff reports.*

As indicated in the CFO staff report, the CFO regulation is a complement to the ZEV program. Specifically, if the automobile industry makes the business

decision to meet a portion of the ZEV mandate with FCVs, the CFO regulation will be necessary to meet the fueling needs of those vehicles. Staff's analysis in the ZEV ISOR assumes increasing number of FCVs are produced in compliance with the ZEV requirements, and assumes hydrogen fueling infrastructure is readily available. Therefore, according to staff's analysis, sufficient hydrogen infrastructure is necessary to the adoption of FCVs and ultimately the overall emission reductions expected under the ACC program (see response to comment 26-9 regarding ARB's 2009 light-duty vehicle analysis). Further, because the ZEV regulation would be flexible in that manufacturers could fulfill their requirements by marketing FCVs, as well as other types of vehicles, it cannot be determined ahead of time exactly when the CFO regulation would be activated by the regional or statewide trigger levels. This is not a case where one regulation should preclude another. The proposed ACC Program will result in a fleet of vehicles with supporting infrastructure. One cannot occur without the other. The commenter is also referred to Response to Comment L26-5.

The commenter argues that some other combination of regulations should have been considered, but does not offer an alternative to the ACC Program that meets the overall objectives. WSPA's comment letter (CFO - L26) offers three alternatives to the CFO regulation that ARB responded to and were determined to be infeasible as they do not meet the objectives of the ACC Program.

ARB staff admits in response 26-5, it has not fulfilled this obligation with respect to the CFO regulation.

Response: *ARB disagrees. The EA provides a detailed description of the project being proposed for approval, which includes the three regulatory actions. The project description should not be a smaller portion of the entire proposed project being considered for approval as the commenter suggested in CFO – L26. The EA informs the decision makers of the potential environmental impacts associated with the CFO amendments while providing an integrated, coordinated impacts analysis of all the proposed ACC Program's amendments. ARB has the authority to define the proposed project. ARB disagrees that the EA does not provide a basis for action by the Board on the proposed ACC Program. The entire ACC Program has been fully analyzed and the Board has the discretion to approve the entire project or some portion thereof.*

Further, it is unacceptable for ARB's response to this criticism to be essentially that it does not have to do the required analysis. The CFO regulation is a mandate that requires existing major producers and importers of transportation fuels to supply and create a dispensing infrastructure for hydrogen as a means of lowering the costs of compliance with the ZEV mandate for manufacturers that elect to produce fuel cell vehicles and offer them for sale. There is no requirement that vehicle manufacturers produce battery electric vehicles. Absent the CFO regulation, vehicle manufacturers

could still choose to produce fuel cell vehicles, but another means of providing a hydrogen refueling infrastructure would have to be found.

Because the CFO regulation is not needed to implement the LEV III or ZEV regulation, its implementation produces no reductions in any pollutant or greenhouse gas.

Response: *The CFO regulation ensures sufficient hydrogen infrastructure is in place to support FCVs resulting from increased ZEV requirements. A FCV produces fewer emissions on a well-to-wheel basis than a gasoline vehicle. Any FCVs produced in compliance with the ZEV regulation may also be used towards a manufacturer's LEV III criteria pollutant average as well as its LEV III GHG average. When a manufacturer uses FCVs to help comply with its fleet average standards, the vehicle can be directly attributed to the emission reductions in the LEV III fleet standard. The CFO regulation ensures those vehicles are properly supported with appropriate infrastructure. Additionally, in ARB staff's 2009 analysis, FCVs must be predominate on-road vehicle technology in the 2050 timeframe in order to achieve the GHG emission reductions necessary to meet California's long term goals. See Response to Comment L26-9 for further elaboration on ARB's 2009 light-duty vehicle analysis.*

While the commenter contends that auto manufacturers could choose to produce FCVs absent the CFO regulation because "another means hydrogen refueling infrastructure would have to be found," the commenter does not support the contention with examples of other means of providing hydrogen fueling infrastructure. The commenter is referred to Response to Comment L26-15. The CFO ISOR describes the efforts underway and government funding dedicated toward developing hydrogen infrastructure to support the projected early FCV deployments through 2014. Absent continued government funding, staff could find no other viable alternative for guaranteeing that hydrogen infrastructure develops at a pace to support the FCV numbers that ARB predicts are necessary to achieve the long-term GHG emission reductions. Without the guarantee of that hydrogen infrastructure will keep pace with FCV deployments, the ACC program could not achieve its objectives.

However, its implementation could greatly increase the cost of the total Advanced Clean Cars Regulatory Package, and the CFO regulation could require substantial construction activities which could have a host of adverse environmental impacts.

Response: *The economic analysis of the Advanced Clean Cars program (presented in the LEV ISOR) includes the costs associated with compliance with the Clean Fuels Outlet regulation and found positive economic benefits from the entire program. In addition, regardless of whether a facility is sited at an existing fueling facility versus other locations, the EA discloses the impacts associated with site preparation and construction at a programmatic level, and analyzed the relative magnitude of emissions related to construction activities. The commenter is also referred to Response to Comments L26-7 and L26-10.*

Again, it is unacceptable for ARB to claim that those impacts do not need detailed study and mitigation just because they are not large enough to offset the greater environmental benefits ARB claims will result from the LEV III and ZEV regulation.

Response: *If commenter is saying that ARB is claiming that impacts don't need detailed analysis (unclear), we disagree. The EA discloses potential environment impacts related to the foreseeable compliance responses by the regulated community on a statewide level, and identifies mitigation. The level of specificity required in an environmental analysis depends on the degree of specificity of the activity under review. For example, an EIR for a construction project must be more specific and detailed than an EIR for a general plan or other general policy. An EIR for a policy or plan focuses on the indirect secondary effects of that plan or policy and cannot be as detailed as a subsequent EIR on the specific construction projects that would be expected to follow. (See CEQA Guidelines section 15146, sub (b).) ARB's preparation of the EA for the ACC Program is similar to the approach for an EIR prepared for a plan or policy. In preparing the EA for the ACC Program, ARB cannot speculate about details that would be provided in any subsequent project specific environmental analyses.*

ARB's programmatic approach to its analysis on the potential indirect impacts related to the regulated communities' foreseeable compliance responses is necessarily general, programmatic and qualitative in nature. A more detailed analysis is not reasonably feasible because it is unknown what specific future actions will be and any site-specific impacts cannot be known and assessed with any level of specificity at this time. Therefore, details of project-level impacts are properly deferred to future project level review when those details can be known. This is an appropriate approach under CEQA. (See In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143.)

When potentially significant environmental impacts are identified in the EA, feasible mitigation measures have been presented to substantially reduce the effects. As stated in the EA, ARB does not possess the authority to require project-specific mitigation measures for facilities approved by other land use or permitting agencies if impacts are identified for those projects. Because the authority to determine project-level impacts and require project-level mitigation lies with the land use and/or permitting agency for individual projects, and project-specific details about the impacts and mitigation cannot be known at this stage, there is inherent uncertainty in the degree of impacts identified and mitigation ultimately implemented. Consequently, the EA took the conservative approach in its analysis of potential impacts and in its post-mitigation significance conclusions (i.e., tending to overstate impacts) and, for CEQA compliance purposes, discloses that potentially significant impacts related to the development of fueling stations and new or modified manufacturing facilities may be significant and unavoidable. ARB expects, however, that as the proposed ACC Program is carried out, these significant impacts can and should be

resolved and reduced to insignificance by other government agencies, in accordance with their authorities and project review procedures. The commenter is also referred to Response to Comment L26-2.

No Comment on L26-6, L26-7, or L26-8

Comment Regarding L26-9 In responding to Comment 26-9, the ARB takes the position the CFO regulation is a necessary component of the Advanced Clean Cars Regulation Package without which the emission reductions attributed to the ZEV regulation will not be achieved.

Response: *ARB's 2009 light-duty vehicle analysis (ZEV ISOR Reference, ARB 2009b) used a number of assumptions in determining the mix of vehicles that could achieve 80% emissions reductions below 1990 levels by 2050. A well-supported assumption was that a variety of vehicle technologies was needed to ensure the 2050 goal was met.*

“Each technology has a large set of challenges which makes market growth uncertain. All three (BEVs, FCVs, and PHEVs) offer energy security and fuel diversification over time. But it is too early to pick winners at this time. Doing so would dramatically increase the risk of missing the 2050 GHG goal because it would create no room for technology or market failures. Discussions between ARB and automotive firms confirm this – it is impossible for industry to know exactly what consumers will demand and accept in the future. BEVs will most likely play a role and obtain a sizable portion of the long-term market, focused on small vehicle platforms in urban areas. For long-range larger applications, both FCVs and PHEVs with biofuels offer deep GHG reductions, but both have large market uncertainties. FCVs offer deep well-to-wheel (WTW) GHG reductions and fast refueling, but creating the fuel infrastructure is a substantial challenge. PHEVs offer less infrastructure challenges but would rely on biofuels in quantities that may exceed the 2050 limit of supply for passenger vehicles.” (pg. 26-27)

Additionally, manufacturers have historically complied with a variety of ZEV technologies in meeting the ZEV mandate. Manufacturers have invested billions of dollars into various ZEV technologies, including hydrogen fuel cell vehicles, and have publicly announced availability of those vehicles in the next three to four years. (See ZEV ISOR reference Toyota, 2011d, Bloomberg, 2010, USA TODAY, 2010, and response to CFO FSOR comment 37). Therefore, it is reasonable to assume all ZEV technologies, including FCVs, would continue to be produced throughout the regulation, making the CFO regulation essential to the success of those vehicles and to achieving the long-term emission reduction goals.

The ZEV regulation contains no requirement that any vehicle manufacturer produce and offer a fuel cell vehicle for sale in California. Manufacturers are free to choose the types of ZEVs they want to produce based on the cost of the vehicles and the same considerations regarding consumer preferences that they apply in making decisions about producing other types of vehicles.

Response: *The commenter is correct in that automakers are free to choose their ZEV compliance path and are not told which types of vehicles to produce. In fact, automakers routinely share their ZEV compliance strategies with ARB (in confidence), and to the public via press releases, board hearing testimony, etc. Based on both confidential and public information, ARB has learned that (1) that no two automakers have the same plans for ZEV compliance and, (2) collectively, automakers plan to comply with ZEV using BEVs, FCVs and PHEVs.*

Because no manufacturer must produce a single fuel cell vehicle in order to comply, the CFO regulation is not a necessary condition to compliance with the ZEV mandate.

Response: *Per the CFO ISOR and the regulation language, if no FCVs are projected to be produced, then the regulation will not be triggered. The Department of Motor Vehicles (DMV) records and auto manufacturer projections must indicate that the volume trigger is reached before the regulation can be triggered for a particular fuel. These trigger determinations, including a summary of the information and analysis relied upon, will be shared with interested parties per section 2303.5(b) of the regulation. Given the above, the CFO regulation will not require anyone to build hydrogen stations if automakers: (1) choose to comply with the ZEV mandate strictly via BEVs and PHEVs, or (2) choose to comply with FCVs but place those FCVs in other states. See response to CFO FSOR comments 38 and 39 regarding the ZEV travel provision. Importantly, as discussed above and in responses to CFO FSOR comments 37, FCVs are included in many automakers ZEV compliance plans, and as such, the CFO will be needed to complement many auto manufacturers' ZEV compliance strategies. Without CFO or some other means to guarantee adequate fueling infrastructure, the relatively modest government investments toward hydrogen infrastructure will not be sufficient to develop FCV technology to commercialization because availability of fuel will be a critical factor in consumer choice.*

It is also important to note that automakers must send clear signals that they plan to deploy enough FCVs to trigger the regulation. One such signal would be targeted early FCV deployments in the areas where there are stations today and that under construction. The signals that automakers receive from the early deployments will help them chart their ZEV compliance path including which type(s) of ZEV technologies to introduce.

Next, ARB states, in defending its emission analysis of fuel cell vehicles relative to gasoline vehicles, that,

"Measuring emissions of one alternative fuel versus another only demonstrates which alternative fuel is cleaner, whether or not the alternative fuel has any emissions benefit within the existing transportation sector that is and will continue to be dominated by gasoline vehicles in the timeframe evaluated."

However, a comparison of the relative emissions of electric and fuel cell vehicles is precisely the point that has to be considered in the EA with respect to the CFO regulation. The CFO regulation provides a mechanism designed to lower the cost of compliance with the ZEV mandate for vehicle manufacturers by providing them with a fuel cell vehicle refueling infrastructure at no cost to the vehicle manufacturers. This provides an incentive to vehicle manufacturers to build fuel cell vehicles. If fuel cell vehicles are not as clean as battery electric vehicles, as was illustrated on pages 36 through 38 of the WSPA comments, and the CFO regulation causes the production of more fuel cell vehicles than would otherwise be produced, the(n) impact of the CFO regulation is increased relative emissions that must be considered and mitigated in the EA.

Response: *Although the comment is not directly related to the EA, ARB disagrees with many aspects of this comment. First, auto manufacturers' cost of compliance with the ZEV mandate reflects costs associated with developing, producing, commercializing and marketing ZEVs, and does not include the cost of installing and operating fueling infrastructure (hydrogen or electric charging). While the presence of infrastructure affects commercialization and vehicle sales, which helps auto manufacturers earn a return on their investment, the ZEV regulation has never required auto manufacturers to bear the cost of developing fueling infrastructure. The "incentive" to develop one ZEV technology over the other is based on auto manufacturers' ability to earn credits for ZEVs delivered for sale and placed in service. Credits are determined based on the credit structure adopted by the Board, as outlined in the ZEV ISOR (see response to CFO FSOR comments 50-52).*

Although it is not clear, it appears that the commenter is suggesting that ARB must consider and mitigate the relative emissions increases of FCVs when compared to BEVs. The rationale being that the CFO regulation "causes the production of more FCVs than would otherwise be produced." ARB's emissions analyses evaluate benefits compared to an existing baseline; and FCVs clearly show emissions benefits compared to the gasoline baseline. When evaluating emissions associated with providing ZEV fuels, it is important to note that emissions can be affected positively (or negatively) by use of renewable resources and by the time of day that BEV drivers plug in (i.e., on-peak vs. off-peak).

Also, as explained in above, it is ARB's firm belief that a diverse ZEV portfolio, with varying sizes, payload capacities and ranges, is critical to replacing the fleet of combustion-based vehicles and achieving long-term emission reduction goals. As discussed in the ZEV ISOR, BEV technology is best suited (and most economical) with smaller vehicle platforms, and FCV technology is more suitable

and will be less expensive compared to BEVs in the larger vehicle platforms. If automakers are to introduce increasingly more ZEVs into the fleet, FCVs are necessary to fulfill the customers' needs for vehicles with longer range and larger platforms. Conversely, without hydrogen and FCVs, drivers would likely have to resort to combustion technology vehicles to meet needs that cannot be met with smaller BEVs. The commenter is also referred to the response regarding L26-9 on page 7 of this document.

Further, the CFO regulation is in conflict with the Health and Safety Code sections cited as ARB is providing the authority for the adoption of the Advanced Clean Cars Regulation Package (as discussed in the comment on Comment 26-5) which requires that the entire package achieve the maximum feasible and cost-effective emission reductions as it adds cost and decreases emission benefits.

Response: *As discussed in the response regarding L26-5, ARB disagrees that the CFO regulation is in conflict with HSC sections for authority.*

Comment Regarding L26-10 The ARB fails to respond to the comment and tries to conceal emissions due to the CFO regulation in the emission reductions associated with the other elements of the Advanced Clean Cars Regulatory package. As noted above, there is no requirement that any manufacturer produce and offer a fuel cell vehicle for sale in California, and it appears that fuel cell vehicles have higher emissions relative to electric vehicles.

Further, construction associated with hydrogen refueling stations will lead to further increases in emissions which must also be quantified to determine to what degree they are offsetting benefits provided by the other elements of the CFO regulation. Indeed, ARB cannot avoid that it has offered absolutely no quantitative analysis of the environmental impacts associated with the construction of as many as 450 hydrogen fueling stations.

Response: *As noted above, automakers will comply with the ZEV mandate by producing both BEVs and FCVs. The extent to which hydrogen fueling infrastructure will be required will depend on the number of FCVs produced.*

ARB disagrees with the commenter's contention that emissions associated with construction are not quantified, and that ARB did not respond to the comment. A relative magnitude of emissions associated with construction are provided in EA Impact Analysis and Mitigation Chapter 5. The commenter is referred to RTC 26-10, 26-9, 26-2, and ARB's response regarding programmatic analysis related to 26-5.

Comment Regarding L26-11 The ARB fails to address the comment. The comment addresses the need for the EA to estimate how much new hydrogen generation capacity will be required and what the environmental impacts would be that are associated with the construction and operation of those plants. Further, the EA at page 135 fails to even address that new hydrogen generation capacity and modifications to

existing facilities to increase production volumes will both lead to increases in greenhouse gas emissions.

Response: ARB disagrees that the comment was not responded to. The EA includes a discussion of the effects of FCVs on merchant hydrogen facilities, and clearly indicates that expansion of construction of new facilities may be needed in the future. Because CEQA discourages speculation, the EA does not speculate as to the location or size of such future facilities. The EA also indicates that new generation of hydrogen may result in additional or expanded hydrogen plants in the Regulated Community Compliance Response section, and in the Impacts Analysis and Mitigation impacts associated with construction of such facilities are analyzed in Chapter 5. The commenter is reminded that the EA is programmatic and is referred to RTC 26-10, 26-2 and to the response related to the programmatic analysis in this document.

Comment Regarding L26-12 The ARB does not address or respond to WSPA's comment. WSPA highlighted that the EA fails to analyze the nature and magnitude of the risk associated with hydrogen transport, hydrogen fueling, or accidents involving hydrogen fuel vehicles. It is not enough for ARB to state that the production and transport of hazardous materials already may be subject to regulation under federal and state law. Rather, ARB has an obligation to consider the magnitude of any additional risk and determine whether mitigation efforts are necessary or appropriate. Nor can ARB void this conclusion by arguing that WSPA has offered no evidence of "the potential for explosion risk." That objection is meritless. In its response, one paragraph earlier, ARB states that the EA addresses the "explosion risk from hydrogen transport and use" by identifying "the respective governing laws that when complied with, would avoid or reduce this potential impact." ARB recognizes that there is a risk of explosion from hydrogen, but never attempts to assess its magnitude or address mitigation efforts in any meaningful way.

Response: ARB used the CEQA Checklist to determine the potential impacts associated with hazards. ARB found the potential for risk of upset and accident conditions involving the release of hazardous materials to the environment to be potentially significant and unavoidable. ARB is not required to quantify at speculative levels with a programmatic document. The commenter is referred to Response to Comments L8-1, L26-4, and L26-12.

Comment Regarding L26-13 The ARB's response is untenable. The ARB asserts that WSPA has not produced evidence of the risk of fire or explosion, but as noted above, ARB has acknowledged in its response that EA addresses "the ignitable characteristics of explosive material." WSPA is not required to provide additional evidence. While WSPA is not commenting in this response on the technical aspects of the possible risks associated with hydrogen refueling, ARB should evaluate safety risks and how they will be managed as part of the administrative process, including any needed support from public service agencies.

Response: *The EA indicates that facilities would be sited appropriately in areas zoned for such facilities. The hazards related to fueling stations are not new risks, and laws and zoning requirements would be complied with.*

Chapter 5 indicates that as discussed in Chapter 4, Regulated Community Compliance Responses, implementation of the proposed ACC Program could result in the construction and operation of new manufacturing plants that specialize in the production of propulsion batteries and fuel cells. New hydrogen fueling stations could also be constructed and operated along with modifications to existing hydrogen production plants. These stations would likely occur within existing footprints or in areas with consistent zoning, therefore, not affecting the provision of public services. As a result, this impact would be less than significant. The commenter is also referred to Response to Comments L26-3 and L26-13.

No Comment L26-14

Comment Regarding L26-15

ARB's response does not address WSPA's comments about its failure to adequately consider feasible alternatives to the CFO regulation, or respond to the in-home fueling alternative offered by WSPA. First, ARB is required to develop and evaluate a reasonable range of alternatives but has failed to satisfy that threshold obligation. Second, the ARB's response does not adequately address WSPA's comment that "deployment of fuel cell vehicles could also create a market for in-home hydrogen fueling" and that "in home fueling for natural gas vehicles already exists." This alternative is not infeasible merely because ARB states that some fuel cell vehicle owners might not be able to benefit from it based on where they live. The same would be true of a fuel cell vehicle owner who lived a significant distance from metropolitan areas where ARB states that clean fuel outlets likely would be constructed.

Further, the "feasibility" concerns expressed by ARB are not materially different from the feasibility and cost concerns inherent in the CFO regulation itself.

Response: *The project alternatives are for the entire ACC Program, not a single regulation. ARB disagrees that it did not fulfill the obligation to consider alternatives to the ACC Program. As for the in-home fueling, ARB posted a revised response to 26-15 on March 20 that addresses the in-home fueling alternative to the CFO regulation. The following is the entire response:*

"In accordance with the substantive requirements of CEQA, the alternatives in the EA represent a "reasonable range" that could potentially attain most of the basic project objectives while having the potential to reduce or eliminate significant environmental effects. The range of alternatives analyzed in the EA was governed by the "rule of reason," requiring evaluation of those alternatives "necessary to permit a reasoned choice." (See CEQA Guidelines, section 15126.6(f). The candidate

alternatives must have the potential to meet the project objectives and be potentially feasible, based on technical, legal and regulatory grounds, to be considered for evaluation.

The project consists of a set of regulations that comprise the proposed ACC Program, of which the CFO regulation is one component. The EA examined the “No Project”, a More Stringent Emissions Standard in the Low Emission Vehicles and the Zero Emission Vehicle Regulations, a Less Stringent Emissions Standard in the Low Emission Vehicles and the Zero Emission Vehicle Regulations, a Clean Fuels Outlet Regulation Based on a Memorandum of Agreement with Major Refiners and Importers of Gasoline, and three other alternatives that were considered by rejected as infeasible. These include a Feebate Regulation, Targeting High-Emitting Vehicles in the Existing Fleet and targeting Battery Electric Vehicles or Hydrogen Fuel Cell Vehicles Only.

The commenter suggests additional alternatives to the CFO regulation that commenter believes ARB should analyzed in an EA. These include in-home fueling, an alternative where hydrogen fueling could be accomplished through exchange of canisters, and another that targets BEVS. The commenter suggests an “exchange of canisters for light electric scooters and micro cars alternative” as a viable alternative to hydrogen fueling infrastructure by automobile manufacturers, government and academic agencies, or other parties involved in researching the advancement of FCVs.

It is not clear whether or not the commenter is suggesting that in-home refueling appliances should be considered as an alternative to requiring public infrastructure, and therefore arguably no further response is needed here. In the event it is determined that the commenter did properly present this as an alternative, it is rejected for a number of reasons.

First, ARB has determined that such in-home appliances do not meet the overall objectives of the Advanced Clean Car program, and poses feasibility challenges. The home energy station, such as the one under development by Honda, considers a whole energy approach using natural gas already supplied to the home to provide heat, energy, electricity, and hydrogen. This conceptual system may not be available to all FCV owners, specifically those who do not live in single-family dwellings, those whose homes do not have supplied natural gas or cannot be modified to accommodate such an appliance, and those who cannot afford it. Still in the development stages, this home energy and hydrogen fueling station concept shows promise for some applications, but development has not advanced sufficiently enough to be a likely fuel supply scenario in time for FCV deployments .

The canister alternative would not meet the overall objective of the ACC Program and would not serve the same purpose as the proposed regulation. The suggested alternative would reduce the overall scale of the regulation, and would result in different safety issues and a different suite of potential environmental impacts. Additionally, there could be feasibility issues that could be challenging to address. The alternative would require that NHSTA approve the full-function, highway legal vehicles to use detachable canisters of high pressure hydrogen. FCVs are designed to achieve a driving range similar to today's vehicles. The mass of storage systems required to achieve this range can be greater than 100 kg. The idea of routinely swapping storage containers weighing greater than 100 kg obtained at retail outlets would likely be impractical to perform at home. In addition, drivers and vehicles used for transporting high-pressure gas canisters would likely be required to obtain special permitting and licensing, thereby preventing the average fuel cell vehicle owner from purchasing canisters, transporting and storing them for use in their vehicles.

The BEV alternative that the commenter is advocating includes electric vehicle charging and CFO. BEV-only ZEV scenario would place more focus on public fast-charging facilities, and presents several challenges surrounding the necessity for a mandate, the parties who incur the cost, and the establishment of a standard for fast-charging the plug. The CFO ISOR analysis found that a charging infrastructure mandate is unwarranted and could hinder the current development of public charging infrastructure. Staff also found that more information is needed to determine what should be done to from a regulatory perspective to increase BEV sales and electric miles traveled as BEVs are experiencing a successful commercial launch today without a public charging mandate. For this reason, and with the support of and input from auto manufacturers and electric vehicle advocates, staff's regulatory proposal included the public charging infrastructure needs assessment (section 2302(c)). At this time, it is uncertain that regulatory mandate for charging infrastructure is necessary to promote BEVs, but ARB intends to find out via the assessment proposed in section 2302(c). If the commenter is suggesting that regulated parties be allowed to choose to build charging stations instead of hydrogen stations, the end result would be insufficient hydrogen stations necessary to promote commercialization of FCVs. If the commenter is suggesting an alternative that mandates fueling infrastructure for all ZEVs, then they would be required to provide both charging infrastructure and hydrogen dispensers based on on-road ZEVs and automaker projections.

Further, and although highly unlikely, battery fires have occurred and the EA discloses the potential for that impact. This contention is in contrast with the documents provided by the commenter that show that no impact

would result with hydrogen fueling, per the NOEs and the mitigated negative declaration submitted.

The commenter repeats several concerns regarding hydrogen safety and public interaction with a new fuel that have been addressed in the EA. At this point, the commenter should be well aware that, regardless of the vehicle or fuel type, commercial introduction of any new technology will depend on strict adherence to codes and standards designed to protect the “lay person” against exposures, fires, explosions, or electrocution.”

The alternatives to the CFO regulations suggested by the commenter, including the in-home fueling alternative, do not meet the ACC Program objectives and present feasibility challenges”.

Regarding ARB’s above response, the commenter disagrees with ARB’s conclusion that home hydrogen refuelers present feasibility challenges because some FCV owners may not be able to benefit. While the commenter is correct in stating that deployment of FCVs could create a market for home refuelers, ARB does not foresee such appliances playing significant role in the hydrogen supply chain, at least not to the extent to warrant evaluation as a viable alternative to CFO regulation, much less the ACC Program.