Supplemental
Responses to Comments

on the

Environmental Impact Analysis

Prepared for the

Proposed Amendments to
the Low Carbon Fuel Standard
November 8, 2024

1.0 Supplemental Responses to Comments

During the November 8, 2024, CARB Board meeting, CARB received comments from Earthjustice and Shute, Mihaly, & Weinberger LLP on behalf of Leadership Counsel for Justice and Accountability raising environmental-related concerns about the Proposed LCFS Amendments. The comments submitted are outside the scope of the noticed 45-day and 15-day comment periods, and therefore, no response is required. However, CARB staff provide the following response for transparency and full disclosure.

A. Public Hearing Comments and Responses on the Draft and Recirculated Environmental Impact Analyses

Comment Letter H38

11/8/2024
Nina Robertson
Earthjustice

H38-1: The commenter states, “Earthjustice submits the following comments on the Environmental Impact Analysis (“EIA”) for the California Air Resources Board (“CARB”) Proposed Amendments to the Low Carbon Fuel Standard Regulation (“Proposed Amendments” or “Project”).1 On September 30, 2024, Earthjustice submitted comments on the Recirculated Draft Environmental Impact Analysis (“RDEIA”). On October 1, 2024, CARB issued a Second 15-day change to the Proposed Amendments, but CARB did not supplement its environmental analysis or introduce any additional mitigation measures.2”

Response: The comment contains an introductory remark to their letter and notes previous comment letters submitted to CARB. Please see responses to specific comments as follows below.

H38-2: The commenter states, “On the evening of November 6, 2024, CARB published its response to comments on the Draft EIA (“DEIA”) and RDEIA as well as the Final EIA (“FEIA”). CARB allowed a single day to provide public comment on the FEIA. Notwithstanding CARB’s failure to provide the public a meaningful opportunity to respond to the FEIA, we highlight multiple ways in which CARB’s responses and the FEIA do not address or remedy concerns raised in prior comments, and we detail additional deficiencies in CARB’s environmental review, including new problems introduced by the second 15-day changes after the comment period for the RDEIA closed.”

Response: The Final EIA and Responses to Comments document is not required to be circulated for a separate public review period. This comment is introductory in nature. No further response is required.

H38-3: The commenter states, “Specifically, CARB’s environmental review is deficient in the following respects:

1. CARB fails to analyze and disclose the effects of imminent step-downs in the carbon intensity ("CI") benchmark, as a result of the newly amended Auto Acceleration Mechanism ("AAM");

2. CARB fails to cure the multiple defects in the EIA's analysis of the impacts of increased crop-based biofuel production;

3. CARB continues to fail to address the flaws in its analysis of emissions of biofuels combustion in California vehicles;

4. CARB continues to fail to address the violations associated with its analysis and disclosure of localized impacts from biofuel production and to adopt all feasible mitigation measures;

5. CARB fails to cure defects in its treatment of electrolytic hydrogen;

6. CARB fails to analyze and disclose impacts from the production of hydrogen derived from fossil methane and to mitigate those impacts;

7. CARB continues to fail to address and mitigate the impacts of its reliance on direct air capture ("DAC") and to adopt all feasible mitigation;

8. CARB fails to analyze and mitigate the effects of massive reduction in support for electrification of medium and heavy duty vehicles; and

9. CARB continues to fail to analyze a reasonable range of alternatives."

Response: The comment is introductory in nature and briefly summarizes the topics that are discussed in greater detail later in the comment letter. Please see responses to specific comments as follows below.

H38-4: The commenter states, "Given the many deficiencies in CARB's analysis and disclosure of the Project's impacts as well as its failure to adopt all feasible mitigation measures, CARB must recirculate an environmental review for public review and comment."

Response: In accordance with Section 15088.5 of the State CEQA Guidelines, a lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. Significant new information requiring recirculation include: 1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented; 2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance; 3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it; or 4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were

precluded. (Mountain Lion Coalition v. Fish and Game Com. (1989) 214 Cal.App.3d 1043). CARB completed a robust analysis of the Proposed Amendments in the Draft EIA and Recirculated EIA consistent with CEQA requirements. CARB has evaluated and responded to all comments provided in this letter, as well as previous comments received from the commenter raising many of the same arguments provided in the comments below. No new information has been provided since the publication of the Recirculated Draft EIA, 15-day changes, and comments within this letter (see responses to specific comments below). As a result, recirculation is not required.

H38-5: The commenter states, "Finally, because comments on the Second 15-Day Change to the Project address the Project's environmental effects, we hereby incorporate by reference those comments, which CARB did not address in its Response to Comments."

Response: CARB received and responded to the comment letter referenced in the comment above in the Responses to Comment on the Draft and Recirculated Environmental Impact Analysis (RTC Document). The responses to Comment Letter 15.2-174 (as denoted in the RTC Document) are hereby incorporated by reference. Please see responses to comment 15.2-174-1 through 15.2-174-7 in the RTC Document.

H38-6: The commenter states, "**I. CARB Fails to Analyze and Disclose the Effects of Imminent Step-Downs in the Carbon Intensity Benchmark.**

A. CARB Does Not Explain How the New Changes to the AAM Will Function.

The AAM mechanism, first proposed by CARB in the Initial Statement of Reasons ("ISOR"), is intended to allow CARB to adapt the CI benchmark schedule in response to specified market conditions without having to undertake another rulemaking, meaning that the change in stringency of the program does not require additional public review or Board approval. This approach is unique to these amendments, as any change to an annual benchmark schedule has previously required additional rulemaking. Further, the second 15-day change Proposal introduces ambiguity into how the AAM will function in the future. As commenters have noted, the newly proposed regulatory text is not clear and can be read to allow and lead to very different outcomes for the CI benchmark.3 CARB has declined to clarify what the regulatory text means. In response to a question about the meaning of the new provisions, CARB stated that it will not explain the meaning of the text until it issues the Final Statement of Reason ("FSOR").4 Per CARB procedure, CARB will issue the FSOR after CARB has issued the Notice of Decision ("NOD") on its environmental review and after the Board votes on whether to approve the Project. Therefore, the regulation's meaning and effects will remain unknown to the public and decision-makers until after the window for analysis and deliberation is closed.

CARB's failure to disclose the meaning and intent of its proposed changes to the AAM violates CEQA's requirement that the agency accurately describe its project. As we

explained in our September 30 comments, “[a]n accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR.” San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713, 730 (quoting County of Inyo v. City of Los Angeles (1977) 71 Cal.App.3d 185, 193). An accurate project description is “the heart of the EIR process” and “necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.” Sacramento Old City Ass’n. v. City Council (1991) 229 Cal.App.3d 1011, 1023; San Joaquin Raptor/Wildlife Rescue Center, 27 Cal.App.4th at 730. While extensive detail is not necessary, the law requires that CEQA documents describe proposed projects with sufficient detail and accuracy to permit informed decision-making. See CEQA Guidelines § 15124 (project description). To adequately evaluate the environmental ramifications of the Project, CARB must first provide a comprehensive description of the project itself and its failure to do so here is a violation of CEQA.”

Response: The Recirculated Draft EIA included a summary of CARB’s proposed Automatic Acceleration Mechanism (AAM), which is intended to increase the stringency of the carbon intensity (CI) benchmarks of the LCFS Regulation when specific regulatory conditions are satisfied. Under CARB’s current proposal, if activated, the AAM would advance the upcoming year’s CI benchmark, and all subsequent years by one year. This can only be triggered once a year. For example, if the AAM is activated in 2029 based on 2028 LCFS reporting, the 2030 CI reduction target would be increased to 34.5%. An AAM can support the deeper transportation sector decarbonization needed through mid-century by increasing regulatory clarity for the market, acting alongside existing provisions that also help to provide program certainty, such as the maximum credit price and the Credit Clearance Market (CCM). The AAM would be triggered when the credit bank to average quarterly deficit ratio exceeds three and credit generation exceeds deficit generation based on the prior year’s reporting.

Also noted in the Recirculated Draft EIA, the reasonably foreseeable compliance responses to the AAM activation, which would result in compliance targets moving forward by one year, would not generate additional impacts to the resource areas discussed in the Draft EIA and Recirculated Draft EIA. Because the addition of the AAM would not result in additional compliance resources that could cause new impacts beyond those previously disclosed in the Draft EIA and Recirculated Draft EIA, recirculation of the EIA is not required. Please refer to Response to Comment H38-4 for additional information pertaining to recirculation requirements under CEQA.

H38-7: The commenter states, “**B. Although Future AAM Step-Downs in the CI Benchmark Are Highly Likely to be Triggered, CARB Does Not Analyze or Disclose Their Environmental Effects.**

As we explained in our September 30 comments, CARB’s modeling in the RDEIA lacks support and violates CEQA because it assumes that the credit price will be $0 during several years in the near future but fails to describe this feature of the Project and analyze the associated, reasonably foreseeable impacts. As modeled, the Proposed

Scenario in the 15-day Proposal shows credit prices of $0 in 2029, 2030, 2031 and 2032.5 This is problematic for at least two reasons.

First, CARB does not explain how the Project can properly claim greenhouse gas benefits (or any other benefit) if it no longer provides a subsidy to purportedly cleaner fuels (due to the $0 credit price). A $0 LCFS credit price implies that the market is saturated with enough low-carbon fuel to meet or exceed regulatory benchmarks without requiring a LCFS financial incentive to encourage the production of these fuels or their delivery to California. A repeated stated purpose of the LCFS is to provide price signals for investment.6

Second, given that a $0 credit price implies oversupply of low-carbon fuels relative to the deficits needed to meet annual benchmarks, it is reasonable to expect that the AAM will be triggered at least once before 2030. 7 Triggering an AAM advances the benchmark schedule by a year, such that a trigger effective in 2030 would change the benchmark from the staff's proposed 30% CI reduction to a 34.5% CI reduction. Thus, the annual change from 2029 to 2030 would be nearly 6%, rather than staff's proposed 1.45% change. A step-down of this CI stringency has not been modeled by CARB.8 The RDEIA does not describe this outcome in the project description or properly analyze its impacts, including effects that are reasonably foreseeable.

Despite these fundamental shortcomings in its analysis, CARB did not update its model to include the environmental effects of the future AAM triggers. This failure persists in the second 15-day change. CARB has not modeled likely step-downs in the CI stringency that are likely to occur as a result of its new AAM proposal. Thus, CARB's failure to explain the meaning and effects of its second 15-day proposal on the CI benchmark violates CEQA."

Response: The proposed amendments show continued deployment of low carbon fuels above the baseline even in years with a marginal $0 credit price because the more aggressive CI target benchmark continues to motivate producers to create low-CI fuels to minimize deficit generation and/or avoid intra-marginal costs. The proposed amendment modeling supporting the impacts analysis in the EIA identified expected types of impacts necessary to comply with the CI benchmarks. If the conditions occurred to trigger the AAM, CARB anticipates the same impacts necessary for compliance would occur, but at an earlier date. If the AAM is triggered, it would not cause any different significant impact on the environment than addressed in the EIA.

Commenter concludes the updated CI benchmark amendments would lead to different environmental impacts, but neither identified any environmental impact that would be different nor any changes to the significance conclusions from those identified in the Draft EIA.

In addition, Alternative 4 substantially differs and is not appropriate to compare to the proposed CI reduction targets in the Recirculated Draft EIA. Alternative 4 proposed removing several project amendments that limit or phase out credit generating

opportunities that could pose environmental impacts. (See Draft EIA, p. 179.) Alternative 4 would remove crop-based biofuels sustainability criteria, and not include any phase out of avoided methane crediting, or deliverability requirements for book-and-claim of biomethane generated outside of California.

Please refer to response to comment H38-8.

H38-8: The commenter states, "**C. CARB Admits that Changes to the CI Stringency Will Have Environmental and Cost Impacts.**

CARB's failure to analyze and disclose the effects of its newly proposed change to the AAM is particularly troubling because CARB itself admits that the program's CI targets will impact the environment. In the DEIA, CARB rejected Alternative 4, which assumed an increase in the CI reduction target to 40% in 2030, among other differences from the Proposed Amendments. CARB offered the following reasons for rejecting Alternative 4:

While this alternative does meet most of the objectives of the Proposed Amendments, it was rejected because increasing the CI reduction target and allowing fewer limits on biofuels crediting in this scenario increases the risk of greater environmental impacts than the Proposed Amendments. The alternative also would result in higher direct costs and CARB is mandated by AB 32 to consider the cost-effectiveness of measures. As an example of potential risk of greater environmental impacts, increasing the CI reduction target to 40% in 2030 would result in an increase of the compliance responses associated with the Proposed Amendments and in turn would result in an increase in the environmental impacts as disclosed on Chapter 4.0. 9

Given these effects of Alternative 4, CARB staff "did not pursue further evaluation of this alternative for the purposes of the Draft EIA."10 Although it first rejected a 40% target in 2030, the newly proposed amendments may lead to this very outcome. As one analysis of the original Proposal explains, "Staff's proposal for an AAM includes a prohibition on the AAM being triggered two years in a row but there is no proposed limit on the number of triggers. If multiple triggers occur, such as in 2028 and 2030, the benchmark could increase in stringency by over 20% in just four years, demonstrating the accelerated impact of successive triggers on the schedule. In such a case, the target would be 23.25% in 2027 and 43.5% by 2031."11 In the second 15-day change Proposal, the benchmark could be even more stringent, as appears to allow the AAM to be triggered two years in a row. In other words, the 40% step-down in 2030 may in fact occur under the newly proposed amendments.

Therefore, because CARB has not explained the meaning of its new proposal or modeled its effects, the public and decision-makers do not have sufficient information to understand the impacts of the proposed regulation, which could be significant. These failures violate CEQA. "Only through an accurate view of the project may outsiders and public decision-makers balance the proposal's benefits against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal . . . and weigh other alternatives in the balance." County of Inyo v. City of Los Angeles

(1977) 71 Cal.App.3d 185, 192. Here, rather than "demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action," CARB appears to be masking the severity of Project impacts and also failing to adopt feasible measures to reduce the Project's serious environmental harms. Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal. (1988) 47 Cal.3d 376, 392. Further, without justification, CARB is now proposing key features of an Alternative that it previously rejected on the basis of high environmental risks and cost implications. CARB has not explained or justified the basis for this change."

Response: The Final EIA expressly considers the AAM component referred to by the commenter. (See FEIR at 16-17.) Please refer to response to comment H38-7 regarding how AAM impacts are incorporated into the analysis supporting the EIA impact conclusions**.** Note that CEQA requires analysis of what is reasonably foreseeable; it does not require detailed analysis of every conceivable outcome. (*See Gray v. County of Madera* (2008) 167 CA4th 1099, 1125.) Furthermore, even to the extent that an impact is reasonably foreseeable, impacts that are a foreseeable but indirect consequence of project approval may be evaluated at a more general level of detail than the project's direct impacts. (See *Save the Plastic Bag Coalition v. City of Manhattan Beach* (2011) 52 C4th 155, 174.) Impact assessments are not required to address all variations of the issues or permutations of the data; the goal is to provide a reasonable, good faith disclosure and analysis of the project's reasonably foreseeable indirect impacts. (*See San Joaquin Raptor Rescue Ctr. V. County of Merced* (2007) 149 CA4th 645, 680; *see also Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 C3d 376, 392.) In addition, triggering of the AAM is speculative and depends on a number of factors outside of CARB control. This uncertainty was highlighted in Appendix C of the First 15-day change release. Even if the AAM is triggered, it operates to accelerate the stringency of the CI benchmarks by just one year, and it cannot be triggered more than once a year. The indirect compliance response changes in response to such a trigger would be modest and incremental.

See also response to comment R13-3 in the RTC Document and H38-7.

H38-9: The commenter states, "**II. CARB Fails to Cure the Multiple Defects in the EIA's Analysis of the Impacts of Increased Crop-Based Biofuel Production.**

In our comments on the RDEIA, Earthjustice identified multiple flaws in the EIA's assessment of the impacts from the Proposed Amendments' incentivization of crop-based biofuel production. For example, CARB's environmental assessment relies on outdated modelling that does not reflect existing or anticipated levels of biofuel production, fails to disclose the impacts of increased biofuel production on human health by exacerbating global food insecurity, fails to make a good faith effort to disclose the uncertainties and unsupported assumptions in indirect land use change ("ILUC") modelling, and fails to adopt feasible mitigation to address the significant impacts of

increased crop-based biofuel production.12 Because the FEIA fails to remedy any of these fatal shortcomings, the EIA continues to violate CEQA."

Response: Please refer to Master Response 2. Please also refer to response to comments on comment letter R22 in the RTC Document.

H38-10: The commenter states, "**A. The EIA's Reliance on 2014 Biofuel Volumes to Assess Indirect Land Use Impacts of Crop-Based Biofuel Production Violates CEQA's Baseline and Cumulative Impact Requirements.**

As Earthjustice stated in earlier CEQA comments, the EIA's assessment of the greenhouse gas impacts of increased crop-based biofuel production improperly relies on decade old biofuel volumes that fail to reflect the dramatic growth in crop-based biofuels.13 In failing to model both existing global levels of biofuel production to set a baseline for Project impacts and increased biofuel production resulting both from the Project and past, present, and probable future actions in California, the EIA violates CEQA's baseline and cumulative impact requirements. See Guidelines §§ 15125, 15130."

Response: See responses to comments R22-2 through R22-9 in the RTC Document, and particularly R22-5, which addresses the commenter's statements regarding outdated biofuel volumes. See also Master Responses 2 in the RTC Document.

H38-11: The commenter states, "**1. Unlike Other Lifecyle Factors that Are Routinely Updated, CARB's CEQA Analysis Applies Decade-Old ILUC Factors for Crop-Based Biofuel Production**.

In 2009, CARB first adopted the Global Trade Analysis Project ("GTAP") model as part of its original adoption of the LCFS program. 14 In 2011, the Board directed staff to work with interested stakeholders to update ILUC values for various biofuels.15 As part of 2015 LCFS readoption, the GTAP model was updated and the Agro-Ecological Zone Emissions Factor ("AEZ-EF") model was created to supplement GTAP's estimates of GHG emissions from various types of land conversions.16 CARB's methodology for calculating carbon intensity from ILUC is set forth in their December 2014 Detailed Analysis for Indirect Land Use Change as part of 2015 LCFS readoption. 17

As part of its 2018 LCFS Update, CARB did not update ILUC values.18 Instead, CARB stated it "maintains its commitment to periodic review and assessment of land use change emissions" and "is committed to continuing review of indirect effects including land extension/intensification, multi-cropping, and cross-product substitutions for various feedstocks used in fuel production after the completion of this round of rulemaking."19 Yet in the six years since, CARB conducted no such review. In the 2024 Proposed Amendments to the LCFS, CARB continues to rely on the same ILUC values as it did in the 2015 LCFS Readoption.20

Notably, CARB regularly updates other factors used in the LCFS for lifecycle assessment. For example, the Greenhouse gases, Regulated Emissions, and Energy

use in Technologies (“GREET”) model is a life cycle assessment database developed by Argonne National Laboratory. GREET facilitates evaluating the energy and environmental impacts of various vehicle and fuel technologies across their entire life cycles and is regularly updated. CARB staff adapted the database to develop a California-specific version, called CA-GREET, which is used for many parts of a fuel pathway’s CI score. CA-GREET has been updated several times to reflect better or newer information about GHG emissions in fuel pathways. CA-GREET was updated for the 2015 LCFS readoption (v2.0), the 2018 LCFS amendments (v3.0), and a new version (v4.0) is being proposed as part of the current LCFS amendments. The model is published for public comment along with underlying documentation.21

Similarly, the Oil Production Greenhouse gas Emissions Estimator (“OPGEE”) is a lifecycle assessment tool estimating the GHG emissions from crude petroleum and natural gas.22 The model was created in response to Board direction23 to develop annual CI values for crude oil used in California, which are used to calculate annual incremental deficits for fossil gasoline or diesel fuel. 24 CARB contracted Stanford University to initially develop the model and subsequently update it for the 2015 LCFS readoption (OPGEE v1.1E) and the 2018 LCFS amendments (OPGEE v2.0c), and again for the 2024 update (OPGEE v3.0b).25 The model is published for public comment along with underlying documentation.26 Accordingly, CARB’s failure to update ILUC factors stands apart from its regular reevaluations of other lifecycle calculations.”

Response: Please refer to Master Response 2 in the RTC Document.

H38-12: The commenter states, “**2. CARB’s Failure to Update ILUC Factors to Account for Significant Increases in Crop-Based Biofuel Production Serves to Understate Project Impacts in Direct Contravention of CEQA.**

In evaluating Project impacts, CARB relied on decade-old projections of biofuel production that do not reflect the explosive growth in crop-based biofuel production and corresponding impact on ILUC emissions. Because biofuels are a global market and the United States is now importing biofuels to meet renewable diesel demand,27 CARB further erred in only looking at domestic production. As the Food and Agriculture Organization of the United Nations (“FAO”) observes, where increased productivity cannot meet demand, “mandating the use of biofuels in one region may increase global GHG emissions due to indirect land-use changes in locations where the biofuel feedstock is grown.”28 In failing to assess Project impacts based on existing and projected global levels of biofuel production, the EIA violates CEQA’s baseline and cumulative impact requirements.

In determining the ILUC emissions from biofuels, as illustrated below in an excerpt from CARB’s Analysis of Indirect Land Use Change, the primary input is supply “shock,” which “corresponds to an increase in the volume of biofuel production used as an input to model to estimate land use changes.”29

To assess ILUC emissions for the readoption of the LCFS in 2015, CARB applied the following shocks, which corresponded to anticipated impacts of the U.S. Renewable Fuel Standard ("RFS") quantities as structured at that time compared to a 2004 baseline.30 With the exception of sugarcane ethanol, CARB applied shock values that only looked at U.S. biofuel production.31

The shock values CARB applied for the 2015 LCFS readoption do not account for the explosion of renewable diesel ("RD") and biodiesel ("BD") derived from crop-based biofuels32 since that time. As observed by the United States Department of Agriculture ("USDA"), "[d]uring the past few years, the landscape for U.S. renewable diesel production has drastically changed….this dramatic U.S. production and capacity growth is causing significant, market altering shifts both domestically and to foreign feedstock trade."33 Indeed, the share of biomass based diesel ("BBD") credited under the LCFS program grew from 1 percent of total volumes in 2011 to 46 percent in 2022 and made up over half of compliance volumes in Q1 of 2023.34

Biofuels rely on feedstock availability. The selection of feedstocks for biofuel production primarily depends on the type of biofuel being produced and the technological requirements of the production process. For example, ethanol is typically produced from sugar or starch-based feedstocks such as corn, sugarcane, or sorghum because these materials are rich in sugars that can be easily fermented into alcohol. In the United States, corn is the predominant feedstock for ethanol, while in Brazil, sugarcane is predominant, although both can be used in E10 fuels.

Similarly, RD and BD are produced from lipid-based feedstocks like vegetable oils (soy, palm, canola), animal fats, and recycled greases. These oils and fats undergo processing where the lipid molecules are transformed into fatty acid methyl esters ("FAME") for biodiesel or hydrocarbons for renewable diesel. These processes require feedstocks with high lipid content, which make vegetable oils and animal fats ideal, but also highly interchangeable.

The volumes of available feedstocks for biofuels are limited by agricultural capacity, land use considerations, and competing uses for these feedstocks in food, feed, and industrial sectors. Increasing demand for biofuels has significant impacts on global markets and food costs. As more agricultural land is dedicated to biofuel feedstock production, there is less land available for food crops, which can lead to increased food prices and heightened food security concerns, especially in regions heavily dependent on agricultural imports.

Moreover, because crop-based oil markets are global and oils such as soy and palm are highly interchangeable, diversion of one type of oil for use as a biofuel can increase demand for another type of oil for other uses. As noted by the International Council on Clean Transportation ("ICCT") in its February 20, 2024 comments on the Proposed Amendments:

> When soybean oil is diverted from food, feed, and oleochemicals markets it is often substituted with palm oil;35 this greatly increases its upstream emissions impacts because palm oil is often grown on high-carbon stock land….This risk is "especially [likely] if RFS program total biofuel mandates increase in the future."36 Due to soy-palm substitution and pressure that soy expansion places on other markets, soy [biomass-based diesel] BBD's ILUC emissions may even exceed that of fossil fuel.37

Global biofuel consumption has grown dramatically over the past two decades. According to an industry report on global bioenergy, biofuel production increased nine-fold from 2000-2018, with 160 billion liters (42 billion gallons) of biofuels produced in 2018.38 A 2017 report by FAO found that "[b]etween 2000 and 2009, the consumption of vegetable oil for all purposes grew at an annual rate of 5.1 percent, while the consumption of vegetable oil for biofuel production grew at an annual rate of 23 percent," noting the increase in production of bioenergy crops has led to a conversion of considerable areas of forest into farmland.39 Thus, the concern over the impacts of land use changes grows as biofuel demand increases. Land use change effects of biofuels can lead to climate-related effects, through intensification and conversion of carbon-rich areas (such as peatland or rainforests) which release carbon upon conversion to agricultural land. For this reason, the shock values CARB used to determine ILUC emissions matter in determining the severity of project impacts.

The relationship between biofuel volumes and ILUC impacts is further illustrated in EPA's 2023 evaluation of five different ILUC models to better understand the potential GHG impacts of increased use of biofuels. The evaluation, termed the Model Comparison Exercise ("MCE") looked at baseline uses of biofuels (2014 for the GTAP model) and what GHG effects an additional 1 billion gallons of ethanol or soy biodiesel would show across the five models.40 The results showed that with increasing demand of crop-based feedstocks for biofuels, GHG emissions also increased. While CARB's previous study evaluated GTAP for similar effects, the EPA study used updated models and higher volumes of biofuels than CARB's earlier approach. The MCE results had two overarching conclusions. First, significant uncertainty exists across models. Increases in GHG emissions from land use change ranged from 10 kgCO2/MMBTU for GTAP to 295 kgCO2/MMBTU for the Applied Dynamic Analysis of Global Economy ("ADAGE") model.41 These differences, according to EPA, are due to the sensitivity of each model's framework and assumptions, meaning the system as a whole may not be understood enough to model with certainty. Second, all models showed that with increasing volumes of soybased biofuel, greenhouse gas emissions from ILUC also increase. Even under the lower-end increase from increased biofuel production modelled in GTAP, ILUC emissions from soy diesel increase by approximately 36 percent from the 29.1 gCO2e/MMBTU used by CARB in its environmental analysis.

Accordingly, CARB's failure to examine the impact of crop-based biofuels in light of significantly higher production volumes serves to understate impacts in direct

contravention of CEQA's analytical requirements. Increased deforestation pressures from substantially increased production levels fundamentally compromise the integrity of CARB's environmental analysis in at least two ways.

First, under CEQA, existing environmental conditions "will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." CEQA Guidelines § 15125(a). CARB relies on 2004 baseline levels of biofuel production from which it evaluates ILUC impacts, but the 2004 baseline production levels are far less than the levels of biofuels currently produced domestically, much less globally, and thus are not reflective of existing conditions. Indeed, despite their relevance in understanding Project impacts, the EIA's description of the environmental setting omits any reference to existing levels of crop-based biofuel production.42

Moreover, CARB has long been aware of the low quantities of biofuels modelled to assess ILUC impacts and the need for an updated analysis. In its FSOR for the 2018 LCFS Rulemaking, CARB recognized that "the GTAP model database used reflected the global economy when negligible quantities of inedible oil and tallow were used in biofuel production which limited contributions of these feedstocks to impact cross-product substitutions" and stated "Staff is committed to periodically updating life cycle analysis modeling tools and is committed to revisiting indirect effects analysis in a future rulemaking."43 Yet despite skyrocketing biofuel production in the years following CARB's stated commitment, it failed to update shock values in this rulemaking to properly assess Project impacts.

Because biofuels are a global market44 and the United States is now importing biofuels to meet RD demand, CARB further erred in only looking at domestic production. As FAO observes, where increased productivity cannot meet demand, "mandating the use of biofuels in one region may increase global GHG emission due to indirect land-use changes in locations where the biofuel feedstock is grown."45

To comport with CEQA and properly analyze project impacts, CARB should have started with a shock value that represented existing global levels of crop-based biofuel production. As EPA states in its Model Technical Analysis, "soybean oil does have near perfect substitutes for many end uses, in the form of other vegetable oils."46 Accordingly, a soybean oil shock could include other vegetable oil production levels as a means of understanding the carbon intensity of biofuel production at current levels.

From a baseline reflecting existing global levels of crop-based biofuel production, CARB should then have used shock values representing increased biofuel production both under the Proposed Amendments and when considered in the context of projected growth elsewhere. The Proposed Amendments are not the only driver of increased crop-based biofuel production and its associated impacts. In its July 2022 workshop, CARB recognized that "[c]lean fuels programs in Oregon, Washington, Canada, Brazil and EU will likely increase global demand for crop-based fuels."47 CARB similarly

stated in its November 2022 LCFS workshop that "[i]n light of expected increase in global production capacity, staff continues to evaluate the need for adjustments to prevent potential deforestation, land conversion, and adverse food supply impacts."48 The International Energy Agency ("IEA") estimates that globally, "[b]iofuel demand is set to expand 38 billion litres [roughly ten billion gallons] over 2023-2028, a near 30% increase from the last five-year period."49 As each billion gallons of soybean oil based renewable diesel requires about 15 million acres of land to grow - an area roughly the size of West Virginia – the potential cumulative impacts of increased global biofuel production are far from trivial. 50 Yet despite recognizing escalating land-use pressures from increased biofuel production from policies in other states and countries, CARB's cumulative impacts assessment is limited to assessing related projects under California's 2022 Scoping Plan.51 Moreover, what cumulative analysis the EIA does conduct ignores the Project's cumulative effect on impacts from crop based biofuels.

Indeed, the land pressures from crop-based biofuel production are a classic example of a cumulative impacts problem, with increased global biofuel production correlated to tropical deforestation, food insecurity, and other harms. The EIA's failure to "discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable" violates CEQA. Guidelines § 15130(a). In addition, even if the EIA had included a cumulative impacts assessment for biofuel production, limiting it to projects under the statewide Scoping Plan would be wholly inadequate particularly where, as here, CARB acknowledged potential impacts from increased global production. Guidelines § 15130(b)(3) (requiring lead agencies to "define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.").

CARB's assertion in the Response to Comments that a "lack of consensus and the time and resource-intensive process that would be necessary to pursue a comprehensive reevaluation of land use change modeling" preclude it from updating ILUC impacts does not excuse its CEQA violations. 52 First, CEQA requires that impacts be analyzed based off existing conditions. Reliance on 10-year-old analysis that does not comport with existing and projected levels of crop-based biofuel production violates this fundamental requirement. Second, at a minimum, CARB could have updated shock values to reflect current and projected levels of biofuel production similar to EPA's analysis without undergoing a "comprehensive revaluation" of the model. Finally, this is the same excuse CARB has fallen back on in previous LCFS updates. As set forth above, following those updates, CARB committed to relook at ILUC but failed to do so, despite amendments in 2018 and 2019, and a four-year process for the current amendments.53 CARB cannot continue to rely on the same excuse for reliance on woefully outdated information particularly where, as here, that reliance violates CEQA's analytic requirements."

Response: Please refer to Master Response 2 in the RTC Document.

H38-13: The commenter states, "**B. The EIA Continues to Mislead Decision-Makers and the Public by Failing to Disclose the Fundamental Flaws in GTAP.**

Even if the EIA correctly used existing and projected volumes of crop-based biofuel production to evaluate the Project's ILUC impacts, the EIA would continue to violate CEQA by failing to disclose the uncertainties and unsupported assumptions in GTAP. As discussed above, EPA evaluation of how different ILUC models respond to increased shock values yielded a range of results, with smaller increases under GTAP, and a large increase under ADAGE such that ILUC emissions exceeded those of fossil fuels.54 This range of outcomes is because GTAP and other models rely on economic elasticities, which define the sensitivity of supply and demand to price changes. These elasticities are key inputs in determining how land use changes in response to changes in crop prices and production demand (such as from biofuels). However, the derivation of these elasticities is often entirely subjective or based on limited datasets, leading to questionable projections of land use change. As noted by prominent researchers, "[t]he GTAPBIO model reflects the subjective expert opinion of a relatively small group of researchers. There is an apparent tendency for evidence that might support parameters leading to higher ILUC estimates to be robustly challenged by GTAP-BIO modelers, while weaker analysis that supports the generation of lower ILUC estimates has been readily accepted."55

Rather than only rely on GTAP using decade-old assumptions, CARB should have evaluated multiple models to determine whether they were adequate for use and based on peer-reviewed data, and whether the assumptions (such as elasticities) are calibrated to the volumes of biofuels being evaluated.56 CARB should then have run multiple scenarios on models deemed adequate. Finally, CARB should have conducted uncertainty analyses for each model, such as Monte Carlo simulations.57

Moreover, rather than disclose key model shortcomings, the EIA attempts to hide them. For example, the DEIA states, "[a] fuel that is more likely to displace sensitive lands, such as forests, would have a higher LUC value, making it less attractive for use in complying with the Proposed Amendments."58 While this would be the case if the model CARB used was capable of assessing the impact of biofuel production on displacement of sensitive lands, GTAP is unique among ILUC models in not having this capability. GTAP is "the only model with zero area of non-commercial land available for conversion to a commercial use."59 GTAP's inability to account for biofuel production resulting in direct conversion of forests, savannas, and other carbon-rich ecosystems results "in lower overall CI estimates compared to when non-commercial land is represented and available for conversion."60 With recent satellite data showing a clear trend of increasing deforestation and land conversion alongside rising soybean consumption in the biofuel sector, key GTAP assumptions are not supported by substantial evidence.61

While CARB acknowledged this limitation in the 2018 LCFS Updates, it subsequently did nothing to remedy this defect in evaluating ILUC impacts under the Proposed

Amendments. In its FSOR for the 2018 LCFS update, CARB acknowledged that "[i]n GTAP-BIO, all forestry land is treated as producing timber, so the conversion of any forestry land results in a decline in timber output from the converted area, creating pressure elsewhere to increase timber production, counteracting some of the forest removal in terms of carbon emissions. If non-commercial forest land were available for conversion, this market-mediated effect would not occur, most likely resulting in an increase in LUC emissions."62 CARB's exclusive reliance on a land use model that excludes deforestation as a potential result of increased biofuel production coupled with 10- year-old shock values serves to significantly understate project impacts and in not a supportable basis from which to assess ILUC impacts. Moreover, rather than disclose this limitation, the EIA improperly suggests that ILUC factors used by CARB account for deforestation when they do not. Moreover, CARB's own assertion that it did not model all the potential areas for feedstock production, along with the global nature of fuel production, shows that CARB should have revised its modeling to include ILUC estimates that accurately reflect the potential risks.63"

Response: Please refer to Master Response 2 in the RTC Document.

H38-14: The commenter states, "**C. The EIA Continues to Fail to Address Impacts of Increased Crop-Based Biofuel Production on Global Fuel Insecurity and Its Corresponding Impacts on Public Health.**

As discussed in Earthjustice's comments on the RDEIA, the RDEIA ignores the health impacts of increased crop-based biofuel production from increased food insecurity.64 Because the FEIA fails to remedy this fundamental defect, the EIA continues to violate CEQA. Moreover, CARB's response to Earthjustice's comments is wholly deficient, falling far short of CEQA's requirement that a lead agency provide "good faith, reasoned analysis" in response to comments. Guidelines § 15088(c).

The CARB's Response to Earthjustice's comments on the impact of increased biofuel production on global food insecurity is to refer to Master Responses 2 and 3."65 Neither of these responses constitute a "good faith, reasoned analysis" response to Earthjustice's comment. Guidelines § 15088(c). Master Response 2 purports to address deforestation impacts from cropbased biofuel production and Master Response 3 states the CARB is not required to analyze speculative impacts without specifically addressing food insecurity.66

As an initial matter, the link between increased demand for biofuels and increased food insecurity is well-documented. As researchers have found, in a review of over one hundred economic modeling studies of the potential impact on prices from increased biofuel demand, "[t]he overwhelming consensus in the literature we surveyed is that, as predicted by basic economics, biofuel demand (and hence biofuel policy) results in increased food prices."67 The impact of increased food prices falls on poor households in the developing world the hardest. This is because "food consumption of poor households in the developing world is more sensitive to food commodity prices than

consumption in the developed world is, and thus these poorer households will be disproportionately affected by food price increases caused by biofuel demand."68 Accordingly, the evidence that increasing (or maintaining) demand for food-based biofuels can be expected to increase poverty and reduce food security is compelling."69

Indeed, the purported greenhouse gas benefits CARB claims from biofuel are premised on reduced demand for food due to lack of affordability. As CARB acknowledged in its 2014 Detailed Analysis of Land Use Change that is the basis of the ILUC factors CARB continues to use in assessing the impact of the Proposed Amendments:

> The LCFS, together with biofuel production mandates in the U.S. and Europe, will result in the diversion of agricultural land from food production to biofuel feedstock production. This diversion of agricultural land to biofuel production will exert an upward pressure on food commodity prices, and potentially lead to food shortages, increasing food price volatility, and inability of the world's poorest people to purchase adequate quantities of food. GTAP analysis predicts that price increases resulting from the additional demand for biofuels will result in reduced crop production, leading to lower food consumption.70

CARB cannot recognize the link between biofuel production and food insecurity and include the corresponding reduction in food demand to assess greenhouse gas emissions from biofuels while simultaneously asserting this is a speculative impact. As observed by leading researchers, "[p]olicy makers should give serious consideration to the balance between the environmental benefits delivered by biofuel policy and the incidental harm done through increased food prices."71 Yet in failing to so much as disclose this impact, particularly, where, as here, it underpins the Project's ILUC analysis, the EIA precludes any such discussion and in direct contravention of CEQA, sweeps these serious concerns "under the rug." Save the Hill Group v. City of Livermore (2022) 76 Cal.App.5th 1092, 1108.

Response: The EIA is not meant to address purely economic, social, or financial issues associated with the Proposed Amendments. Rather, the purpose of CEQA and the EIA is to fully analyze and mitigate the Proposed Amendments' potentially significant physical impacts on the environment. As such, comments related to social, economic or financial concerns such as food insecurity are outside of the scope of the EIA and not addressed in this response to comments document. However, these comments are acknowledged for the record and have been provided to Board Members prior to final consideration. Please see also Master Response 2 in the RTC Document, which explains the protective approach of the Proposed Amendme6nts to potential land use change.

H38-15: The commenter states, "**D. The EIA Fails to Adopt All Feasible Mitigation Measures to Reduce Impacts from Increased Biofuel Production.**

1. **Adding Sunflower Oil to the Virgin Oils Subject to the Credit Limit Is Insufficient to Address Resource Shuffling.**

Earthjustice's comments on the RDEIA explained the importance of extending the 20 percent limit on crop-based fuel production to all virgin oils rather than only soybean and canola oil to prevent resource shuffling given the interchangeability of vegetable oils. 72 CARB's addition of only sunflower oil to the 20 percent limit in its second set of 15-day changes to the Proposed Amendments fails to adequately address this concern. By not including all oil feedstocks, including corn oil, the Proposed Amendments continue to enable resource shuffling through the substitution of other virgin oils.

Other sources of edible oil for biodiesel production include rapeseed, peanut, olive, coconut, mustard, and linseed,73 and current corn-based fermentation facilities could be converted to make drop-in fuels.74 Yet, CARB has not evaluated what feedstocks would replace soy, canola, and sunflower. CARB also stated that the credit limit is meant to "[avoid] sending a long-term signal for virgin soy or canola oil to serve California demand."75 However, the issues on food insecurity and deforestation are not limited to soy and canola oil. Further, CARB states that "[t]he State must ensure that other regions are able to also access increasing volumes of lowcarbon alternative fuels."76 Yet, by failing to put an overall limit on biofuels, producers will likely continue to send fuel to California, as shown by CARB's own modeling.77 Producers may not even be limited in virgin oil volumes because of the ease of feedstock switching."

Response: Earthjustice provided similar comments during the public review period of the Draft EIA and Recirculated Draft EIA. Please refer to Response to Comment R22-11 in the RTC Document for a detailed response regarding the mitigation measures and evaluation of impacts related to increased biofuel production.

H38-16: The commenter states, "**2. Assigning Excess Crop-Based Oils the Benchmark CI Is Ineffective in Deterring Production.**

As Earthjustice explained in comments on the RDEIA, CARB's proposal to assign biofuel volumes that exceed 20% of virgin oil feedstock the compliance benchmark CI is at best a short-term signal that fails to provide the necessary disincentive for long-term change.78 This is because assigning excess volumes the benchmark CI still offers an advantage to biofuel producers. Though these excess volumes won't generate credits in the LCFS, they also do not generate deficits. Producers can continue delivering biofuels to California without facing a strong enough penalty to deter production.

Assigning excess biofuel volumes the benchmark CI (which means these fuels generate neither credits nor deficits in the LCFS) is not ineffective in limited increased production of virgin feedstocks because producers continue to benefit from other incentives including federal subsidies79 and lower California's Cap-and-Trade ("C&T") compliance

obligations.80 In addition, as shown below in Figure 1, retail prices for diesel in California are higher than the rest of the United States, creating an additional incentive to produce biofuels for the California market.

In contrast, assigning excess volumes the CI of fossil diesel would serve as effective mitigation by providing a more robust deterrent. By equating virgin oil biofuels to fossil diesel in the LCFS, CARB would send a clearer signal that biofuels exceeding the 20 percent threshold carry similar LCFS compliance burdens as fossil diesel. This approach would increase the compliance cost, creating a stronger incentive to reduce reliance on virgin oils. Furthermore, even with continued federal support through the RFS and BTC/PTC, and lower C&T obligations, the higher compliance cost associated with the diesel CI would significantly reduce the attractiveness of biofuel production beyond the 20 percent limit.

The fact that biofuels will eventually become deficit-generators under the Program as the benchmark CI decreases over time is insufficient by itself to limit their supply into California absent assignment of the CI of fossil diesel for excess production. First, even if virgin oil biofuels generate deficits due to the declining benchmark CI, the compliance burden will still be much lower than that of fossil diesel. For example, virgin oil biofuels have a CI of around 60 gCO2e/MJ,82 whereas the CI of fossil diesel is 105.76. The cost of compliance for biofuel producers would still be lower than for fossil diesel, meaning that generating deficits on biofuels remains a more attractive option than producing fossil diesel, even as the benchmark declines. As demonstrated in Table 1 below, according to the current benchmark schedule, the policy would be effective for 5 years from 2028 to 2032. In 2033 the CI of oils above and below the limit would become equivalent. If one or more AAMs are triggered, the policy shortens. Accordingly, CARB's assertion in its Response to Comments that the 20 percent limit "avoids sending a longterm signal for virgin soy, or sunflower oil to serve California demand" is wholly without merit as the minimal disincentive of the benchmark CI score will sunset by no later than 2033.83

CARB Proposal CI for volumes 20%84 2025-2027 60 60 2028 60 77.10 2029 60 75.57 2030 60 74.03 2031 60 69.27 2032 60 64.51 2033 60 60 Second, CARB's modeling shows that biofuels will continue to be supplied even after the benchmark declines to a point where biofuels begin generating deficits. 85 This suggests that the incentives to continue producing biofuels, even at a deficit, outweigh the disincentives created by assigning the benchmark CI. Therefore, simply assigning the benchmark CI to excess volumes is not enough to stop producers from supplying biofuels over the 20% limit. Once the benchmark CI is below 60, all virgin oil fuels become deficit generating. However, from CARB's California Transportation Supply ("CATS") output, there is not a noticeable drop in RD consumption expected.

Other stakeholders, including ICCT, have also raised concerns with the ineffectiveness of the CI Benchmark. As set forth by ICCT:

> The de facto penalty for exceeding the crediting limit ranges from approximately $0.06 to $0.23 per diesel-gallon equivalent (DGE) depending on the year, before going away entirely. If these fuels were treated as having a CI of the fossil baseline, their effective penalty would $0.55 per DGE, creating a stronger disincentive for exceeding the limit. In short, this small penalty is not expected to meaningfully change producer behavior given that it is far lower than the sum of incentives renewable diesel sold in California receives.86

Accordingly, CARB's failure to apply the fossil diesel benchmark to excess virgin oil fuels falls short of CEQA's mitigation requirements.

In rejecting this mitigation measure in the FEIA Response to Comments, CARB talks out both sides of its mouth. In Master Response 2, CARB states that the "20 percent value is based on historical reported data under the LCFS program" and rejects the suggestion this provision would increase consumption of fossil diesel as "speculative."87 Yet elsewhere in the Response to Comments, CARB rejects assigning ULSD to surplus oils as it "would likely increase diesel production and increase both GHG emissions and air pollution."88 Even if CARB's claims that diesel production would increase despite its earlier insistence any such increase is speculative, as CARB elsewhere recognizes, the purpose of the 20 percent limit is to "serve as a guardrail against potential future land conversion or deforestation."89 To serve as a guardrail, the provision must be effective.

Moreover, CARB already assigns palm oil a CI near that of fossil diesel to "send a strong signal that disincentivizes use of this fuel."90 CARB currently assigns palm oil feedstocks a LUC value of 71.4, which would result in a CI of any palm-based fuel near to or even higher than the fossil CI. Because of this, CARB has stated they have no reported palm-based fuels in the program. This has sent an appropriate long-term signal, unlike the proposal to put then annual benchmark CI for other fuels CARB is trying to disincentivize in California. CARB is proposing to modify the palm oil CI to be equivalent to that of fossil diesel in the proposed regulation. Due to the interchangeability of vegetable oils, increasing biofuel demand for soy and other virgin oils increases demand for palm oil for non-biofuel uses. As ICCT notes:

> Soy oil market distortion will impact other vegetable oil markets due to the fungibility of vegetable oils in food and feed markets and in consumer products. Relative to other feedstocks, palm and soy oil are particularly cross-price elastic, meaning that palm oil supply is responsive to changes in the price of soy oil. Using a regression model, Santeramo and Searle identified a causal relationship between increased soy biodiesel demand and increased palm oil imports in the United States between 1992 and 2016.91

Accordingly, assigning the excess production of all virgin oils the CI of fossil diesel like CARB proposes for palm oil is both necessary and appropriate given similar harms from increased demand for use of these crops for biofuels.

Response: Please refer to response to comments R22-15 and R22-19 in the RTC Document, as well as Master Response 2.

H38-17: The commenters states, "**III. CARB Continues to Fail to Address the Flaws in Its Emissions Analysis of Biofuels Combustion in California Vehicles.**

CARB's Response to Comments and the FEIA fail to remedy flaws in its air quality analysis that have led to systematic undercounting of criteria pollutant emissions from the Proposed Amendments. These flaws in the EIA undermine its purpose as an informational document and render inadequate any mitigation of these impacts."

Response: The comment is introductory in nature. Please see responses to specific comments as follows below.

H38-18: The commenters states, "**A. CARB Fails to Justify Claimed Emissions Reductions.**

Notably, in the Response to Comments, CARB changes its assessment that "almost all" emissions benefits results from use of RD and BD in legacy engines to "the majority," as excerpted here:92

> used in NTDE engines. The majority ~~Almost all~~ of the air quality and health improvements that come from the tailpipe emissions reductions from the Proposed Amendments and subsequent increased biofuels use are a result of these additional PM reductions from increased RD and BD use in legacy engines, a conclusion that is supported by the results of the 2021 LED study.

The Response to Comments concedes that "[g]iven the much higher PM emission rates in legacy engines, when RD and BD are used in legacy engines, the RD and BD results in a much more significant total reduction of emissions and much more significant health benefits than when the same fuel is used in new technology diesel engines ("NTDE") engines."93 Given that "majority" can mean 50.01%, the environmental analysis fails to articulate where the other purported benefits are created. In fact, the Response to Comments concedes "[t]he most significant health and air quality improvements from source of the additional emissions reductions above and beyond "the majority" it claims occurs by burning RD and BD in combustion engines.

Similarly, the CEQA analysis also fails to articulate whether this analysis is double counting any purported emissions benefits from other regulations that require use of RD.95 In its April 10 workshop presentation, CARB failed to show how the LCFS regulation is the primary driver of additional RD that is needed to offset increased NOx from BD when other regulations require use of RD in large swaths of offroad equipment.96

As noted in prior comments, the CEQA analysis is also flawed because it integrates the federal RFS and tax credit incentives into the production cost inputs for renewable diesel and biodiesel in the California Transportation Supply ("CATS") model for both the baseline and analyzed scenarios to isolate the impact of the LCFS and ensure that production changes reflect the additive value of the LCFS. Therefore, the change in RD and BD volumes between the baseline and proposed scenario is estimated as a result of the additional incentive provided by LCFS.

The environmental analysis is also faulty because it uses the CATS model to determine fuel volumes and emissions benefits from the LCFS. The model was developed to show least cost compliance paths for meeting California's LCFS benchmarks by assigning the lowest-cost alternative fuels first, up to the volume required to meet the annual CI target. It was not designed to develop emissions benefits.

Moreover, by constraining the baseline used in the CEQA analysis to simply meet the compliance requirements, the model is not capable of showing volumes that might enter California regardless of the LCFS, thus underestimating what might occur in the absence of the LCFS and making the difference between the Proposal and baseline volumes artificially higher. Volumes of alternative fuels are likely to be used in California even without the LCFS. The Renewable Fuel Standard and federal tax credits will continue to mandate or encourage these fuels, and CA-specific regulatory requirements such as RD use requirements in California's offroad rule and reduced Cap and Trade obligations will continue to drive fuel availability and supply into California.97

Therefore, the past approach in prior CEQA analysis for prior LCFS amendments, which apportioned benefits to the LCFS is more appropriate to present an accurate depiction of the impacts of this decision. 98 Alternatively, one could model RFS prices at $0 to determine the the use of RD and BD come from the use of these fuels, as opposed to fossil ULSD, in legacy engines..."94 The analysis fails to explain the volume of fuel that the LCFS would deliver. The LCFS acts to incentivize the lowest-CI fuel to be used in California because, unlike the RFS, it rewards incremental CI reductions."

Response: Please refer to Master Responses 2 and 5 and responses to comments 15.1-65 and R22-27 in the RTC Document.

H38-19: The commenters states, "**B. CARB Fails to Justify Its Decision to Disregard the Findings of Its Own 2021 Study.**

As explained in prior comments, CARB's 2021 Low Emissions Diesel ("LED") study found that, in NTDE engines:

- BD NOx has higher emissions than fossil diesel.
- RD NOx has similar emissions to fossil diesel.
- RD cannot offset BD NOx impacts.
- BD and RD have PM emissions similar to fossil diesel.99

The study notes the fuels tested complied with the ADF regulation except for the cetane number, which is higher than ADF specification requirements. According to CARB, the cetane number can affect the NOx emissions levels, with very high cetane diesel fuels offsetting or reducing biodiesel NOx emissions.100 According to the EIA, soybean oil has a lower cetane number than other feedstocks, similar to ULSD.1061

CARB's efforts to write off this analysis by noting staff is engaging in "further research" to determine whether these alarming findings are "applicable" does not comply with CEQA's mandate to take an approach that is most protective of the environment.102 To the extent "further research" is needed, CARB must take a conservate approach in the interim, based on its most recent findings. The approach is further outrageous because the 2021 LED study emanated from the ADF and 2018 LCFS amendments to confirm assumptions that biofuels in NTDEs would not have an adverse effect on PM and NOx.103 Now, staff is conveying that the results are inadequate because it could lead to potentially significant emissions impacts that would need to be mitigated. This attempt to sweep important findings under the rug violates CEQA."

Response: CARB provided a substantive response to commenter's previous comments about 2021 Low Emissions Diesel ("LED") study, as reiterated here. See response to comments R22-14 and R22-26 and Master Response 4 in the RTC Document.

H38-20: The commenters states, "**C. CARB Fails to Justify Its Decision to Lock Biodiesel Volumes at 2022 Levels.**

CARB's decision to "lock[] in" BD volumes at 2022 volumes in the modeling lacks a sound justification.104 Figure 2 depicts an excerpt of the modeling spreadsheet in which CARB staff overrode the model and locked in 2022 BD volumes into all future BD volumes, thereby preventing the air quality modeling to find any future BD growth and emissions associated with that growth.

Figure 2: Excerpt of CARB Modeling Inputs for 15-Day Package[105]

108	2022	Biodiesel	35463211159	inf	2022 gallons	281163967
109	2023	Biodiesel	35463211159	inf	Lock at 2022 volumes	
110	2024	Biodiesel	35463211159	inf		
111	2025	Biodiesel	35463211159	inf		
112	2026	Biodiesel	35463211159	inf		

CARB fails to address the fact, asserted in our September 30 comments, that BD is a lower cost fuel that the cost-optimizing CATS model would likely select if CARB had not read in volumes as stable to override such an outcome. While it may be the case that BD volumes have remained steady or declined in the past "several" and "two years," respectively, past trends are not evidence of future market changes. In fact, as noted in prior comments, CARB has consistently failed to predict biofuels volumes, wildly underestimating the future growth of RD in recent years. There is no assurance here

that steady BD volumes are a certainty such that any future growth, and the associated potential for health-harming NOx increases, should be overridden by staff in the model. Under the conservative approach required by CEQA, CARB must analyze and mitigate the Project's potential air quality impacts. Because BD growth is possible and reasonably foreseeable, CARB should have modeled and disclosed its effects. Instead, CARB assumed away any growth and turned a blind eye to the possibility of NOx increases and the need for mitigation.

Response: See response to comment R22-26 in the RTC Document.

H38-21: The commenters states, "**D. CARB Improperly Relies on the Alternative Diesel Fuel Regulation to Mitigate Concerns about Air Quality Impacts.**

CARB states in its Response to Comments that "CARB currently implements a Regulation on the Commercialization of Alternative Diesel Fuels (ADF regulation), which is designed to ensure that the use of biodiesel blends do not result in excess NOx emissions relative to ULSD."106 For numerous reasons, this response fails to address the problems with NOx that we raised in our prior comments.

First, CARB designed the ADF regulation to sunset when specific measures are met for on-road and off-road equipment. In fact, CARB Staff previously determined that the on-road sunset would likely occur in 2023, consistent with previous analyses, while the off-road sunset would likely occur in 2030 or later, saying, "[t]his proposed amendment would mitigate potential future NOx emissions increases due to biomass-based diesel use attributed to the LCFS."107

Second, the ADF Regulation has not adequately accounted for NOx emissions because it does not incorporate the findings of the 2021 LED study. While the study was published in 2021 CARB could have been aware of its core findings before it updated the ADF in 2020.108 Public records show that it was aware of preliminary findings in 2020. Yet the regulation ignores its results. And in any event, CARB has failed to update the ADF regulation based on the critical 2021 data indicating that RD does not offset the NOx emissions from BD in new technology diesel engines.

Third, and perhaps most importantly, there are currently no ADF additives that are certified as effective to mitigate the NOx increases from biodiesel use. CARB's own documentation shows the additives contemplated by the ADF regulation have not been effective. Although CARB certified six additives to mitigate the NOx impacts of biodiesel in accordance with the 2016 ADF regulation, in October 2019, CARB issued a Product Alert for fuel additives, noting none met the NOx standards.109 The Product Alert allowed continued use of the certified additives to meet ADF NOx compliance. In addition, CARB posts volumes of biodiesel blends used in California beginning in 2016; however, these reports have not been published since 2020.110 Therefore, one year after the additives were found ineffective, reporting of biodiesel blend volumes inexplicably stopped. CARB has not evaluated the NOx impacts given the NOx mitigating additives previously certified were not effective, although allowed to be used

for compliance through mid-2021. Nor has CARB explained how it is mitigating the NOx not controlled by the additives.

These flaws render the CEQA analysis a failure as a disclosure document in masking serious and real air pollution harms."

Response: Please refer to response to comment R22-26 in the RTC Document, which explains why CARB staff does not expect biodiesel volumes supplied to California to increase as a result of the Proposed Amendments. As the comment notes, CARB currently implements a Regulation on the Commercialization of Alternative Diesel Fuels (ADF regulation), which is designed to ensure that the use of biodiesel blends do not result in excess NOx emissions relative to ULSD. Although additives previously certified to support implementation of that regulation are no longer in use following amendments to the ADF regulation, the regulation, and its requirements to mitigate emissions from fuels used in California, remain in effect.

H38-22: The commenters states, "**IV. CARB Continues to Fail to Address the Violations Associated with Its Analysis and Disclosure of Localized Impacts from Biofuel Production and to Adopt All Feasible Mitigation Measures.**

CARB concludes that the Project's long-term operations could result in significant and unavoidable impacts to air quality. 111 Despite this acknowledgment, CARB (1) fails to adequately disclose or analyze a wide range of emissions, (2) relies on outdated health impact assumptions, and (3) fails to provide sufficient information about the magnitude and severity of health-harming emissions. These deficiencies violate CEQA, and CARB's Response to Comments and FEIA fail to remedy these violations."

Response: See Master Response 2 and responses to comments R22-11 and R22-36 in the RTC Document.

H38-23: The commenters states, "**A. The EIA Fails to Analyze Emissions of Numerous Health-Harming Pollutants from Biofuels Production.**

Throughout all the environmental review documents for the Proposed Amendments, CARB limits its quantitative and qualitative analysis of health-harming air pollutants to PM2.5 and NOx emissions.112 The DEIA relies on the air quality analysis methodology in the "Health Impact Analysis" conducted in the Standardized Regulatory Impact Assessment ("SRIA").113 In the first 15-day change, CARB conducted additional modeling of air quality which it presents in the RDEIA. The FEIA provides no additional air quality modeling even though Earthjustice and other commenters pointed out numerous flaws including CARB's failure to provide quantitative assessments for pollutants other than PM2.5 and NOx emissions.114 The RDEIA claims that "reduction[] in criteria pollutants and air toxics" is expected, while also acknowledging that biofuel production "may result in criteria pollutant and other emissions."115 Yet the RDEIA fails to identify any specific air pollutants beyond PM2.5 and NOx and fails to disclose how

emissions of pollutants other than PM2.5 and NOx would either increase or decrease as a result of the Proposed Amendments.116

CARB's lack of analysis is jarring given that evidence shows that many other types of air pollutants caused by the Project could have significant impacts. For example, as explained in prior comments,117 facilities that manufacture hydrogen from methane using steam-methane reformation—which is an input to biofuels refining and which CARB admits are likely to increase as a result of the Project118—emit not only PM2.5 and NOx but also other pollutants harmful to human health. The Bay Area Air Quality Management District, for example, has identified several additional toxic air contaminants as well as specific polycyclic aromatic hydrocarbons reported in steam-methane reformation emissions that CARB failed to analyze for their specific emission rates and potential impacts.119 Several of these pollutants are known to pose specific health risks, such as carbon monoxide and volatile organic compounds.120 The EIA does not justify its omission of these other air pollutants, nor does the EIA disclose that pollutants other than NOx and PM2.5 are emitted by steam-methane reformation.

Additionally, biofuel refining itself—which would also increase as a result of the Proposed Amendments121—releases significantly greater amounts of certain hazardous air pollutants than petroleum refineries.122 These include carcinogens like formaldehyde and acetaldehyde as well as hexane and acrolein, which can cause nerve damage and lung and eye irritation, respectively.123 In fact, more acrolein is emitted from the biofuels industry than any other sources in the U.S., according to EPA's Toxics Release Inventory.124 These four pollutants also contribute to the formation of ground-level ozone, or smog, which is linked to a wide variety of respiratory ailments; as well as microscopic, soot-like particulates that can trigger heart and asthma attacks.125

Biofuel refining can also worsen acute air pollutant exposures as a result of refinery flares.126 This is supported by site-specific evidence: Since the conversion of the Phillips 66 Rodeo and Marathon Martinez refineries from petroleum to biofuel, several flaring incidents have been reported at the refineries.127 At these sites, refinery flaring released spent catalyst chemicals, heavy metals, and diesel fuel onto adjacent communities.128 Despite these documented air quality emergencies, CARB does not disclose or analyze biofuel refinery flaring impacts on air quality.

Relatedly, CARB acknowledges potential air quality impacts from transportation of feedstock to biofuels refineries,129 yet fails to analyze and quantify these impacts. Transportation of biofuel feedstock is associated with the emission of several criteria pollutants such as diesel particulate matter and PM10 that CARB failed to analyze. 130 These effects will be heightened and concentrated in communities near refineries. CARB could have quantified these transportation emissions by analyzing expected biofuel volumes to determine the amount of feedstock needed to determine the number of trucks needed to transport the feedstock. Instead, CARB merely offers conclusory statements.

CARB could have, and should have, analyzed these foreseeable emissions; the agency's failure to disclose or account for air contaminants beyond PM2.5 and NOx violates CEQA. See, e.g., Sierra Watch v. County of Placer (2021) 69 Cal.App.5th 86, 98–99 (finding EIR inadequate because it failed to evaluate a category of pollutants that would result in environmental impacts due to increased vehicle miles traveled resulting from the Project). CEQA obligates agencies to collect information necessary to identify significant environmental impacts and propose feasible mitigation measures. Sierra Club v. Board of Forestry (1994) 7 Cal.4th 1215, 1220. Without the required information, the court in Sierra Club v. Board of Forestry concluded, meaningful assessment of a Project's impacts under CEQA is impossible. Id. Here, CARB's inadequate disclosure and insufficient analysis of health-harming air pollutants precludes a legally sufficient analysis of air quality impacts."

Response: Please see Master Responses 2 and 4, and responses to comments 15.1-65 and R22-36 in the RTC Document.

H38-24: The commenters states, "**B. CARB Fails to Adequately Support Its Emissions Estimates.**

The air quality emissions analysis CARB does provide is flawed and based on outdated, misleading data. As mentioned above, the EIA bases its analysis of NOx and PM2.5 emissions on the Health Impact Analysis evaluation conducted in 2023 in connection with the SRIA and on modeling of air quality impacts of the first 15-day changes. However, the Proposed Amendments differ from and first 15-day change in ways that could affect emissions and their health impacts.131 For example, the Proposed Amendments extend crediting periods for certain biomethane pathways for many years beyond the time period contemplated in the first 15-day change. It also grants large dairies avoided methane credits even if a future regulation prevents methane venting – a glaring departure from life-cycle accounting methodologies that CARB purports to use as the basis for determining the CI scores of fuels that participate in the program. Crediting of large dairy operations has a wide range of air quality and health impacts.132 It follows that the Project's extension of the timelines for these credits will increase health impacts, rendering the SRIA's Health Impact Analysis and the RDEIA findings outdated and inadequate. The FEIA has not remedied these errors.

Additionally, the EIA relies on unrepresentative data to form its NOx and PM2.5 emissions estimates. The EIA bases its NOx and PM2.5 emission estimates for biofuels production used in its modeling on emission factors calculated from Kern Oil & Refining Co. Bakersfield refinery emissions.133 This refinery, however, lacks co-located steam-methane reformation hydrogen production, meaning its emissions are not representative of those most similar to what the Proposed Amendments would incentivize. By contrast, Phillips 66 refinery in Rodeo represents a far larger share of RD in the LCFS, and its environmental review information suggests refinery NOx and PM2.5 emission factors roughly three to four times those that the EIA uses from Kern Oil & Refining Co. Bakersfield facility.134 The FEIA does not correct this error. CARB's

reliance on unrepresentative data to calculate emissions factors renders its analysis inadequate and makes it difficult for decision-makers and the public to understand the Proposed Amendments' impacts.

CARB's reliance on outdated and unrepresentative emissions data violates CEQA. Indeed, courts have invalidated CEQA documents that relied on outdated and incomplete scientific information. Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners (2001) 91 Cal.App.4th 1344, 1380 (EIR using "scientifically outdated information" was not a reasoned, good-faith effort to inform decision-makers and the public); Citizens to Preserve the Ojai v. County of Ventura (1985) 176 Cal.App.3d 421, 430-32 (EIR violated CEQA by omitting any analysis of major source of cumulative air pollution)".

Response: Please refer to Master Responses 2 and 5 and response to comments R22, including R22-36, and 15.1-65 in the RTC Document.

H38-25: The commenters states, "**C. CARB Fails to Analyze Impacts on Refinery Adjacent Communities.**

CARB fails to analyze impacts of the Proposed Amendments on refinery adjacent communities likely to experience increased pollution as a result of the Proposed Amendments.

In the RDEIA, CARB concludes that after mitigation, "air quality impacts resulting from the operation of new or modified facilities associated with the Proposed Amendments would remain significant and unavoidable."135 This conclusion is not altered in the FEIA. These significant impacts are a result of increased biofuel production and transport as well as steam methane reformation to supply biofuel refineries with necessary hydrogen.136 Indeed, CARB "[s]taff expects proposed amendments will increase the production of low-carbon fuels in California, which will result in increased emissions at the production facilities."137 According to the EIA "potential local increases in emissions would be largely dependent on the extent and location of increased biofuel production."138 However, the EIA does not identify refineries or hydrogen production facilities in California that are beginning new or expanding existing production, evaluate potential emissions from these facilities, or assess the impact of these emissions on frontline communities. Instead, CARB downplays potential localized increases and asserts that "the extent of increased biofuel production and the location of potential new biofuel facilities cannot be known at this time and would be too speculative to quantify."139 This is both factually inaccurate and legally insufficient under CEQA.

The locations of already existing or already approved biofuel refineries, as well as refineries capable of immediate conversion to biofuel production are identifiable. For example, Phillips 66 Rodeo, Marathon Martinez, and AltAir Paramount are three approved refinery biofuel conversions located in communities with some of the worst air pollution in the state.140 The cities of Rodeo, Martinez, and Paramount contain environmental justice communities where residents are disproportionately burdened by

pollution and vulnerable to health risks.141 As CalEnviroScreen data demonstrates, census tracts nearest the Marathon refinery experience a pollution burden in the 82-91 percentile of state census tracts.142 Residents in the census tract closest to the Phillips 66 refinery experience a pollution burden greater than 86 percent of census tracts in the state.143 Similarly, residents in the census tracts in and around the AltAir Paramount refinery experience a pollution burden in the 89-98 percentile.144 As a result, these refinery communities experience increased rates of asthma, cardiovascular disease, and other health burdens.145

Exhibit 1 contextualizes the locations of these biofuel refineries alongside the baseline air pollution for communities adjacent to these facilities, demonstrating the feasibility of identifying and analyzing air quality impacts of increased biofuel production.

CARB should, and could, connect this data and assess the impact of increasing biofuel production on these communities. Other public agencies have conducted similar analyses because current LCFS biofuel refining incentives have already resulted in rapid increases in biofuel production. 146 For example, the Environmental Impact Report ("EIR") for the AltAir Paramount refinery analyzed foreseeable air quality impacts from expanding biofuel production at the refinery. The EIR for the expansion project estimated that the expanded refinery would release 1,743 pounds of VOCs and 2,133 pounds of NOx emissions per day, and it would require 50 rail car unloads per day and 540 diesel truck trips.147 CARB could have done a similar analysis here to disclose reasonably foreseeable impacts from increased production of biofuels at these refineries. Even if CARB cannot determine the exact location of all future biofuels refineries it could provide a range of estimated emissions based on reasonable assumptions grounded in existing data on refinery conversion and expansion potentials. CARB's failure to analyze these impacts runs afoul of CEQA's "purpose [] to alert the public and its responsible officials to environmental changes before they have reached [] points of no return." Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal. (1988) 47 Cal.3d 376, 392.

Additionally, Exhibit 1 aggregates data from the U.S. Energy Information Administration identifying all refineries in California with the key equipment necessary to be converted with relatively minor retooling into a biofuel refinery.148 Again, CARB could have easily identified these facilities and analyzed a range of potential impacts of biofuel production on air quality in surrounding communities.

CARB's acknowledgement that the Proposed Amendments will further incentivize biofuel production which will result in significant and unavoidable air quality impacts149 is insufficient without an accompanying analysis that apprises the public of the severity and magnitude of these potential impacts. This sort of analysis is not only appropriate but required, even for a programmatic environmental review such as this one. See Cleveland National Forest Foundation v. San Diego Association of Governments (2017) 17 Cal.App.5th 413, 440.

The Cleveland National Forest Foundation court found that the adequacy of an agency's discussion of environmental impacts is an issue distinct from the extent to which the agency is correct in its determination whether the impacts are significant. The "designation of a particular adverse environmental effect as 'significant' does not excuse the [agency's] failure to reasonably describe the nature and magnitude of the adverse effect." Id.; see also Berkeley Keep Jets, 91 Cal.App.4th at 1371 (the EIR's approach of simply labeling the effect "significant" without accompanying analysis of the project's impact on community health was found inadequate under CEQA). The court in Cleveland National Forest Foundation invalidated a Programmatic EIR where the agency failed to identify sensitive receptors based on available information. Cleveland National Forest Foundation 17 Cal.App.5th at 440. The fact that "more precise information may be available during the next tier of review did not excuse [the agency] from providing the information it could reasonably provide now." Id. The California Supreme Court also held that CEQA obligates agencies to collect the necessary information to identify significant environmental impacts and propose feasible mitigation measures—even at a programmatic level; without the required information, meaningful assessment of a plan or program's impacts under CEQA are impossible. Sierra Club v. Board of Forestry (1994) 7 Cal.4th 1215, 1236-1237 (invalidated logging plan because of failure to analyze impact to sensitive species).

Here, it is insufficient for CARB to simply conclude, without analysis, that long-term air quality impacts of the Proposed Amendments will be significant and unavoidable. CARB should have, and could have, analyzed the foreseeable air quality impacts from new or expanding biofuel production at existing biofuel refineries and refineries easily capable of conversion. CARB's failure to disclose localized impacts and analyze the public health and air quality implications of the Proposed Amendments leaves the public and decisionmakers in the dark about the Project's pollution burdens and public health impacts to frontline communities. The programmatic nature of this environmental review does not excuse CARB's failure to disclose and assess the magnitude and severity of air quality impacts from the Proposed Amendments' impacts on biofuel production at already existing biofuel refineries. Failing to provide this analysis violates CEQA.

Critically, CARB has already committed to examining the localized impacts of biofuels refining in the LCFS. In the CEQA Functional Equivalent Document for the 2008 Scoping Plan, CARB stated that "[t]he LCFS regulatory proposal will contain a more detailed analysis of the potential air quality impacts. Such impacts include the evaluation of the lifecycle greenhouse gas emissions and environmental impacts, potential air quality impacts associated with the production, transportation and use of the fuels, and an assessment of the potential localized and cumulative air quality impacts of building in-state production facilities."150 CARB has underscored this obligation in its representations in court. The 2008 Scoping Plan was the subject of litigation in which petitioners challenging the FED for the plan pointed to its failure to examine and disclose localized impacts from expanded biofuel refining, among other violations. In its response brief, CARB stated that "Petitioners could have, but did not,

challenge the environmental review conducted by ARB of the LCFS directly. That is the appropriate venue for petitioners to raise this complaint" – i.e. Petitioners' complaint that CARB failed to analyze in the FED the localized and cumulative air quality effects of the expansion of future facilities' biofuel production.151 Thus, CARB has already admitted that it is able and obligated to examine localized impacts in the LCFS rulemaking process.

Finally, while CARB acknowledges—though fails to analyze—foreseeable localized increases in air pollution, the agency asserts that those impacts will be partially offset by end use of biodiesel, renewable diesel, and alternative jet fuel use which would maintain air pollution levels regionally.152 In its Response to Comments, CARB states that "the Proposed Amendments have the potential to introduce localized pollution to communities within the proximity of biofuel production facilities and routes for biofuel feedstock and finished fuel transportation. However, CARB staff does not believe significant localized increases would be likely and anticipate overall beneficial long-term operational impacts statewide."153 CARB does not offer any evidence or analysis to support these conclusions. Since CARB has not analyzed localized impacts, it has no basis for concluding that it "does not believe significant localized increases would be likely."154

And even if there were an offsetting effect, potential regional or statewide benefits from end-use of biofuels (which are themselves questionable given NOx concerns and double counting, as we explain above) does not excuse CARB's failure to analyze and mitigate worsening air quality and public health risks for refinery communities. Statewide improvements are not adequate mitigation for localized impacts."

Response: CARB notes that the commenter, who commented extensively during the noticed public comment period on the Recirculated Draft EIA in September 2024, made these comments regarding potential localized emissions for the first time during the final public hearing on this item, at the end of a public rulemaking process that began in December 2023. CARB provides the following response.

The commenter claims the potential for localized impacts due to the conversion of a petroleum refinery's operations to biofuel production. However, the commenter does not indicate whether or how the conversion of all or part of an existing petroleum refinery's current production, which is part of the environmental baseline, would result in emissions increases from that baseline. The commenter also does not provide information sufficient to demonstrate that the Proposed Amendments would require substantial numbers of new biofuels manufacturing facilities. The localized impacts claimed by the commenter, at facilities of unknown locations and of unknown scale, are speculative and do not lend themselves to analysis at this level of amending a statewide market-based program.

CARB continues to conclude that it would be speculative to attempt to identify particular locations at which biofuels may be produced, or the extent of any such operations at

those locations, given the market-based nature and statewide scale of the Proposed Amendments.

Additionally, CARB disagrees with the commenter's contention that prior CARB statements commit or obligate CARB to examine localized impacts in the LCFS rulemaking process where such effects would be speculative. Analyzing speculative impacts would provide little to no informational value, and for that reason, such analysis is not required by CEQA. (*See, e.g., Aptos Council v. Cnty. of Santa Cruz* (6 Dist. 2017) 10 Cal. App. 5th 266, 295 ("where future development is unspecified and uncertain, no purpose can be served by requiring an EIR to engage in sheer speculation as to future environmental consequences"); see also CEQA Guidelines §§ 15145, 15384(a) (noting that speculation does not constitute substantial evidence under CEQA).)

Staff based production emissions analysis on real-world data from the California Emissions Inventory Data Analysis and Reporting System (CEIDARS), and at the time of the analysis the facilities described by the commenter had no available real-world emission data. Even if staff were to use the suggested emission factors, the Proposed Amendments would still result in net emissions reductions for both NOx and PM. See also Master Response 4 and responses to comments R17-5 in the RTC Document and H38-21.

H38-26: The commenters states, "**V. CARB Fails to Cure Defects in Its Treatment of Electrolytic Hydrogen**.

In our comments on the RDEIA, we explained how use of electrolytic hydrogen could increase GHGs if proper safeguards are not in place. As one recent analysis finds, "[e]lectrolytic hydrogen that relies on fossil fuel power would fail to reduce net climate pollution across all end uses," with the exception of steel production.155 It warns that "[h]ydrogen would almost universally do more harm than good if its production isn't subject to strict guardrails (i.e., requiring electrolyzers to draw from new, deliverable, hourly matched clean energy) that prevent it from increasing fossil fuel power plant electricity generation—even after accounting for its use downstream."156 CARB fails to address this problem and analyze the emissions impacts of the Project's reliance on electrolytic hydrogen that is not subject to hourly matching requirements and other necessary guardrails. CARB also does not analyze the energy impacts associated with increased demand for electricity and associated strain on the electric grid. We highlighted these failures in our prior comments, and CARB has failed to address them. These omissions violate CEQA; they undermine the role of the RDEIA as an informational document and lead to insufficient mitigation of adverse Project effects."

Response: Please refer to responses to comment R22-2, R22-29, and R22-30 in the RTC Document.

H38-27: The commenters states, "**VI. CARB Fails to Analyze and Disclose Impacts from the Production of Hydrogen Derived from Fossil Methane.**

A. CARB Fails to Analyze the Effects of Delaying the Phase Out of Generation for Fossil Methane-Derived Hydrogen from 2030 to 2035.

In the Second 15-Day change, CARB allows the fossil fuel-derived hydrogen that is not paired with biomethane credits to remain in the program until 2035. 157 This is a significant change from the 2030 phase out date in the First 15-Day Change.

The production of fossil-fuel derived hydrogen via steam-methane reformation emits GHGs and a wide range of air pollutants that are harmful to human health, as described above and in prior comments. In the FEIA, CARB fails to disclose, analyze, and mitigate the effects of the 2035 phase out date on both greenhouse gas emissions and air pollution. Its most updated air quality and GHG modeling is from the first 15-day change, which assumes a 2030 phase out.

CARB also fails to analyze and disclose the extent to which the continued allowance of fossil fuel-derived hydrogen in the program is consistent with the State's carbon neutrality mandates, as articulated in Assembly Bill ("AB") 1279158 and applicable air quality standards. For these reasons, the EIA violates CEQA."

Response: The proposed amendments phase out hydrogen produced from natural gas while the baseline conditions allow hydrogen produced from natural gas indefinitely. Therefore, the modifications proposed will result in reduced environmental impacts even under the current proposal. Please refer to responses to comment R22-32 and R22-33 in the RTC Document.

H38-28: The commenters states, "**B. CARB Fails to Cure Defects in the EIA's Analysis of the Effects of Fossil-Fuel Derived Hydrogen Paired with Biomethane Attributes.**

As we asserted in prior comments, CARB's failure to analyze the GHG emissions and other impacts of fossil hydrogen paired with book-and-claim biomethane credits violates CEQA. In its FEIA, CARB fails to remedy this violation. Evidence shows that the GHG benefits of book-and-claim biomethane credits derived from dairies and other sources of biomethane are largely illusory and that the negative CI scores assigned to livestock methane projects risk rewarding and expanding polluting management practices.

Two new reports reinforce this showing. 159 In one study of Iowa dairy farms, evidence suggests that the LCFS's biomethane incentives may lead to herd size increases and other environmentally damaging outcomes. The analysis found that since 2021—when Iowa permitted 15 new digester facilities and the Legislature passed a law allowing animal feeding operations with digesters to exceed the state's limit of 8,500 animal units—almost half of the 15 farms added to their herd. Taken together, the total number of cows went from 84,861 before the sites got their digester permits to 104,424 after—a 23 percent increase.160 As Leadership Counsel for Justice and Accountability ("LCJA") detailed in their prior comments, this increase in herd size can cause higher methane emissions than would have otherwise occurred as well as other localized water and air

pollution impacts. For instance, according to the report, digester releases of manure have also caused discharges of pollution to the detriment of local waterways. 161

A second recent report, published since the closure of the comment period on the RDEIA, underscores these risks. 162 “When credit prices have been high, the combination of incentives from the LCFS program and several related state and federal programs have been sufficient to potentially encourage larger herd sizes, specifically to produce additional methane emissions to capture for profit… a perverse incentive that has been documented in other carbon offsetting programs.”163 CARB does not address this evidence or account for these effects from its treatment of so-called “renewable hydrogen.”

Response: Please refer to responses to comment R22-32 and R22-33 in the RTC Document.

H38-29: The commenters states, “**C. CARB Fails to Analyze and Disclose Cumulative Effects of Expanded Biofuels and Fossil Fuel-Derived Hydrogen Production on Impacted Communities.**

An EIA must “discuss cumulative impacts of a project when the project’s incremental effect is cumulatively considerable.” Guidelines § 15130(a). Here, the EIA fails to examine the extent to which the Project’s increase of biofuels and hydrogen production will cumulatively impact communities near refineries where production of both fuels is reasonably foreseeable to occur. As detailed above, the production of biofuels and of hydrogen emit a wide range of pollutants. They are also produced in communities that are already bearing substantial pollution burdens, as illustrated in Exhibit 1. As CARB admits, the Project will lead to expansion of the production of both fuels and therefore increased localized impacts in production areas. CARB was therefore obligated to examine the cumulative effects of the Project. Its failure to do so violates CEQA. See Citizens to Preserve the Ojai v. County of Ventura (1985) 176 Cal.App.3d 421, 430-32 (EIR violated CEQA by omitting any analysis of major source of cumulative air pollution). “

Response: Please refer to responses to comment R17-3, R17-6, R22-3, and R22-32 in the RTC Document.

H38-30: The commenters states, “**VII. CARB Continues to Fail to Address and Mitigate the Impacts of Reliance on Direct Air Capture and to Adopt All Feasible Mitigation.**

In addition to the deficiencies enumerated in our September 30, 2024 comments with respect to DAC, CARB failed to analyze and disclose the energy impacts of the Proposed Amendments’ reliance on DAC. The CEQA Guidelines recognize that wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, may result in a significant environmental impact.164 “If analysis of the project’s energy use reveals that the project may result in significant environmental effects due to

wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, [an] EIR shall mitigate that energy use."165 Such impacts to energy use, utilities and service systems must be evaluated under CEQA.166

Here, the EIA does not meet the basic requirements for evaluating and mitigating energy use because it brushes aside possible significant energy-use-related environmental effects. As detailed in our September 30, 2024 comments, CARB's analysis shows that reliance on DAC will be substantial, but CARB fails to acknowledge these effects. For instance, CARB fails to examine the energy use of DAC including the strain that DAC reliance would put on the electric grid. CARB does not analyze the extent to which the reliance on energy-intensive DAC could amount to unnecessary consumption of energy resources because, as explained in our September 30 comments, it would function as an offset to fossil fuel use rather than a technology to mitigate residual or legacy emissions, as contemplated by the Scoping Plan.

CARB also fails to address the risk that new energy demand to power DAC risks competing with and adversely impacting critical transportation electrification efforts in California. CARB's rules require widespread deployment of ZEVs, which will increase demand for electricity to power the transportation sector. CARB fails to address the fact that the Project's DAC reliance could hamper necessary transportation electrification, thereby undermining attainment of state ZEV goals and reducing the many climate and air quality benefits of zeroemission transportation technology.

CARB acknowledges that DAC will increase electric load but fails analyze the associated environmental effects.167 Further, the DEIA states that "[o]n-site energy generation and storage to power the capture equipment are key mitigation strategies involving photovoltaic electricity generation, battery storage, and microgrid systems. Increased electricity demand would be met by increased generation, both on-site and off-site."168 As we noted in our September 30 comments, CARB provides no justification for making such an assumption. The Proposed Amendments do not require DAC projects to be powered exclusively by off-grid renewables and there is therefore no sound basis for assuming such power mix in the analysis. Without such a requirement, there is no basis for finding that DAC projects' impacts would in fact be mitigated.

Courts have found mitigation measures insufficient under CEQA when they failed to require actual mitigative action, and instead required reports or fee arrangements. See Cal. Clean Energy Comm. v. City of Woodland (2014) 225 Cal. App. 4th 173, 197 (finding that fair share fee mitigation measures that "do not require the City to undertake any action . . . stand in contrast to the 'CEQA require[ment] that feasible mitigation measures actually be implemented as a condition of development . . .'"); id. at 199 (finding a mitigation measure inadequate because it "requires the City to take no action other than to coordinate . . . to prepare a plan . . . [and] does not require any action by the City to mitigate the [impacts] it may discover to result [from the Project]."). Here, there is not even a requirement to plan, study, or report on adoption of the referenced on-site solar energy generation, much less any requirement that it actually be installed.

This baseless assumption is insufficient under CEQA. See King & Gardiner Farms, LLC v. County of Kern (2020) 45 Cal. App. 5th 814, 877–88 (finding that a mitigation measure relying on the purchase of credits "from an established agricultural farmland mitigation bank" or "equivalent program" was inadequate given that the record did not establish such banks or programs even existed or "were available."). In making such an unsupported assumption about the source of power generation for future DAC use, CARB is masking a potentially significant effect of the Project and failing to mitigate its adverse impacts on the environment."

Response: Please refer to response to comment R22-37 in the RTC Document.

H38-31: The commenters states, "**VIII. CARB Fails to Analyze and Mitigate the Effects of Massive Reductions in Support for Electrification of Medium and Heavy Duty Vehicles.**

CARB's second 15-day change includes major rollbacks to investments in electrification of medium and heavy duty vehicles ("MHDV") when compared to staff's original Proposal in the ISOR. CARB does not disclose or analyze the effects of these changes. Based on an independent analysis undertaken by ICCT, the changes amount to a loss of annual revenue ranging from $176 and $1,261 million from 2025-2035 under the current proposal; enough to subsidize the cost gap of nearly 100,000 Class 8 sleeper cabs between 2025 and 2035."169 The effect of lower number of ZEVs will be increased diesel emissions, which include toxic and carcinogenic diesel particulate matter as well as NOx and other pollutants. These adverse impacts will be felt most acutely in already overburdened communities near major transportation corridors. Moreover, the analysis fails to disclose how this shift impacts attainment efforts for a range of pollutants, including the 1-hour ozone standard, the 8-hour ozone standard, and the fine particulate matter standards. CARB fails to address these effects, and this failure violates CEQA."

Response: CARB notes that the commenter, who commented extensively during the noticed public comment period on the Recirculated Draft EIA in September 2024, made these comments regarding electrification of medium and heavy-duty vehicles for the first time during the final public hearing on this item, at the end of a public rulemaking process that began in December 2023. CARB provides the following response.

The commenter does not identify an environmental impact to the existing conditions baseline, but instead identifies a conditional modification to an element of the initial proposal that staff's analysis did not assume would result in quantified emissions benefits driven by the Proposed Amendments. The proposed regulation benefit analysis does not assume greater electrification nor hydrogen medium- and heavy-duty vehicle deployment as a result of program crediting, so potential air emission reductions assumed by the commenter for the previous proposal were not part of the analysis provided in the EIA.

H38-32: The commenters states, "**IX. CARB Continues to Fail to Analyze a Reasonable Range of Alternatives.**

As we noted in prior comments, there are fundamental flaws in CARB's analysis of alternatives to the Proposed Amendments. The alternatives chosen do not contribute to "a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation"170 because they fail to consider a ZEV-focused alternative that limits combustion fuels even though such an alternative 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"171 including air quality impacts. See Save Our Capitol! v. Dep't of Gen. Servs. (2023) 87 Cal. App. 5th 655.

In assessing whether a Project's alternatives analysis is deficient, "[e]xamining alternatives begins with project objectives because it is these objectives that a proposed alternative must be designed to meet." Golden Door Properties, LLC v. County of San Diego (2020) 50 Cal. App. 467, 546. Here, the RDEIA identifies "reduc[ing] the CI of fuels used in California's transportation sector" as the objective of the current LCFS regulation,172 and identifies several objectives of the Proposed Amendments, including improving California's "long-term ability" to support the "use of increasingly lower-CI transportation fuels and to improve the program's overall effectiveness," as well as "support[ing] the transition of biomethane fuel pathways for combustion out of transportation" and incentivizing ZEV fueling infrastructure buildout.173 By failing to analyze a ZEV-focused alternative scenario, the EIA ignores "an alternative that would feasibly attain" most Project objectives "while also lessening the project's significant impacts," and thus violates CEQA. See Save Our Capitol!, 87 Cal App. 5th at 703.

As commenters have explained throughout this rulemaking process, a ZEV-focused alternative could be achieved through a combination of measures including effective restrictions on crop-based biofuels, such as a cap on volumes, which the alternatives analysis does not evaluate.174 Rather than design and analyze an alternative that would limit the oversupply of credits for combustion fuels to the benefit of zero-emissions alternatives, CARB constructs and rejects Alternative 2. According to CARB, Alternative 2 is a "version" of the "Comprehensive EJ Scenario" that was analyzed and rejected in the ISOR.175 For numerous reasons, CARB's inclusion of Alternative 2 does not satisfy CEQA.

First, Alternative 2 does not include restrictions on biofuel volumes. Commenters have proposed such a limit since the initiation of this rulemaking.176 Further, modeling of an alternative regulatory design by Stanford researchers found that capping lipid biofuels, among other measures, would unleash an infusion of dollars from the LCFS to transportation electrification pathways, 177 thereby propelling deployment of electric cars and trucks beyond current levels. Such growth in zero-emissions transportation could provide substantial climate and air quality benefits when compared to the Proposed Amendments. A volume limit on biofuels would also reduce climate, global

hunger, and biodiversity harms, as well as localized harms in frontline refinery communities, as detailed above and in our prior comments.

Second, CARB creates a methane "cliff" in Alternative 2, abruptly ending all avoided methane crediting in 2025 even though groups that proposed credit restrictions suggested a phase out over time. An analysis of the EJ Scenario by Stanford University researchers explains why such an immediate end to all avoided methane crediting was misguided and led CARB to reach skewed conclusions about the EJ Scenario's effects. 178 The modeling of the Stanford experts "shows that a scenario consistent with many of the asks from the environmental justice community, can be constructed using CARB's modeling tools and consistent with many of CARB's stated objectives both from the Scoping Plan Update and as stated in the current LCFS amendment process."179

Third, CARB did not eliminate DAC credits as the EJ Scenario proposed. As we explained in our RDEIA comments, CARB claims in the DEIA that the exclusion of DAC in Alternative 2 would make it challenging to achieve the proposed 90% CI reduction by 2045, stating: "compliance with the regulation is difficult without direct air capture, so this scenario risks creating demand for credits that exceeds available supply beyond 2030."180 Yet this assertion is not adequately supported by the modeling provided.

Fourth, CARB's modeling does not allow for ZEVs to increase. Consequently, there is no way for the public to know what an alternative focused on ZEV support rather than combustion fuels would yield in terms of improved air quality and associated health benefits. CARB could have read ZEV numbers into the model to see what higher levels looked like, even if they could not do an optimization under CATS. CARB did not do this, and as a result, it did not accurately model what the proposed EJ alternative would yield in terms of air quality, health, and equity benefits. Fifth, CARB did not consider adjustments to the Proposed Amendments' CI benchmark that, when combined with restrictions on oversupply of biofuels and biomethane credits, could have served to meet the Project's objective of increasing the credit price while also reducing harms and distortions caused by these fuels and minimizing the pass-through costs.

CARB could have explored alternatives that included some or all of these adjustments. Indeed, the "illustrative scenario," modeled by Stanford researchers allowed for "reasonably similar credit prices to those proposed by CARB staff," and achieved "similar emission reduction objectives in the liquid fuels sector, and it does not rely on burning more fossil fuels in order to limit RD or livestock dairy book-and-claim crediting." 181 According to their analysis, the illustrative scenario achieved this "by relying on modest changes to assumptions about the mix of ZEV and emitting vehicles on the road that we believe more realistically depict what has and is actually happening in California since the Scoping Plan modeling was conducted."182 Although this illustrative scenario was presented to CARB in May of 2024, CARB failed to analyze it in the FEIA.

In sum, the numerous errors in CARB's analysis led CARB to explore an inadequate range of alternatives and to improperly conclude that measures proposed by

commenters and in the EJ Scenario are infeasible and will not meet the Project's objectives. CARB thus failed to provide critical information about how the Proposed Amendments could be modified to achieve most of the Project's objectives while avoiding environmental harms. These failures violate CEQA. See Save Our Capitol!, 87 Cal. App. 5th at 703."

Response: Section 15126.6(c) of the CEQA Guidelines addresses the selection of a range of reasonable alternatives. The range of potential alternatives to a proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. "[T]here is no ironclad rule governing the nature or scope of the alternatives to be discussed in an Environmental Impact Report (EIR or EIA in this case), other than the rule of reason." (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 576; *In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1162–1164; CEQA Guidelines, § 15126.6, subd. (a).) Section 15126(a) states the "EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which 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 and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives."

Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts." These guidelines were followed and complied with in Chapter 7 of the Draft EIA, which addresses four alternatives. The alternatives evaluated in the Draft EIA constitutes a reasonable range of alternatives, evaluates their potential to achieve most of the basic project objectives, and evaluates whether the respective alternative would avoid or reduce the potentially significant environmental impacts of the Proposed Amendments in compliance with CEQA requirements.

In addition, staff analyzed an alternative scenario in the staff report that closely aligned with the recommendations of the EJAC, including a cap on biomass-based diesel volumes, phaseout of avoided methane pathways (based on the scenario presented by Stanford at the May 31 LCFS community meeting, in which avoided methane was eliminated in 2024), as well as elimination of direct air capture crediting. The modeling inputs and outputs were posted for public review, as well as the air quality analysis workbook for the scenario. Alternative 2 in the EIA was designed to be consistent with the CEQA requirement that alternatives achieve most of the project objectives, while

also reducing or eliminating the environmental impacts of the Proposed Amendments. This precluded a cap on biomass-based diesel, because staff modeling indicated that fossil diesel consumption would have increased under a biofuels cap, with corresponding increases in air pollution.

H38-33: The commenters states, "**X. A Revised EIA Must Be Recirculated for Public Review and Comment.**

Because of the inadequacies discussed above, the environmental review conducted thus far cannot form the basis of a final EIA. As explained in our prior comments, CEQA requires lead agencies to prepare and recirculate a supplemental draft "[w]hen significant new information is added to an environmental impact report" after public review and comment on the earlier draft. Pub. Res. Code § 21092.1. The opportunity for meaningful public review of significant new information is essential "to test, assess, and evaluate the data and make an informed judgment as to the validity of the conclusions to be drawn therefrom." Sutter Sensible Planning, Inc. v. Sutter County Board of Supervisors (1981) 122 Cal.App.3d 813, 822; see also City of San Jose v. Great Oaks Water Co. (1987) 192 Cal.App.3d 1005, 1017. An agency cannot simply release a draft report "that hedges on important environmental issues while deferring a more detailed analysis to the final [EIR] that is insulated from public review." *Mountain Lion Coalition v. California Fish and Game Comm'n* (1989) 214 Cal.App.3d 1043, 1052.

To cure the flaws in the RDEIA identified in this letter, CARB must obtain substantial new information. This information is necessary to adequately assess the proposed Project's environmental impacts, and to identify effective mitigation and alternatives capable of alleviating the Project's significant impacts. This new information will clearly necessitate recirculation. CEQA requires that the public be given a meaningful opportunity to review and comment upon this significant new information in the form of a second recirculated draft EIA."

Response: Please see response to comment H38-4.

H38-34: The commenters states, "**Conclusion**

For all of the reasons described above, the EIA fails to comply with the requirements of CEQA. We respectfully request that CARB correct these errors and recirculate a revised draft EIA for public review and comment."

Response: The comment is conclusory in nature. Please see the responses provided above.

Comment Letter H65

2024-11-08
Orran Balagopalan
Leadership Counsel for Justice and Accountability

Comment H65 -1: The commenter states, “We previously submitted multiple sets of comments explaining that the Proposed Amendments greatly increase the incentive that large dairies with liquid manure handling systems (“factory farms”) have to expand their herd sizes and install anaerobic digesters. Both the Draft Environmental Impact Analysis (“DEIA”) and the Recirculated Draft Environmental Impact Analysis (“Recirculated DEIA”) omitted *any* analysis of the environmental impacts of herd expansion and included an insufficient, cursory analysis of the impacts associated with digesters.”

Response: The comment contains an introductory remark to their letter and notes previous comment letters submitted to CARB. Please see responses to specific comments as follows below.

Comment H65-2: The commenter states, “In its Final Environmental Impact Analysis (“FEIA”) and Responses to Comments, CARB continues to not take seriously the severe environmental impacts that the Proposed Amendments will cause. CARB doubles-down on its unsupported and contradictory position that herd expansion is not a reasonably foreseeable compliance response to the Proposed Amendments. CARB also fails to seriously contend with the study submitted by Leadership Counsel that attacks the EIA’s cursory analysis of the impacts associated with anaerobic digesters. CARB once again ignores the CEQA Guideline providing explicitly that lead agencies must adopt all feasible mitigation measures even when adopting a regulatory change, which include measures incorporated into the regulation itself. Additionally, CARB fails to provide any justification to support its decision not to analyze an alternative scenario that eliminates LCFS crediting for fuel pathways derived from manure methane emissions and achieves the State’s methane reduction goals through direct regulation. Lastly, CARB ignores its obligation to recirculate the DEIA to account for the significant changes in the Second 15-Day Notice. Approval of the Proposed Amendments, despite these numerous flaws, would be a clear violation of CEQA.”

Response: Please refer to Master Response 1 and response to 229-18 in the RTC Document and response to H38-32 above. The comment otherwise contains an introductory summary to their letter and notes previous comment letters submitted to CARB. Please see responses to specific comments as follows below.

Comment H65-3: The commenter states, "**I. The Proposed Amendments increase the already large incentive for factory farms to expand their herds and install anaerobic digesters.**

In comments on the DEIA, RDEIA, and 15-day Notices, Leadership Counsel explained that the Proposed Amendments provide a clear signal to factory farms to expand their herds and install digesters in the near-term, to take advantage of the lucrative financial benefits provided by the LCFS. For example, the Proposed Amendments would strengthen the LCFS' carbon intensity benchmark2, thereby increasing demand for LCFS credits and the money eligible fuel producers, including factory farms, receive for LCFS credits. CARB also proposes to draw a bright line between biomethane fuel pathways certified before, and after, the effective date of the regulation3, providing significantly more benefits to pathways certified in the next few years. Additionally, the Proposed Amendments provide that the rule limiting avoided methane crediting if there is a law, regulation, or mandate requiring methane reductions only applies to pathways that break ground after December 31, 2029."4

CARB attempts to downplay the effect of the Proposed Amendments, referring to "several changes to biomethane crediting under the LCFS program in the Proposed Amendments which, when compared to the existing regulation, reduce the long-term incentive provided for biomethane combustion in the LCFS."5 In support, they cite the numerous proposed modifications that restrict LCFS crediting eligibility after either the effective date of the regulation or December 31, 2029.6 However, CARB fails to recognize that this temporal restriction provides a strong signal to factory farms to expand their herds and install anaerobic digesters in the near-term, so that they may take advantage of the LCFS' lucrative benefits before they begin dwindling."

Response: Please refer to Master Response 1 in the RTC Document.

Comment H65-4: The commenter states, "**II. CARB fails to justify its refusal to acknowledge that herd expansion is a reasonably foreseeable compliance response to the Proposed Amendments.**

CARB has failed to comply with its obligation to analyze all reasonably foreseeable environmental impacts caused by a project they are proposing to approve. *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 396-98; *Ebbetts Pass Forest Watch v. Cal. Dept. of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 954-55. CARB has taken the position that herd expansion in response to the Proposed Amendments is too "speculative" to be subject to environmental review. However, CARB fails to support its position with substantial evidence, as CEQA requires. *Santa Rita Union School Dist. v. City of Salinas* (2023) 94 Cal.App.5th 298, 334-36. Leadership Counsel provided voluminous data demonstrating that expansion of herds is a reasonably foreseeable compliance response to the Proposed Amendments, no different than the installation of anaerobic digesters, increased production of fuel

derived from factory farm manure, or the myriad other reasonably foreseeable compliance responses CARB acknowledges.

In the Recirculated DEIA—the first instance in which CARB acknowledged the potential of herd expansion—CARB chiefly relied on data and analyses derived from the California Dairy & Livestock Database ("CADD") to support its position that the LCFS has no effect on the expansion of herds at factory farms, and that there is no statistically significant relationship between anaerobic digesters and herd expansion. Leadership Counsel submitted comments on the Recirculated DEIA explaining the myriad flaws in the CADD. On October 22, 2024, Leadership Counsel submitted comments on the CADD, which is still currently in draft form as CARB considers public comments.7 These comments explain in great detail the numerous defects in the CADD, including: (1) that CADD was developed using unreliable data; (2) staff used inappropriate methodologies to analyze data in the CADD; and (3) staff refused to conduct an appropriate data analysis to avoid the conclusion that there is a statistically significant relationship between digesters and herd expansion.

In its Response to Comments, CARB fails to address the numerous problems with CADD. CARB admits that there are discrepancies in the CADD data when compared to other sources.8 CARB nonetheless justifies relying on this data on the grounds that the CADD data sources are more comprehensive than any other source—a claim for which they provide no support. However, even if the data sources CADD relies on are *relatively* more comprehensive than other data sources, which they may not be, CARB has not demonstrated the CADD data are sufficiently accurate to support CARB's sweeping conclusion that the LCFS has no causal effect on herd expansion, particularly in light of the evidence presented by Leadership Counsel that shows the exact opposite.

Leadership Counsel also pointed out that CARB omitted a significant volume of dairies from its analysis: those that ceased to exist between 2017 and 2022. CARB asserts that "[f]acilities that shut down are not germane to concerns around expansion" and "[o]nly operational dairies (as of 2022) were considered because including dairies that shut down would mask the true growth rates of facilities that remained operational."9 CARB again provides no support for its claim. Nor could it. A majority of the dairies that ceased operations between 2017 and 2022 had no digester. Data on the dairies without digesters that reduced their animal populations to zero after LCFS crediting begin are obviously "germane to concerns around expansion.," as are data on the dairies without digesters that increased their animal populations after crediting began. If these dairies were included in CARB's analysis, CARB would have been forced to acknowledge the statistically significant relationship between anaerobic digesters and herd expansion. CARB also fails to justify its omission of dairies with "under-construction" digesters from its analysis, simply asserting that this omission was necessary because "some facilities that were initially selected to receive a digester grant … did not complete the digester installation."10

Due to these flaws,11 the data and analysis derived from CADD cannot constitute "substantial evidence" supporting CARB's conclusion that herd expansion is too speculative to analyze. *Holden v. City of San Diego* (2019) 43 Cal.App.5th 404, 410 ("Substantial evidence is evidence of ponderable legal significance that is reasonable in nature, credible, and of solid value"). CARB has not complied with its obligation to conduct a "thorough investigation" and "note its conclusion" that herd expansion is too speculative to be the subject of CEQA review. 14 Cal. Code Regs. § 15145; *County of Butte v. Dept. of Water Resources* (2023) 90 Cal.App.5th 147, 161. Approval of the Proposed Amendments without first analyzing the severe environmental impacts associated with herd expansion, particularly in pollution-burdened communities like the Central Valley, would be a clear violation of CEQA.

Response: Please refer to Master Response 1 and Response to Comment R14-7 in the RTC .

Comment H65-5: The commenter states, "**III. The DEIA did not analyze the out-of-state impacts caused by anaerobic digesters and herd expansion.**

The significant air quality, water quality, public health, and greenhouse gas impacts caused by the Proposed Amendments are not limited to California. More evidence substantiating the link between the LCFS and nationwide anaerobic digester installation has surfaced since Leadership Counsel commented on the Recirculated DEIA. On November 3, 2024, *The Gazette* published an article analyzing the link between the LCFS and anaerobic digester installations in Iowa.12 The article notes a significant increase in animal units on factory farms after they received a permit to install an anaerobic digester. Digesters in Iowa have caused significant environmental impacts, including almost 400,000 gallons of liquefied manure leaking from a digester into a creek, which the Iowa Department of Natural Resources found "resulted in the degradation of water quality and caus[ed] an elevated pollutant level."

> The article also makes the culprit for this increase clear:
>
> California is driving the development of anaerobic digesters across the farm belt. California requires fuel producers there to stay below certain carbon intensity thresholds or buy credits from low-carbon fuel producers in California or other states. If a digester facility in Iowa can supply Renewable Natural Gas to a pipeline that goes to California, the digester facility can sell its credits to California companies.

Because factory farms nationwide are eligible for LCFS crediting, the Proposed Amendments provide the same incentives to out-of-state and in-state factory farms. CEQA therefore requires that CARB analyze the out-of-state impacts of herd expansion and anaerobic digesters with the same rigor as it analyzed in-state impacts. CEQA requires lead agencies to analyze potentially significant impacts of proposed projects that may occur in "the area which will be affected by [the] proposed project." 14 Cal. Code Regs. § 15360. There is no limitation in the statute authorizing lead agencies to

avoid analyzing the impacts of a project simply because those impacts are felt out-of-state. CARB's assertion that "CEQA does not specifically require lead agencies to analyze out-of- state impacts" is a blatant misstatement of law.

CARB's assertion that "out-of-state impacts were an integral part of" its analysis lacks any support. CARB attempts to pass off its California-specific air quality, water quality, public health, and greenhouse gas analysis as generally applicable to the entire nation, stating: "For example, out-of-state dairy facilities already participate in the LCFS program, as disclosed in the ISOR, so the reasonably foreseeable impacts discussed in the EIA related to dairy facilities would generally apply to out-of-state as well as in-state facilities."13 However, the EIA's air quality impact analysis, for example, refers specifically to impacts in California, and relies on the Standardized Regulatory impact Assessment that, in turn, focused on California impacts.14 The EIA also analyzed the air quality impacts of the Proposed Amendments on each air basin *within California*.15 This analysis is not generally applicable nationwide. CARB cannot retroactively assert that its California-specific analysis is generally applicable nationwide to avoid CEQA's clear dictate to analyze all of the Proposed Amendments' impacts. 14 Cal. Code Regs.§ 15360."

Response: Please refer to Master Responses 1, 2, 3, and 4 in the RTC Document.

Comment H65-6: The commenter states, "**IV. CARB fails to justify its cursory analysis of the environmental impacts associated with anaerobic digesters.**

Leadership Counsel submitted comments, supported by a report from an environmental chemist, delineating the significant air quality, water quality, and greenhouse gas emissions caused by anaerobic digesters, which the FEIA undercounts. CARB appears to acknowledge that nitrous oxide emissions are worse from digestate than raw manure, but completely ignores the study provided by Leadership Counsel. Instead, CARB takes the confounding position that installation of anaerobic digesters at factory farms with open lagoons "does not mean that more digestate is produced."16 Unsurprisingly, CARB does not provide a single citation to support its position, which is glaringly inconsistent with its omission in the FEIA that the Proposed Amendments will cause significant impacts because they incentivize the installation of anaerobic digesters."

Response: See Master Response 1, Response to comment 299-18 and Response to Comment R14-7 in the RTC Document.

Comment H65-7: The commenter states, "**V. CARB's approach to mitigation is legally erroneous and not based in reality.**

Leadership Counsel advocated for the adoption of numerous feasible mitigation measures that would reduce the significant air quality, water quality, and greenhouse gas impacts caused by the Proposed Amendments. In response, CARB doubles down on its legally erroneous approach to mitigation, asserting that Leadership Counsel's

proposed mitigation "may be more appropriately viewed as suggested project alternatives, since they would change the design of the program rather than operate as additional measures for reducing impacts or as conditions of approval."17 CARB ignores the CEQA Guideline section that provides: "In the case of the adoption of a plan, policy, regulation, or other public project, *mitigation measures can be incorporated into the plan, policy, regulation, or project design*." 14 Cal. Code Regs. § 15126.4(a)(2) (emphasis added). CARB continues to confuse the Project before it (the Proposed Amendments) with the individual projects (e.g., anaerobic digesters) that are incentivized by the Proposed Amendments. CARB has the authority—and the obligation—to incorporate mitigation measures into the Proposed Amendments.

Each of the mitigation measures Leadership Counsel advocates for its feasible. CARB claims that mitigation measures which would reduce the financial benefits for installing anaerobic digesters are infeasible because they contradict the 2022 Scoping Plan, which relies on methane capture to achieve the State's methane reduction goals.18

CARB's position relies on a false premise—that factory farms will only reduce their methane emissions if they are incentivized to do by the LCFS. However, in Senate Bill 1383 the State Legislature mandated that CARB develop and implement direct regulation of the dairy and livestock industry. CARB itself acknowledged in its 2022 Scoping Plan that direct regulation of the sources of methane emissions is integral to the State's methane emissions reduction strategy.19 CARB's stated strategy for reducing the emissions of short-lived climate pollutants, most notably methane, is a "carrot-then-stick" approach.20 This approach begins with the incentive-based, indirect regulations, such as the LCFS (the "carrot"), and then transitions into direct regulation, similar to those that have been promulgated for the landfill and oil and gas systems (the "stick"). The 2022 Scoping Plan ultimately recommends the carrot and stick approach for manure methane.21 It is feasible to limit LCFS crediting for environmentally damaging dairies and factory farms without sacrificing the State's methane reduction goals. CEQA requires CARB to do so."

Response: Please refer to response to comments 299-16 and 299-18 in the RTC Document.

Comment H65-8: The commenter states, "**VI. CARB must analyze an alternative scenario that achieves the State's methane reduction goals without causing the severe environmental impacts associated with factory farm herd expansion and anaerobic digester usage.**

CARB failed to provide any explanation for its failure to consider an alternative scenario that eliminates LCFS credits for fuel derived from manure emissions and achieves methane emission reductions through direct regulation. CARB simply asserts that "the Draft EIA presents a reasonable range of alternatives, evaluates their potential to achieve most of the basic project objectives, and evaluates whether the respective alternative would avoid or reduce the potentially significant environmental impacts of the

Proposed Amendments in compliance with CEQA requirements."22 CARB's failure to even attempt to justify its omission of this alternative scenario is a clear violation of CEQA. *See Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564 (referring to the discussion of mitigation and alternatives are "the core" of CEQA analysis)."

Response: Please refer to response to comment H38-32. As explained above, Alternative 2 in the EIA was designed to be consistent with the CEQA requirement that alternatives achieve most of the project objectives, while also reducing or eliminating the environmental impacts of the Proposed Amendments. This precluded a cap on biomass-based diesel, because staff modeling indicated that fossil diesel consumption would have increased under a biofuels cap, with corresponding increases in air pollution

Comment H65-9: The commenter states, "**VII. The DEIA must be recirculated to account for the significant proposed change in the Second 15-Day Notice.**

After CARB issued the Recirculated DEIA, CARB issued the Second 15-Day Notice, which made a monumental change to the Proposed Amendments. The Proposed Amendments now provide that the proposed amendment limiting avoided methane crediting if there is a law, regulation, or mandate requiring methane reductions only applies to pathways that break ground after December 31, 2029.23 The additional years of credit generation awarded by this last-minute amendment will greatly increase the incentive dairies and factory farms have to expand herds and install digesters, thereby increasing the severity of the significant and unavoidable air quality, water quality, greenhouse gas, and public health impacts that CARB acknowledges, and those that it does not. CARB asserts that the changes in the Second 15-Day Notice "merely clarify, amplify, or make insignificant the modifications in the EIR, so recirculation of the EIA was not necessary."24 CARB provides no support for this assertion. CEQA requires CARB to recirculate the DEIA and update the analysis to account for the changes in the Second 15-Day Notice. *See* Pub. Res. Code § 21092.1; 14 Cal. Code Regs. § 15088.5; *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1993) 6 Cal.4th 1112, 1130; *Western Placer Citizens for an Agricultural & Rural Environment v. County of Placer* (2006) 144 Cal.App.4th 890, 899-903.

Response: Please see response to comment H38-4.