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June 15, 2020

Alexander "Lex" Mitchell
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on Proposed Changes to the ADF Amendments

Dear Mr. Mitchell:

Thank you for the opportunity to comment on the changes, proposed by staff of the California Air Resources Board (CARB) during your June 4th webinar, to the recently-approved amendments to the Alternative Diesel Fuels (ADF) regulation. The National Biodiesel Board (NBB), California Advanced Biofuels Alliance (CABA), and the undersigned member companies offer the following comments to ensure the proposed changes are consistent with the Board's direction. We are encouraged by a number of the proposed changes but remain concerned about other changes that are inconsistent with the Board's direction and the Executive Officer's commitment to implement that direction, as discussed below.

As a preliminary matter, we appreciate CARB staff confirming at the webinar a number of the basic tenets that are foundational to the ADF regulation. Among these tenets are that the ADF regulation aims to preserve the emission benefits of existing fuel regulations, there are no oxides of nitrogen (NOx) increases from the use of biodiesel in new technology diesel engines (NTDEs), and that NOx reductions from the use of renewable diesel offset NOx increases from biodiesel blends, including B5 and lower (those blends with 5% or less biodiesel content).

Support for the reduction in the RD to BD ratio from 3.75 to 1 to 2.75 to 1 in the "Approved ADF Formulations" provision

We appreciate and support the proposed change that would reduce the renewable diesel to biodiesel ratio (RD to BD ratio) contained in the approved ADF formulation provision[1]. As we noted in our testimony at the April 23rd hearing, the language approved by the Board erroneously reflected a RD to BD ratio of 3.75 to 1, which in turn was translated to a requirement that a minimum of 75% RD be blended with a maximum of 20% biodiesel (R75/B20) in order for a RD/BD blend to be approved as a

[1] Section (a)(1)(B), Appendix 1, Subarticle 2, 13 CCR 2293 et seq.

NOx-neutral ADF formulation. But as we pointed out, the approved language was both mathematically incorrect and not supported by CARB's own testing data. Accordingly, the Board directed the Executive Officer to work with stakeholders to revise the ratio to reflect a maximum RD to BD ratio of 2.75 to 1, which would translate to R55/B20 as contained in your proposed change.

Opposition to blanket prohibition against formulations containing RD to BD ratios less than 2.75 to 1 (R55/B20), even if NOx neutrality can be demonstrated with the lower ratio(s)

The prohibition conflicts with the Board's direction. Unfortunately, the other proposed changes in the Approved ADF Formulations language misinterpret and contradict the Board's clear direction[2]. Rather than providing the Executive Officer discretion to approve a RD to BD ratio less than 2.75 to 1 that is shown to be NOx-neutral, the proposed changes would establish the 2.75 to 1 ratio as a floor, allowing the Executive Officer to adjust the ratio only upwards based on the proposed triennial program review. This clearly contradicts with the Board's direction since the entire discussion at the hearing on this issue was about providing the Executive Officer discretion to approve a 2.75 to 1 ratio and lower ratios as appropriate and in response to stakeholder comments at the hearing[3]. The Board expressed its desire for the Executive Officer to work with stakeholders to provide a resolution that addresses the "dynamic environment" and the "dataset that is involved"[4] (that is, in response to current and developing information).

The justification for the prohibition is based on flawed assumptions. The primary justification cited by staff for not allowing EO approval of a formulation with less than 2.75 to 1 RD/BD content is that the "surplus" RD in the system is needed to offset projected statewide NOx emissions from B5 blends (blends with 0 to 5% biodiesel content). This is ostensibly supported by the staff analysis posted for the webinar[5], which uses the 2018 illustrative compliance scenario as a prediction that growth in biodiesel volume in the 2020-2023 timeframe will far outstrip growth in renewable diesel sales, as shown in Table 1 below, thereby resulting in a potential shortfall in the RD "needed for full NOx mitigation of BD Volume" starting in 2020:

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[2] Board member Berg, "*So a suggestion in the context of 15-day changes could be discretion, delegation, to the Executive Officer to respond to that growing body of data and make adjustments as appropriate in terms of the -- moving the two lab to one lab, for instance, as well as the previously defined status of the RD -- the renewable diesel biodiesel blend. That would still require 15-day changes. It would provide additional opportunity for us to work with the stakeholders to nail the language down. But where it would be going is the delegation to the Executive Officer, realizing when you talk out methods and testing, it's a dynamic environment and the ability to respond as that data set is involved seems to me to be an appropriate path.*" [Emphasis added.] Given the issue raised by NBB and others that she was responding to involved both the lab procedure and the appropriateness of the RD to BD ratio, it was clear that the context for the delegation was for the Executive Officer to have discretion to adjust the RD to BD ratio in whatever direction is warranted under the circumstances, including a downward adjustment provided NOx neutrality is maintained. Board Transcript, http://ww3.arb.ca.gov/board/mt/2020/mt042320.pdf, April 23, 2020 hearing, at 114-115.

[3] See, e.g., NBB comments, https://www.arb.ca.gov/lists/com-attach/17-adf2020-UD5TNwRnVloHYghn.pdf, at 6.

[4] Berg, *op cit.*

[5] https://ww2.arb.ca.gov/sites/default/files/2020-06/Staff_Analysis_ADF_Public_Formulation_Blend_Level.xlsx.

Table 1. Historical and Future Biodiesel, Renewable Diesel, Conventional Diesel, and Total Diesel Demand Volumes (CARB, June 4th webinar)

Year	Historical Volumes[1]									Future Volumes[2]			
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BD Volume as B100 (million gal)	13	20	60	67	126	163	170	184	212	350	425	500	500
RD Volume as R100 (million gal)	1.8	8.8	117	113	165	256	335	384	618	650	750	850	900
RD Volume as R100 needed for full NOx mitigation of BD Volume as B100[3] (million gal)	26	40	120	134	252	326	340	368	424	700	850	1000	1000
Conventional Diesel Volume (million gal)	3585	3575	3498	3487	3466	3382	3342	3210	2988	2688	2540	2392	2374
Total Diesel Demand[4] (million gal)	3600	3604	3675	3667	3757	3801	3847	3778	3818	3688	3715	3742	3774

(reproduced from the staff analysis, internal citations omitted.)

While the 2020-2023 renewable diesel volumes in Table 1 are relatively in line with the expected trajectory of RD sales based on current market conditions, the projected biodiesel volumes in the same time period significantly overestimate BD volumes based on current trajectories. There is no real-world basis for Table 1's projected 65% growth for biodiesel from 2019 to 2020, followed by a 21% growth the next year. By contrast, Table 1 projects a 5% and 15% year-over-year growth rate for renewable diesel in 2020 and 2021, respectively. This growth rate for biodiesel is simply not borne out by the current market. In fact, RD volumes and growth rates have been several multiples of biodiesel's volume and growth rates since 2015, not the other way around, and there is no reason to believe that trend will reverse itself in the 2020-2023 timeframe. But because Table 1 projects an unrealistic growth rate for biodiesel, it results in a "shortfall" of RD needed for full NOx mitigation from biodiesel, which in turn leads to the proposal's prohibition against the Executive Officer approving a ratio below 2.75 to 1, even if he finds that, in a given year, there is ample renewable diesel actually in the market to provide sufficient offsetting.

Instead of relying on the illustrative scenario as a prediction with certainty, if we extrapolate linearly the BD and RD volumes in 2020-2023 based on the 2015-2019 data, we get a very different result, as shown in Table 2:

Table 2. Historical and Future Biodiesel, Renewable Diesel, Conventional Diesel, and Total Diesel Demand Volumes (NBB, linear extrapolation from 2015-2019 LCFS data)

Year	Historical Volumes[1]									Future Volumes[2]			
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BD Volume as B100 (million gal)	13	20	60	67	126	163	170	184	212	229	248	268	287
RD Volume as R100 (million gal)	1.8	8.8	117	113	165	256	335	384	618	662	765	869	972
RD Volume as R100 needed for full NOx mitigation of BD Volume as B100[3] (million gal)	26	40	120	134	252	326	340	368	424	458	496	536	574
Conventional Diesel Volume (million gal)	3585	3575	3498	3487	3466	3382	3342	3210	2988	2688	2540	2392	2374
Total Diesel Demand[4] (million gal)	3600	3604	3675	3667	3757	3801	3847	3778	3818	3579	3553	3529	3633

(based on the staff analysis, internal citations omitted.)

Projecting BD and RD volumes for 2020-2023 based on current market trends, Table 2 shows that in this scenario, there would be far more RD than is needed for full NOx mitigation of the BD volume (e.g., in 2020, 458 million gallons of RD would be needed, but 662 million gallons are projected based on the 2015-2019 sales growth as shown in the LCFS program data, a surplus of over 200 million gallons that are sufficient for full NOx mitigation, including B5).

Instead of relying on flawed illustrative projections, the Executive Officer should have the ability to adjust the RD/BD complying ratio either down or up, consistent with the Board direction to reflect real world conditions. Of course, both Table 1 and Table 2 constitute only projections of what might happen in that timeframe. The 2018 LCFS illustrative scenario is merely that, an illustration of a fuel mix that can meet the LCFS carbon reduction targets; the illustrative scenario is neither a crystal ball prediction of what fuel mix will actually occur, nor is it a prediction of the only fuel mix that can meet the LCFS target. But not having crystal ball certainty of the volumes that will occur does not mean the Board should artificially constrain biodiesel volumes in anticipation of a scenario that may never happen. Instead, the reasonable solution is for the Executive Officer to assess the volumes on an annual basis, and based on that assessment, determine whether there are sufficient RD volumes to fully offset the NOx from the BD volumes over the same period. This is straightforward; as the CARB staff's analysis shows, the Executive Officer simply needs to determine whether there are at least twice as many gallons of RD as there are BD in the same timeframe (as shown in both Table 1 and 2) in order to confirm full NOx mitigation.

Uncontested CARB-certified RD/BD blend shows formulations with less than 55% RD can be NOx-neutral. It also follows that, if the Executive Officer determines there are sufficient volumes of RD to provide full NOx offsets in the system, the Executive Officer should be able to certify a B20 formulation with less than R55 as long as that formulation can be shown through testing to be NOx neutral. In fact, we know that RD/B20 blends with less than 55% RD can be NOx neutral because CARB itself certified such a formulation for the Renewable Energy Group (REG), and there has never been any suggestion that CARB had any issues with that certification.[6]

Support for new requirements involving chain-of-custody and observation of fuel blending and emissions testing in the proposed single-engine certification testing protocol

We understand, appreciate, and support the proposed new chain-of-custody requirements, along with the fuel blending and emissions testing observation requirements. Irrespective of what the remaining certification elements ultimately evolve into, we believe these measures will help provide needed certainty by increasing CARB's and stakeholder confidence in the test results.

Opposition to the single-engine screening and certification testing procedure, as a whole, because it is inconsistent with the Executive Officer's commitment pursuant to the Board's direction

We oppose the suggested change to introduce a whole new screening step involving a single engine tested at a minimum of three labs for several reasons. First, it misinterprets the Board's clear direction for simplifying, not further complicating, the certification procedure and is therefore inconsistent with that direction and the Executive Officer's commitments. Moreover, it is an inappropriate substitute for the full round robin testing requested by NBB[7], thereby presenting a missed opportunity for CARB staff to develop collaboratively with stakeholders a meaningful,

[6] See EO G-714-ADF06, https://ww2.arb.ca.gov/resources/documents/alternative-diesel-fuels-executive-orders.
[7] NBB *op cit*. at 9.

workable replacement for the problematic 2-lab certification procedure that the Board expressed its desire to simplify in the first place.

The proposed 3-lab screening increases complexity, rather than simplifying certification, conflicting with the Board's direction and Executive Officer's commitment. While intended to result in an alternate certification protocol using a single engine at a single lab, getting to that protocol involves an unprecedented, needlessly complex, and expensive multi-lab screening, testing and protocol development process that runs counter to the Board's direction to develop a simplified, single-lab certification procedure. The proposed change to include a new multi-lab screening process will increase complexity, costs (even greater than the original 2-lab certification procedure the proposed alternative is intended to supplant), and uncertainty. While the costs for the screening itself are not as high as performing certification testing, overall costs of the screening plus certification testing will likely be greater than the original procedure adopted by the Board (and for which the Board directed simplifications) when the costs for 3 different labs and sufficient fuels to cover each screening are accounted for.

The proposed 3-lab screening/1-lab certification procedure is an inappropriate proxy to true, scientifically-valid round robin testing. It appears that the proposed new screening, which ostensibly leads to a single-lab certification procedure, is a misguided attempt to substitute for round-robin testing that misses the important point we were raising in our 45-day comments. To reiterate, NBB raised the need for a full, round-robin testing program to be undertaken by CARB in partnership with stakeholders to identify and quantify the interlaboratory variations that CARB's recent testing suggested. This is the standard and scientifically-accepted best practice for developing and improving a test method when there are significant differences in test results among different labs.[8]

The objective of such a round-robin testing program is to generate a single, standardized procedure, using a single engine and fuel at any qualified lab, which any applicant could then follow to obtain certification of a NOx-neutral blend or additives package. Instead, the proposed screening ignores the issue of interlaboratory variability altogether and establishes an individualized screening and certification process that will vary for each applicant. As such, the new screening fails to address NBB's comments with regard to the need for a true round-robin testing program. The NBB's suggestion was aimed at identifying the issues with the original certification procedure in a scientifically valid manner and quantifying their effects so that an improved certification procedure can be adopted, which can then be used as a single-lab certification procedure. The proposed changes would turn that concept on its head; instead of undertaking a multi-lab round robin program in which CARB would be a participant invested in the results, the proposed changes would place the protocol development burden entirely on formulator applicants. Further, instead of applying an enhanced and standardized single-lab procedure that every applicant would then use for every formulation to be certified, the proposed changes would essentially require every applicant to

[8] Indeed, every ASTM test procedure in CARB's fuel regulations were developed through round-robin testing to publish the precision and bias (repeatability and reproducibility), both mandatory parts of all standardized test methods.

develop a new protocol for every formulation seeking certification, effectively nullifying the concept of a standardized certification procedure.

The proposed changes would introduce further uncertainties into the certification procedure. The proposed changes are unclear in a number of ways. For example, it is not clear whether the screening tests at 3 facilities are required just once to obtain an industry list of approved labs. Further, it is unclear whether the 3-lab testing must be undertaken by each entity just once or if this must be included for each project in which certification testing will be performed. We would appreciate clarification on the applicability of the screening process.

More importantly, since CARB would not be invested as an active participant in the development of an enhanced, standardized 1-lab procedure, the proposed changes would introduce substantial uncertainty in the testing results. This is because CARB can raise doubts about the testing after a formulation is certified and invalidate the results months or even years later with its own testing through U.C. Riverside's CE-CERT lab. The biofuels industry needs greater certainty, rather than more uncertainty, and the proposed screening procedure does little to improve certainty.

The approved certification procedure and these proposed changes continue to illustrate an illogical bias toward biodiesel blends. As noted at the April 23rd hearing, CARB has preemptively declared that at least one non-biodiesel ADF fuel, dimethyl ether (DME), will not be subject to the certification procedure[9]. There is no logical basis for this; CARB has already confirmed DME as an emerging ADF, and the premise for the ADF regulation has always been to establish the same ground rules applying to new and emerging petroleum diesel substitutes for which commercialization in California is being sought[10]. Further, CARB's preemptive declaration regarding DME makes little sense: DME, a fuel for which CARB has very little emissions data when it is used as a transportation fuel in California, is being exempted from the enhanced certification procedure and the proposed changes, but those same new requirements would be applied to biodiesel/renewable diesel blends, even those that were certified through extensive testing as NOx-neutral by CARB and for which CARB had previously expressed no issues or doubts with those certifications.

The proposed changes represent a missed opportunity for a truly collaborative test development program. To our knowledge, the June 4th webinar was the first time anyone in the biomass-based diesel sector was made aware of CARB's current thinking to address the Board's concerns as discussed above. This is a missed opportunity for meaningful collaboration since many of these issues could have been identified and addressed had the industry been consulted when the proposed changes began to be conceptualized.

[9] Board hearing transcript *op cit.*, at 102-103.
[10] See 13 CCR section 2293 ("Purpose").

The phaseout of certified formulations and additives needs to be extended six months to ensure an orderly transition to the recently adopted amendments.

Finally, we continue to recommend a reasonable six-month extension of the phaseout for current certifications, especially since the amendments process is ongoing. We are already halfway through 2020, and with the ADF rulemaking still months away from being finalized, the January 2021 compliance deadline is simply unreasonable. Formulators will need months to work through the new requirements once they are finalized, identify appropriate test labs, develop and secure testing agreements and protocols, conduct the tests, and take numerous other steps to comply. Further, producers need additional time to ensure an orderly transition to the recently adopted requirements and any subsequent changes CARB finalizes and implements. Particularly affected are those producers whose infrastructure and operations were built around the production of the certified additives and blends. Producers need time to install new mixing tanks, establish new supply chains, and make numerous other infrastructure and operational changes to meet the new requirements. It is by no means a trivial effort to transition from one business model to another within the amendments' compressed timeframe, and the current pandemic has made such an orderly transition that much more challenging.

Recommendations

Consistent with the CARB Board's direction, we recommend CARB staff:

1) Revise the proposed changes so that the Executive Officer can adjust the 2.75 to 1 ratio (R55/B20) up or down based on an annual or more frequent review of the biomass-based diesel volumes in the LCFS reported dataset. Conduct this review in conjunction with the existing requirement to determine the NTDE penetration rate, as provided under 13 CCR section 2293.6(a)(4) (Sunset of Biodiesel In-use Requirements).
2) Revise the proposed changes to allow approval of an ADF formulation with up to 20% biodiesel and less than 55% renewable diesel that has been shown through CARB-approved testing as NOx neutral, provided the RD to BD ratio in the LCFS program was at least 2 to 1 in the preceding quarter.
3) Revise the proposed changes to replace the screening procedure with a simplified, single-lab/engine/fuel standardized certification procedure that can be applied by anyone seeking certification for their blend/formulation, particularly for blends and formulations for which CARB had not previously identified any issues.
4) Work with NBB and other stakeholders to develop and implement a scientifically valid, round-robin testing program to replace the recently-approved 2-lab procedure.
5) Extend the phase out date for currently certified NOx additives and formulations to July 31, 2021 to provide a more orderly transition for producers to adjust their operations.

Conclusions

We appreciate the good working relationship we have developed with CARB over many years and look forward to working cooperatively and productively to address the concerns we raised above. Adoption of these recommendations will help ensure that biomass-diesel fuels will continue to play the strong role they have played historically and must continue to play while California works toward a much lower carbon future.

Sincerely,

/s/
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Director of State Governmental Affairs, NBB

/s/
Rebecca Baskins
Executive Director, CABA

/s/
Tyson Keever
Chief Operating Officer
SeQuential and Crimson Renewable Energy

/s/
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