September 2, 2025

To: New Mexico Environment Department

Re: Proposed New Rule 20.2.92, Clean Transportation Fuel Program

Clean Air Task Force (CATF) is pleased to submit comments on the New Mexico Environment Department's May 2025 Proposed Rule for the Clean Transportation Fuel Program.

CATF is a global advocacy organization working to safeguard against the worst impacts of climate change by catalyzing the rapid development and deployment of low-carbon energy and other climate-protecting technologies. We greatly appreciate the work and transparency that New Mexico Environment Department (NMED) has invested in implementing the Clean Transportation Fuel Program (CTFP), which is an important step in decarbonizing the transportation sector. CATF believes that a clean fuel standard can be a powerful tool for eliminating transportation sector emissions if implemented wisely. Our recommendations stem from a decade and a half of experience with clean fuel standards, including extensive engagement on this policy in California. We draw from other states' experiences and learnings towards ensuring the deployment of the most health- and climate-beneficial technologies.

CATF applauds NMED for presenting a proposed rule that thoughtfully considers many aspects of a clean fuel standard (CFS). We appreciate our engagement with NMED thus far and NMED's consideration of CATF's previous comments[1] on the December 2024 draft rule. We also favor aspects of the proposal such as the careful treatment of book-and-claim accounting, the inclusion of the fuel supply equipment credit, and the robust monitoring, reporting, and verification requirements. The feedback below is focused on issues where CATF sees clear opportunities to strengthen the CTFP.

In sum, we respectfully recommend the following:

I. Utilize robust lifecycle analyses that appropriately account for indirect land-use change (ILUC) emissions to deter the use of biofuel feedstocks that negatively impact food markets and result in expanded land use that result in emissions increases and other detrimental environmental impacts;
II. Limit the use or eligibility of food crop feedstocks that can negatively impact food markets and drive destructive land-use changes;
III. Eliminate negative emission credits, which will undermine investment in and use of low- and zero-emission technologies and fuels; and
IV. Eliminate book-and-claim credits or at least limit those credits to sources within New Mexico.

[1] Discussion Draft of the Clean Transportation Fuel Program Rule, CATF comments, January 17, 2025

I. The importance of a robust lifecycle analysis

A. Strong lifecycle analyses

A CFS should utilize the best available models and other tools for assessing the full lifecycle greenhouse gas emissions associated with transportation fuels, including significant indirect emissions from indirect land use change. CFSs hinge on point estimates of fuels' carbon intensity (CI). A comparison between a fuel's CI score and the annual CI requirement established by a CFS dictates whether—and to what extent—that fuel generates deficits or credits. The CI of different fuels will shape compliance strategies, which in turn will drive investment decisions in multiple sectors (agriculture, refining, vehicle manufacturing, energy retailing, etc.). Accordingly, regulators must ensure that CI determinations are made using tools that incorporate the best data, the most defensible assumptions, and the strongest, most up-to-date, and most comprehensive analytic processes for determining the attributional and consequential effects of policy-induced fuel production and consumption. We look forward to reviewing the forthcoming NM-GREET lifecycle analysis model to ensure it meets these characteristics and to working with NMED on its implementation.

Strong lifecycle analyses assess and include emissions from indirect land use change (ILUC). While ILUC emissions vary by fuel, most conventional biofuels cause ILUC emissions, with some causing significantly higher emissions (as discussed in Section II). A CFS that ignores or severely discounts those emissions essentially puts its finger on the scale in favor of land intensive, food-crop based biofuels and does so at the expense of other alternative low- and zero-carbon fuels. The result is fewer actual GHG emissions than the CFS system purports to achieve.

B. Improve carbon intensity values

The updated CI values in table 5 for renewable diesel (NMRD001, 59.1 g CO_2e/MJ) and biodiesel (NMBD001, 56.6 g CO_2e/MJ) appear to include ILUC values of 25.9 g CO_2e/MJ and 25.67 g CO_2e/MJ, respectively, which is more closely aligned with ILUC component values for soybean biodiesel or renewable diesel assessed by other regulators, such as within the California Low Carbon Fuel Standard (CA LCFS), which uses a value of 29.1 g CO_2e/MJ.

The CI values that NMED proposes for several crop-based biofuels, however, remain optimistically low, particularly the carbon intensities for fuels derived from vegetable oils. Indeed, many are well below the values found in other carbon intensity assessments, such as the Global Biosphere Management Model (GLOBIOM).[2] As noted in Section II below, the scale of the biofuel market in the United States, which is driven by state clean fuel

[2] Understanding Uncertainty in Market-Mediated Responses to US Oilseed Biodiesel Demand: Sensitivity of ILUC Emission Estimates to GLOBIOM Parametric Uncertainty, Environmental Science & Technology, December 2024

standards as well as the federal Renewable Fuel Standard, significantly impacts global vegetable oil markets. Shifting more crop-seed oils from food markets to fuel production will likely increase vegetable oil prices and lead to the expansion of palm oil production to backfill the demand for vegetable oils in food and other markets. The expansion in palm oil production will result in higher indirect land use impacts and higher net GHG emissions. As described in Section II, NMED must guard against the overuse of fuels made from vegetable oils and other hard-to-assess feedstocks by implementing guardrails on the number of credits such fuels can generate within the CTFP.

Separately, as CATF noted in previous comments[3], it appears that NMED has substituted sorghum ethanol's ILUC value for canola biodiesel's ILUC value, and vice versa, based on a comparison with the values used in the CA LCFS. These values should be updated accordingly.

II. NMED must use safeguards to limit food crop biofuel feedstocks

Safeguards are needed in a CFS program to prevent regulated entities from expanding the use of feedstocks that pose significant risks to food markets and global emissions. Robust and reliable lifecycle analyses are essential to a functional clean fuel standard, but LCAs alone are not sufficient to protect against the adverse impacts of diverting biofuel feedstocks for CFS compliance. Even the best LCAs struggle to capture market-mediated impacts of increased demand for crop seed-based biofuels, especially emissions from indirect land use changes that occur as global agricultural markets reestablish supply and demand equilibrium following new policy-induced demand for bioenergy crops. For example, crop seed oils,[4] such as soy and canola oil, are globally traded food commodities that, when used to make biofuels, are most often backfilled by expanded land use and crop production. These market substitution and land use impacts are significant, difficult to fully quantify, and typically not fully captured in an LCA.

New Mexico can protect against these adverse impacts by limiting the extent to which regulated entities can base compliance on the sale of fuels that have CI scores with a relatively high degree of uncertainty. The limits can be adjusted upward if, for example, the fuel producer demonstrates that additional volumes of the fuel can be produced in ways that do not require additional land use.

A. The growth in crop-seed oil-based fuels is already impacting food markets

According to the U.S. Department of Agriculture and market analysts, crop-seed oil-based diesel has impacted the soy oil market so significantly that in 2023, for the first time in

[3] Discussion Draft of the Clean Transportation Fuel Program Rule, CATF comments, January 17, 2025

[4] "Crop-seed oils" include oils pressed from soy, canola, and other crops that are otherwise grown for food markets.

history, the U.S. began importing more soy oil than it exported.[5] Soy oil demand for biofuels has grown to half the total soy oil use in the United States.[6]

Pursuant to the statutory duties of the NMED, we strongly encourage NMED to finalize the rulemaking with effective limits on the amount of crop-seed oil-based biofuels that can be used for compliance. The current and projected growth in demand for crop-seed oil feedstocks pose significant risks because of substitution effects in global markets. Crop-seed oil markets are global and highly correlated. Significant use of crop-seed oil feedstocks to make transportation fuels will likely lead to expanded land clearing, deforestation, and/or increased palm oil production and associated emissions and ecosystem impacts.[7]

B. Lessons learned from the California LCFS

New Mexico can learn important lessons from California's implementation of its CFS and avoid some of the negative results of California's failure to set limits on seed-oil-based biofuels when it launched its CFS. According to the California Air Resource Board's (CARB) reporting, renewable diesel from bio-oils[8] (mostly used cooking oil, tallow, and crop-seed oils) are by far the largest source of credits in California's LCFS.[9]

According to the most recently available data, bio-oil based diesel accounted for 74% of total diesel fuel consumption in California in 2024.[10] Since CARB has tracked feedstock data beginning in 2021, quarterly use of crop-seed oil feedstocks (soy and canola oil, otherwise used for cooking and food ingredients) has grown rapidly to account for 34% of the state's diesel market in 2024.[11] Corn oil derived from ethanol production is also a major feedstock but is considered a non-edible byproduct.

A recent study from the University of California at Davis projects that 100% of the state's 3.5 billion gallons of diesel demand could be met by bio-based diesel by 2030.[12] Such a massive influx of crop-seed oil-based diesel fuel not only poses the risk of very large indirect land use impacts and a *potential net increase* in GHG emissions, it also undermines CARB's efforts to bolster carbon credit prices and support the commercialization of truly zero- and low-carbon fuels that can be scaled in a sustainable

[5] US shifts to net soybean oil importer on biofuel boom, S&P Global, October 12, 2023.
[6] Biofuel demand to soak up more than half of US soy oil production next year, USDA says, Reuters, July 11, 2025
[7] *See* Stephanie Searle, *How rapeseed and soy biodiesel drive oil palm expansion*, ICCT (July 2017) https://theicct.org/sites/default/files/publications/Oil-palm-expansion_ICCT-Briefing_27072017_vF.pdf at 1.
[8] We use the broader term "bio-oils" to include crop-seed oils as well as waste oils, used cooking oil, and corn oil.
[9] Low Carbon Fuel Standard Reporting Tool Quarterly Summaries-Graphs, CARB, April 30, 2025
[10] Calculated from Low Carbon Fuel Standard Quarterly Data Summary Spreadsheet, CARB, July 31, 2025
[11] Calculated from Low Carbon Fuel Standard Quarterly Data Summary Spreadsheet, CARB, July 31, 2025
[12] Fuel Portfolio Scenario Modeling of 2030 LCFS Targets, U.C. Davis, July 6, 2023

manner. To address these issues, CARB instituted limits on the availability of credits for crop-seed oil-based fuels in California's LCFS.[13]

In New Mexico, there is an even greater likelihood that fuel providers will rely on high-risk, non-sustainable crop-seed oil-based fuels, given the recent strengthening of California's carbon intensity targets and new limits in the state's LCFS on crop-seed oil feedstocks. New Mexico will have difficulty attracting low-carbon fuels made from waste and used cooking oils, because there will be high demand for such fuels in California. As many studies have concluded, most of these feedstocks are already accounted for in the market, leading to rapid growth of crop-seed oil-based fuels. As California and other states adopt LCFS rules, it is likely that the use of high-risk biofuels (as opposed to those made from waste and used cooking oils) for compliance will increase substantially. To properly manage the risks associated with compliance with this rule using high-risk crop-seed oil-based biofuels, NMED should finalize rules with strong LCA requirements and compliance limits for these fuels.

C. Recommendations for limiting food markets and indirect land-use change

The rapid growth in the use of soy, canola, and other globally traded crop-seed oils as biofuel feedstocks creates immediate and significant threats of damaging direct and indirect food and land-use impacts. Therefore, CATF recommends that NMED design an overall limit on all crop-seed-oil-based fuels in the CFS (see Appendix A), given the high degree of uncertainty in calculating their CI value, as part of a comprehensive approach to addressing the risks via the following steps:

- Limit the eligibility of fuels made from crop-seed based feedstocks, e.g. soy, canola, and other crop seeds grown for food markets (as described in Appendix A);

- Carefully screen and reject new biofuel pathway applications that have high ILUC risks (i.e., via careful implementation of sections 20.2.92.202 and 20.2.92.205);

- Monitor U.S. bio-oil and fuel markets to ensure that New Mexico is not incentivizing the use of high-risk feedstocks. This includes monitoring waste and used-cooking oil markets, which may also be backfilled by food oil feedstocks and risk the accompanying ILUC impacts; and,

- Assess and report on an annual basis the market and environmental impacts of the CTFP. We appreciate the public disclosure requirements in section 20.2.92.602 and encourage additional assessment of broader market and environmental impacts.

[13] CARB updates the Low-Carbon Fuel Standard to increase access to cleaner fuels and zero-emission transportation options: Updated guardrails (November 8, 2024), https://ww2.arb.ca.gov/news/carb-updates-low-carbon-fuel-standard-increase-access-cleaner-fuels-and-zero-emission

California adopted percentage limits on fuels derived from certain high-risk feedstocks in its most recent update to the LCFS regulations, which is a step in the right direction toward limiting the use of high-risk fuels. New Mexico can address this problem at the outset by setting limits on high-risk bio-oil-based fuels early in the rulemaking process. We strongly recommend the NMED consider adding such a provision in the CTFP; we provide draft language in Appendix A.

III. Disallow negative emission credits

Incorporating negative emissions rates into the New Mexico Temporary Carbon Intensity table (table 5) could unduly preference fuel pathways that can cause significant environmental harm. As we noted in our previous comments, we encourage NMED to proceed with caution. If there is fundamental uncertainty about the full lifecycle emissions or wide variability in the feedstock for production of a given feedstock, NMED should establish a minimum CI value for fuel pathways of 0 g CO2e/MJ, at least until it has undertaken a full and accurate assessment of the lifecycle emissions of a given fuel pathway. This includes emissions from the full value chain of the fuel as well as indirect effects, such as land-use impacts. We appreciate that the negative emissions values remaining in table 5 (for pathways NMRCNG002 - renewable compressed natural gas; NMRLNG002 - renewable liquefied natural gas; and NMHYG003 - gaseous compressed hydrogen) are improved from the December 2024 draft rule and are closer to zero. However, we remain concerned about the distortionary impact that negative emissions can have on a CFS and its associated credit markets, and the extent to which accumulation of credits tied to negative emissions can discourage development and deployment of other innovative low-carbon energy carriers.

Assigning negative emissions to fuels such as natural gas derived from agricultural operations and hydrogen produced from steam methane reforming (SMR) of biomethane could lead to undesirable market distortions. This includes the possibility of highly disparate prices between biomethane from operations that begin capture in response to the CFS compared to those with existing biomethane production. It could also create incentives to increase methane production from digesters, such as by addition of non-waste material to the digester. Therefore, NMED should not include negative emissions values in the Lookup Table.

The California LCFS provides a useful example of the ramifications of negative emissions. The LCFS currently suffers from a surplus of credits, especially from biomethane,[14] which accounts for an outsized amount of LCFS credit generation compared to the amount of biomethane-fueled vehicles in California. This is in large part due to the negative emissions values assigned to biomethane, which results in a credit market flooded with inexpensive

[14] https://ww2.arb.ca.gov/resources/documents/low-carbon-fuel-standard-reporting-tool-quarterly-summaries

credits. The justification for negative emissions is that the LCFS is rewarding "avoided methane pollution." The notion of "avoided methane pollution" must be approached cautiously given that incentives from a CFS can encourage livestock managers to *increase* methane production, such that methane pollution is not actually "avoided," the lack of robust studies supporting assumptions about emissions reductions,[15,16] and other issues.

Crediting negative CI scores in a CFS can undermine the goals of phasing down the use of fossil fuels and increasing the use of alternative, low- and zero-carbon energy carriers. California's main motivation for maintaining this offset mechanism was to incentivize dairy farmers to install digesters to reduce methane pollution, but the energy production capacity and climate benefit of the fuel derived from these digesters are frequently exaggerated.[17,18]

In a 2024 blog, Union of Concerned Scientists (UCS) illustrated how the use of fuels that have a negative emissions value do not necessarily result in policies and investments that will lead to decarbonization.[19] The UCS hypothetical (which is set in California, but could also occur in New Mexico depending on the form that NMED's CTFP regulations take) involves an initial fleet of seven diesel trucks. Two of the seven trucks are converted to run on compressed natural gas (CNG) and the hypothetical fleet uses a book-and-claim agreement with a manure digester to claim the negative emissions (from supposedly avoided methane releases) associated with a proportional volume of biomethane produced by the digester. The negative CO_2e emissions linked via book-and-claim to the fuel used by the two converted trucks are more than sufficient to mathematically offset the CO_2 emissions from the fleet's remaining five diesel trucks. As a result, the entire fleet would collectively meet the requirements of the clean fuel standard—even though all seven trucks still use internal combustion engines, still have tailpipe emissions, and depend on "offsets" that come from a process that is not currently required to demonstrate a net reduction of greenhouse gas emissions (at least not in California).[20] In a variant of the UCS hypothetical, the fleet could switch to seven CNG-fueled trucks and

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[15] Castner (2025). Cow Power: Governing dairy methane emissions in California. https://escholarship.org/content/qt9p8401wg/qt9p8401wg.pdf

[16] Hedge and Badzmierowski (2025). Promising Technologies Need a Bigger Push to Cut Manure Emissions in the US. Scaling Solutions for Manure Emissions in the US | World Resources Institute

[17] https://agdatanews.substack.com/p/cow-poop-is-now-a-big-part-of-california

[18] https://agdatanews.substack.com/p/the-value-of-methane-from-cow-manure

[19] https://blog.ucsusa.org/jeremy-martin/something-stinks-california-must-end-manure-biomethane-accounting-gimmicks-in-its-low-carbon-fuel-standard/

[20] Carbon offsets are not qualitatively equivalent to actual emission reductions, and, to make matters worse, the negative emissions that are attributed to bio-CNG producers and used for compliance in the California LCFS courtesy of its book-and-claim mechanism are particularly low-quality offsets. As Jeremy Martin points out in his blog, *supra*, the California LCFS "does not require evidence that claimed methane emissions reductions are real and additional, as would be required from any credible offset program." Researchers including Aaron Smith at University of California at Davis and the International Council for Clean Transportation have described how the windfall of California LCFS credits for bio-gas changes the economics of livestock management, which could lead to changes in herd management and potentially increase methane emissions.

then use a minute volume of biomethane[21] to justify an assertion that the fleet's emissions are low or even negative for the purpose of the LCFS compliance.

Given the substantial potential to utilize biomethane sources within New Mexico, in particular from the state's dairy industry,[22] NMED should:

- Ensure that 0 g CO2e/MJ is the minimum CI value for any fuel used to comply with the CTFP.
- Require that any book-and-claim credits used to comply with the CTFP be tied to avoided emissions achieved in-state (e.g., at dairies located within New Mexico), which will have the added benefit of focusing the economic benefits from biomethane investments within the New Mexico economy.

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With great appreciation for the tremendous effort NMED staff have invested in developing and proposing important regulations for New Mexico's Clean Transportation Fuel Program, we thank you for your consideration of our recommendations throughout this rulemaking process and would be glad to elaborate on or discuss these issues further.

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[21] The bio-CNG might be used directly by blending it with a larger volume of fossil CNG or indirectly by utilizing book-and-claim.
[22] New Mexico Dairy Industry Key Indicators, New Mexico State University, March 2025

Appendix A

Currently, crop seed oils account for roughly half of the 5 billion gallons of bio-oil-based diesel used in the U.S. today, which represents roughly 5% of total U.S. diesel use. Given that the same process for making renewable diesel fuel can also produce gasoline and jet fuel, it would be reasonable to limit the eligibility of crop seed feedstocks to no more than 10% of total volume of regulated fuels under the CTFP. Accordingly, to ensure the CTFP minimally impacts food production and achieves desired emission reductions, CATF recommends the NMED including the following modifications to the proposed regulation.

In Section 20.2.92.7 add the following definitions:

> *"Bio-oil-based fuels" means biodiesel, renewable diesel, renewable gasoline and opt-in alternative jet fuel.*
>
> *"Crop seed oil" means first-generation vegetable oil pressed from seeds that are otherwise grown for food markets.*

In Section 20.2.92.201, Carbon Intensity General Requirements, following (A)(3) add (A)(4):

> *Transportation fuels produced from crop seed oils are eligible for carbon intensity credits for up to 10 percent combined of the total volume of regulated fuels annually reported by any regulated party, produced in New Mexico, produced for import, and imported. Any reported quantities of crop seed oil-based fuels in excess of 10 percent on a regulated party-wide basis will be assigned a carbon intensity equivalent to the fossil carbon intensity benchmarks shown in Table 4 in section 20.2.92.701.*