July 31, 2026
To: New Mexico Environment Department
Re: Public input on Tier 1 Carbon Intensity Calculators for the Clean Transportation Fuel Program

Clean Air Task Force (CATF) appreciates the opportunity to provide input on the New Mexico Environment Department's Tier 1 Carbon Intensity (CI) Calculators for the Clean Transportation Fuel Program (CTFP).

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 appreciate the continued work and transparency that NMED has invested in implementing the CTFP. As one of a small group of states shaping how clean fuel standards are designed, New Mexico's choices around CTFP implementation could inform the efforts of other states considering similar programs. Ensuring the integrity and accuracy of the Tier 1 calculators is important for both the environmental and economic outcomes of New Mexico's own CTFP and for the credibility of existing and potential clean fuel standards nationally.

We have supported many elements of New Mexico's approach, including the program's recognition that lifecycle greenhouse gas emissions must be assessed using science-based models and protocols, the inclusion of indirect land-use change (ILUC) emissions in lifecycle accounting, the fuel supply equipment credit, and the program's monitoring, reporting, and verification framework. As we have noted in prior comments[1,2], a clean fuel standard can be a powerful tool for reducing transportation sector emissions if implemented wisely.

The Tier 1 CI Calculators will serve as a practical pathway for applicants to generate CI values for fuel pathways that may be used to allocate CTFP credits and deficits. Because those CI values will shape compliance strategies and investment decisions, NMED should ensure that the calculators are transparent, conservative where uncertainty is high, and consistent with the CTFP's statutory objective of reducing the carbon intensity of transportation fuels used in New Mexico. To ensure that the simplified tools of the Tier 1 calculators do not overstate emissions reductions, the Tier 2 CI Calculator should be used for fuel production pathways that are more complicated than can be accurately captured in the Tier 1 CI Calculators, including pathways that rely on high-uncertainty claims relating to feedstocks or whose site-specific operations are not well represented within the Tier 1 calculators.

[1] Discussion Draft of the Clean Transportation Fuel Program Rule, CATF comments, January 17, 2025
[2] Proposed New Rule 20.2.92, Clean Transportation Fuel Program, CATF comments, September 2, 2025

In sum, CATF respectfully recommends that NMED:

1. Publish a clear technical memorandum explaining the assumptions, defaults, formulas, and NM-GREET modifications embedded in each Tier 1 calculator, and periodically review and update the calculators and underlying NM-GREET assumptions to stay consistent with the best available lifecycle science;
2. Improve transparency around ILUC assumptions and maintain safeguards for high-risk and waste- or residue-derived feedstocks that have material market mediated effects;
3. Prevent Tier 1 pathways from generating negative CI values based on avoided methane emissions unless the applicant demonstrates durable carbon storage and a rigorous full lifecycle basis for net-negative emissions;
4. Require strong monitoring, measurement, reporting, and verification (MMRV), leak detection and repair (LDAR), and feedstock traceability for biomethane and waste-derived fuel pathways; and
5. Require conservative treatment of methane leakage, electricity attributes, biomethane attributes, and default production inputs in the Tier 1 Hydrogen Calculator.

I. NMED should publish a technical memorandum documenting all Tier 1 calculator assumptions and defaults and periodically update calculators.

The Tier 1 calculators are intended to simplify CI calculations for fuel pathways that are conventionally produced and well-evaluated. That simplification can reduce administrative burden, but it also creates program-integrity risks if key assumptions are embedded in locked formulas, background sheets, or default values without clear public explanation.

CATF recommends that NMED publish a technical memorandum for each Tier 1 calculator that identifies:

- Any significant deviations from the full NM-GREET model and the basis for those deviations;
- All material emission factors, co-product allocation methods, energy density values, and conversion factors;
- The treatment of direct emissions, indirect emissions, and ILUC;
- Any default values that are not subject to verification;
- The circumstances under which an applicant must use Tier 2 rather than Tier 1; and
- Any significant changes made between calculator versions.

This documentation is important because CFS programs hinge on single point estimates of carbon intensity without uncertainty bands. A comparison between a fuel's CI score and the applicable standard dictates whether, and to what extent, that fuel generates credits or deficits. Regulators must therefore ensure that CI determinations are made using the best available data, the most defensible assumptions, and transparent, up-to-date analytic methods.

NMED should also require applicants to identify whether they relied on defaults or site-specific data for each material input. Where default values are used, NMED should ensure those defaults are conservative, particularly for pathways with substantial uncertainty or substantial risk of market-mediated emissions.

Finally, NMED should review and update the Tier 1 calculators and the underlying NM-GREET assumptions on a periodic basis. Like all lifecycle models, NM-GREET must be updated regularly to remain consistent with the best available science, and NMED should establish a transparent process for incorporating updated emission factors, default values, and modeling improvements over time.

II. NMED should improve transparency around ILUC assumptions and maintain safeguards for high-risk and waste/residue feedstocks that have material market mediated effects.

CATF appreciates that the Tier 1 calculators incorporate explicit ILUC values for several major crop-based feedstocks. The values incorporated for soybean oil, canola oil, palm oil, corn ethanol, and sorghum ethanol appear consistent with those used in the California Low Carbon Fuel Standard. However, these values are from 2015 and may be outdated.

While the inclusion of ILUC values is important, ILUC estimates depend on assumptions regarding commodity markets, agricultural productivity, trade flows, and land conversion, and the scientific literature continues to evolve. CATF therefore recommends that NMED periodically review and update the ILUC values embedded within NM-GREET and the Tier 1 calculators as new information becomes available. California Air Resources Board has similarly retained authority to revise ILUC values and incorporate additional feedstock-specific values over time.[3]

Feedstocks commonly characterized as wastes or residues can present a lower land use change risk than purpose grown feedstocks. However, some of these feedstocks (e.g., used cooking oil and animal fats) can have material market-mediated effects via displacement of other uses. The HEFA calculator includes production emission factors for used cooking oil, animal fats, and distillers corn oil but does not appear to assign these feedstocks an ILUC or substitution value. As demand for these materials grows, their expanded use for fuel production can influence broader vegetable oil, feed, and

[3] 17 CA Code of Regs 95488.3(d)

agricultural commodity markets in ways that may not be fully captured in current lifecycle methodologies. NMED should continue to evaluate whether these market-mediated effects are adequately reflected in NM-GREET and the Tier 1 calculators.

Accordingly, NMED should ensure that the HEFA and biodiesel calculators:

- Clarify that feedstocks entered under the "Other" category, or any feedstock lacking an embedded ILUC value or validated production emission factor in NM-GREET, must be evaluated under Tier 2 rather than through a Tier 1 calculator;
- Require documentation of feedstock origin, chain of custody, and market category;
- Avoid over-crediting used cooking oil, tallow, distillers corn oil, or other feedstocks where demand growth can cause substitution with virgin vegetable oils; and
- Require applicants to use conservative assumptions where feedstock origin or displacement effects are uncertain and likely to have a material effect.

With recognition that a volumetric cap is a program-design measure rather than a calculator input, CATF continues to support pairing the calculators with such safeguards, including the limit on crop-seed-oil-based fuels (no more than 10% of regulated fuel volume) that CATF proposed in prior comments.

III. NMED should not allow Tier 1 calculators to generate negative CI values based on avoided methane emissions without durable carbon storage and rigorous lifecycle evidence.

CATF strongly recommends that NMED ensure 0 g CO_2e/MJ is the minimum CI value for fuels used to comply with the CTFP unless the applicant demonstrates a rigorous lifecycle basis for net-negative emissions, which requires durable carbon storage.

Avoided methane emissions can be important climate mitigation, but avoided emissions are not the same as physical removal and durable storage of carbon from the atmosphere. Assigning negative CI values to transportation fuels based on avoided methane can create serious market distortions. It can allow combustion fuels to generate very large quantities of credits, weaken incentives for electrification and other scalable zero-emission technologies, and allow continued fossil fuel use to be offset on paper but not in practice.

This concern around crediting avoided methane as "negative" emissions is especially important for manure-derived biomethane, organic waste biomethane, wastewater sludge biomethane, landfill gas biomethane, and hydrogen pathways that rely on biomethane or other avoided-methane attributes. These pathways involve baseline assumptions about what would have happened absent the project. If those assumptions are incorrect, the resulting CI value can substantially overstate real-world emissions reductions and conflate those reductions with actual carbon removal.

NMED should therefore require Tier 2 review for any pathway that would otherwise generate a negative CI value under a Tier 1 calculator. At minimum, NMED should require the applicant to demonstrate:

- The fuel production systems include durable carbon storage of carbon atoms and gross carbon stored exceeds direct and indirect lifecycle emissions,
- The claimed CI value is verified by an independent third party, and
- If the lifecycle accounting includes avoided methane emissions:
    - The legal and factual baseline for the claimed avoided methane emissions;
    - That the methane reduction is additional to existing law, regulation, permit obligations, and business-as-usual practice;
    - That the project does not incentivize increased production of manure, organic waste, or other methane-generating feedstocks;
    - That all project emissions, including fugitive methane, venting, flaring, digestate storage, upgrading emissions, compression, liquefaction, and transportation, are included;[4]
    - That the claimed avoided methane emission is not double counted under another program; and
    - That the claimed CI value is verified by an independent third party.

Absent such a showing, NMED should set the pathway CI at no lower than 0 g CO_2e/MJ.

Relatedly, CATF does not believe that fossil gas blended into a biomethane pathway or captured fugitive methane should generate CTFP credits.[5] The Organic Waste biomethane calculator allows applicants to blend fossil fuels with biomethane prior to pipeline injection. Blending fossil gas into a biomethane pathway raises the same core concern as negative CI values: it can lower a pathway's reported CI through accounting rather than through a physical reduction in emissions. At minimum, where any fossil gas is blended, NMED should require the fossil-gas fraction to be assigned a full fossil carbon intensity that is not offset or diluted by an avoided methane credit.

IV. Biomethane and waste-derived pathways require strong MMRV, LDAR, and feedstock traceability.

CATF recommends that NMED strengthen the instructions for all Tier 1 biomethane calculators to require robust monitoring, measurement, reporting, and verification (MMRV), leak detection and repair (LDAR), and feedstock traceability. As currently drafted, the Tier 1 biomethane calculators rely on self-reported monthly operational data and

[4] CATF, *Strengthening the Environmental Benefits of Anaerobic Digestors Through Robust Measuring, Monitoring, Reporting, and Verification* (May 2026).

[5] See CATF's comments on the Section 45Z Clean Fuel Production Credit (p. 25) for more detail on our position on blending fossil natural gas with biomethane.

default fugitive-methane assumptions rather than site-specific measurement, and they do not require an LDAR program or feedstock chain-of-custody documentation.

This is particularly important for pathways involving manure management, organic waste diversion, landfill gas, and wastewater sludge. In these pathways, relatively small differences in assumed methane capture rates, destruction efficiency, leakage, venting, flaring, and digestate management can materially affect calculated CI. For example, the calculators apply fixed default fugitive-loss factors, including a 1% feed-loss value in the wastewater-sludge calculator, a 2% energy feed-loss value in the landfill-gas calculator, and a standard digester-leakage value with a 2% minimum upgrading-fugitives assumption in the manure calculator, rather than requiring applicants to detect and measure actual leaks. These defaults may understate real-world methane emissions,[6] and the calculators contain no mechanism to verify that claimed reductions actually occurred.

These concerns are compounded by crediting risk. As discussed in Section III, several of these pathways can generate substantial avoided-emissions credits and, absent a minimum CI floor, negative CI values. They also raise questions about whether claimed feedstocks are truly wastes, whether waste-diversion claims are additional, and whether fuel-production incentives could increase methane generation or prolong high-emitting waste-management practices. While the manure calculator requires an applicant to demonstrate that methane control is voluntary and additional to legal requirements, it still relies on default leakage values rather than measured performance.

NMED should require applicants to provide, as applicable:

- Metered biogas collection and upgrading data;
- Gas collection efficiency assumptions and supporting records;
- Venting and flaring records;
- LDAR plans, including inspection and repair results;
- Digestate storage and management practices;
- Feedstock origin documentation, including estimated volumes;
- Records distinguishing waste feedstocks from purpose-grown or non-waste feedstocks;
- Chain-of-custody records for biomethane and environmental attributes;
- Documentation of prior waste-management practices, including estimated volumes;

[6] Measured real-world methane losses frequently exceed these defaults: CATF's review of the literature finds modern anaerobic digestion plants lose on average just under 5% of the methane they produce (roughly 0.5-6%, and higher at legacy plants), with biomethane upgrading alone emitting 0.9% to over 3% and digestate storage, which the Tier 1 calculators do not appear to capture, commonly adding another 2-4% (up to 12–15% in warm months or without gas-tight storage). See CATF's *Strengthening the Environmental Benefits of Anaerobic Digestors Through Robust Measuring, Monitoring, Reporting, and Verification* (May 2026).

- Third-party verification of all avoided-emissions claims; and
- Annual updates if operational conditions change.

NMED should also clarify that landfill gas biomethane should not be over-credited in a way that encourages continued disposal of organic waste in landfills rather than waste prevention, diversion, composting, or other higher-value waste-management approaches.[7] Where site-specific measurement, leak detection, or feedstock traceability cannot be established, NMED should direct the pathway to Tier 2 review and require conservative default assumptions.

V. Hydrogen pathways should require conservative treatment of methane leakage, emissions associated with electricity and biomethane, and default production inputs.

Hydrogen CI values can vary significantly depending on the production pathway, upstream methane leakage, electricity sourcing, process efficiency, carbon capture performance, and many other factors. CATF is concerned that the current structure of the Tier 1 Hydrogen Calculator allows default assumptions to substantially reduce a pathway's reported CI without a corresponding reduction in actual emissions.

The calculator offers a "Default Value" hydrogen production option that applies predefined NM-GREET feedstock and process-energy inputs that, per the accompanying instructions document, are not subject to verification. Because production energy is the dominant driver of hydrogen CI, unverified default inputs could allow a facility to report a favorable CI that does not reflect its actual natural gas or electricity emissions.

The biomethane CI value is drawn from the manure biomethane calculator, which under the proposed calculator can carry avoided-methane credits and produce negative CI values. When combined with the calculator's negative-valued exported-steam coproduct credit, these features can drive the reported CI of steam-methane-reformation (SMR) hydrogen to very low or even negative values based primarily on accounting methods rather than reductions of direct process emissions via deployment of carbon capture. As CATF noted in prior comments, assigning negative CI values to hydrogen produced from SMR because of the use of biomethane risks significant market distortions and does not reflect real, physical emission reductions at the point of production. NMED should ensure that the calculator does not reward carbon-intensive hydrogen production based primarily on accounting methods.

[7] CATF notes that landfill-gas-derived biomethane is not a preferred long-term pathway for transportation-fuel decarbonization. While methane capture can reduce emissions relative to uncontrolled landfill operations, policies should prioritize waste prevention, organics diversion, composting, and other approaches that avoid methane generation in the first place rather than creating incentives that depend on the continued disposal of organic waste in landfills. This concern is particularly important where crediting structures could increase the value of landfill gas production or discourage high-value-waste-management alternatives.

NMED should ensure that the hydrogen calculator does not allow default values or environmental attributes to obscure high-emitting production by:

- Requiring site-specific verified data for hydrogen production inputs where those inputs materially affect the CI (for example, the upstream methane leak rate), and limit use of the unverified "Default Value" option;
- Using conservative default values where verification is unavailable;
- Requiring clear documentation of electricity sourcing and any associated environmental-attribute claims, including how ownership, deliverability, certificate retirement, and avoidance of double counting will be demonstrated;
- Requiring rigorous documentation for biomethane or other gaseous environmental attributes used as process fuel, including additionality and chain-of-custody; and
- Prohibiting negative CI values for hydrogen produced using biomethane or other avoided-methane attributes unless the applicant demonstrates durable carbon storage and a rigorous lifecycle basis for net-negative emissions.

In all cases, NMED should ensure that a pathway's reported CI reflects actual, physical lifecycle emissions, and that emissions accounting represents real emission reductions.

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CATF appreciates NMED's continued work to implement the CTFP and to make the program's lifecycle analysis tools available for public review. The Tier 1 calculators will play an important role in determining how CTFP credits and deficits are generated in practice. For that reason, the calculators should be transparent, grounded in conservative assumptions, and backed by strong verification requirements.

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

Respectfully submitted,
Clean Air Task Force

Rachel Starr
Senior U.S. Policy Manager
Industrial Innovation and Transportation Decarbonization
rstarr@catf.us

Dan West
Senior Western Regional Policy Manager
State Policy Program
dwest@catf.us