

The Honorable Chris Wright
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

The Honorable Scott Bessent
Secretary of the Treasury
U.S. Department of the Treasury
1500 Pennsylvania Avenue NW
Washington, DC 20220

October 1, 2025

Re: Legal and Scientific Concerns Regarding 45VH2-GREET Model Updates and Section 45V Implementation

Dear Secretary Wright & Secretary Bessent,

The undersigned organizations write to express serious legal and scientific concerns regarding the Department of Energy’s (DOE’s) May and June 2025 updates to the 45VH2-GREET model.¹ We are particularly concerned about the model’s treatment of upstream methane emissions, which is incongruent with the approach Treasury adopted in its final 45V regulations.² This change may enable hydrogen producers to model artificially low lifecycle greenhouse emissions and seek 45V tax credits for hydrogen production that does not comply with the statutory emissions thresholds. All changes to 45VH2-GREET, both past and present, must be adopted through the proper procedures and must conform to the constraints of Section 45V and its implementing regulations.

DOE’s recent updates to 45VH2-GREET to permit user-defined (“foreground”) upstream methane emissions rates raise significant legal concerns. These changes directly conflict with the Treasury Department’s 45V implementing regulations, which clearly state that foregrounding methane rates would lead to inaccuracies unless specific conditions are met—none of which currently are. Specifically, the regulatory preamble states:

To maintain accuracy in determining the section 45V credit, upstream methane emissions rates must be maintained as background data in 45VH2-GREET until the verified GHGRP [Greenhouse Gas Reporting Program] data collected under the revised GHGRP rules are available. Additionally, if those rules are rescinded, or revised in a manner that reduces the scope, stringency, accuracy, or reliability of emissions

¹ DOE, *Change log for 45VH2-GREET Model*, https://www.energy.gov/sites/default/files/2025-06/45vh2-model-change-log_june-2025.pdf.

² Credit for Production of Clean Hydrogen and Energy Credit, 90 Fed. Reg. 2224 (2025).

reporting under Subpart W, Subpart C, or Subpart P, if the EPA does not maintain the current requirements of the Super Emitter Program or does not take necessary implementation steps—including continuing to receive data on super emitters from third party notifiers, publishing that data on the web, and sending notifications of super emitter events to responsible owners and operators—*then upstream methane emissions rates would need to be maintained as background data in 45VH2-GREET* to maintain accuracy in determining the section 45V credit.³

None of these conditions are currently being met. In fact, all of the EPA regulations described by Treasury as “essential to the determination that differentiated upstream methane rates are appropriate” have already been altered or are targeted for repeal.⁴ For example, EPA has already delayed gathering data under the GHGRP⁵—data which would be necessary to determine methane rates—and it has just proposed to broadly repeal the GHGRP.⁶ Additionally, EPA recently suspended the Super Emitter Program, so it is not currently in effect or producing the data that would be necessary to achieve more accurate methane estimates.⁷ Because none of these conditions have been met, DOE’s recent updates to 45VH2-GREET risk illegally awarding inaccurate credit amounts to hydrogen producers. Without those regulatory conditions in place, and without amendments to the 45V implementing regulations, it would be illegal for users to model foreground methane rates when claiming the 45V tax credit.

From a scientific standpoint, the foregrounding of methane rates without an accurate measurement, reporting, and verification system in place risks significantly undercounting actual emissions. The background 0.9% national average methane leakage rate embedded in 45VH2-GREET already underestimates actual emissions. For example, the total methane leakage rates for the Permian basin and the Uinta basin have

³ 90 Fed. Reg. 2224, 2275-76 (emphasis added). The rule further specifies that: “The determination that the current Subpart W and section 111 rules are adequate to support facility-specific upstream methane leakage calculations is based on the following rules: Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems, 89 FR 42062 (May 14, 2024), as corrected by 89 FR 71838 (Sept. 4, 2024); Standards of Performance for New, Reconstructed and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, 89 FR 16820 (Mar. 8, 2024), as corrected by 89 FR 62872 (Aug. 1, 2024). Amendments to the Subpart W rule and Standards of Performance and Emissions Guideline rule made pursuant to specific grants of reconsideration announced for Subpart W in December 2024 and for the section 111 rule in May 2024, will not be considered a rescission or revision as described herein.” *Id.* at 2276, note 40.

⁴ 90 Fed. Reg. at 2276.

⁵ Extending the Reporting Deadline Under the Greenhouse Gas Reporting Rule for 2024 Data, 90 Fed. Reg. 13085 (2025).

⁶ Reconsideration of the Greenhouse Gas Reporting Program, 90 Fed. Reg. 44591 (proposed Sept. 16, 2025) (proposing to repeal Subpart C, Subpart P, and Subparts related to carbon capture and sequestration, among others, and proposing to suspend reporting under Subpart W until 2034).

⁷ Extension of Deadlines in Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review Final Rule 90 Fed. Reg. 35966, 35976 (2025).

been measured at around 3-4% and 6-8%, respectively.⁸ DOE's recent 45VH2-GREET updates would exacerbate this underestimation by allowing users to rely on either the background average or their own foreground data on a segment-by-segment basis, likely choosing whichever is lower in each instance. In the preamble to its final regulations, Treasury specifically prohibited this approach, reasoning that "[g]iving taxpayers discretion to selectively use either the default national average estimate or a differentiated rate depending on which is more taxpayer favorable would systematically understate the actual upstream production and transportation emissions from methane used to produce hydrogen."⁹ Further, the 45VH2-GREET user manual provides little to no direction for how users should determine their foreground methane rates, stating only that the rate should be "consistent with data that the facilities have reported to the EPA."¹⁰ As mentioned above, EPA has just proposed to stop collecting that data. And there is no standardized way to convert methane emissions across different segments of the supply chain into a single leakage rate. Allowing users to choose whatever methane rate they want, calculated without a standard methodology or verified process, would artificially and inaccurately inflate the amount of the credit claimed. This would undermine the integrity of the 45V tax credit and subsidize, at the expense of the American public, high-polluting hydrogen produced with fossil fuels.

Given that DOE's recent updates to 45VH2-GREET directly conflict with Treasury's 45V implementing regulations, and may also violate the statute's emissions thresholds, hydrogen producers will be put at significant risk if they rely on the June or May 2025 versions of 45VH2-GREET model to claim the tax credit. Changes to the 45VH2-GREET model, and particularly, significant changes that do not appropriately reflect the statute's incorporation of the Clean Air Act's Section 211 standard, cannot override the statute's strict emissions requirements or the provisions of a regulation that has been adopted through notice and comment. A future IRS will not be bound by unlawful alterations to 45VH2-GREET, and any approach that is not consistent with the statute or administrative law requirements may be subject to legal uncertainty and future revision, including during a 45V credit stream.

The same is true for any future updates to 45VH2-GREET that conflict with Treasury's implementing regulations or the statute. For example, changes to allow blending of renewable natural gas, expanding steam allocation, and any modifications to the three pillars of hourly matching, deliverability, and incrementality would all amount to significant policy changes that cannot be made without due regulatory process, including

⁸ Lu et al., *Observation-derived 2010-2019 trends in methane emissions and intensities from US oil and gas fields tied to activity metrics*, 17 PNAS 120 (2023), <https://doi.org/10.1073/pnas.2217900120>; Zhang et al., *Quantifying methane emissions from the largest oil-producing basin in the United States from space*, 6 Sci. Advances 17 (2020), <https://doi.org/10.1126/sciadv.aaz5120>; Lin et al., *Declining methane emissions and steady, high leakage rates observed over multiple years in a western US oil/gas production basin*, 11 Sci. Reports 11 (2021), <https://doi.org/10.1038/s41598-021-01721-5>.

⁹ 90 Fed. Reg. at 2276.

¹⁰ DOE, *Guidelines to Determine Well-to-Gate Greenhouse Gas (GHG) Emissions of Hydrogen Production Pathways using 45VH2-GREET Rev. June 2025* at 19, https://www.energy.gov/sites/default/files/2025-06/45vh2-greet-manual_june-2025.pdf.

notice and comment. For users to be able to rely on any new versions of 45VH2-GREET that substantively differ from prior policy judgments, Treasury would be required to amend the implementing regulations through a notice-and-comment rulemaking and provide reasoned justification for its change in position.¹¹

The 45VH2-GREET model is a means of implementing policy—not creating it. All changes to 45VH2-GREET are subject to the constraints of both Section 45V and its implementing regulations, including the statutory emissions thresholds. Accordingly, we urge DOE to reverse its recent problematic updates to the model, and to direct any further proposed policy changes to the notice-and-comment rulemaking process, which is where such changes belong.

Sincerely,

Environmental Defense Fund
Natural Resources Defense Council
Clean Air Task Force
Earthjustice
Sierra Club
Union of Concerned Scientists

¹¹ *FCC v. Fox TV Stations, Inc.*, 556 U.S. 502, 515 (2009); *see also Perez v. Mortg. Bankers Ass’n*, 575 U.S. 92, 101 (2015) (“[T]he D.C. Circuit correctly read § 2 of the APA to mandate that agencies use the same procedures when they amend or repeal a rule as they used to issue the rule in the first instance.”); *Owner-Operator Indep. Drivers Ass’n v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 193, (D.C. Cir. 2007) (holding agency violated the APA where it failed to give interested parties opportunity to comment on the methodology of a model the agency used to justify its regulations).