



July 23, 2024

Via email only

Secretary Julia S. Moore, P.E.
Agency of Natural Resources
1 National Drive, Davis 2
Montpelier, VT 05620-3901
Julie.Moore@vermont.gov

Re: Notice of Alleged Violation of 10 V.S.A. § 593(d)

Dear Secretary Moore:

This letter will serve as a notice of alleged violation of 10 V.S.A. § 593(d) (failure to review and, if necessary, update rules on or before July 1, 2024) sent pursuant to 10 V.S.A. § 594(a) on behalf of Conservation Law Foundation (CLF) and its affected members.

Specifically, CLF notifies the Agency of Natural Resources (ANR) that, in violation of 10 V.S.A. § 593, the Secretary of Natural Resources (the Secretary) has failed:

1. Contrary to subsection (d), to, “on or before July 1, 2024,” conduct a statutorily sufficient review of whether the State was on track to “achieve the 2025 greenhouse gas emissions reduction requirement pursuant to [10 V.S.A. § 578 (2025 Reduction Requirement)].”¹
2. Contrary to subsection (d), to, “on or before July 1, 2024,” if necessary, adopt one or more new rules and/or amend one or more existing rules “in order to ensure that the 2025 [Reduction Requirement] is achieved.”²
3. Contrary to subsections (c) and (d), to, as part of the most recent “review and update”³ “conduct public hearings across the State . . . [and to] conduct a portion of [the] hearings in areas and communities that have the most significant exposure to the impacts of climate change, including disadvantaged, low-income, and rural communities and areas.”⁴

CLF sets out the circumstances of these violations in this notice of alleged violation.

¹ 10 V.S.A. § [593\(d\)](#).

² [Id.](#)

³ [Id.](#)

⁴ 10 V.S.A. § [593\(c\)](#).

BACKGROUND

The Global Warming Solutions Act (GWSA) amended 10 V.S.A. § 582 in 2020 to change overall, not sector specific, aspirational greenhouse gas emissions reduction goals to greenhouse gas emissions reduction requirements that the State must achieve by each of January 1, 2025, January 1, 2030, and January 1, 2050.⁵ The GWSA also established the Vermont Climate Council, required the creation and regular updating of the Climate Action Plan (CAP), set a timeline for the regular adoption and/or amendment of rules and review of the State’s progress towards achieving the statutory greenhouse gas emissions reduction requirements by the Secretary, and created a citizen suit provision.⁶

Under this statutory framework, the Secretary is and will, in the future, be obligated to conduct certain reviews, and carry out rulemaking activity incident to those reviews, that must ensure that the State reduces its greenhouse gas emissions below specific limits as of specific deadlines. The work underlying and stemming from these reviews is imperative if Vermont is going to achieve its statutory greenhouse gas emissions reduction requirements and do its part in aiding industrialized countries to “cut their [greenhouse gas] emissions to net zero by 2050, which is necessary to achieve the Paris Agreement’s goal of keeping the increase in global average temperature to below 2°C.”⁷ As the Vermont General Assembly found in 2020: “A climate emergency threatens our communities, State, and region and poses a significant threat to human health and safety, infrastructure, biodiversity, our common environment, and our economy.”⁸ This climate emergency affects us all.

Specific to the most recent required review, the Secretary was required to, “on or before July 1, 2024, review and, if necessary, update the rules required by [10 V.S.A. § 593(b)] in order to ensure that the 2025 [Reduction Requirement] is achieved[,]”⁹ where the rules required by 10 V.S.A. § 593(b) are “rules consistent with the specific initiatives, programs, and strategies set forth in the [Climate Action] Plan and achieve the 2025 [Reduction Requirement].”¹⁰ “In performing [that] review and update, the Secretary”¹¹ is required to “conduct public hearings across the State . . . [and to] conduct a portion of [the] hearings in areas and communities that have the most significant exposure to the impacts of climate change, including disadvantaged, low-income, and rural communities and areas.”¹²

⁵ [2020 Acts and Resolves No. 153, Sec. 3](#) (amending 10 V.S.A. § 578).

⁶ [Id., Sec. 4](#) (codifying 10 V.S.A. chapter 24).

⁷ [Id., Sec. 2\(1\)](#) (legislative findings).

⁸ [Id.](#)

⁹ 10 V.S.A. § [593\(d\)](#); *see also* 10 V.S.A. § [578\(a\)\(1\)](#).

¹⁰ 10 V.S.A. § [593\(b\)](#); *see also* 10 V.S.A. § [578\(a\)\(1\)](#). While the Vermont Climate Council shall “[p]rovide guidance to the Secretary of Natural Resources concerning the form, content, and subject matter of rules to be adopted pursuant to [10 V.S.A. § 593,]” 10 V.S.A. § [591\(b\)\(4\)](#), that subdivision should not be read as modifying the Secretary’s statutory obligations, but as requiring something of the Vermont Climate Council.

¹¹ 10 V.S.A. § [593\(d\)](#).

¹² 10 V.S.A. § [593\(c\)](#).

OVERVIEW OF ALLEGATIONS

Based on the Secretary’s July 1, 2024, letter to the Vermont Climate Council (ANR’s Official Review),¹³ CLF is aware that the Secretary relied on the modeling conducted by Energy Futures Group, Inc. (EFG) in preparing *The Analysis of Buildings / Thermal Energy Sector Emissions Reduction Policies for Vermont, Nov. 2023* (EFG Report)¹⁴ to determine that the State will narrowly achieve the 2025 Reduction Requirement. Reliance on that modeling to determine whether the State would achieve the 2025 Reduction Requirement was technically and mathematically insufficient and therefore does not meet the statutory requirements for the review.

That modeling (1) was not intended to analyze or document anticipated achievement of the State’s greenhouse gas emissions reduction requirements, including the 2025 Reduction Requirement, (2) utilized a model that was not properly aligned with the State’s Greenhouse Gas Inventory and Forecast (GHG Inventory) methodology¹⁵ and the State’s historic greenhouse gas emissions data,¹⁶ and (3) even so, predicted such a narrow margin of achievement of the 2025 Reduction Requirement that the modeled result cannot support the statutory review requirement, which is that the State **will** achieve the 2025 Reduction Requirement without further action.¹⁷ A sufficient review, based on a proper model, fairly interpreted, could only conclude that the State was **not** on track to achieve the 2025 Reduction Requirement, which, pursuant to statute, should prompt the swift adoption of one or more new rules and/or amendment of one or more existing rules.¹⁸

¹³ See Letter from J. Moore to Vermont Climate Council (July 1, 2024) (ANR’s Official Review) (Enclosure 1).

¹⁴ See [The Analysis of Buildings / Thermal Energy Sector Emissions Reduction Policies for Vermont, Nov. 2023](#) (EFG Report).

¹⁵ As will be discussed in more detail in note 43, *infra*, any Low Emissions Analysis Platform (LEAP) model results (LEAP Model) alignment with GHG Inventory methodology and the State’s historic greenhouse gas emissions data should be based on the GHG Inventory methodology that ANR is currently using because ANR frequently changes the GHG Inventory methodology to better track actual greenhouse gas emissions based on available data.

¹⁶ CLF retained Synapse Energy Economics, Inc. (Synapse) to analyze the LEAP Model that EFG prepared as part of the EFG Report and to identify any deficiencies in the inputs of the LEAP Model as it relates to the State’s current GHG Inventory. As will be discussed in Sec. 1.D, *infra*, Synapse has determined that there are significant deficiencies in the inputs of the LEAP Model.

¹⁷ CLF also retained Synapse to calculate the calendar year 2024 greenhouse gas emissions that the LEAP Model would have forecasted if the inputs of the LEAP Model were properly aligned with the State’s GHG Inventory methodology and the State’s historic greenhouse gas emissions data. As will be discussed in Sec. 1.D, *infra*, Synapse has determined that the State is not expected to achieve the 2025 Reduction Requirement.

¹⁸ While CLF supports “ANR regularly review[ing] and updat[ing] the LEV/ZEV rule to maintain consistency with program adjustments made by the California Air Resources Board and to comply with the ‘identity’ requirement of the Clean Air Act[.]” none of that review and update is in response to any review of Vermont’s progress towards achieving the 2025 Reduction Requirement. See ANR’s Official Review at note 1. Further, 10 V.S.A. § 593(b) requires the adoption and implementation of “rules **consistent with** the specific initiatives, programs, and strategies set forth in the [Climate Action] Plan **and** achieve the 2025 [Reduction Requirement].” 10 V.S.A. § [593\(b\)](#) (emphasis added). Reading this only to require the adoption of the one rule that was

And, in terms of the public hearings required under 10 V.S.A. § 593(c) and (d), as of July 1, 2024, and to date, ANR has not conducted any public hearings on anything that has been held out by ANR as the review required under 10 V.S.A. § 593(d).

In light of the Secretary’s failure to conduct a review that meets the statutory requirements, adopt one or more new and/or amend one or more existing rules, and engage in public hearings, CLF notifies the Secretary that CLF, on behalf of itself and its affected members, may commence litigation pursuant to 10 V.S.A. § 594(a) after the expiration of the 60-day notice period.

SPECIFIC ACTIONS ALLEGED TO BE VIOLATIONS OF 10 V.S.A. § 593(d)

1. The Secretary of Natural Resources’ Review Does Not Meet Statutory Requirements Because the Review Relied on Inadequate Modeling and Incorrectly Determined that the State Would Achieve the 2025 Reduction Requirement

A. The LEAP Model Prepared for the EFG Report (Pathways 3.27) Was Not Intended to Predict Greenhouse Gas Emissions for Purposes of Achieving the 2025 Reduction Requirement

The core problem with the Low Emissions Analysis Platform (LEAP) Model prepared for the EFG Report (Pathways 3.27) is that, as EFG has itself stated, Pathways 3.27 was not “meant to document attainment of requirements[.]”¹⁹ Pathways 2.01 and 2.11 were developed in 2021 as part of the State’s work related to the CAP, also using the LEAP Model; then, as part of the development of the EFG Report, EFG made some updates to the LEAP Model to create Pathways 3.27 in 2023.²⁰ The updates to the business as usual scenario within the LEAP Model were not done to align the LEAP Model to GHG Inventory methodology and the State’s historic greenhouse gas emissions data, but rather to add assumptions to aid in predicting changes in future emissions if the State pursued certain policies.²¹ But EFG did not assess whether the LEAP Model had, in the first place, been properly aligned to GHG Inventory methodology and the State’s historic greenhouse gas emissions data. In ANR and EFG’s own words, Pathways 3.27 was intended to be used to “compar[e] policies for reducing emissions in [the thermal] sector[.]”²² not “to document attainment requirements[.]”²³ And EFG was careful to

specifically identified in the Climate Action Plan is too narrow given the plain meaning and use of the emphasized words—“consistent with” and “and”—and the significance of the breadth of work done by the Vermont Climate Council in preparing the Climate Action Plan.

¹⁹ Comparison of LEAP Model and Inventory Indicators of Progress to 2025 GWSA Requirements, Jan. 17, 2024 (EFG Slides) at slide 2 (Enclosure 2)

²⁰ See [Climate Action Office: Senate Natural Resources and Energy, Jan. 10, 2024 \(ANR Slides, Jan. 10, 2024\), at slide 5](#); [Updated Vermont Pathways Baseline Emissions, Jan. 29, 2024 \(ANR Slides, Jan. 29, 2024\), at slide 6](#); [Updated Vermont Pathways Baseline Emissions, June 13, 2024 \(ANR Slides, June 13, 2024\), at slide 6](#).

²¹ See [Analysis of Buildings / Thermal Energy Sector Emissions Reduction Policies for Vermont, Presentation to the Cross-Sector Mitigation Subcommittee, Nov. 30, 2023, at slide 38](#); EFG Report at pp. [25](#) and [31 and 32](#).

²² [ANR Slides, Jan. 10, 2024, at slide 5](#).

²³ EFG Slides at slide 2.

acknowledge that its work would not allow ANR to predict attainment by including the following disclaimer in the EFG Report: “The modeled economy-wide emissions for the GWSA compliance years of 2025, 2030 and 2050 presented in this report should not be viewed as indicative of the [S]tate’s likelihood of achieving those emission levels in those years.”²⁴

EFG also noted to ANR that the “[i]nventory and LEAP methods are different[,]”²⁵ and the scope of work for the EFG Report was predominately focused on the thermal sector and policy analysis for strategies to achieve the by January 1, 2030, and by January 1, 2050, greenhouse gas emissions reduction requirements.²⁶

Given the purpose of the EFG Report and Pathways 3.27 and EFG’s disclaimer about the greenhouse gas emissions predicted by Pathways 3.27 not being viewed as indicative of the State’s likelihood of achieving those greenhouse gas emissions levels, ANR’s reliance on Pathways 3.27 could **never** meet the statutory obligation that the review “ensure” that the 2025 Reduction Requirement would be achieved.

EFG provided ANR with clear advice about the limitations of EFG’s work as it relates to fulfillment of the Secretary’s duties under 10 V.S.A. § 593. ANR cannot, therefore, credibly point to EFG’s modeling work as representing compliance with the Secretary’s obligations to do a review that meets statutory requirements.

And, while outside the scope of this notice of alleged violation, CLF is concerned that ANR is now using Pathways 3.27, without any explanation of further alignment to GHG Inventory methodology and the State’s historic greenhouse gas emissions data, in lieu of the traditional forecast component of the GHG Inventory.²⁷ While ANR is correct that not “having two differing sets of projected values[,]” from the traditional forecast component of the GHG Inventory and the LEAP Model, “will help to maintain consistency and [] avoid confusion[,]”²⁸ Pathways 3.27, given its intended purpose, should be aligned to the GHG Inventory methodology and the State’s historic greenhouse gas emissions data, not the other way around.²⁹ Comparing the calendar year 2025 greenhouse gas emissions forecast of 8.55 million metric tons of carbon dioxide equivalent emissions (MMTCO_{2e}) from Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2020, Apr. 2023³⁰ to the calendar year 2026 greenhouse gas emissions forecast of 7.21 MMTCO_{2e} from Vermont Greenhouse Gas Emissions Inventory and Forecast 1990–2021, July 2024³¹ shows just how significant using Pathways 3.27 for the forecast

²⁴ [EFG Report at pp. 35 and 36.](#)

²⁵ EFG Slides at slide 2.

²⁶ [EFG Report at pp. 20 and 21](#) (objectives).

²⁷ *See* Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2021, July 2024 at pp. [6](#) and [26 and 27](#).

²⁸ *Id.* at p. [6](#).

²⁹ *See* Sec. 1.D, *infra*.

³⁰ [Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2020, Apr. 2023 at p. 7.](#)

³¹ [Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2021, July 2024 at p. 27](#) (ANR acknowledges that “2021 emissions from [Pathways 3.27] are approximately [six percent] below the 2021

component of the GHG Inventory is. This is a more than 1.3 MMTCO_{2e} difference, the equivalent of more than 15 percent of annual greenhouse gas emissions.³²

B. The Secretary of Natural Resources Did Not Modify Pathways 3.27 After Receiving Criticism on How Pathways 3.27 Was Used to Show That the State Was on Track to Achieve the 2025 Reduction Requirement

After the EFG Report, Pathways 3.27, and how ANR was using Pathways 3.27 to show that the State was on track to achieve the 2025 Reduction Requirement were made public, there was criticism of the lack of alignment³³ with GHG Inventory methodology and the State’s historic greenhouse gas emissions data made on or around January 10, 2024.³⁴ Following that criticism, EFG explained to ANR, on or around January 17, 2024, that it was possible to “[h]armoniz[e] and validat[e] LEAP to [the GHG I]nventory [through] additional careful analysis[,]”³⁵ which ANR appears not to have done and, subsequent to that criticism and explanation from EFG, once again represented, on January 29, 2024, this time to the entire Vermont Climate Council, that the State was on track to achieve the 2025 Reduction Requirement.³⁶ ANR’s Official Review also appears to inaccurately explain the timing of a correction to increase greenhouse gas emissions from the agriculture sector in Pathways 3.27 in such a way that makes it appear like the correction was made after the public criticism, when, in fact, the correction was indicated in ANR’s presentation that preceded the criticism.³⁷

C. Initial Presentation of Results from Pathways 3.27 Was for Calendar Year 2025 Greenhouse Gas Emissions, not Calendar Year 2024 Greenhouse Gas Emissions

ANR initially presented, on January 10, 2024, calendar year 2025 greenhouse gas emissions data

[GHG I]nventory emissions . . .[.]” showing that there is a known gap between Pathways 3.27 modeled greenhouse gas emissions and the State’s historic greenhouse gas emissions according to the GHG Inventory.).

³² Calculated by dividing approximately 1.3 MMTCO_{2e} by approximately 8.0 MMTCO_{2e}.

³³ Alignment will be discussed in further detail in Sec. 1.D, *infra*.

³⁴ See generally [Senate Committee on Natural Resources and Energy, Jan. 10, 2024, at 2:10:30](#); J. Duval Testimony to Senate Natural Resources & Energy Committee, Jan. 10, 2024, at slides [10](#) and [12–17](#); [E. Cotton, Will Vermont meet its 2025 climate emissions requirements? Experts clash over the data, VTDigger \(Jan. 11, 2024\)](#) (Secretary of Natural Resources acknowledges that “whether the [greenhouse gas emissions] data could still be used to determine that the [S]tate is on track for the 2025 deadline” is “an open question following the discussion” in the Senate Committee on Natural Resources and Energy on January 10, 2024.); [A. Giles, Is Vermont on track to meet its 2025 climate commitments? Not everyone agrees, Vermont Public \(Jan. 11, 2024\)](#).

³⁵ EFG Slides at slide 2.

³⁶ See [ANR Slides, Jan. 29, 2024, at slide 11](#).

³⁷ It appears to be accurate that EFG built in an assumption that reduced the greenhouse gas emissions from the agriculture sector by 50 percent, but that assumption was modified before the January 10, 2024, presentation to the Senate Committee on Natural Resources and Energy. See [ANR Slides, Jan. 10, 2024, at slides 7 and 8](#). That this assumption had already been modified by January 10, 2024, does not align with ANR’s Official Review, which indicates that it was “[a]fter concerns were raised by several Climate Councilors about the updated analysis presented in the EFG report, [that] staff reviewed model assumptions with the contractors who carried out the analysis and confirmed that, [there needed to be] an adjustment to emissions in one sector (agriculture) . . .” ANR’s Official Review at p. 2.

as predicted by Pathways 3.27 to show that the State was on track to be more than 100 thousand metric tons of carbon dioxide equivalent emissions (kMT or kMTCO_{2e}) under the 2025 Reduction Requirement.³⁸ This was an obvious error as 10 V.S.A. § 578(a)(1) requires that the 2025 Reduction Requirement be achieved “**by** January 1, 2025” (emphasis added), which means that the correct calendar year to analyze is calendar year 2024, not calendar year 2025. ANR eventually, in a presentation on June 13, 2024, presented calendar year 2024 greenhouse gas emissions data as predicted by Pathways 3.27 to show that the State was on track to be just 13 kMT under the 2025 Reduction Requirement—a razor-thin margin of compliance.³⁹

CLF is troubled by the timing of the modification and its disclosure on June 13, 2024, mere weeks before the July 1, 2024, deadline and more than five months after the first presentation to the Senate Committee on Natural Resources and Energy.⁴⁰ This timeline⁴¹ for presenting ANR’s corrected interpretation of Pathways 3.27 significantly limited the opportunity for the General Assembly and its committees, the Vermont Climate Council and its subcommittees, and the public to question the modeling eventually underlying ANR’s Official Review in a way that might have allowed course correction through rulemaking before July 1, 2024.

D. The Assumptions in Pathways 3.27 Were Not Aligned to GHG Inventory Methodology and the State’s Historic Greenhouse Gas Emissions

In short, although ANR has asserted a predicted 13 kMT clearance under the 2025 Reduction Requirement based on predictions from Pathways 3.27, it has done so despite its consultant advising, in plain words, that the modeling in Pathways 3.27 was not “meant to document attainment of requirements[.]”⁴² Partly for that reason, CLF retained Synapse to review Pathways 3.27 and the underlying LEAP Model and assess, based on available data, whether Pathways 3.27 undercounts or overcounts projected greenhouse gas emissions in light of GHG Inventory methodology and the State’s historic greenhouse gas emissions.

The following table shows the approximate extent to which Synapse estimates greenhouse gas emissions for calendar year 2024 as predicted by Pathways 3.27 will deviate from greenhouse

³⁸ [ANR Slides, Jan. 10, 2024, at slide 9](#) (“Pathways 3.27 2025”).

³⁹ [ANR Slides, June 13, 2024, at slide 11](#) (“Pathways 3.27 2025 (CY 2024)”).

⁴⁰ See [ANR Slides, Jan. 10, 2024, at slide 9](#); [ANR Slides, June 13, 2024, at slide 11](#).

⁴¹ The Administration, including ANR, has, in recent months, shifted away from an earlier argument that the State has all of calendar year 2025 to achieve the 2025 Reduction Requirement. Compare [Senate Committee on Natural Resources and Energy, Jan. 10, 2024, at 2:53:45](#) (“[I]f you read the GWSA, [] that clause goes on to allude to reduction requirements in line with the U.S. Climate Alliance and Paris Climate Agreement, which actually gives you all of 2025 . . . [I]t does [likely matter] when we’re talking about how close we are here for 2025 and [] that’s something that our legal counsel at ANR has engaged the [Attorney General’s Office] around looking at what year of an inventory is [] what will really count for legal action around the GWSA.”), with [Vermont Climate Council Cross Sector Mitigation Subcommittee, June 13, 2024, at 8:50](#) (“I have updated this. . . We’ve been talking about 2025 and 2030, but because those dates in the Act are January 1, it’s actually calendar year 2024 and 2029 emissions. . . . It’s important to note that it is actually calendar year 2029.”); see also [Clean Heat Standard Technical Advisory Group Subgroup on Pacing, May 8, 2024, at 25:00](#).

⁴² EFG Slides at slide 2.

gas emissions for calendar year 2024 as measured under the GHG Inventory⁴³:

Source	Approximate Under (+)/Over (-) Counting of Projected Emissions (per Synapse Analysis)
Electric	-40 kMT
Thermal	+100 kMT
Transportation	0 kMT
Fossil Fuel Transmission and Distribution	0 kMT
Industrial Process	+90 kMT
Waste Management	+30 kMT
Agriculture	+200 kMT
Necessary Change to Pathways 3.27	+380 kMT
Corrected Pathways 3.27 Comparison to 2025 Reduction Requirement	Approximately 367 kMT OVER 2025 Reduction Requirement

⁴³ This analysis is based on Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2020, Apr. 2023, as that is the GHG Inventory that was publicly available when Pathways 3.27 was prepared and when ANR presented to the Senate Committee on Natural Resources and Energy and the Vermont Climate Council in January 2024, when ANR presented to the Cross Sector Mitigation Subcommittee of the Vermont Climate Council in June 2024, and when the Secretary sent ANR’s Official Review on July 1, 2024. However, ANR released the Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2021, July 2024 on July 19, 2024, and the GHG Inventory methodology has changed slightly from the methodology that was used to prepare the Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2020, Apr. 2023. *See, e.g., Vermont Greenhouse Gas Emissions Inventory and Forecast Methodologies, July 2024 at p. 9* (“In previous versions of the GHG Inventory onroad diesel estimates were taken from [Energy Information Administration State Energy Data System (SEDS)], however, in the 1990–2021 iteration of the GHG Inventory diesel sales data from [the Joint Fiscal Office] have been incorporated into the inventory to capture the use of onroad diesel after being adjusted to remove the estimated biodiesel component of the fuel, which is still taken from SEDS.”). This change in GHG Inventory methodology also yielded a small change in the 2025 Reduction Requirement because the 2025 Reduction Requirement is statutorily based on 1990 greenhouse gas emissions levels and all the historic emissions levels change whenever the GHG Inventory methodology changes. *See id. at p. 8* (“It is important to note that each additional year of the Vermont GHG Inventory updates all of the historical values as appropriate, due to updates in historical federal datasets, methodology updates or refinements, or the incorporation and backward projection of the impacts of more accurate and/or Vermont specific datasets.”); compare *Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2020, Apr. 2023 at p. 29* (Greenhouse gas emissions level in calendar year 2005 was 9.83 MMTCO_{2e}.), with *Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2021, July 2024 at p. 28* (Greenhouse gas emissions level in calendar year 2005 was 9.86 MMTCO_{2e}.). It is imperative that any update to the State’s use of the LEAP Model to align it with GHG Inventory methodology and the State’s historic greenhouse gas emissions be aligned with **current** GHG Inventory methodology, whatever that is, and the State’s historic greenhouse gas emissions as measured under current GHG Inventory methodology. Failure to align with current GHG Inventory methodology will only perpetuate problems caused by misalignment. CLF is encouraged to see that ANR has made some modifications to the LEAP Model beyond Pathways 3.27 in the analysis underlying the forecast component to Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2021, July 2024, but this interpretation is based on data that CLF received in response to a public records request, *see* LEAP_2026_2031 (Enclosure 3), and there is no public explanation for the modifications. Of note in this modified LEAP Model data is that it now predicts that the State will **not** achieve the 2025 Reduction Requirement. Compare 2024 Forecast from LEAP_2026_2031 (Enclosure 3) (7.4 MMTCO_{2e}), with 2025 Reduction Requirement from *Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2021, July 2024 at p. 28* (7.3 MMTCO_{2e}, calculated by taking 74 percent of the 2005 greenhouse gas emissions of 9.86 MMTCO_{2e}).

In sum, CLF believes that if Pathways 3.27 was properly aligned to GHG Inventory methodology and the State’s historic greenhouse gas emissions, it would show that the State is on course to be approximately 367 kMT **over** the 2025 Reduction Requirement. Put another way, a proper model would predict, between calendar year 2020 and calendar year 2024, a reduction in greenhouse gas emissions that is less than half of what the Secretary is required to ensure.⁴⁴

It is important to emphasize that CLF is not, in this notice, notifying ANR of a disagreement between experts concerning which assumptions should be applied to a predictive model. EFG has made clear to ANR that Pathways 3.27 is not meant to predict whether the State will achieve the 2025 Reduction Requirement. The only expert analysis that does utilize a LEAP Model aligned with GHG Inventory methodology and the State’s historic greenhouse gas emissions data to predict whether the State will achieve the 2025 Reduction Requirement (of which CLF is aware) is that of Synapse, which shows the State is on course for material failure, which should have triggered the Secretary to adopt one or more rules and/or amend one or more rules in order to ensure that the State would achieve the 2025 Reduction Requirement.

E. The Results from Pathways 3.27 for Calendar Year 2024 Greenhouse Gas Emissions Do Not Ensure That the State will Achieve the 2025 Reduction Requirement

The Pathways 3.27 prediction of a 13 kMT margin of compliance, even if it were correct, does not meet the Secretary’s statutory obligation to “ensure” that the State will achieve the 2025 Reduction Requirement. That predicted margin of compliance (13 kMT) represents less—substantially less—than one percent of the statutory limit for the 2025 Reduction Requirement (7.275 MMTCO_{2e}).⁴⁵ It is, in fact, a margin of under 0.2 percent, which does not “ensure” that the State will achieve the 2025 Reduction Requirement. As EFG advised ANR in mid-January 2024, “modeled reductions are significant **but do not meet the 26 [percent] requirement**.”⁴⁶

As far as CLF is aware, ANR never disclosed that advisement from EFG to the public, as part of a public hearing or otherwise, although there was an admission from the Director of the Vermont Climate Office that “[the EFG Report] does not ensure that [the State is] on track to meet [the 2025 Reduction Requirement, but is] a strong signal that the work that [the State is] doing currently has a good chance and a good opportunity for [the State] to [achieve the 2025 Reduction Requirement].”⁴⁷

⁴⁴ Greenhouse gas emissions from calendar year 2020 are 7.99 MMTCO_{2e}, see [Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990–2020, Apr. 2023 at p. 7](#), and the 2025 Reduction Requirement is 7.275 MMTCO_{2e}, see [ANR Slides, June 13, 2024, at slide 11](#), for a total required reduction of 715 kMT between calendar year 2020 and calendar year 2024. Based on Synapse’s analysis, the total greenhouse gas emissions for calendar year 2024 will be approximately 7.64 MMTCO_{2e}, or an overall approximate reduction of 350 kMT from calendar year 2020 (7.99 MMTCO_{2e} less 7.64 MMTCO_{2e}), and 350 kMT is less than 50 percent of 715 kMT.

⁴⁵ [ANR Slides, June 13, 2024, at slide 11](#).

⁴⁶ EFG Slides at slide 2 (emphasis added).

⁴⁷ [A. Giles, Is Vermont on track to meet its 2025 climate commitments? Not everyone agrees, Vermont Public \(Jan. 11, 2024\)](#).

As is noted in ANR’s Official Review, the Secretary’s statutory obligation is to “‘on or before July 1, 2024, review and, if necessary, update’ [ANR’s] rules adopted consistent with the Initial Climate Action Plan (CAP), ‘in order to ensure that the 2025 [Reduction Requirement] is achieved.’”⁴⁸ It is not, as is claimed in ANR’s Official Review, sufficient for the Secretary to find that the State is “generally on track to meet the 2025 [Reduction Requirement.]”⁴⁹ Predicting that the State will be 13 kMT under the 2025 Reduction Requirement may be “generally on track,” but “being generally on track” is not the same as “ensuring achievement.”⁵⁰

2. The Secretary of Natural Resources Failed to Conduct Public Hearings as Statutorily Required

One of the statutes enacted by the GWSA obligated the Secretary, in performing the first of regular “review[s] and update[s] to observe the requirements of [10 V.S.A. § 593(c)].”⁵¹ That subsection (c) requires the Secretary to “conduct public hearings across the State . . . [and] conduct a portion of th[o]se hearings in areas and communities that have the most significant exposure to the impacts of climate change, including disadvantaged, low-income, and rural communities and areas.”⁵² The General Assembly specifically required public hearings as part of every review—not just those reviews resulting in the adoption or amendment of one or more rules.⁵³

Based on records that CLF has received and reviewed in response to a public records request, a monitoring of ANR’s website, a recent review of ANR’s website and the State’s public meetings calendar for the first six months of 2024,⁵⁴ and ANR’s Official Review, CLF is not aware of any public hearing that ANR conducted on anything that has been held out as related to the review of whether the State is on track to achieve the 2025 Reduction Requirement, including on the EFG Report and/or ANR’s Official Review.⁵⁵

⁴⁸ ANR’s Official Review at p. 1 (quoting 10 V.S.A. § 593(d)).

⁴⁹ ANR’s Official Review at p. 2.

⁵⁰ An ANR employee has also indicated that: “Even when that difference between the Pathways 2025 number and the GWSA number was larger—130, 150, you know— . . . [the ANR employee] certainly always looked at it as it’s going to be very close and [the ANR employee] couldn’t tell you one way or another [whether the 2025 Reduction Requirement would be achieved].” [Vermont Climate Council Cross Sector Mitigation Subcommittee, June 13, 2024, at 24:25.](#)

⁵¹ 10 V.S.A. § [593\(d\)](#).

⁵² 10 V.S.A. § [593\(c\)](#).

⁵³ 10 V.S.A. § [593\(d\)](#). In terms of future reviews and updates, 10 V.S.A. § 593(f) and (h) obligate the Secretary to conduct hearings as described in 10 V.S.A. § 593(c) at a minimum of every two years between 2026 and 2030 and between 2040 and 2050, also without regard to whether rules are being adopted or amended. 10 V.S.A. § [593\(f\) and \(h\)](#).

⁵⁴ See [Public Meeting Calendar for State Agencies](#).

⁵⁵ While ANR presented on the EFG Report before the Senate Committee on Natural Resources and Energy (January 10, 2024), the Vermont Climate Council (January 29, 2024), and the Cross Sector Mitigation Subcommittee of the Vermont Climate Council (June 13, 2024), none of those presentations was a public hearing. Nor were any of those presentations “in areas and communities that have the most significant exposure to the impacts of climate change,” 10 V.S.A. § [593\(c\)](#), nor were they held out as anything other than an update.

CLF’S REQUESTED REMEDIES

All the data, as analyzed by EFG and Synapse, shows that the Secretary cannot ensure that the State is on track to achieve the 2025 Reduction Requirement, and is therefore not in compliance with statute. Given the much more challenging timeline for the by January 1, 2030, and by January 1, 2050, greenhouse gas emissions reduction requirements, the State’s ability to achieve those requirements absent significant efforts, including through rulemaking, continues to be in serious doubt given all available evidence and ANR’s own admissions.⁵⁶ For that reason, CLF and its members reserve the right to seek a judicial remedy as is allowed under 10 V.S.A. § 594.

However, during this 60-day notice period, CLF is willing to discuss effective remedies for the violations noted in this notice of alleged violation that may avoid the necessity of protracted litigation. Such remedies would require prompt discussions and, at a minimum, include: ANR updating the State’s use of the LEAP Model to align with current⁵⁷ GHG Inventory methodology and the State’s historic greenhouse gas emissions and consistently using that updated model for all greenhouse gas emissions forecasting;⁵⁸ ANR issuing a revised Official Review that relies on that updated LEAP Model; discussions around the role of public hearings in those reviews; and a plan for expeditious and impactful rulemaking if the updated review indicates, as CLF believes it will, that the State is not on track to achieve the 2025 Reduction Requirement.

CONCLUSION

CLF looks forward to discussing this time-sensitive matter, which impacts all Vermonters, with ANR as soon as possible. If ANR wants to pursue such discussions, please have ANR’s attorney

See [ANR Slides, Jan. 10, 2024, at slide 1](#) (Slide deck title: “Climate Action Office: Senate Natural Resources and Energy”); [ANR Slides, Jan. 29, 2024, at slide 1](#) (Slide deck title: “Updated Vermont Pathways Baseline Emissions”); and [ANR Slides, June 13, 2024, at slide 1](#) (Slide deck title: “Updated Vermont Pathways Baseline Emissions”). And ANR’s Official Review does not appear to have been made available to the public, including on the Climate Change in Vermont website, see <https://climatechange.vermont.gov> (last checked by CLF on July 23, 2024), but rather just sent to the Vermont Climate Council.

⁵⁶ [A. Giles, Is Vermont on track to meet its 2025 climate commitments? Not everyone agrees, Vermont Public \(Jan. 11, 2024\)](#) (“‘I think we will be hard pressed if not impossible to get to 2030 without additional rules and regulations,’ Moore said.”).

⁵⁷ See note 43, *supra* (discussion on the importance of aligning to current GHG Inventory methodology).

⁵⁸ CLF believes that ANR agrees that this update is necessary based on representations that ANR made to the Vermont Climate Council Cross Sector Mitigation Subcommittee on June 13, 2024, see [Vermont Climate Council Cross Sector Mitigation Subcommittee, June 13, 2024, at 17:05](#) (“[G]oing forward, [we’re] working with [] SEI directly, the people that built the [LEAP] Model and are the owners of the [] LEAP software[.] We’re going to engage them in[.], probably[,] a four year contract . . . [W]e also want to have them on board to be able to [] help us with updating the [LEAP] Model with [] more recent information that’s available . . .”), and that the Secretary made in ANR’s Official Review. See ANR’s Official Review at pp. 2 and 3 (“ANR plans to have an updated baseline scenario available by January 2025 that will incorporate data and forecasts that have been produced since the release of the EFG [R]eport in November 2023 and refine elements of the model to better reflect near-term historical emissions.”). It is also consistent with the Secretary’s statement that: “Absolutely we want to make sure we are making decisions based on the best available information and fully utilizing datasets that exist[.]” [A. Giles, Is Vermont on track to meet its 2025 climate commitments? Not everyone agrees, Vermont Public \(Jan. 11, 2024\)](#).

contact Anthea Dexter-Cooper as soon as possible so that negotiations may be completed before the end of the 60-day notice period. We do not intend to delay the filing of a complaint in court if discussions are continuing at the conclusion of the 60 days.

Thank you for ANR's attention to this urgent matter.

Sincerely,

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Enclosures

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House Committee on Environment and Energy
Senate Committee on Natural Resources and Energy
Vermont Climate Council

ENCLOSURE 1

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July 1, 2024

To the Vermont Climate Council:

The Agency of Natural Resources (ANR) is writing to inform you of its determination under 10 V.S.A. § 593(d) of the Global Warming Solutions Act (GWSA). Specifically, 10 V.S.A. § 593(d) states that ANR must, “on or before July 1, 2024, review and, if necessary, update” its rules adopted consistent with the Initial Climate Action Plan (CAP), “in order to ensure that the 2025 greenhouse gas emissions reduction requirement is achieved.”

As explained in greater detail below, ANR has determined that it is not necessary to update rules adopted consistent with the Initial CAP by today’s date. Specifically, ANR has reviewed the rules called for in the CAP – known collectively as the Low Emissions Vehicle and Zero Emissions Vehicle Rule – that were adopted in December 2022 and has made program adjustments as needed to ensure the success of this program.¹ As recognized in the Plan, these rules represent a critical step to meeting Vermont’s GHG emissions reduction requirements for the transportation sector.²

In addition, since the enactment of the GWSA in September 2020, staff and leadership throughout many agencies of state government, along with countless volunteers and dozens of expert consultants, have worked to meet the intent of the legislation and address climate change and its impacts on Vermont. Together, we have invested thousands of hours of time and effort designing, improving and implementing programs, developing models and tracking tools, preparing reports, offering testimony, soliciting and responding to public comments, and participating in regional and national level working groups.

¹ See, e.g., *Final Proposed Rule Amendments, Low Emissions Vehicle and Zero Emissions Vehicle (LEV/ZEV) Rule*, Rule No. 23P043, <https://secure.vermont.gov/SOS/rules/results.php> (ANR regularly reviews and updates the LEV/ZEV rule to maintain consistency with program adjustments made by the California Air Resources Board and to comply with the “identity” requirement of the Clean Air Act).

² A summary of ANR’s rules adopted Dec. 2022 pursuant to the Plan can be found here, https://dec.vermont.gov/sites/dec/files/aqc/laws-regs/documents/Regulation_Summary_Document_LCAR.pdf; see also Initial Climate Action Plan, at 72 (Dec. 2021) (assigning to ANR the task of adopting California’s Advanced Clean Cars II, Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas Rules), <https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/Initial%20Climate%20Action%20Plan%20-%20Final%20-%202012-1-21.pdf>.



The net result of this work, and tens of millions of dollars' worth of investment, shows that we are generally on track to meet the 2025 greenhouse gas emissions (GHG) reduction requirements of the GWSA. While actual compliance will be determined when the 2025 *Vermont Greenhouse Gas Inventory and Forecast* is published, ANR technical staff and contractors have reassessed and updated models to project anticipated reductions in GHG emissions resulting from significant state and federal investments in climate action that are underway in Vermont. This analysis was summarized in a report prepared by Energy Futures Group, Stockholm Environment Institute, and Cadmus Group (“the EFG Report”).³

After concerns were raised by several Climate Councilors about the updated analysis presented in the EFG report, staff reviewed model assumptions with the contractors who carried out the analysis and confirmed that, with an adjustment to emissions in one sector (agriculture), the baseline scenario fully considers the available data and relies on a set of model inputs consistent with similar modeling done to support both the Initial Climate Action Plan and the State’s Comprehensive Energy Plan. Updated baseline scenario model results (also referred to as “business as usual” or “BAU”) presented in the EFG report demonstrated that the state is generally on track to meet the 2025 GHG target reductions.

Further, ANR recognizes that significant, on-going investments in climate action will be needed to meet the GHG emission reduction requirements of the GWSA. In 2023, ANR secured a \$3 million planning grant from the Environmental Protection Agency’s (EPA) Climate Pollution Reduction Grants (CPRG) program.⁴ This grant funded the design of priority action plans for funding in six key sectors (electricity generation industry, transportation, buildings, agriculture/natural and working lands, and waste management). Consistent with the CPRG program, in March of 2024, ANR prepared a Priority Climate Action Plan (PCAP) and will develop a Comprehensive Climate Action Plan in mid-2025. These strategic projects prioritize climate actions that are designed to achieve maximum reductions in GHG emissions by investing in existing programs with the capacity to implement GHG reduction projects over the next several years. Such projects will provide significant benefits to Vermont citizens and communities.⁵

Relatedly, ANR has also applied for a CPRG implementation grant from EPA to support key actions identified in the PCAP. ANR is still awaiting information about this grant award, but based on conversations with EPA, we anticipate receiving a grant award of \$50-100 million later this year.

Throughout, ANR has and will continue to carefully monitor progress toward GHG emission reductions and regularly share this information with the Climate Council and Legislature. To this end, ANR plans to have an updated baseline scenario available by January 2025 that will incorporate data and forecasts that have been produced since the release of the EFG report in

³ *The Analysis of Buildings / Thermal Energy Sector Emissions Reduction Policies for Vermont*, Nov. 2023, https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/VT%20Thermal%20Analysis%20Final%20Report%2011_28%20revisions.pdf.

⁴ Climate Pollution Reduction Grant Planning, <https://climatechange.vermont.gov/cprg>.

⁵ Priority Climate Action Plan, https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/Vermont_CPRG_Priority%20Climate%20Action%20Plan.pdf (describing community benefits associated with each measure proposed to reduce GHG emissions).



November 2023 and refine elements of the model to better reflect near-term historical emissions. This work will be used to inform development of the forthcoming update to the Climate Action Plan (due July 1, 2025) and identify projects and actions needed to meet the 2030 GHG emissions reduction requirements of the GWSA.

Please do not hesitate to reach out to us with questions regarding this determination.

Sincerely,



Julia S. Moore, P.E.
Secretary



ENCLOSURE 2



energyfuturesgroup.com

Comparison of LEAP Model and Inventory Indicators of Progress to 2025 GWSA Requirements

1/17/24



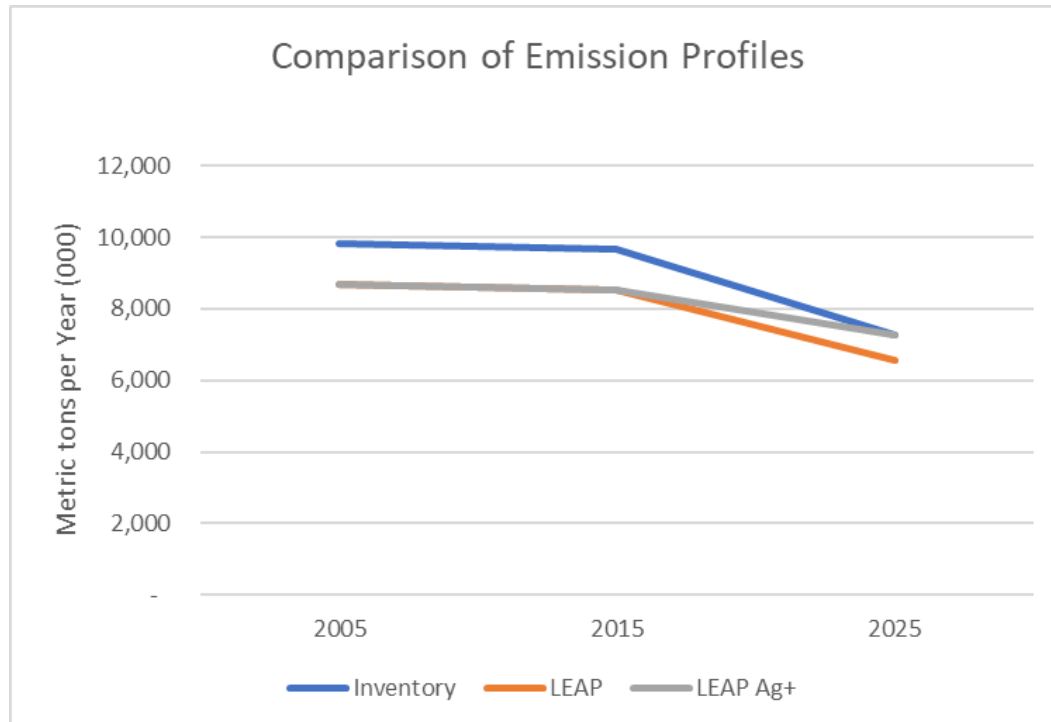
Context – Key Points

1. Scope and use of thermal study not meant to document attainment of requirements
2. Inventory and LEAP methods are different
3. Can extrapolate LEAP back to 2005 using either 2015 or 2020 as basis
4. Can examine adjusting ag sector emissions back up, and reductions based on carbon budget report
5. Modeled reductions are significant but do not meet 26% requirement
6. Harmonizing and validating LEAP to inventory requires additional careful analysis



Graphic and Tabular Review

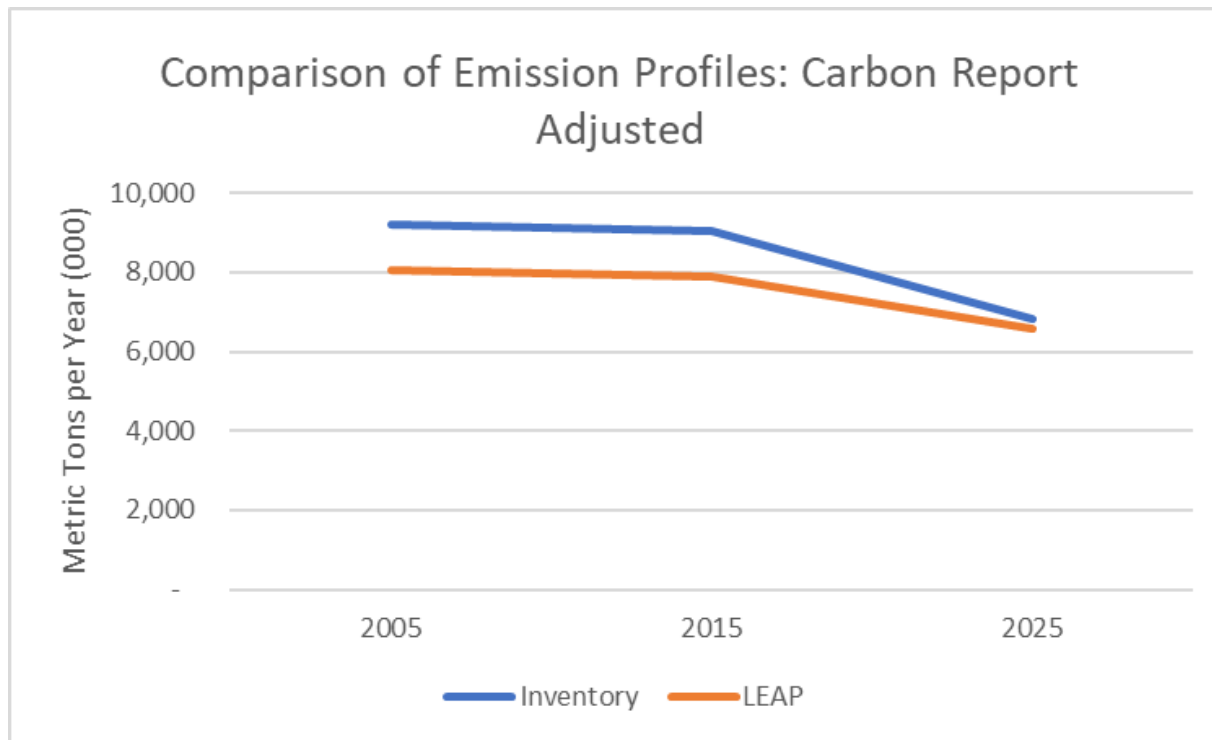
	Emissions (Million Metric Tons)				Estimated % Reductions				Implied %	
	2005	2015	2020	2025	2005-2015	2005-2020	2015-2025	2020-2025	2015	2020
VT Inventory	9.83	9.66	7.99	n.a.	1.7%	18.7%	n.a.	n.a.		
LEAP	n.a.	8.53	7.66	7.24	n.a.	n.a.	15.1%	5.5%	16.6%	23.2%
									64%	89%



Note: Results reflect adjustments to Ag Sector but do not include differences between LEAP and Inventory for other sectors.

Graphic and Tabular Review

	Emissions (Million Metric Tons)				Estimated % Reductions				Implied %	
	2005	2015	2020	2025	2005-2015	2005-2020	2015-2025	2020-2025	2015	2020
VT Inventory	9.20	9.03	7.99	n.a.	1.8%	13.2%	n.a.	n.a.		
LEAP	n.a.	7.90	7.66	6.56	n.a.	n.a.	17.0%	14.4%	18.5%	25.7%
									71%	99%



Note: Results reflect adjustments to Ag Sector but do not include differences between LEAP and Inventory for other sectors.

ENCLOSURE 3

Sector	2026	2031
Agriculture	1,327.25	1,344.00
Electricity generation	179.05	133.49
Transmission and distribution	23.93	21.98
Transportation	2,856.23	2,368.86
Industrial Processes	571.67	586.36
Residential	876.54	622.32
Commercial	828.55	742.97
Industrial	406.01	407.62
Waste	138.80	140.06
Total	7,208.03	6,367.67

Sector	2026	2031
Agriculture	1.33	1.34
Electricity generation	0.20	0.16
Transportation	2.86	2.37
Industrial Processes	0.57	0.59
Residential/Commercial/Industrial Fuel Use (RCI)	2.11	1.77
Waste	0.14	0.14
LEAP Model Total	7.21	6.37

Branch	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2040	2050
Agriculture	1,310.0	1,306.1	1,308.2	1,312.9	1,317.8	1,322.6	1,327.2	1,331.3	1,334.9	1,338.0	1,341.2	1,344.0	1,346.4	1,348.4	1,349.8	1,351.0	1,352.1	1,353.2	1,370.1
Commerci	867.1	893.6	884.1	872.4	858.9	844.5	828.6	811.7	794.5	776.2	757.4	743.0	728.7	714.9	702.3	693.0	686.0	661.8	654.9
Electricity	177.7	163.6	135.6	112.3	120.2	135.4	179.0	177.4	129.8	163.9	134.3	133.5	183.5	158.2	147.5	196.7	216.5	310.0	516.9
Heat Prod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial	481.7	418.3	406.7	406.2	406.1	406.0	406.0	406.1	406.2	406.3	406.5	407.6	408.7	409.9	411.0	412.2	414.3	422.8	445.7
Industrial F	555.3	556.6	559.1	562.2	565.4	568.5	571.7	574.7	577.7	580.6	583.5	586.4	589.2	591.9	594.5	597.1	599.7	609.5	638.2
Residentia	1,420.2	1,286.9	1,201.8	1,120.1	1,028.1	950.7	876.5	810.0	755.4	712.3	665.9	622.3	599.9	560.7	536.7	517.4	498.7	445.9	405.3
Transmissi	26.2	25.9	25.6	25.2	24.8	24.4	23.9	23.5	23.1	22.8	22.4	22.0	21.7	21.3	21.0	20.8	20.6	20.2	20.6
Transporta	2,827.8	3,020.7	3,004.1	2,980.7	2,946.7	2,905.0	2,856.2	2,795.2	2,721.1	2,618.6	2,502.9	2,368.9	2,232.9	2,095.5	1,957.5	1,818.3	1,690.8	1,282.6	827.7
Waste	137.4	137.0	137.1	137.6	138.0	138.4	138.8	139.1	139.4	139.6	139.9	140.1	140.2	140.3	140.3	140.3	140.3	139.9	140.0
Total	7,803.52	7,808.61	7,662.22	7,529.62	7,405.98	7,295.49	7,208.03	7,069.14	6,882.12	6,758.42	6,553.92	6,367.67	6,251.26	6,041.14	5,860.64	5,746.80	5,619.04	5,245.83	5,019.39