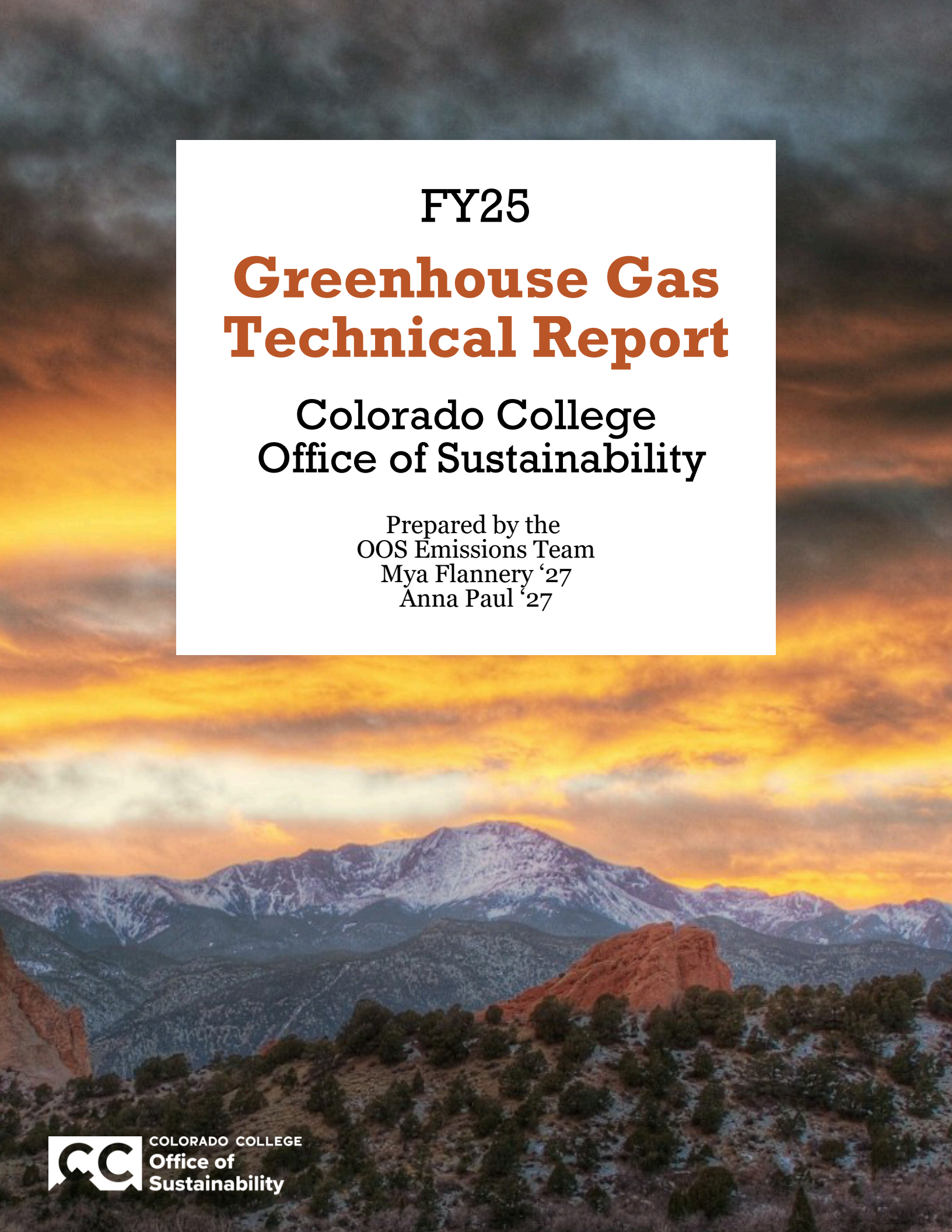

FY25

# Greenhouse Gas Technical Report

## Colorado College Office of Sustainability

Prepared by the
OOS Emissions Team
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COLORADO COLLEGE
Office of Sustainability

# Table of Contents

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# Definitions and Terminology

## General Terms and Industry Language

- **Greenhouse Gas Emissions (GHGs):** Greenhouse gases are gases that accumulate in the atmosphere, absorbing heat energy from the Earth and radiating some of that heat back towards the Earth's surface. These gases trap heat within the atmosphere, preventing it from escaping into space, and thereby causing a warming of the Earth. Human activities are exacerbating the accumulation of greenhouse gases in the atmosphere, acting as the largest driver of climate change. Major greenhouse gases include carbon dioxide (CO2), methane (CH4), water vapor (H2O), and nitrous oxide (N2O), amonst others.

- **Greenhouse Gas Inventory:** A greenhouse gas inventory acts as a record of the quantity of greenhouse gases released by a specific entity (such as a company, organization, or country). Inventories list emission sources and quantify their corresponding emissions. Gases such as carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) are typically included within these inventories. As critical tools for measuring emissions and identifying major sources, greenhouse gas inventories form the basis for climate impact assessments and reduction strategies.

- **Global Warming Potential (GWP):** Global warming potential acts as a scale for measuring the amount of heat a certain greenhouse gas can trap in the atmosphere, allowing comparisons of different gases' global warming impacts. Gases are measured in comparison to carbon dioxide; the amount of energy absorbed by the emission of one ton of a given gas is scaled against the emission of one ton of carbon dioxide over a certain time period (typically 100 years). The greater the GWP value for a given gas is, the more heat a given quantity of that gas will trap in earth's atmosphere, forcing the climate. Carbon dioxide is given a GWP of 1 (as the baseline), so methane with a GWP of 28 over 100 years traps 28 times more heat than carbon dioxide over a 100 year period. GWP values can change - usually slightly - as the scientific understanding of greenhouse gases improves (new information on atmospheric lifetime, radiative efficiencies, indirect effects, etc. is discovered). Because of this, it is important to use the most current and updated GWP values when compiling a report (see SIMAP Emissions Accounting under Changes from Last Year).

- **Carbon Neutrality or Net Zero Emissions:** This means that an entity (an organization, institution, country, etc.) has a net total of zero greenhouse gas emissions. Although all entities produce some amount of greenhouse gases, these emissions can be neutralized by helping to reduce or remove an equal amount of emissions elsewhere. This can be done through strategies such as verified carbon offsets or carbon sequestration. For an entity to be considered carbon neutral, any carbon removals must demonstrate additionality- resulting in emission reductions or removals that would not have occurred without that specific intervention.

- **Carbon Offsets:** These are measures taken by an entity to reduce or prevent the release of carbon dioxide and other greenhouse gases into the atmosphere. This is achieved through sequestration, avoidance, or carbon capture and storage (CSS). Sequestration is the capturing and storing of carbon in natural systems such as forests and soil. Avoidance is the changing of activities to prevent emissions from occurring initially. CSS occurs through direct air capture or through post-combustion capture. The reduction or removal of one metric ton of carbon dioxide equivalent (MTCO2e) is equal to one carbon offset; however, not all offsets are of equal quality. There are a certain set of standards, defined by the P.A.V.E.R framework, that an offset must meet to be impactful. P.A.V.E.R. stands for Permanent (the length of time emissions are kept out of the atmosphere for), Additional (whether the reductions are truly additive), Verifiable (whether the impact can be reliably quantified and verified), Enforceable (there must be a legal document in place to guarantee the transfer of offsets), and Real (meaning the offsets cannot be speculative - they must be occurring from a real, operational project). Offsets that adhere to these criteria are more likely to produce real and lasting climate benefits.

- **Renewable Energy Certificates (RECs):** RECs are tools used to monitor the production and use of renewable energy. One REC is equal to one megawatt-hour of electricity produced by a renewable energy source and delivered to the electricity grid. Buying a REC allows you to support renewable energy generation on the grid, whether or not the electricity you use comes from a mix of sources. RECs can be sold separately from the electricity they represent, and thus can be viewed as proof of renewable energy generation that allows buyers to support its environmental benefits, rather than the exact generation source of electricity received.

- **Bundled RECs:** RECs that are sold together with the renewable energy sourced electricity they represent. Since the electricity and the certificate remain linked, this type of REC directly influences the local power grid where the energy was produced.

- **Unbundled RECs:** RECs that are sold separately from the electricity they represent. Because the certificate is separated from the power, it can be purchased by those located remotely from where the renewable energy was generated. This allows for individuals or organizations to support renewable energy, whether or not they are located near to the source of that energy.

## Emissions Scopes and Measurement Parameters

- **Scope 1 (Direct GHG Emissions):** Scope 1 emissions measure “direct emissions” as specified in the Greenhouse Gas (GHG) Protocol. Direct GHG emissions are from sources owned and/or operated by Colorado College. This includes emissions from natural gas used in heating campus buildings, gasoline and diesel for CC’s vehicle fleet, and refrigerants, chemicals, and fertilizers CC uses directly.

- **Scope 2 (Indirect Institutional GHG Emissions):** Scope 2 includes indirect emissions that the College consumes directly. These emissions result from activities that Colorado College manages but rely on energy purchased from external sources that the College does not operate or own. This category specifically covers purchased electricity or heat. For CC, the sole source of Scope 2 emissions is the electricity it purchases.

- **Scope 3 (Indirect GHG Emissions):** Scope 3 emissions include indirect emissions from activities related to the College, but that are carried out by organizations or entities the College does not own or control. These emissions result from things like purchasing decisions and student and staff travel. The GHG protocol lists Scope 3 as a voluntary scope, but reporting on it is good practice and helps establish a more comprehensive and complete report. Additionally, reporting Scope 3 emissions from commuting and air travel sources is mandatory under Second Nature's Climate Commitment. CC has chosen to measure emissions from study abroad, staff and faculty commuting, student travel to and from home, and business travel paid for by Colorado College. Additionally, the College chooses to track other Scope 3 emissions, such as emissions from solid waste and wastewater, office paper use, and energy losses during fuel and electricity distribution (FERA and T&D losses).

- **FERA (Fuel and Energy Related Activities):** Also known as upstream emissions, FERA includes emissions that occur before energy in the form of fuel, electricity, heating, or cooling reaches the final user. Transmission and distribution (T&D) losses can be accounted for as part of FERA or reported on their own. For this report, they are considered separately; the Greenhouse Gas Protocol groups them together under fuel and energy-related activities.

- **T&D (Transmission and Distribution) Loss:** With the delivery of electricity, steam, heating, and cooling, there is energy lost along the way. These energy losses are considered upstream emissions and are included in Scope 3 of the greenhouse gas inventory. There are variations in how T&D losses are reported, since energy producers and distributors can be different companies. Colorado College is neither an energy producer nor distributor, so this report includes T&D losses under Scope 3.

- **Fiscal Year:** An accounting period, which may not align with the standard calendar year. This report refers to Colorado College's FY25, encompassing the period from July 1, 2024, to June 30, 2025.

- **Institutional Data**: This is the information and records that an organization collects, manages, and uses in its operations and decision-making processes. For this report, institutional data for Colorado College can include financial records for funded travel, solid-waste, and water-waste information. This is often used for the comparison of growth and emissions.

## Units

- **Kilowatt-hour (kWh):** A measurement of power that equals the equivalent of 1000 watts used continuously for one hour. It is frequently used by electric utilities to bill consumers for the electricity they use.

- **Metric Tonnes of Carbon Dioxide Equivalent (MTCO2e):** The unit of measurement for GHG emissions, where all regulated GHG are scaled to carbon dioxide-equivalent emissions. For example, one metric ton (MT) of methane is equal to 28 MT of carbon dioxide. "Equivalent" is determined by the GWP.

# Introduction

The Greenhouse Gas (GHG) Technical Report was first created at Colorado College in 2008. This annual report is a tangible reflection of the College's ongoing efforts in environmental accountability and transparency; it is written by the Emissions Team within the Office of Sustainability and is used as a publicly accessible record of yearly greenhouse gas emissions. This report for fiscal year 2025 (FY25), covering the period from July 1, 2024, to June 30, 2025, details our emissions data, outlines our methodology for data collection, interprets results, and describes the use of carbon offsets. An appendix is included for full transparency and reference.

The GHG report illustrates the Office of Sustainability's ongoing efforts to reduce greenhouse gas emissions and develop strategies for long-term climate action. Colorado College achieved carbon neutrality in 2020 through heavy reductions in Scopes 1 and 2 and with carbon offsets for residual emissions, but is now choosing to move beyond that status to establish more impactful sustainability goals. While carbon neutrality served as a meaningful interim goal, new standards are being established to promote sustainable practices that can be effectively maintained and that target the root causes of carbon emissions on campus. Carbon neutrality gave the College momentum for the next step: going forward CC will no longer strive to maintain status as a carbon-neutral institution, but will aggressively decarbonize by moving away from the use of fossil fuels on campus for normal daily operation entirely.

Funds previously allocated to carbon offsets will be redirected to support these new initiatives. The College aims to cut its gross greenhouse gas emissions by an additional 50% compared to 2020 levels, establishing 2020 as the new baseline year for reporting, with a target date of 2035. In this context, CC is also working on a new energy master plan to support its evolving sustainability efforts.

This report follows the widely adopted framework of the GHG Protocol, the leading international standard for emissions accounting. Emissions are classified into three scopes:

- Scope 1 includes direct emissions from sources owned or controlled by the College.
- Scope 2 accounts for indirect emissions from purchased electricity.
- Scope 3 covers all other indirect emissions resulting from college-related activities that occur outside of our operational control but are influenced by our actions.

We report across all three scopes to produce data that is consistent, comparable year-to-year, and in alignment with the GHG Protocol and higher education standards. Under the GHG Protocol, reporting of Scope 3 remains optional, but it is best practice and widely recognized as important for any meaningful climate accountability. CC signed the Second Nature Carbon Commitment in 2009 when the goal of reaching carbon neutrality was established. In accordance with this commitment, Scope 3 reporting for commuting and air travel is mandatory. CC has also chosen to report on optional categories, including business travel, student travel, solid waste, wastewater, and upstream emissions from paper use and energy distribution.

Colorado College seeks to maintain its status as a leader in sustainability within higher education. This year demonstrates that through continuous actions, rather than mere words, CC is working towards achieving this goal. This report serves both as a technical disclosure and as a reflection of our ongoing commitment to align our operational practices with our institutional values, with the aim of promoting a more ethical, resilient, and sustainable future.

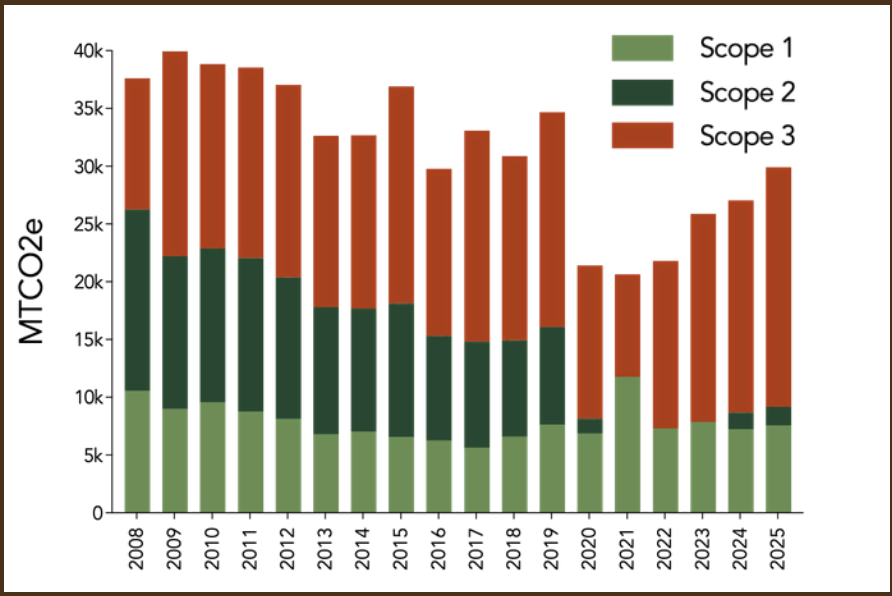
# Data Collection and Methodology

Since establishing its Greenhouse Gas (GHG) Inventory in 2008 as part of a broader commitment to environmental accountability and long-term sustainability, Colorado College has continued to expand and improve the range and accuracy of the inventory process. The College has focused on refining methodologies, broadening data collection, and enhancing the accuracy of data collected. The inventory for the FY25 report was conducted by the Office of Sustainability's Emissions Team, consisting of two student interns. Data collection for FY25 began in August 2025 and ended in January 2025, drawing primarily from institutional purchasing records and internal operational documents as sources for data. These records, gathered in cooperation with relevant staff and faculty across campus, provide the basis for the majority of emissions calculations presented within this report. Targeted surveys were distributed to collect emissions-related data excluded from official school records; specifically information on students' travel between home and school and staff and faculty commuting to and from work. Once data has been collected, it is entered into SIMAP (Sustainability Indicator Management and Analysis Platform), an emissions accounting tool developed by the University of New Hampshire that is widely used by higher education institutions. SIMAP follows the Greenhouse Gas Protocol, the internationally recognized framework for carbon reporting, and also regularly updates emissions factors based on the latest guidance from the United Nations Intergovernmental Panel on Climate Change (IPCC). Doing this guarantees that methodologies remain up to date with the latest global climate research. All reported emissions are measured and expressed in MTCO2e, a standardized unit that reflects the relative warming effects of different greenhouse gases.


The inventory process extends beyond calculating emissions data; it also encompasses tracking several contextual factors that allow emissions to be normalized across time. These factors include key institutional metrics: campus populations and housing distribution, operating budgets, and changes to physical infrastructure, including new construction or property acquisitions that modify the institute's gross square footage. Incorporating these variables provides a broader context when interpreting emissions trends, allowing the College to account for operational growth and isolate the impacts of sustainability initiatives from the effects of institutional expansion. Along with calculating emissions data from the current fiscal year, the Emissions Team is also responsible for verifying that data, beginning with comparing it to previous inventories. This review process helps identify anomalies, evaluate emerging trends, and ensure reporting consistency. Utilizing this iterative approach strengthens the reliability and accuracy of the final report while also supporting the College's ability to make informed, data-driven decisions that advance its long-term climate objectives.

# FY25 Emissions Summary

## CC's Emissions by Scope 2008-2025




29,905.53 MTCO2e (total) - 5,660.45 MTCO2e (offsets) =

## 24,245.08 Net MTCO2e

### Scope 1
(Direct)
7,537.52 MTCO2e

- Stationary Fuels
- Direct Transportation
- Fertilizer
- Refrigerants and Chemicals

### Scope 2
(Indirect-Direct)
1,643.71 MTCO2e

- Purchased Electricity

CC is net neutral in Scope 2 Emissions due to Carbon Offsets and Renewable Energy Certificates (RECs)

### Scope 3
(Indirect)
20,724.77 MTCO2e

- Financed air travel and study abroad
- Faculty, staff, and student commuting
- FERA and T&D Emissions
- Solid Waste and Wastewater
- Paper Purchasing

Office of Sustainability

# Results | Gross Emissions

An overall analysis of CC's gross emissions trends indicates that institutional efforts to gradually decrease emissions from baseline levels have remained largely successful. While FY25 gross emissions increased from FY24, they remain beneath baseline 2008 levels. Also notable is the decrease in carbon offsets for FY25. To maximize the impact of financial resources, the College has chosen to shift its focus away from carbon neutrality and instead prioritize fossil fuel reduction and further implementation of alternative, cleaner energy sources. While the movement away from carbon offsets will initially increase net emissions, initiatives detailed under Goals and Future Areas for Improvement will combat this in the future through the direct reduction of emissions. By continuing to rapidly move away from fossil fuels and pursue emissions reduction targets, CC will further strengthen its institutional prioritization of sustainability.

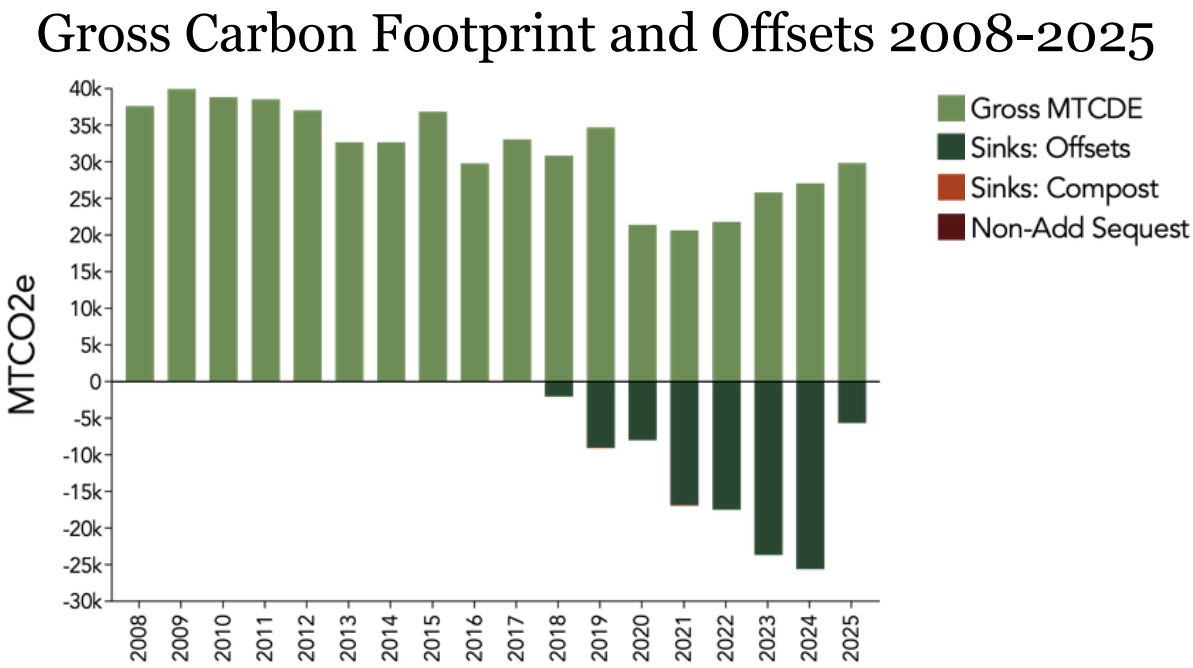



*Figure 1: CC's gross emissions and offsets from 2008-2025.*

Between 2008 and 2025, the College reduced its gross emissions by 20.64%. Consequently, gross emissions per student have been reduced from approximately 18.35 MTCO2e to 14.32 MTCO2e, for a 21.67% decrease in emissions per student. This overall decrease has also occurred alongside an expansion in campus physical space of approximately 13.28%, resulting in a 29.94% decrease in emissions per square foot. These trend demonstrates CC's ability to meet emissions reduction goals alongside infrastructure and population expansions. Although FY25 gross emissions increased by 16.83% from FY24 levels, short-term variability between years is expected and this year's emissions data continues to show decreased emissions compared to baseline levels.

Scope 1 and Scope 2 emissions have been reduced by 28.50% and 89.53% respectively between 2008 and 2025, while Scope 3 emissions have experienced an increase of 81.05%. This discrepancy indicates that institutional emissions reduction efforts should focus primarily on indirect, Scope 3 emissions as opposed to emissions more directly associated with campus operations (Scope 1 and Scope 2). This also reflects changes made to the calculations of Scope 3 emissions in the greenhouse gas inventory following 2008, including student travel to and from home and financed air travel. While the GHG Protocol recommends establishing a new base year when incorporating new sources, CC has retained 2008 as its base year to maintain transparency and address these sources within its climate action commitments. With new emissions reduction goals and the addition of sources such as FERA, however, the College is likely to adopt a new base year in the near future.

# Results | Data Visualization

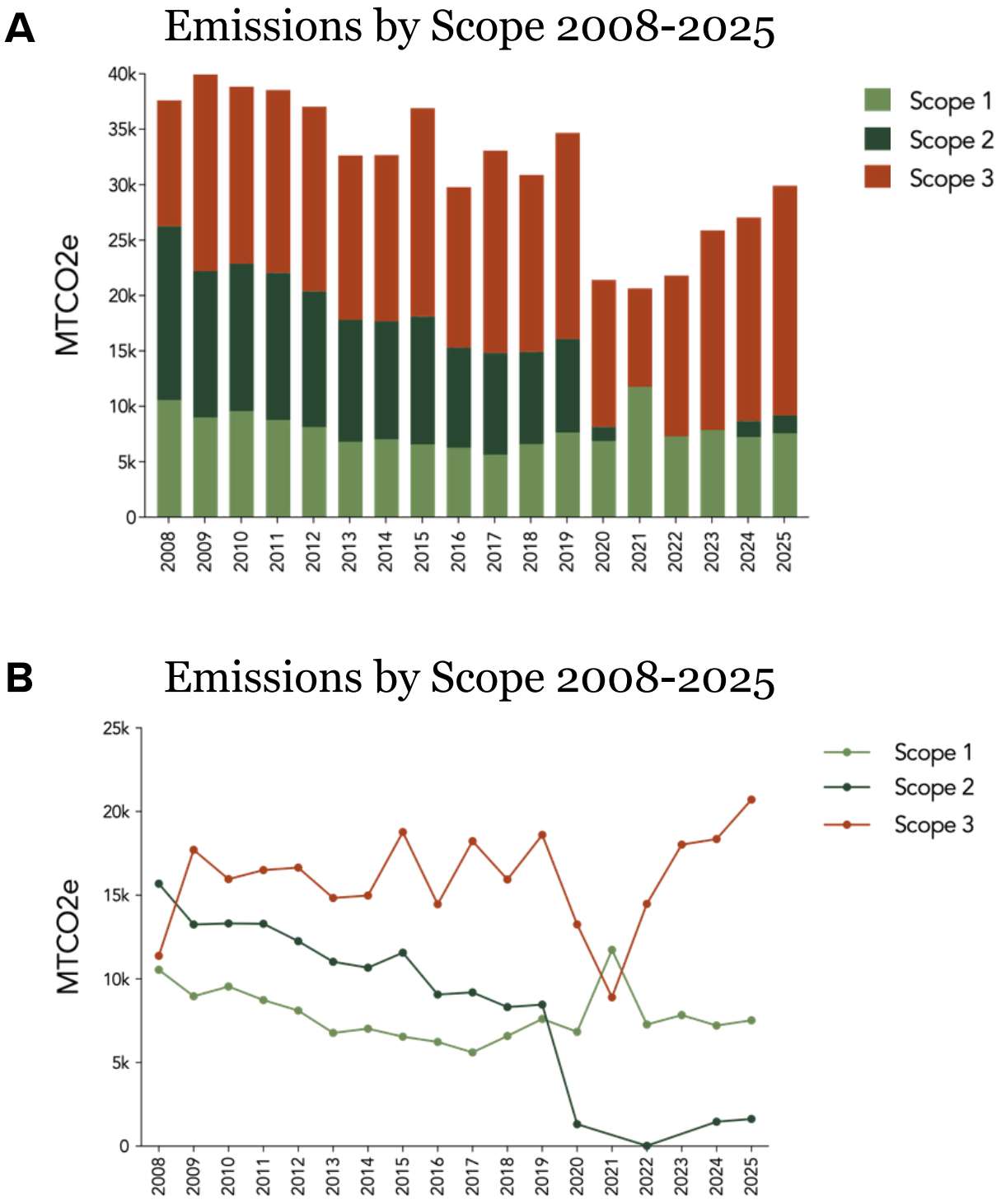



*Figure 2: CC's carbon emissions by scope from 2008-2025. Graph 2A displays each scope's contribution to total gross emissions. Graph 2B shows trends within each scope over time.*

CC's Scope 1, Scope 2, and Scope 3 emissions from 2008 through the current year of 2025 are shown in Figure 2 on the previous page. There are several key variations across the graphs that can be attributed to specific events and operational changes during the reporting period. Notably, the implementation of RECs in 2020 led to a substantial reduction in Scope 2 emissions, Scope 3 emissions declined sharply following the COVID-19 pandemic, and Scope 1 emissions increased significantly in 2021 due to an isolated refrigerant leak. Also important to note are updates to emissions factors included in the new 2024 Emissions Factors Version of SIMAP. These updates cause retroactive changes to data calculations, which can lead to seeming discrepancies between the current SIMAP calculator used to generate emissions values for the most recent GHG technical report and former versions of the report as well as the public reporting section of SIMAP. For example, retroactive changes applied between FY24 and FY25 to Scope 2 emissions calculations caused FY24 to show Scope 2 emissions in this report that were not displayed in the FY24 inventory. The GHG Protocol suggests retroactively calculating all emissions back to the base year as new versions of emissions factors are implemented to prioritize consistency in methods between fiscal years. However, CC has moved past reporting and onto reduction and elimination, meaning that the College prioritizes transparency in disclosure, rather than rote 'best practices' designed to give general guidelines for organizations that may or may not be interested in action beyond disclosure. Retroactively changing emissions values leads to confusion around publicly reported numbers that change from year to year and creates moving goalposts that make it difficult to gain financial support and administrative buy-in for set goals. Therefore, out of an interest in reporting the best available data consistently and using that data to drive institutional change, CC has chosen to prioritize transparency in its reporting despite this creating tension with GHG protocol's best practices (described above).

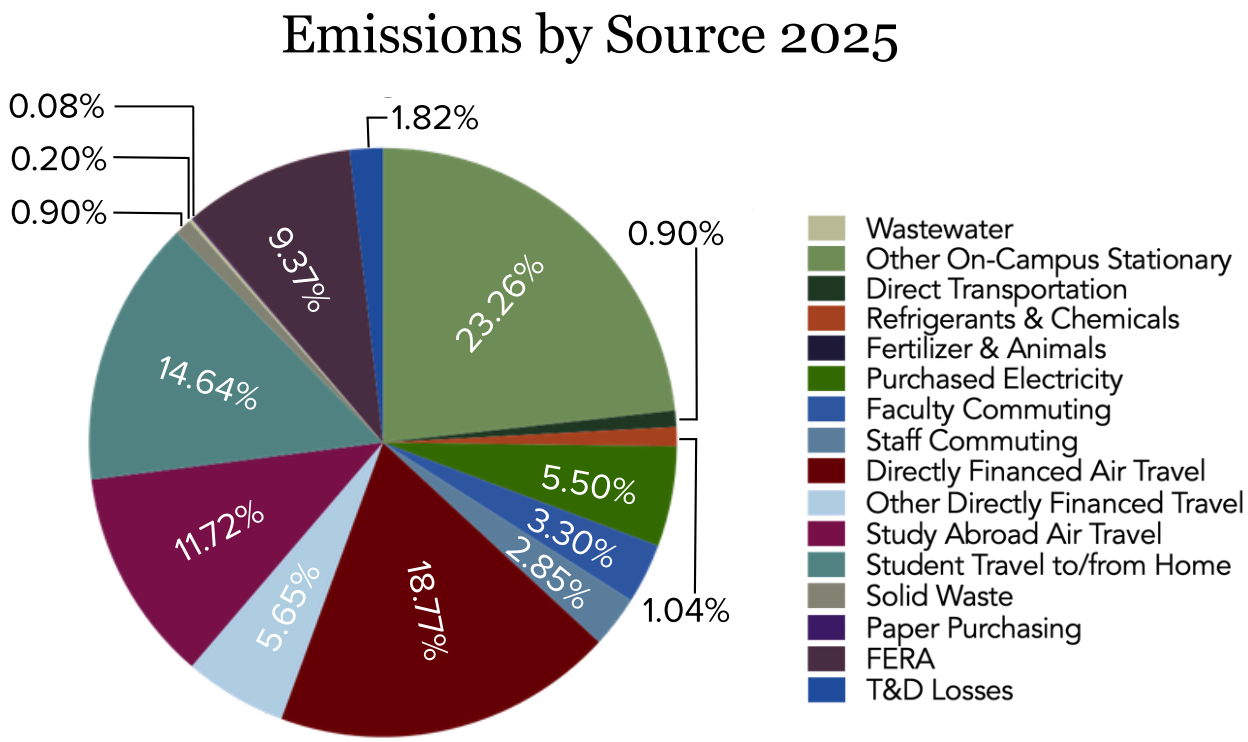



*Figure 3: CC's carbon emissions for FY25 broken down by source.*

All individual sources that contributed to Colorado College's FY25 emissions are shown in Figure 3 on the previous page. On-campus stationary fuel use (Scope 1) remains as the College's single largest emissions source, contributing 23.26% of the total FY25 emissions. Among Scope 3 factors, directly financed air travel (18.77%), student travel to and from home (14.64%), study abroad air travel (11.72%), and FERA (9.37%) emissions are the largest contributors, following behind on-campus stationary fuel use. This pattern remains consistent with the FY24 inventory, further underscoring the importance of targeting these emissions sources for future reductions. Figure 4 below shows the yearly fluctuations in each emissions source relative to total emissions since the baseline year 2008.

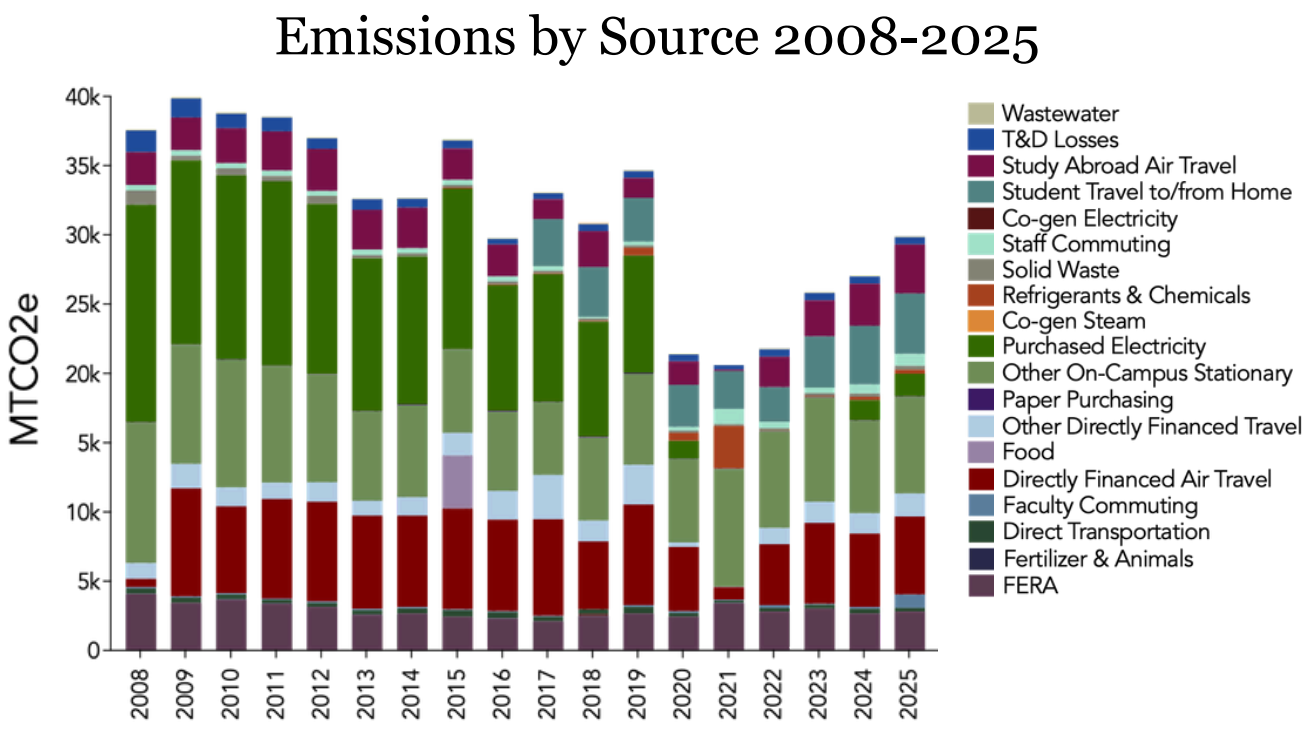



*Figure 4: CC's carbon emissions broken down by source from 2008-2025.*

# Results | Scope 1

**As defined by the Greenhouse Gas Protocol, Scope 1 emissions are "direct emissions" that originate from sources that are owned or controlled by Colorado College. These emissions result from fuel usage in campus buildings, operation of the College's vehicles, and direct usage of refrigerants, chemicals, and fertilizers by the College.**

Scope 1 encompasses all greenhouse gas emissions directly produced in the daily operations of CC. Stationary fuel use on campus, fuel used for institutional transportation, refrigerant and chemical use associated with campus facilities, and fertilizer use for groundskeeping purposes are all included in this category. Aggregate Scope 1 emissions for FY25 were 7537.52 MTCO2e, a 4.31% increase from FY24. However, aggregate Scope 1 emissions continue to show a downward trend from base year levels, with a 36.88% decrease in emissions per square foot between FY08 and FY25.

| EMISSIONS CATEGORY | MTCO2e |
|---|---|
| On-Campus Stationary Sources: (Distillate Oil (#1-4), LPG, and Natural Gas) | 6,956.13 |
| University Fleet (Diesel, Gasoline, and Propane) | 267.54 |
| Refrigerants and Chemicals (R404a and R-410a) | 312.28 |
| Synthetic Fertilizer | 1.57 |

*Table 1: Scope 1 emissions categories and their corresponding total emissions values in MTCO2e.*

The increase in Scope 1 emissions seen between FY24 and FY25 was primarily due to a 4.51% increase in on-campus stationary fuel use (the largest source of Scope 1 emissions). Rises in natural gas and propane usage contributed to this increase, despite a significant decrease in distillate oil usage. Although this increase accounted for a large percent of the total Scope 1 emissions difference between FY24 and FY25, the overall on-campus stationary fuel emissions for FY25 still remain beneath the totals for FY21-FY23. There was also a 24.06% increase in refrigerant and chemical usage between FY24 and FY25 that contributed to the overall rise in Scope 1 emissions. Refrigerant and chemical emissions, while concerning due to their high global warming potential, are a small contributor to Scope 1 emissions. Reductions occurred in all other Scope 1 emissions categories between FY24 and FY25; transportation-related emissions from the College's vehicle fleet decreased by 14.44% and fertilizer-related emissions decreased by 68.47%.

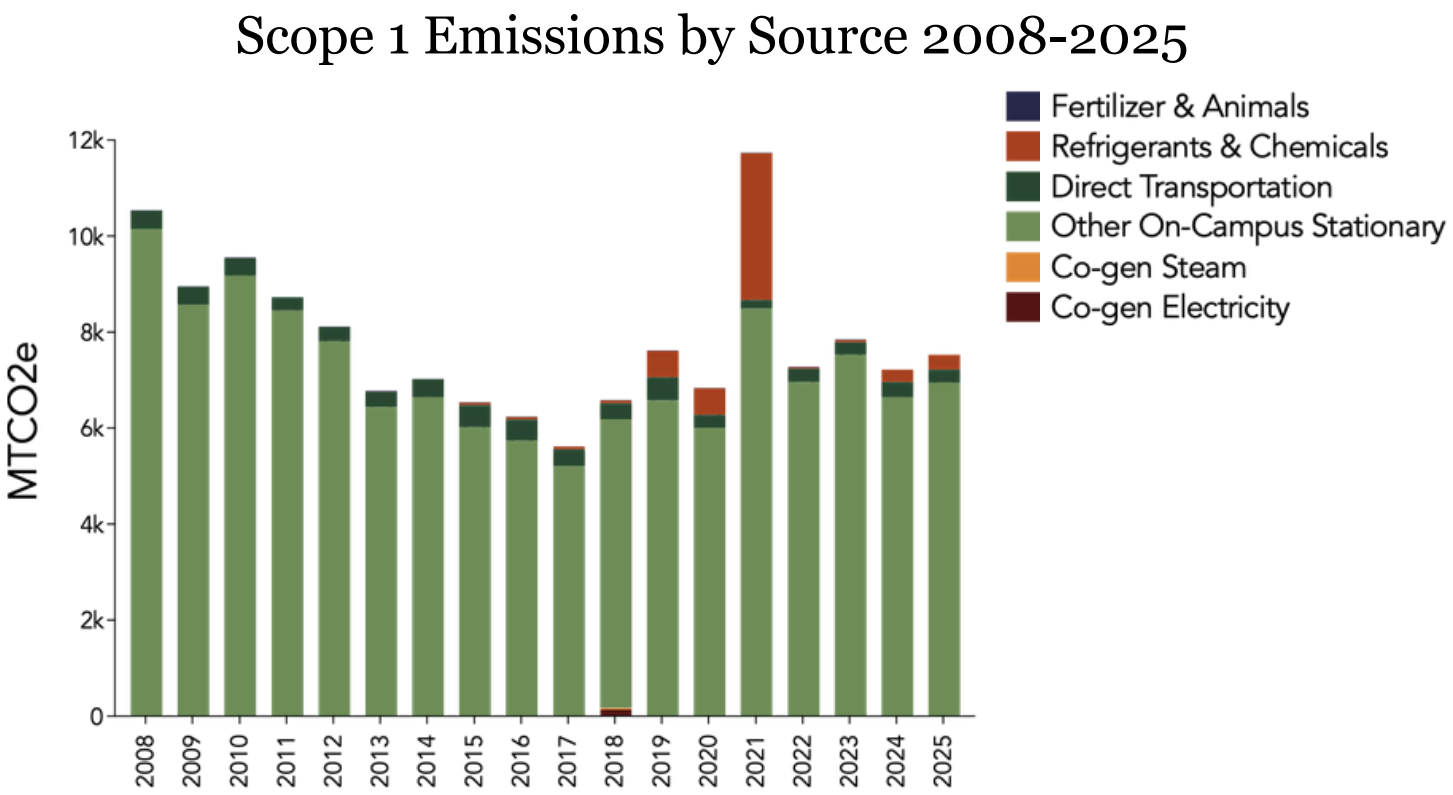



*Figure 5: Total Scope 1 emissions from 2008-2025, broken down by source.*

Colorado College's Scope 1 emissions are shown on Figure 5, broken down by individual sources from FY08 through FY25. A gradual decline in Scope 1 emissions can be seen between 2008 and 2025, although there is a less clear trend from 2018 to 2025. A notable increase occurred in 2021, specifically for refrigerant and chemical emissions and on-campus stationary emissions. The large spike in refrigerant and chemical emissions can be attributed to a refrigerant leak that occurred at a chiller rack in the food service kitchen, while the elevated on-campus stationary emissions were from heating make-up air for increased ventilation due to COVID-19 safety precautions. In general, refrigerant and chemical emissions and stationary fuel emissions stand out as the Scope 1 categories with the largest fluctuations between 2018 and 2025, marking them as key targets for reductions needed to meet the College's Scope 1 emissions goals. Attention to this reduction goal will be especially important moving forward, given the increase in Scope 1 emissions observed this year.

# Results | Scope 2

**Scope 2 encompasses "indirect emissions" associated with the generation of purchased energy. While these emissions physically occur at the facility where the energy is produced, they are attributed to Colorado College as the consumer. For the purposes of this report, CC's Scope 2 emissions are derived solely from purchased electricity.**

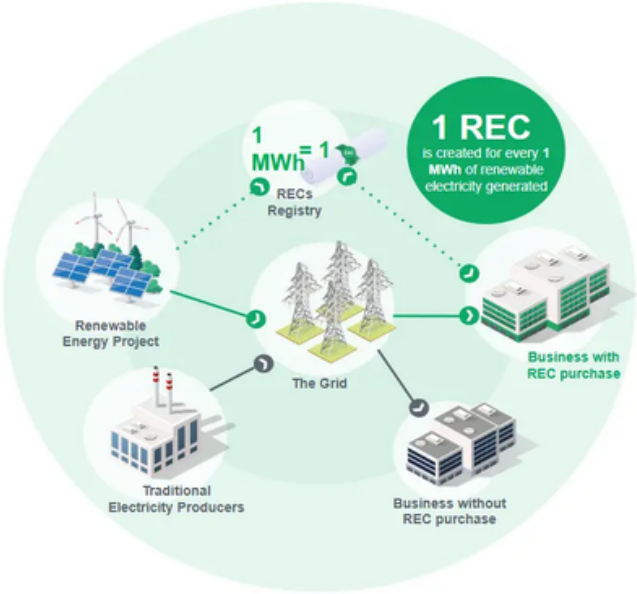



*Figure 6: Image courtesy of World Kinect. Energy flow for purchased RECs.*

Scope 2 emissions at Colorado College arise from the electricity the institution purchases. The consumption of electricity is recorded for the main CC campus, the CC Cabin, and the Baca campus, each of which utilizes different utility companies. Colorado Springs Utilities serves as the primary electricity provider for the main Colorado College campus. In fiscal year 2025, the total electricity consumption across the three campuses was approximately 19,637,988 kWh. This marks a 4.43% increase from the 18,804,408 kWh consumed in fiscal year 2024. It is anticipated that annual variations in electricity usage will occur, and currently lie within standard fluctuations.

FY25 is the fifth year that CC's Scope 2 emissions are zero (excluding a slight irregularity in FY22) due to the purchase of Renewable Energy Certificates (RECs) and carbon offsets (see Definitions and Terminology). 16,454,710 kWh of RECs were purchased for FY25. Acquiring bundled RECs directly contributes to local green economic growth and renewable energy, representing one way CC fulfills its sustainability promises. All RECs purchased by CC are audited and verified by Green-e, a third-party energy certification program. The remaining Scope 2 emissions are due to buildings acquired following the establishment of the green power tariff through Colorado Springs Utilities. The green power tariff lists and covers all buildings purchased before its implementation, but does not add on the few meters acquired by the College after that date. These additional emissions are instead compensated for by carbon offsets to attain net neutrality for Scope 2.

Colorado College's RECs are typically bundled or purchased alongside electricity from Colorado Springs Utilities. This arrangement guarantees that the College retains both the energy and the environmental benefits associated with it. The satellite campuses of CC are assigned unbundled RECs obtained from CC's ownership in local solar gardens. As a result, both the CC Cabin and the Baca campus achieve net-zero electricity emissions. Additionally, several properties located near the campus have also been assigned unbundled RECs, as they are currently ineligible for bundled RECs due to limitations on their availability through Colorado Springs Utilities.

While less than 5% of the electricity at CC comes from its on-campus solar facilities, the systems used for monitoring are not currently functioning. Consequently, a precise assessment of the electricity produced by on-campus solar sources cannot be conducted and is therefore excluded from this report.

The definition of Scope 2 emissions prohibits double-counting, ensuring that two different companies cannot claim the same emissions from their electricity; this is enforced through the Green Power Purchasing Program. This means that there is a limited number of RECs for purchase. Looking ahead, it is important to note that there may be a change in availability in bundled RECs through Colorado Springs Utilities, in which CC will need to reassess its REC purchasing options.

*Figure 7: Image courtesy of Colorado Springs Utilities.*

# Results | Scope 3

**As defined by the Greenhouse Gas Protocol, Scope 3 encompasses "indirect emissions" that occur in the College's value chain from sources not owned or controlled by the institution. While this category is often considered voluntary, Colorado College tracks specific activities in alignment with Second Nature's Climate Commitment and institutional sustainability goals. For this report, Scope 3 includes student and staff commuting, college-funded air travel, solid waste, wastewater, office paper consumption, and energy distribution losses (FERA and T&D).**

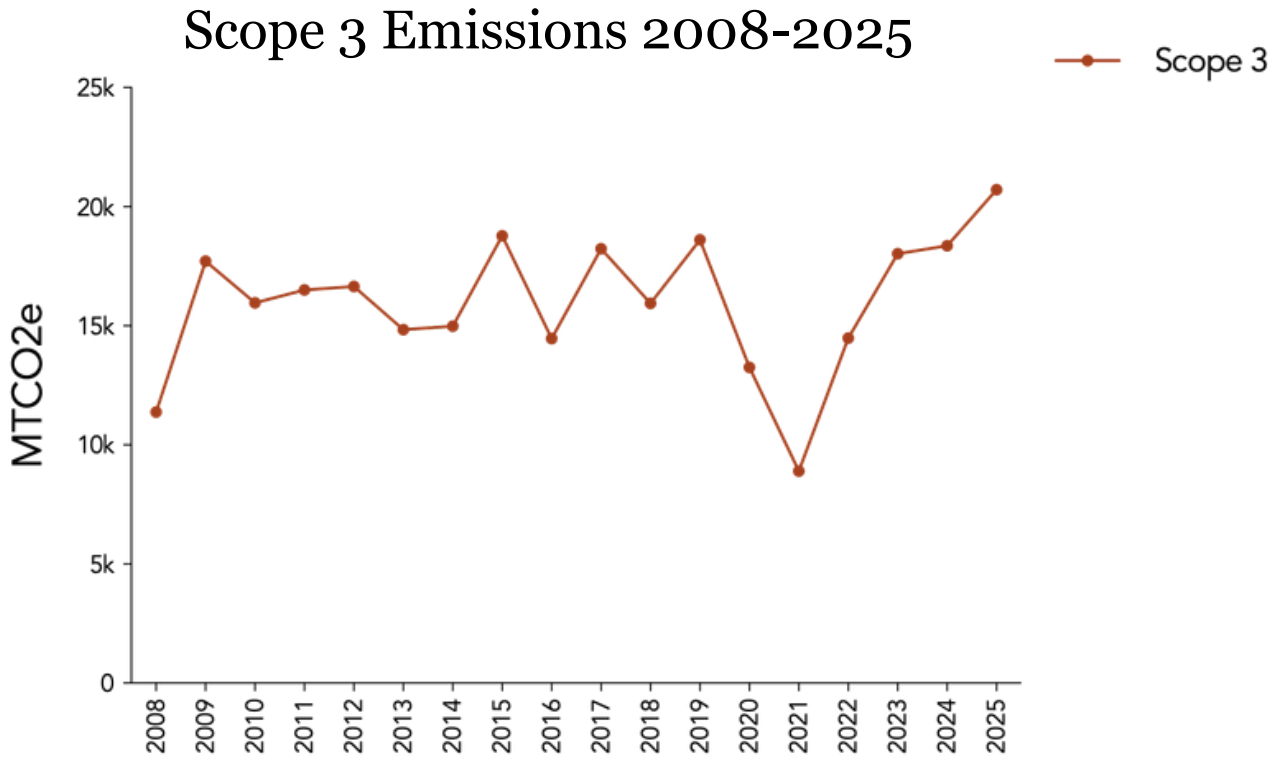



*Figure 8: Total Scope 3 emissions from 2008-2025.*

Scope 3 represents the majority of CC's emissions. In FY25, Colorado College's Scope 3 emissions totaled 20,724.77 MTCO2e, marking an approximate increase of 12.81% from FY24's 18,371.93 MTCO2e. The FY25 value was calculated using updated emissions factors (see Changes From Last Year). FY25 represents the highest Scope 3 emissions of all reported years, when looking from 2008 to 2025 as shown in Figure 8. The dip in Scope 3 emissions after FY19 can be attributed to the COVID-19 pandemic era, when campus operations and travel significantly decreased. From the baseline year FY08 (11,447.00 MTCO2e), Scope 3 emissions have increased by approximately 81.05%. These increases in emissions from the baseline year are largely due to expanded tracking efforts, growth in campus operations, and improved data accuracy.

From FY24 to FY25, all sources of Scope 3 emissions increased, with the exception of paper purchasing, which saw a 43.74% decrease. Notably, two key sources experienced substantial increases, primarily driven by variations in survey participation. Faculty commuting emissions, which are calculated based on self-reported data from faculty, rose by 539.23%, climbing from 154.34 MTCO2e in FY24 to 986.58 MTCO2e in FY25. This sharp increase is largely a reflection of the specific respondent pool, as this year's participants reported a higher usage of non-electric vehicles. Additionally, staff commuting emissions increased by 32.12%. Variations are anticipated in this category, as surveys may not fully capture the true emission values but can provide a good estimate.

Other emissions increases include a 17.08% rise in solid waste and wastewater management, a 16.01% increase in study abroad air travel, a 14.96% increase for directly financed travel (excluding air travel), a 6.10% increase for directly financed air travel, a 4.37% increase in FERA and T&D losses, and a 2.75% increase for student travel to and from home. For a complete list of values, please refer to Table 2 on the following page.

| EMISSIONS FACTORS | FY24 MTCO2e | FY25 MTCO2e | Percent Difference from FY24 to FY25 | Notes for Differences |
|---|---|---|---|---|
| Commuting (Staff & Faculty) | 800.35 | 1,840.10 | 129% Increase | See Limitations of Data and Disclosure (Pg. 24) |
| Business Air Travel | 5,290.81 | 5,613.54 | 6% Increase | Normal Variability |
| Study Abroad Air Travel | 3020.25 | 3,503.87 | 16% Increase | New study abroad destinations have been introduced |
| Student Travel to and from Home | 4262.11 | 4,379.28 | 3% Increase | Normal Variability |
| Other Directly Financed Travel | 1469.06 | 1,688.86 | 14% Increase | Increase in reimbursed travel |
| Solid Waste | 230.58 | 269.96 | 17% Increase | Increase in landfilled waste |
| Wastewater | 50.02 | 58.53 | 17% Increase | Increase in water usage leading to more treated wastewater |
| Paper Purchasing | 36.51 | 23.63 | 35% Decrease | Shift away from printed documents to online |
| T&D Losses | 521.81 | 544.94 | 4% Increase | Normal Variability |
| FERA | 2,684.94 | 2802.06 | 4% Increase | Normal Variability |

*Table 2: Categories of Scope 3 emissions and their total emission for FY24 and FY25. Total emissions include carbon dioxide, methane, and nitrogen compounds in MTCO2e.*

# Results | FERA Disclosure

**Fuel and Energy Related Activities (FERA) refers to emissions generated prior to the energy they supply (fuel, electricity, heating, cooling, etc.) reaching the end user. These are considered upstream Scope 3 emissions. Transmission and distribution (T&D) losses may either be included within this category or reported separately. Within this report, T&D losses are presented as a distinct category, although the Greenhouse Gas Protocol classifies them together under FERA.**

Colorado College recently added FERA to its GHG inventory. While FERA emissions have always existed, the ability to quantify and include them within SIMAP has only been available starting in FY23. FERA represents the upstream emissions associated with the production, processing, and transportation of fossil fuels. Calculations for this emissions category are determined based on the College's Scope 1 direct combustion of fuels or energy generation. Figure 9 details the FERA emissions associated with fuel oil that produces Scope 1 stationary fuel emissions. Included are the upstream Scope 3 emissions of oil production and upgrading, oil transport, refining, and refined product transportation.

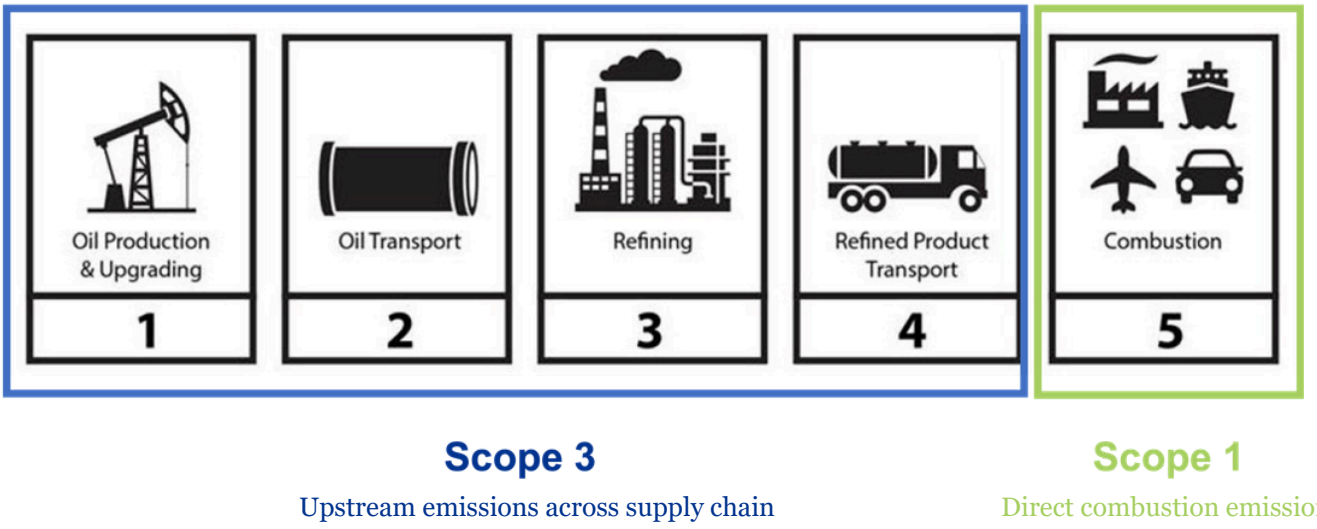



*Figure 9: Scope 3 FERA emissions upstream of Scope 1 emissions. Image provided by SIMAP.*

## Emissions from FERA and T&D Losses 2008-2025

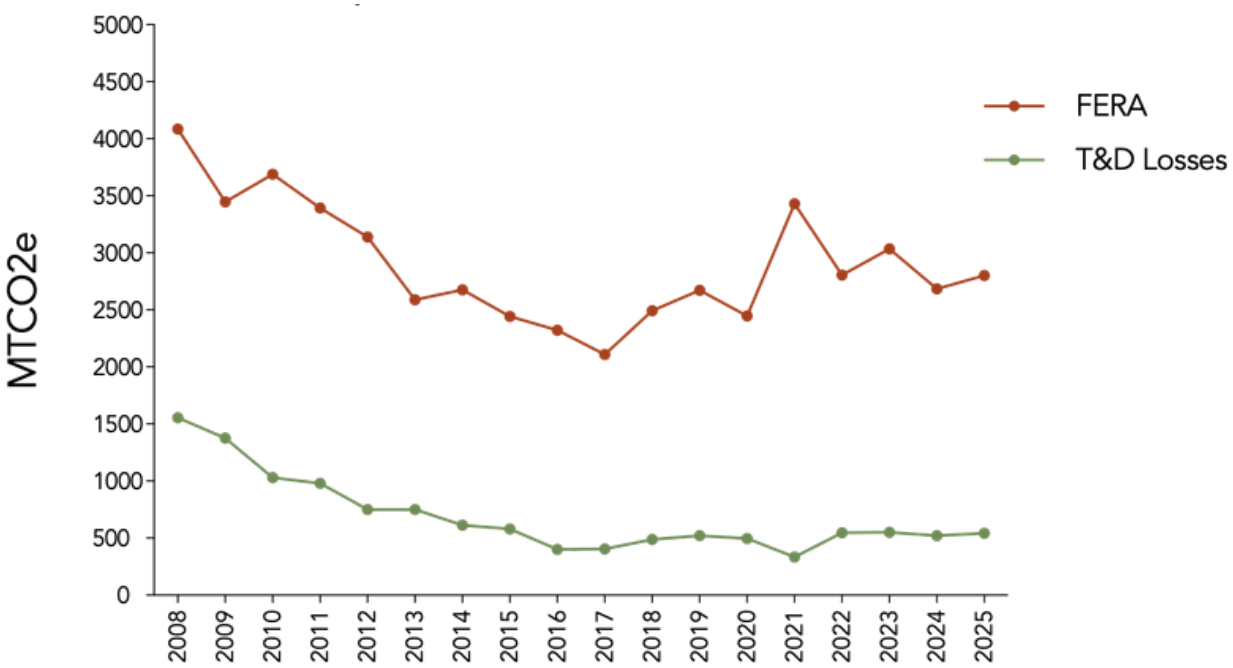



*Figure 10: FERA and T&D emissions for 2008-2025.*

Because FERA, exclusive of T&D, is calculated based on Scope 1 emissions, it can be retroactively calculated. Figure 10 presents the annual trends in both FERA and T&D losses from 2008 to 2025 based on retroactive calculations. FERA and T&D losses will continue to be reported separately to promote transparency until a new baseline year is established for the College, as is recommended by the GHG Protocol. This distinction is especially important considering FERA's significant contribution to total emissions. In FY25, FERA emissions accounted for roughly 2,800 MTCO2e, making it the fifth-greatest emissions source overall.

# Results | Limitations of Data and Disclosure

The Office of Sustainability is dedicated to delivering transparent, easily accessible, and accurate information regarding the environmental impacts of Colorado College. Although significant care and effort go into compiling the annual greenhouse gas inventory, it's essential to recognize uncertainties, the underlying assumptions, and the limitations of the data. This is especially relevant to Scope 3 reporting. Although this report has not undergone third-party auditing, it is assessed internally by Ian Johnson, the Director of Strategic Initiatives and Sustainability, who is a certified greenhouse gas inventory quantifier, along with Mae Rohrbach, the Program Manager of the Office of Sustainability. All data can be publicly viewed through SIMAP's and Second Nature's public reporting feature.

Data on commuting and student travel (Scope 3) is gathered through surveys. The Staff and Faculty Commuting Survey and the Student Travel To and From Home Survey* are created using Qualtrics and distributed through various channels. These include mass emails through a division newsletter, academic departments' Listservs, poster campaigns featuring QR codes, tabling events, and informal group chats (e.g., GroupMe).

Although there is a lot of effort put into reaching the student body, survey participation continues to be a challenge. For data to best reflect the trends of student travel to and from home, the survey asks respondents to estimate their round-trip travel plans. This results in a longer survey that dissuades a lot of students from finishing. Although a lot of students started the survey, there were many incomplete responses that had to be deleted from our data. Additionally, the design of the survey requires the anticipation of future round-trip travel, which can be difficult for students to predict. Colorado College's enrollment for FY25 was approximately 2,088 students. In the Student Travel To and From Home Survey, only 130 responses were completed, representing just 6.23% of the student body.

Engagement in the staff and faculty survey also continues to be low, following a trend observed in previous years. Similarly, CC has a full-time equivalent of 835 staff and faculty members (accounting for full- and part-time employees), but only 127 completed the survey, which is 15.21%. Ongoing low engagement is hindering the statistical significance of our survey samples, potentially leading to data that might not accurately reflect emissions from commuting and travel for all employees and students at Colorado College. In future years, the Emissions team is looking to take a 5-year rolling average of survey results to account for large fluctuations due to low response rates.

Qualtrics includes protections to detect and filter non-human responses. However, some bots still manage to bypass these systems and submit false entries. This presents an additional issue that complicates survey data collection. To ensure accuracy of data and real human responses, every survey response is manually reviewed and verified. Additionally, incomplete entries and responses from individuals not affiliated with the College are removed during this process.

*Since Colorado College is a residential campus, most students live on or close to campus. Therefore, commuting to and from classes is considered minimal and is not included in Scope 3 reporting. Instead, we focus on student travel between campus and home, typically for breaks or holidays, as this accounts for a more significant source of emissions.

Several Scope 3 categories are monitored based on financial data rather than direct activity data. For example, air travel for staff and faculty is measured using expenditures. SIMAP converts these dollar amounts into emissions using internal factors derived from the Bureau of Transportation Statistics. The most recent available value, from 2019, is $18.88 per mile. While this method improves the efficiency of collecting Scope 3 data, it has its limitations. It depends on financial transactions instead of actual miles traveled, which means it may not accurately reflect variations in flight costs, routes, and classes of travel. Additionally, relying on outdated cost factors, such as the cost per mile that hasn't been updated since 2019, can further compromise the accuracy of emissions calculations.

Other forms of travel are also tracked in dollar amounts, including mileage reimbursements, taxis, and rental cars. SIMAP estimates emissions by converting these costs into passenger miles using the Environmental Protection Agency's fuel efficiency standards and the Energy Information Administration (EIA)'s average gas prices. For FY25, the average fuel efficiency estimate is 23.4 miles per gallon, based on 2024 data published in 2025. The average gas price used is $3.149 per gallon, based on the 2025 EIA estimate for all fuel grades. This is the same conversion method used in the previous years to allow for consistency in the report.

Colorado Springs Utilities determines wastewater based on potable water usage, assuming that 86% of the water consumed becomes wastewater. This assumption is also used in our emissions inventory for estimating emissions related to wastewater treatment. This methodology is not only crucial for managing the wastewater system but also plays a significant role in our emissions inventory. When estimating emissions associated with wastewater treatment processes, we apply the same 86% assumption. This approach ensures that our data accurately reflects the relationship between water usage and wastewater production, allowing for more precise assessments of CC's environmental impact and resource management strategies.

This year marks the second year of using updated emissions factors established in June 2024, which reflect the latest understanding of the global warming potential of key greenhouse gases. This presents a challenge for transparency in emissions reporting. The updated emissions factors retroactively change past reports, meaning that public records no longer align with the retroactive updates. Each year, the public reporting system through Second Nature captures a snapshot of Colorado College's emissions as reported. However, with the 2024 emissions factors, these public reports no longer correspond to the calculations made using SIMAP, which is the primary emissions tracking tool.

Colorado College emphasizes the importance of accurate reporting, but retroactive changes can hinder our sustainability efforts. Continuously updating previous years' data can create challenges in securing support from the administration, especially when there is a perceived decline in progress. For instance, while CC achieved carbon neutrality in 2020 using the best available emissions factors at that time, subsequent retroactive adjustments have altered our past calculations, impacting the College's public perception of claims of carbon neutrality. Concerns regarding retroactive changes remain a topic of ongoing discussion, especially amongst carbon-neutral colleges and Second Nature.

# Results | Changes from Last Year

**Emissions Trends**

- Aggregate emissions increased from FY24 to FY25, with no significant fluctuations among sources.
- Overall gross emissions for FY25 increased by 15.55% from FY23 and by 16.83% since FY24.
- The most significant contributing factor to this increase was the rise in study abroad air travel emissions. This category experienced a 16.01% increase in emissions.
- In accordance with goals for directly reducing emissions, as opposed to continuing to focus efforts on offsetting emissions, Colorado College is transitioning away from carbon neutrality to fossil-free operation. See discussion in Goals and Future Areas for Improvement.

**Budget Changes**

- The overall college budget increased by approximately $1 million since FY24. When adjusted for inflation however, the budget shows a slight decrease in purchasing power between FY24 and FY25.

**Student Population**

- The student population in FY24 was 2,173 students total, with 1,750 of those students living on campus.
- The FY25 student population is 2,088 students, and 1,419 of those students live on campus.
- The student population decreased by roughly 3.91%, while the residential population decreased by around 18.91%. This caused the gross emissions per student to increase from 11.78 MTCO2e in FY24 to 14.32 MTCO2e in FY25.

**Construction Projects**

- No significant construction projects occurred between FY24 and FY25.

**SIMAP Emissions Accounting**

- Changes to emissions calculations associated with the new 2024 Emission Factors Version in SIMAP resulted in retroactive recalculations of several emissions categories in previous years. Categories from all scopes were impacted by these changes, but Scope 3 categories experienced the greatest impact.
- The most substantial calculation changes were done in accordance with new EPA Emission Factors Hub data released in 2024. Solid waste, commuting, and study abroad air travel (all within Scope 3) were the categories most impacted by these changes. The greatest change occurred in the calculation for solid waste emissions. Specifically, waste emissions factors from the WARM Model were removed and replaced with emissions factors from the EPA Emissions Factors Hub data released in 2024. This led to significant changes in the waste footprint of previous years.

# Carbon Offsets

**Carbon Offsets are measures taken by an entity to reduce or prevent the release of carbon dioxide and other greenhouse gases into the atmosphere. This is achieved through sequestration or avoidance. Sequestration is the capturing and storing of carbon in natural systems such as forests and soil. Avoidance is the changing of activities to prevent emissions from occurring initially. The reduction or removal of one metric ton of carbon dioxide equivalent (MTCO2e) is equal to one carbon offset.**

Carbon offsets act as a tool for neutralizing emissions by supporting projects that either capture and store carbon or prevent emissions that would otherwise occur. One commonly used carbon offset method involves capturing methane, a potent greenhouse gas, from landfills before it is released into the atmosphere. By collecting and destroying methane produced during the standard waste decomposition process, these projects prevent the gas from entering the atmosphere. Colorado College utilizes one of these methane-focused projects to obtain its carbon offsets. Specifically, the College invests in the destruction of methane at the Larimer County landfill located in Northern Colorado.

CC's involvement in the carbon offset market is voluntary, meaning these purchases are not required by regulation. The price of offsets is dictated by market dynamics rather than legislative regulations or cap-and-trade systems. As a result, costs fluctuate based on supply and demand within the carbon market.

In addition to purchasing carbon offsets, the College also acquires Renewable Energy Certificates (RECs) to help support the generation of renewable electricity. The use of offsets and RECs has allowed the College to leverage its financial resources to advance broader climate goals beyond its direct operational footprint.

CC officially achieved carbon neutrality in 2020 and remained carbon neutral through FY24. It is important to note, however, that neutrality does not equate to zero greenhouse gas emissions from the College. Instead, it means that all unavoidable emissions from campus operations are counterbalanced by verified carbon offsets. Carbon neutrality should therefore be understood not as a final endpoint, but as part of an ongoing process that requires adaptation and continued investment in emissions reduction strategies.

Maintaining neutrality, while important, can only advance the College's climate efforts to a certain extent. With this in mind, Colorado College is shifting efforts away from carbon neutrality and will focus on transitioning from fossil fuel use. This change aligns with the College's commitment to reducing emissions directly. Constraints such as limited availability of advanced technologies and infrastructure, financial barriers, and a lack of full control over certain operational activities make some emissions unavoidable. However, increasing efforts to shift away from fossil fuel sources entirely will greatly contribute to the reduction of emissions. The College has invested in carbon offsets on the voluntary market through 2025, but will be prioritizing actual reductions in emissions over carbon offsets and neutrality going forward.

# Goals and Future Areas for Improvement

Carbon neutrality represented an interim milestone for Colorado College's sustainability initiatives, not the end goal. The College is now moving beyond its interim milestone and transitioning away from fossil fuels towards decarbonization. The rising costs of high-quality carbon offsets, along with other factors, have led the College to move on to a new phase of sustainability initiatives focused on directly reducing and eliminating fossil fuel usage rather than relying on offsets.

Colorado College has set a new long-term goal to move away from fossil fuel use for normal daily operations entirely. This initiative focuses on eliminating fossil fuels from everyday operations and energy use. The primary aim is to address Scope 1 emissions by removing energy sources that rely on fossil fuels. This transition is being guided through a comprehensive energy master planning process, which is scheduled to be complete shortly after this report is published. There is an ongoing evaluation of different technologies and infrastructure strategies to support long-term decarbonization. Planning includes cost analysis and infrastructure buildout options over the next 15 years.

The energy master plan includes investigating alternatives to fossil fuels and is considering geothermal systems as a leading solution. Plans include the expansion of geothermal and heat pump systems to replace fossil fuel heating. Considerations include pricing, scalability, and implementation timelines. Additionally, there is the continued goal of expansion of an EV fleet to reduce fossil fuel consumption in transportation.

By 2035, CC aims to achieve a 50% reduction in fossil fuel use. The goal is to attain near-total elimination (up to 100%) of fossil fuel use by 2040. This transition would primarily address Scope 1 emissions associated with fossil fuel combustion.

In upcoming years, there may be a shift in the availability of bundled RECs from Colorado Springs Utilities, prompting CC to reevaluate its options for purchasing RECs. If availability for bundled RECs changes, this will affect Scope 2 emissions accounting.

In accounting for Scope 3 emissions, there have been challenges in obtaining representative survey responses due to low participation rates in both the Staff and Faculty Commuting Survey and the Student Travel To and From Home Survey. To reduce the significant year-to-year fluctuations in the survey results, we recommend implementing a 5-year rolling average in future years. This approach will help account for outliers in the data and enhance the accuracy of our findings.

By implementing innovative strategies and practices, Colorado College aims to enhance energy efficiency, invest in renewable energy sources, and foster a culture of sustainability within the campus community. Continuous evaluation and adaptation of these strategies will help ensure that the College moves closer to its ambitious sustainability targets and mitigates the impacts of climate change. These ongoing efforts are not just about restoring carbon neutrality but also about fostering a holistic shift in how the College approaches environmental stewardship.

# Conclusion

This year's inventory reflects a 20.64% reduction in gross emissions since the 2008 baseline. This reduction underscores the College's efforts to move toward a more sustainable future, despite the challenges faced in recent years. However, since 2021, gross emissions have been on the rise, highlighting the need for continued focus and more effective carbon management strategies.

In FY25, Colorado College has decided to transition away from its pursuit of carbon neutrality, a goal it successfully maintained for four consecutive years. Rather than signaling an end to sustainability efforts, this shift reflects an evolution in strategy, with funds being reallocated from external carbon offsets toward reducing fossil fuel usage through direct, on-campus infrastructure investments.

Current initiatives aimed at promoting sustainable practices are progressing according to plan. The College is finalizing an energy master plan, which, when implemented, would eliminate fossil fuel use for normal daily operations entirely. This initiative focuses on eliminating fossil fuels from routine operations and energy consumption, particularly by targeting Scope 1 emissions. The plan involves phasing out energy sources dependent on fossil fuels and promoting a transition toward more sustainable alternatives that align with institutional environmental objectives.

The primary objective of this report is to maintain transparency. This includes candidly acknowledging both the progress made and the challenges that remain, particularly the gap between current practices and long-term sustainability goals. By clearly presenting these realities, Colorado College aims to remain truthful about its impact and purposeful in its future direction.

# Acknowledgements

This report could not have been accomplished without the contributions of our data stakeholders. Collecting data is crucial for finalizing the GHG inventory and for comprehending the impacts on both the community and the environment. We extend our gratitude to each data stakeholder for supplying the Emissions Team with the vital information needed to complete our inventory.

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All students who completed the student travel survey
All staff and faculty who completed the commuting survey

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