# NEW MEXICO ECONOMY-WIDE GREENHOUSE GAS EMISSIONS INVENTORY FOR YEAR 2023

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# EXECUTIVE SUMMARY

This report presents New Mexico's statewide greenhouse gas (GHG) emissions inventory for calendar year 2023, developed by Eastern Research Group, Inc. (ERG) using sector-based methods consistent with U.S. Environmental Protection Agency (EPA) and Intergovernmental Panel on Climate Change (IPCC) guidance. The inventory quantifies emissions of carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride ($SF_6$), and nitrogen trifluoride ($NF_3$) across major emitting sectors: Industry, Transportation, Agriculture, Electricity Generation, Buildings, and Waste and Materials Management. Following commonly-used practices, net emissions – the sum of emissions generated and sequestered - from Natural and Working Lands were calculated separately and are not included in gross totals to allow a direct comparison between the 2021 and 2023 inventories. Results show that total gross emissions in 2023 were 76.52 million metric tons of carbon dioxide equivalent (MMT $CO_2e$)[1], driven primarily by Industry's Oil and Gas Production subsector, which accounted for nearly half of statewide GHG emissions (45%). Transportation and Agriculture were the next-largest contributors, representing roughly one-quarter (23%) and one-eighth (13%) of total emissions, respectively. $CO_2$ comprised 68% of total statewide GHG emissions, with $CH_4$ and $N_2O$ accounting for 22% and 8%, respectively.

Statewide, emissions fell from 82.97 to 76.52 MMT $CO_2e$ between 2021 and 2023, an 8% reduction. This decrease was due in large part to reductions in emissions from the Electricity Generation sector. Between 2021 and 2023, electricity-related emissions fell by 36%, reflecting the closure of the coal-fired San Juan Generating Station in 2022 and the continued growth of natural gas and renewable generation. Table ES-1 summarizes gross 2023 GHG emissions by sector. Overall, the results provide an updated and comprehensive emissions checkpoint to support continued climate planning and policy development across New Mexico.

For future emissions projections and associated reduction measures, please see New Mexico's Climate Action Plan at Climate Action Planning – New Mexico Climate Change Action.

**Table ES-1. Summary of Economy-wide GHG Emissions for Year 2023.**

| Sector | Emissions [MMT $CO_2e$] | |
|---|---|---|
| Industry | 37.52 | (49%) |
| └ *Oil and Gas Production* | *34.32* | (45%) |
| └ *Industrial Fuel Combustion* | *1.59* | |
| └ *Industrial Processes and Product Use* | *1.52* | |
| └ *Coal Mining and Abandoned Mines* | *0.08* | |
| Transportation | 17.24 | (23%) |
| Agriculture | 10.07 | (13%) |

[1] All emissions in this report are shown in carbon dioxide equivalents, which accounts for the different global warming potentials (GWP) of each greenhouse gas. A GWP accounts for how much energy the emission of 1 ton of gas will absorb over a given period of time, relative to the emission of 1 ton of $CO_2$. This conversion allows emissions estimates of different gases to be directly compared.

**Table ES-1. Summary of Economy-wide GHG Emissions for Year 2023.**

| Sector | Emissions [MMT $CO_2e$] | |
|---|---|---|
| Electricity Generation | 6.60 | (9%) |
| Buildings | 4.05 | (5%) |
| └ *Residential* | *2.35* | |
| └ *Commercial* | *1.70* | |
| Waste and Materials Management | 1.05 | (1%) |
| **Total Gross Emissions** | **76.52** | **(100%)** |
| Natural and Working Lands (net emissions) | 6.44 | |

# 1 METHODOLOGY

The Greenhouse Gas Inventory (GHGI) team developed a sector-based, statewide inventory of major sources of GHG emissions within New Mexico for calendar year 2023. This inventory includes the seven GHGs commonly required by standard accounting protocols: $CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, $SF_6$, and $NF_3$. The GHGI team calculated emissions of $CO_2$ from a biogenic origin where data were readily available, but these are reported separately from other gases and are not included in the emissions totals.[2] The inventory encompasses all major sectors, including Industry, Transportation, Agriculture, Electricity Generation, Commercial and Residential Buildings, Waste and Materials Management, and Natural and Working Lands. Methodological decisions, assumptions, and data sources are documented below to ensure transparency and reproducibility. The data and calculations used in preparation for this analysis are available in the 2023 GHG Emissions Inventory Excel spreadsheet (2023 GHGI spreadsheet) at https://www.env.nm.gov/climate-change-bureau/greenhouse-gas-emissions-inventories/.

The GHGI team developed this inventory in alignment with established best practices for state-level inventories, drawing primarily from EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks (U.S. GHG Inventory)* and the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (including the 2019 Refinement). It uses 100-year global warming potentials (GWPs) from *The Fifth Assessment Report of the United Nations IPCC*. Although the IPCC has released a Sixth Assessment Report with updated GWPs, New Mexico has chosen to align with those used in the U.S. national inventory for consistency. Emissions were primarily calculated using activity data combined with appropriate emission factors, which are emission rates, by GHG, per unit of activity, prioritizing U.S.-specific factors where available. Where deviations from these standard methods were necessary, they are explicitly noted. A summary of the data sources used to calculate GHG emissions in each sector or subsector is included in Table 1. Data sources used to calculate emissions in the Oil and Gas Production subsector are described in a separate report titled "New Mexico Oil and Gas Greenhouse Gas Emissions Inventory for Year 2023," available at https://www.env.nm.gov/climate-change-bureau/greenhouse-gas-emissions-inventories/.

[2] Biogenic $CO_2$ refers to carbon dioxide released from the decomposition, combustion, or processing of organic material derived from living organisms (rather than from the combustion of fossil fuels). Biogenic $CO_2$ is generally considered carbon neutral because the emitted $CO_2$ was recently absorbed from the atmosphere as part of the short-term natural carbon cycle. It is common practice to exclude or separately report biogenic $CO_2$ emissions from a GHG inventory.

This report presents New Mexico's fifth sector-wide GHG emissions inventory. Preceding this report are two versions of the 2005 baseline year, as well as emissions inventories for 2018 and 2021. The methods used to develop the 2018 inventory and its associated 2005 baseline differ significantly from those used for the revised 2005 baseline and 2021 and 2023 inventories. As a result, the 2018 inventory and its associated 2005 baseline are not directly comparable to the revised 2005 baseline and 2021 and 2023 inventories. The methods used for the 2023 inventory generally align with those used to develop New Mexico's 2021 inventory and the revised 2005 baseline. This report notes any methodological differences where they occur.

**Table 1. Comparisons Across Inventory Years**

| Inventory Year | Type | Year of Analysis | Comparable With... | Author |
|---|---|---|---|---|
| 2005 | Oil and Gas (Revised Baseline) | 2024 | All except 2005 Original Baseline and 2018 | ERG |
| 2005 | Economy-Wide (Original Baseline) | 2020 | 2018 | E3 |
| 2005 | Economy-Wide (Revised Baseline) | 2024 | All except 2005 Original Baseline and 2018 | E3 |
| 2018 | Economy-Wide | 2020 | 2005 Original Baseline | E3 |
| 2020 | Oil and Gas | 2022 | All except 2005 Original Baseline and 2018 | ERG |
| 2021 | Economy-Wide | 2024 | All except 2005 Original Baseline and 2018 | E3 |
| 2023 | Economy-Wide | 2025 | All except 2005 Original Baseline and 2018 | ERG |
| 2023 | Oil and Gas | 2025 | All except 2005 Original Baseline and 2018 | ERG |

Emissions from the Four Corners Generating Station were excluded from the Electricity Generation sector because it is located on the Navajo Nation and therefore is not subject to state of New Mexico regulatory authority. This approach is consistent with the methodology for previous emissions inventories.

While Four Corners Generating Station emissions are excluded from the New Mexico 2023 GHG emissions inventory, other emissions occurring on Tribal land are included. The GHGI team adopted this approach for two reasons. First, it is consistent with the methods used to develop the previous emissions inventories. Second, it is straightforward to exclude emissions from the Four Corners Generating Station because it is a single, large stationary source of emissions, whereas other sources (e.g. transportation) are significantly smaller, more diffuse, and harder to isolate accurately, potentially introducing additional uncertainty or bias.

Emissions and sinks from the Natural and Working Lands sector were quantified to provide a complete picture of the state's GHG emissions but are not included in the overall gross emissions totals, consistent with New Mexico's previous inventories. This approach follows standard practice for state-level

inventories, reflecting the unique characteristics of this sector—including significant interannual variability, methodological complexity, and uncertainty in data and models.

**Table 2. Summary of Data Sources Used in Analysis.**

| Sector/Subsector | Data Source | Date Accessed |
|---|---|---|
| **Industrial Fuel Combustion** | U.S. Energy Information Administration. 2025. *State Energy Data System (SEDS): 1960–2023 (complete), New Mexico State Profile and Energy Estimates*. June 27, 2025. https://www.eia.gov/state/seds/seds-data-complete.php?sid=NM.<br><br>U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2023.* Released via FOIA to Environmental Defense Fund, May 7, 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory<br><br>U.S. Environmental Protection Agency. 2025. *State Inventory Tool*: Stationary Combustion Module [Spreadsheet tool]. U.S. Environmental Protection Agency. January 2025. https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool | July 2025 |
| **Industrial Processes and Product Use** | U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2023.* Released via FOIA to Environmental Defense Fund, May 7, 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory<br><br>U.S. Environmental Protection Agency. 2024. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2022*. EPA 430R-24004. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022. | July 2025 |
| **Coal Mining and Abandoned Mines** | Mine Safety and Health Administration. 2025. *MSHA Mines Dataset. https://www.msha.gov/data-and-reports/mine-data-retrieval-system.*<br><br>U.S. Energy Information Administration. 2024. *Annual Coal Report 2023*. October 2024. https://www.eia.gov/coal/annual/pdf/acr.pdf.<br><br>U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2023.* Released via FOIA to Environmental Defense Fund, May 7, 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory | July - August 2025 |

**Table 2. Summary of Data Sources Used in Analysis.**

| Sector/Subsector | Data Source | Date Accessed |
|---|---|---|
| | U.S. Environmental Protection Agency. 2024. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2022*. April 2024. EPA 430R-24004. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022. | |
| **Transportation** | On-Road:<br>U.S. Environmental Protection Agency. 2024. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2021.* Released April 2024. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021.<br><br>U.S. Environmental Protection Agency. 2024. *Motor Vehicle Emission Simulator* (MOVES4.0.1), Released January 14, 2024. https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves.<br><br>U.S. Environmental Protection Agency. 2024. *Emissions Modeling Platform (2016v3).* Released January 2023. https://www.epa.gov/air-emissions-modeling/emissions-modeling-platforms.<br><br>U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2023.* Released via FOIA to Environmental Defense Fund, May 7, 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory.<br><br>Aviation:<br>U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2023.* Released via FOIA to Environmental Defense Fund, May 7, 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory.<br><br>U.S. Energy Information Administration. 2025. *State Energy Data System (SEDS): 1960–2023 (complete), New Mexico State Profile and Energy Estimates*. Released June 27, 2025. https://www.eia.gov/state/seds/seds-data-complete.php?sid=NM.<br><br>Nonroad:<br>U.S. Environmental Protection Agency. 2024. *Motor Vehicle Emission Simulator (MOVES5.0.0),* Released December 11, 2024. https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves. | On-Road: October 2024<br>All other Transportation Modes: July – August 2025 |

**Table 2. Summary of Data Sources Used in Analysis.**

| Sector/Subsector | Data Source | Date Accessed |
|---|---|---|
| | Rail:<br>U.S. Environmental Protection Agency. 2025. *Emissions Modeling Platform (2022v1).* Released Spring 2023. https://www.epa.gov/air-emissions-modeling/emissions-modeling-platforms.<br><br>U.S. Energy Information Administration. 2024. *Carbon Dioxide Emissions Coefficients.* Released September 18, 2024. https://www.eia.gov/environment/emissions/co2_vol_mass.php. | |
| **Agriculture** | U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks by State: NM, 1990-2023*. Released via FOIA to the Environmental Defense Fund, August 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory. | September – October 2025 |
| **Electricity Generation** | U.S. Environmental Protection Agency. 2025. *eGRID with 2023 Data, Revision 2*. Released June 12, 2025. https://www.epa.gov/egrid/detailed-data. | August 2025 |
| **Buildings - Residential** | U.S. Energy Information Administration. 2025. *State Energy Data System (SEDS): 1960–2023 (complete), New Mexico State Profile and Energy Estimates*. Released June 27, 2025. https://www.eia.gov/state/seds/seds-data-complete.php?sid=NM. | August 2025 |
| **Buildings - Commercial** | U.S. Energy Information Administration. 2025. *State Energy Data System (SEDS): 1960–2023 (complete), New Mexico State Profile and Energy Estimates*. Released June 27, 2025. https://www.eia.gov/state/seds/seds-data-complete.php?sid=NM. | August 2025 |
| **Waste and Materials Management** | U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks by State: NM, 1990-2023*. Released via FOIA to the Environmental Defense Fund, August, 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory. | September – October 2025 |
| **Natural and Working Lands** | U.S. Environmental Protection Agency. 2025. *Inventory of U.S. Greenhouse Gas Emissions and Sinks by State: NM, 1990-2023*. Released via FOIA to the Environmental Defense Fund, August, 2025. https://www.edf.org/freedom-information-act-documents-epas-greenhouse-gas-inventory. | September – October 2025 |

## 1.1 Industry

Emissions from the industry sector include four subsectors: Oil and Gas Production, Industrial Fuel Combustion, Industrial Processes and Product Use, and Coal Mining and Abandoned Mines.

### 1.1.1 Oil and Gas

The Oil and Gas GHGI team calculated emissions from five categories for the Oil and Gas Production subsector. The five categories comprise four key industry segments (production, gathering and boosting, natural gas processing, and transmission and storage) along with inactive oil and gas wells. The Oil and Gas GHGI team used emissions and activity data from the New Mexico Air Quality Bureau's emissions inventory. In addition, the Oil and Gas GHGI Team used data submitted under EPA's Greenhouse Gas Reporting Program Subpart W and Subpart C, other EPA data, measurement studies, and oil and gas well and production data from the EMNRD Oil Conservation Division (OCD). Where appropriate, the Oil and Gas GHGI team used facility-specific data, but some facilities did not have emissions data available. When facility-specific data were not available, the Oil and Gas GHGI Team used available data to calculate average emission factors (by emission source and industry segment) to apply to the facilities without data. Detailed information regarding methods and results for the Oil and Gas Production subsector is provided in a separate report titled "New Mexico Oil and Gas Greenhouse Gas Emissions Inventory for Year 2023," available at https://www.env.nm.gov/climate-change-bureau/greenhouse-gas-emissions-inventories/.

### 1.1.2 Industrial Fuel Combustion

The Industrial Fuel Combustion subsector includes emissions from combustion of fossil fuels for energy purposes in the industrial sector, excluding emissions attributed to the Oil and Gas Production subsector, which are reported in that subsector.

The GHGI team obtained annual fuel consumption data for the industrial end-use sector, by fuel type, from the U.S. Energy Information Administration (EIA) State Energy Data System (SEDS) for 2023 for New Mexico. According to SEDS, distillate fuel (i.e., diesel fuel) contributed 20% of the industrial sector's fuel use in 2023 for New Mexico, and natural gas contributed approximately 19%. Other petroleum products (e.g. still gas, HGLs, asphalt and road oil, and gasoline) collectively accounted for roughly 58% of the industrial sector's fuel use in 2023 in New Mexico.

The GHGI team quantified emissions of fossil $CO_2$, $CH_4$, and $N_2O$ from each fuel type by multiplying the quantity of fuel by its default emission factors from EPA's *U.S. GHG Inventory* and EPA's *State Inventory and Projection Tool* (SIT) stationary combustion module. The following adjustments were made to the 2023 industrial fuel consumption data from SEDS to be consistent with the methodology used in the *U.S. GHG Inventory*:

- Excluded biofuels from the industrial distillate fuel consumption quantity, since biogenic emissions are not included in this inventory.
- Excluded fuel ethanol from the industrial motor gasoline consumption quantity, since biogenic emissions are not included in this inventory.
- Deducted the quantity of fuels used for non-energy purposes within the Industry sector, since these fuels are included in the Industrial Processes and Product Use subsector.

The GHGI team made additional adjustments to prevent the same emissions from being included in multiple inventory sectors (i.e. "double-counting") as follows:

1. Deducted the quantity of natural gas consumed as lease and plant fuel (i.e., on-site fuel use by energy companies including for compressors and dehydrators), as emissions from lease and plant fuel combustion are accounted for in the Oil and Gas Production subsector.
2. Excluded EIA's Industrial sector distillate fuel and gasoline consumption data for nonroad fuel use in construction, agriculture, logging, and commercial applications. These combustion emissions from gasoline and diesel-powered agricultural equipment, construction, logging, industrial, oilfield, and mining equipment are included in the Transportation sector.
3. Excluded EIA's industrial sector gasoline consumption quantity for commercial purposes (EIA reports commercial gasoline use within the industrial end use sector) as these combustion emissions are accounted for in the commercial fuel combustion subsector.
4. Deducted emissions from two industrial facilities with cogeneration for onsite energy use as these emissions are accounted for in the Electricity Generation sector.

Following reconciliation with the nonroad sources, Commercial Buildings subsector, and Electricity Generation sector, $CO_2$ emissions from distillate fuel combustion and $CH_4$ emissions from gasoline combustion were reduced to zero.

The methods described above (2 - 4 in the list of adjustments) differ from those used to develop the 2021 and associated 2005 baseline inventories. The previous GHGI team developed the 2021 and associated 2005 baseline inventories using data on industrial coal, petroleum, and natural gas use from EPA's State Inventory Tool, and only deducted the quantity of natural gas consumed as lease and plant fuel (1 in the above list).

### 1.1.3 Industrial Processes and Product Use

The Industrial Processes and Product Use subsector includes emissions from industrial processes such as cement production and semiconductor manufacturing as well as the use of GHG-containing products such as refrigeration equipment and electrical switchgears. This subsector only includes emissions from industrial processes and products used for non-energy-related purposes. Emissions from fuel use for energy-related purposes are accounted for in the Industrial Fuel Combustion subsector.

The GHGI team estimated emissions for the Industrial Processes and Product Use subsector by multiplying the ratio of New Mexico to national Industrial Processes and Product Use emissions from the 1990–2022 *U.S. GHG Inventory* with the national Industrial Processes and Product Use emissions from the 1990–2023 *U.S. GHG Inventory*.

The methods for the 2023 inventory differ from the methods for the 2021 and associated 2005 baseline inventories in that the previous GHGI team used EPA's *U.S. GHG Inventory by State*. At the time of this subsector's development, the 2023 version of the *U.S. GHG Inventory by State* was not available.

### 1.1.4 Coal Mining and Abandoned Mines

This subsector includes emissions from active and abandoned coal mines. Coal mine $CH_4$ includes emissions from underground and surface mining activities and post-mining activities, and accounts for $CH_4$ that is recovered and used. Abandoned mine $CH_4$ includes vented emissions from abandoned coal mines and accounts for $CH_4$ recovery projects at abandoned mines.

The GHGI team estimated annual coal mine $CH_4$ emissions using mine-level data from the Mine Safety and Health Administration (MSHA)[3], EIA's annual coal production data[4], and GHG emission factors from the 2023 *U.S. GHG Inventory*. The MSHA data indicated that there were no active underground mines in New Mexico in 2023. The GHGI team estimated surface mining emissions (including post-mining activities) using EIA's annual coal production data for New Mexico and emission factors from the *U.S. GHG Inventory*. These methods are consistent with those used to develop the 2021 inventory and associated 2005 baseline.

The GHGI team estimated annual abandoned mine $CH_4$ emissions by multiplying the ratio of New Mexico to national abandoned mine $CH_4$ emissions from the 1990–2022 *U.S. GHG Inventory* with the national abandoned mine $CH_4$ emissions from the 1990–2023 *U.S. GHG Inventory*.

This methodology differs from that used to develop the 2021 inventory and associated 2005 baseline. The previous GHGI team used data from the *1990-2021 U.S. GHG Inventory by State* for New Mexico to estimate abandoned mine $CH_4$ emissions for those inventories. At the time of this subsector's development, the 2023 version of the *U.S. GHG Inventory by State* was not available.

## 1.2 Transportation

The GHGI team quantified emissions from the Transportation sector by summing the total emissions of $CO_2$, $CH_4$, and $N_2O$ from all transportation modes operating within the state. The Transportation sector inventory includes direct GHG emissions from the combustion of transportation fuels in on-road vehicles[5] (passenger cars, light-duty trucks, medium- and heavy-duty trucks, buses, and motorcycles), rail, aircraft, and nonroad vehicles and equipment used across other end-use sectors, including Industry, Buildings, and Agriculture.

To develop New-Mexico-specific transportation emissions estimates, the GHGI team employed a hybrid methodology, combining both high-level (top-down) national data with a more detailed, state-specific (bottom-up) modeling to allocate emission totals among vehicle types. This approach ensures alignment with the U.S. GHG Inventory while providing detail by vehicle type (e.g. passenger cars, heavy trucks), capturing differences in vehicle activity, fuel use, and the mix of transportation modes operating within the state.

ERG's transportation sector methodology differs from the approach used in the 2021 inventory, which applied a top-down method that allocated national data from U.S. EPA's Inventory of U.S. GHG Emissions and Sinks to New Mexico. The previous approach disaggregated emissions by fuel type only (e.g. gasoline, diesel, jet fuel, and other fuels) but did not allocate emissions by vehicle category or mode.

[3] MSHA Mines Dataset, Data Retrieved August 4, 2025. Internet address: https://www.msha.gov/data-and-reports/mine-data-retrieval-system

[4] EIA Annual Coal Report 2023. Table 2. October 30, 2024. Internet address: https://www.eia.gov/coal/annual/pdf/acr.pdf

[5] Electric vehicle-related emissions are included in the transportation sector estimates because the 2023 EPA U.S. GHG Inventory data used for on-road CO2 include emissions associated with electricity generation for electric vehicle (EV) charging. Since these emissions are also captured in the electric power sector, we evaluated the potential overlap and found that removing the EV-related electricity emissions would reduce total statewide GHG emissions by approx. 0.1%. Given the negligible impact on the overall inventory, we moved forward with the national EPA on-road estimates as reported, applying NM-specific allocation factors by vehicle type.

### 1.2.1 On-Road Vehicles

The GHGI team estimated statewide emissions from on-road vehicles using a top-down allocation approach informed by state-specific modeling outputs. Due to limited data availability at the time of this analysis, New Mexico-specific on-road vehicle $CO_2$ emission data was pulled from EPA's annual *Inventory of U.S. Greenhouse Gas Emissions and Sinks by State: 1990-2021*[6] and used for 2023. The 1990-2023 report was not available at the time of analysis. New Mexico-specific on-road vehicle $CO_2$ emission data was then allocated by vehicle category, first using EPA's state-specific Emissions Modeling Platform (EMP 2016v3) inventories and then second by splitting the light-duty vehicle distribution between passenger cars and light trucks using MOVES4.0.1 (the most recent version of the MOVES model at the time of analysis).

These allocation factors represent the state's share and distribution of national on-road activity and emissions by vehicle category (e.g. the proportion of national passenger cars, light-duty trucks, and other vehicle emissions attributable to New Mexico). The GHGI team applied these allocation factors to national $CO_2$ emissions data from the 1990-2023 *U.S. GHG Inventory*, by vehicle category.

The GHGI team used MOVES4.0.1 to estimate New Mexico-specific $CH_4$ and $N_2O$ emissions from on-road vehicles, by vehicle category, applying the appropriate GWP multiplier for each GHG.

### 1.2.2 Aviation

The GHGI team estimated aircraft emissions using a fuel-based allocation approach. The Team developed New Mexico-specific $CO_2$ allocation factors for both commercial and other aircrafts using jet fuel consumption data from EIA's SEDS and applied these factors to national $CO_2$ emissions estimates for aircrafts from the 1990-2023 *U.S. GHG Inventory*.

SEDS jet fuel consumption data represent all jet fuel sold or loaded onto aircraft in the state. As jet fuel accounts for most of the aviation fuel consumed by aircrafts in New Mexico, the GHGI team used jet fuel data, rather than aviation gasoline, to calculate appropriate New Mexico allocation factors. The GHGI team estimated aviation emissions for $CO_2$ only because $CO_2$ emissions can be estimated from fuel consumption data, whereas best estimates of $CH_4$ and $N_2O$ emissions require detailed information on aircraft engine technologies and flight data that are not available at the state level through SEDS.

### 1.2.3 Rail

The GHGI team sourced rail emissions from EPA's Emissions Modeling Platform (EMP). EPA's EMP provides rail emissions estimates for criteria pollutants only, including sulfur dioxide ($SO_2$). The EMP does not include GHG emission estimates for the transportation sector in public reports. To estimate $CO_2$ emissions, ERG retrieved $SO_2$ emissions data from the EMP, including the base year, 2022, and the next available analytical year, 2026, and calculated fuel consumption using an $SO_2$ emission factor. Then, ERG interpolated New Mexico rail diesel fuel consumption for 2023 using the 2022 and 2026 bookend years. ERG then converted fuel consumption to $CO_2$ emissions using the EIA $CO_2$ emission factor for diesel.

While it is technically possible to apply EPA's locomotive $CH_4$ and $N_2O$ emission factors to the estimated diesel consumption values, these emissions are generally more sensitive to assumptions regarding

[6] https://www.epa.gov/ghgemissions/methodology-report-inventory-us-greenhouse-gas-emissions-and-sinks-state-1990-2021

locomotive engine technologies, emission control configurations, operating characteristics, and locomotive tier distributions. The EMP outputs do not provide sufficient information on these factors, resulting in a higher degree of uncertainty for $CH_4$ and $N_2O$ estimates than for $CO_2$ estimates, which are directly tied to fuel consumption. Given the relatively small contribution of $CH_4$ and $N_2O$ compared to $CO_2$ emissions from rail diesel combustion and the additional uncertainty associated with estimating them from EMP-derived fuel use, $CH_4$ and $N_2O$ were not estimated.

### 1.2.4 Nonroad Vehicles and Equipment

The GHGI team estimated emissions from nonroad vehicles and equipment using a bottom-up modeling approach. The GHGI team used MOVES5 to model New Mexico-specific $CO_2$ and $CH_4$ emissions by end-use sector, including agriculture, airport support (e.g., airport support equipment), commercial, construction, industrial, lawn/garden, logging, oil field, pleasure craft, railroad support (e.g., railway maintenance), recreational, and underground mining. As described in Section 1.1.2, the GHGI team removed nonroad emissions reported in SEDS from these sectors and assigned them to the Transportation sector to enable easier comparison with on-road emissions and to support a coordinated assessment of trends and mitigation options. The GHGI team then applied the appropriate GWP multiplier for $CH_4$. MOVES does not enable modeling of $N_2O$ emissions for nonroad vehicles and equipment, therefore $N_2O$ emissions were not estimated.

### 1.2.5 Commercial Marine

Because New Mexico is landlocked and does not support commercial marine transportation, the GHGI team assumed that no commercial marine activity occurred within the state and therefore did not estimate emissions from this transportation mode.

## 1.3 Agriculture

The main sources of emissions in the Agriculture sector are livestock and managed soils. Livestock emissions include $CH_4$ emissions from livestock enteric fermentation and both $CH_4$ and direct and indirect $N_2O$ emissions associated with livestock manure management storage and treatment. Managed soils and other agricultural practices include $CO_2$ emissions from urea fertilizer application, $CH_4$ and $N_2O$ emissions from field burning of agricultural residues, and direct and indirect $N_2O$ emissions from agricultural soil management. Emissions from rice cultivation and commercial application of lime to soils are not applicable to New Mexico. Animal types for New Mexico include dairy and beef cattle (including calves), swine, poultry, sheep, goats, horses, mules and asses, and bison. Crop types vary over the time series but include alfalfa, peanuts, corn and sorghum for grain, oats, rye, soybeans, dry beans and peas and wheat. Field burning of agricultural residues varies over the time series but includes residues from corn and wheat, sorghum, cotton, grass and legume hay, cotton, dry beans and peas, as well as peanuts.

The GHGI team sourced emissions data from the 1990–2023 *U.S. GHG Inventory by State*, consistent with previous inventories. Therefore, methodologies and emission factors for each category are consistent with EPA and IPCC guidance:

- The urea fertilizer category follows the Tier 1 method, using the *2006 IPCC Guidelines* default emission factor.

- The field burning of agricultural residues category follows an U.S.-specific Tier 2 method based on the *Revised 1996 IPCC Guidelines*.
- The enteric fermentation category follows a Tier 2 method for cattle types. The GHGI team used IPCC Tier 1 methodology and the *2006 IPCC Guidelines* default emission factors, to calculate emissions for non-cattle. Consistent with other inventories, poultry types (e.g. broilers) are not included in enteric fermentation emissions.
- The agricultural soil management (managed croplands and grasslands) categories follow a Tier 3 method for mineral cropland soils, Tier 1 and Tier 3 approaches for mineral grassland soils, Tier 1 methods for organics soils from both cropland and grasslands, and Tier 1 and Tier 2 methods for indirect $N_2O$. Tier 1 methods use *2006 IPCC Guidelines* default emission factors.
- The manure management category follows a Tier 2 method for liquid systems (e.g. anaerobic lagoons), using U.S.-specific methane conversion factors, and a Tier 1 methodology for dry systems (e.g. dry lot), using default the *2019 IPCC Refinement* default emission factors. Country-specific nitrogen excretion rates and volatile solid excretion rates are used for all livestock.

Following IPCC guidance, emissions from fossil fuel combustion (e.g. non-highway farm equipment) are not included in the Agriculture sector's total emissions and, instead, are accounted for in the transportation sector to avoid double-counting.

## 1.4 Electricity Generation

The Electricity Generation sector includes emissions from grid-connected power plants located within New Mexico; it does not account for emissions from electricity generated outside the state and imported into New Mexico or emissions from electricity generated inside the state and exported to neighboring states. One facility—the 1.6-gigawatt coal-fired Four Corners Generating Station—was excluded because it is located on the Navajo Nation and therefore falls under Tribal authority, not state authority. This approach is consistent with the methodology used for previous emissions inventories. The Electricity Generation sector also includes emissions from Combined Heat and Power plants. For these facilities, only emissions associated with electricity generation were included in the Electricity Generation sector; emissions associated with heating were attributed to the Commercial subsector. While it is common to assign generators that primarily serve commercial or industrial facilities to those respective sectors, the GHGI team included them in the Electricity Generation sector for consistency with past inventories.

The GHGI team obtained data on emissions and generation from the 2023 version of EPA's Emissions & Generation Resource Integrated Database (eGRID). According to eGRID, New Mexico had 140 active electric generating plants in 2023. Excluding Four Corners, total in-state generation was 31.8 million MWh, primarily from wind (46.9%), natural gas (44.5%), and solar (7.7%). All other energy generation sources, including biomass, geothermal, hydropower, oil, and energy released from battery storage, each contributed less than 0.5%. Total in-state generation—including Four Corners—was 39.3 million megawatt-hours (MWh), while in-state consumption—including consumption occurring on Tribal lands—was 28.3 million MWh per EIA's SEDS 2023 state-level consumption estimates. This positions New Mexico as a net electricity exporter to other states.

The GHGI team quantified emissions by summing facility-level fossil $CO_2$, $CH_4$, and $N_2O$ emissions reported in eGRID for all included power plants. Biomass $CO_2$ emissions were quantified separately but excluded from the totals presented in Table 2.

This approach is consistent with New Mexico's past inventories and aligns with IPCC and EPA guidance.

## 1.5 Buildings

Emissions from buildings include two subsectors: Residential and Commercial.

### 1.5.1 Residential

The Residential subsector includes emissions from the stationary combustion of fossil fuels and wood in private households. The Residential subsector excludes institutional living quarters, such as college and university dormitories and long-term care facilities, which are accounted for in the Commercial subsector. Common stationary combustion applications include space heating, water heating, cooking, and clothes drying.

The GHGI team obtained data on residential fuel use in New Mexico in 2023 from EIA's SEDS 1960–2023 state-level consumption estimates. In 2023, residential stationary fuel use was primarily natural gas (79% by energy content), with smaller contributions from wood (12%) and propane (10%). Distillate fuel oil and kerosene each accounted for less than 0.1%.

The GHGI team quantified emissions of fossil $CO_2$, $CH_4$, and $N_2O$ from each fuel type by multiplying the quantity of fuel by its standard emission factor. The GHGI team quantified Biomass $CO_2$ emissions from wood separately and excluded those emissions from the totals in Table 2. The GHGI team used EPA's 2022 *U.S. GHG Inventory* emission factors for all fuels and GHGs, except biomass $CO_2$ from wood. The emission factor for biomass $CO_2$ from wood was taken from the latest version of EPA's Emission Factors Hub.

The only methodological difference between calculations for the 2023 inventory and previous inventories is that the previous GHGI team used EPA's 2022 *U.S. GHG Inventory by State* to develop the 2021 and associated 2005 baseline inventories, which incorporates SEDS state-level energy data that are adjusted to align with national totals. At the time of this subsector's development, the 2023 version of the *U.S. GHG Inventory by State* was not available.

### 1.5.2 Commercial

The Commercial subsector includes emissions from the stationary combustion of fossil fuels and wood in service-providing facilities such as businesses; federal, state, and local governments; and other private and public organizations, such as religious, social, or fraternal groups. The Commercial subsector also includes institutional living quarters, such as college and university dormitories and long-term care facilities, as well as emissions from the use of fossil fuels in sewage treatment facilities. Common stationary combustion applications include space heating, water heating, cooking, and running a wide variety of other equipment.

The GHGI team obtained data on commercial fuel use in New Mexico in 2023 from EIA's SEDS 1960–2023 state-level consumption estimates. According to SEDS, commercial stationary fuel use was primarily natural gas (82% by energy content), with smaller contributions from motor gasoline (6%), propane (5%), distillate fuel oil (4%), and wood energy (3%). Ethanol and kerosene each accounted for less than 0.5%.

The GHGI team quantified emissions by multiplying the quantity of each fuel type by its standard emission factor. The GHGI team made two adjustments to avoid double-counting with other sectors. First, the team

deducted emissions from motor gasoline and ethanol because the SEDS commercial sector data includes fuel use for lawn and garden care, logging, railroad maintenance, and public non-highway vehicles, all of which are accounted for in the Transportation sector. Second, the SEDS commercial data includes fuel used by generators that produce electricity and/or useful thermal output primarily to support commercial activities. In New Mexico, three such plants exist: one wind plant with no emissions, and two natural gas Combined Heat and Power plants at the University of New Mexico and New Mexico State University. To avoid double-counting with the Electricity Generation sector, the GHGI team deducted emissions from the two natural gas Combined Heat and Power plants as reported by eGRID. Only the portion of emissions attributable to electricity generation was deducted; emissions associated with heat production remain in the Commercial subsector.

The GHGI team calculated emissions of fossil $CO_2$, $CH_4$, and $N_2O$ from each fuel type. The GHGI team quantified biomass $CO_2$ emissions from wood separately and excluded those emissions from the totals in Table 2. Emission factors for all fuels and GHGs, except biomass $CO_2$ from wood, were taken from EPA's 1990-2022 *U.S. GHG Inventory*. The emission factor for biomass $CO_2$ from wood was taken from the latest version of EPA's Emission Factors Hub.

There are two methodological differences between calculations for the 2023 inventory and previous inventories. First, the previous GHGI team used EPA's 1990-2022 *U.S. GHG Inventory by State* to develop the 2021 and associated 2005 baseline inventories, which incorporates SEDS state-level energy data adjusted to align with national totals. At the time of this subsector's development, the 2023 version of the *U.S. GHG Inventory by State* was not available. Second, the previous GHGI team did not deduct electricity-associated emissions from commercial plants, resulting in a small amount of double-counting (a difference of one or two percent) across the Electricity Generation sector and the Commercial subsector.

## 1.6 Waste and Materials Management

The Waste and Materials Management sector includes emissions from solid waste, wastewater, and composting. The solid waste category includes only $CH_4$ emissions from municipal solid waste landfills and industrial waste landfills, as biogenic $CO_2$ emissions are not included in the GHG inventory gross emissions. The wastewater category includes $CH_4$ and $N_2O$ emissions from both domestic and industrial wastewater sources. The composting category also includes $CH_4$ and $N_2O$ emissions.

The GHGI team used the emissions estimates from the 1990–2023 *U.S. GHG Inventory by State*. While the *U.S. GHG Inventory* also includes a category for emissions from anaerobic digestion at biogas facilities, New Mexico did not have any of these facilities in operation as of 2023; thus, emissions from this category were not quantified.

The GHGI team quantified emissions for the Waste and Materials Management sector by summing the emissions for municipal solid waste and industrial landfills, domestic and industrial wastewaters, and composting as provided in the disaggregated data in the 1990–2023 *U.S. GHG Inventory by State*. This approach aligns with that used for the 2021 and associated 2005 baseline inventories.

## 1.7 Natural and Working Lands

The Natural and Working Lands sector includes $CH_4$ and $N_2O$ emissions and carbon stock changes from croplands, grasslands, forest lands, settlements, and wetlands. $CO_2$ emissions from forest fires are not explicitly reported in the emissions total for the Natural and Working Lands sector because they are implicitly included in the net emissions from forest land. This is consistent with the treatment of wildfire emissions in New Mexico's previous GHG emissions inventories. The GHGI team sourced emissions data from the 1990-2023 *U.S. GHG Inventory by State*, consistent with previous New Mexico inventories. Following standard practice, Natural and Working Lands sector emissions are not included in gross emissions totals. This approach is consistent with New Mexico's past inventories and aligns with IPCC and EPA guidance.

# 2 RESULTS

Gross emissions for all major sectors, including Industry, Transportation, Agriculture, Electricity Generation, Buildings, and Waste and Materials Management are presented below in Table 2. Subsector details are included for Industry and Buildings. Net emissions from the Natural and Working Lands sector are reported separately.

The total gross emissions include fossil carbon only; emissions of biogenic carbon were separately calculated for the Electricity Generation and Buildings sectors but are not presented in the table below.[7]

**Table 2. Economy-wide GHG Emissions for Year 2023 by Gas.**

| Sector | Emissions [MMT $CO_2e$] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | Total |
| Industry | 24.79 | 11.83 | 0.04 | 0.73 | 0.02 | 0.10 | 0.00 | 37.52 |
| *└ Oil and Gas Production* | *22.56* | *11.76* | *0.00* | — | — | — | — | *34.32* |
| *└ Industrial Fuel Combustion* | *1.58* | *0.00* | *0.01* | — | — | — | — | *1.59* |
| *└ Industrial Processes and Product Use* | *0.64* | — | *0.03* | *0.73* | *0.02* | *0.10* | *0.00* | *1.52* |
| *└ Coal Mining and Abandoned Mines* | *0.01* | *0.07* | — | — | — | — | — | *0.08* |
| Transportation | 17.01 | 0.04 | 0.19 | — | — | — | — | 17.24 |
| Agriculture | 0.01 | 4.47 | 5.60 | — | — | — | — | 10.07 |
| Electricity Generation | 6.59 | 0.00 | 0.00 | — | — | — | — | 6.60 |
| Buildings | 3.97 | 0.07 | 0.01 | — | — | — | — | 4.05 |
| *└ Residential* | *2.29* | *0.06* | *0.01* | — | — | — | — | *2.35* |
| *└ Commercial* | *1.68* | *0.01* | *0.00* | — | — | — | — | *1.70* |
| Waste and Materials Management | — | 0.93 | 0.12 | — | — | — | — | 1.05 |
| **Total Gross Emissions** | **52.37** | **17.34** | **5.96** | **0.73** | **0.02** | **0.10** | **0.00** | **76.52** |

[7] Biogenic emissions from the Electricity Generation sector come from the Southside Water Reclamation Plant in Albuquerque and total less than 0.01 MMT $CO_2e$. In the Buildings sector, biogenic emissions from wood used for heating in homes and businesses total 0.61 MMT $CO_2e$.

**Table 2. Economy-wide GHG Emissions for Year 2023 by Gas.**

| Sector | Emissions [MMT $CO_2e$] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | Total |
| Natural and Working Lands (total net emissions) | 5.89 | 0.43 | 0.12 | — | — | — | — | 6.44 |

Notes: "—" indicates no emissions of that gas in the sector. A value of 0.00 indicates emissions below 0.005. Gross $CO_2$ emissions represent fossil carbon only. Biogenic $CO_2$ was calculated separately for the Electricity Generation and Buildings sectors but is not included in the values presented above.

Totals may not sum exactly due to rounding. Values are shown to two decimal places; underlying calculations use full precision.

Figure 1 and Figure 2 show relative emissions by greenhouse gas and by sector, respectively. Figure 1 shows that $CO_2$ is by far the dominant GHG in New Mexico, accounting for 68% of total $CO_2e$ emissions in 2023, followed by $CH_4$ (22%) and $N_2O$ (8%). All other gases combined contribute 1%. Activities in the Oil and Gas Production subsector and the Transportation sector drive most $CO_2$ emissions, while the Oil and Gas Production subsector and Agriculture sector drive most $CH_4$ emissions, and agriculture accounts for nearly all $N_2O$ emissions. Detailed information regarding methods and results for the Oil and Gas Production subsector is provided in a separate report titled "New Mexico Oil and Gas Greenhouse Gas Emissions Inventory for Year 2023," available at https://www.env.nm.gov/climate-change-bureau/greenhouse-gas-emissions-inventories/.

Figure 2 shows that the Industry sector is the largest source of emissions in the state, representing half (49%) of all GHG emissions. The Transportation and Agriculture sectors are also major contributors, representing nearly one quarter (23%) and one eighth (13%) of total GHG emissions, respectively.

The Oil and Gas Production subsector accounts for 92% of the Industry sector's total emissions. Industrial Fuel Combustion and Industrial Processes and Product Use subsectors each contribute 4%, while the Coal Mining and Abandoned Mines subsector accounts for 0.2%.

Light- and medium- and heavy-duty trucks together account for about 68% of total Transportation sector emissions (37% and 31%, respectively). Passenger vehicles and motorcycles combined contribute about 13% (12% and 1%, respectively), while nonroad vehicles and equipment and rail each account for about 7%. Buses and aircraft make up the remaining 4% of total Transportation sector emissions (1.5% and 2.5%, respectively).

Much of the total Agriculture sector emissions (88%) are associated with $N_2O$ emissions from agricultural soil management and $CH_4$ emissions from livestock enteric fermentation (56% and 32%, respectively). Emissions from managed soils in New Mexico are dominated (87%) by direct and indirect $N_2O$ emissions from grasslands, versus those from croplands. Almost all emissions (98%) from livestock in New Mexico, both enteric fermentation and manure management, are associated with beef and dairy cattle.

Natural gas-powered electricity generation accounts for 99% of the Electricity Generation sector's emissions. Oil-powered and biomass-powered electricity generation account for 1% and 0.06%, respectively.

About 58% of total Buildings sector emissions are associated with residential buildings, while 42% is associated with commercial buildings.

The municipal solid waste landfill and combined domestic and industrial wastewater categories comprised approximately 77% and 22% of emissions in the Waste and Materials Management sector, respectively. Industrial landfills and composting accounted for less than 1% of emissions.

Nearly 95% of net Natural and Working Lands sector emissions are associated with grassland emissions and forest land emissions (79% and 15%, respectively). Grassland emissions are primarily (81%) from forest aboveground biomass converted to grassland aboveground biomass and grassland mineral soils remaining grassland mineral soils. Emissions from forest lands in New Mexico are primarily (70%) from changes in forest carbon stocks in aboveground biomass, which implicitly includes $CO_2$ emissions from forest fires.

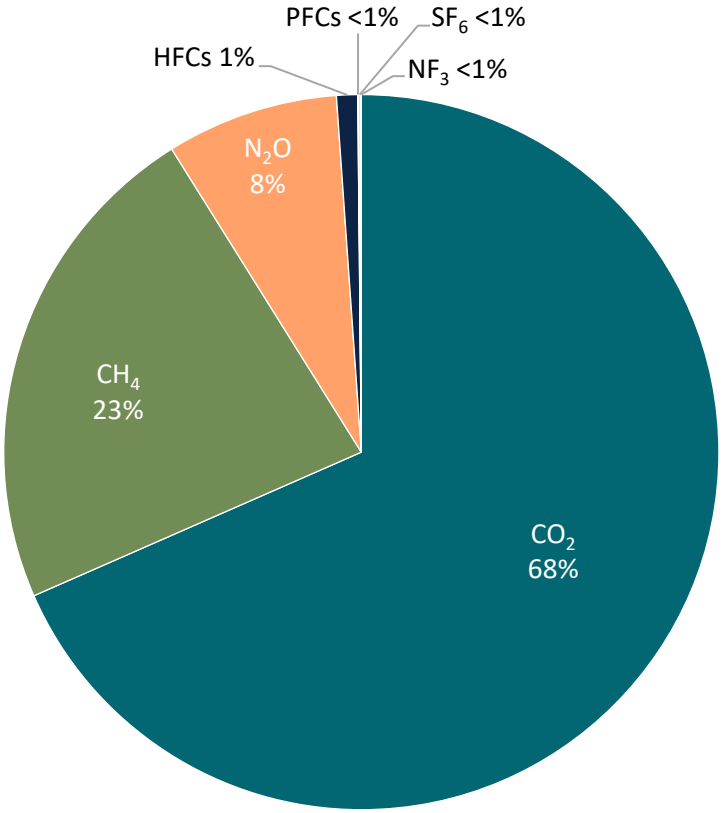



**Figure 1. Economy-wide GHG Emissions for Year 2023 by Gas.**

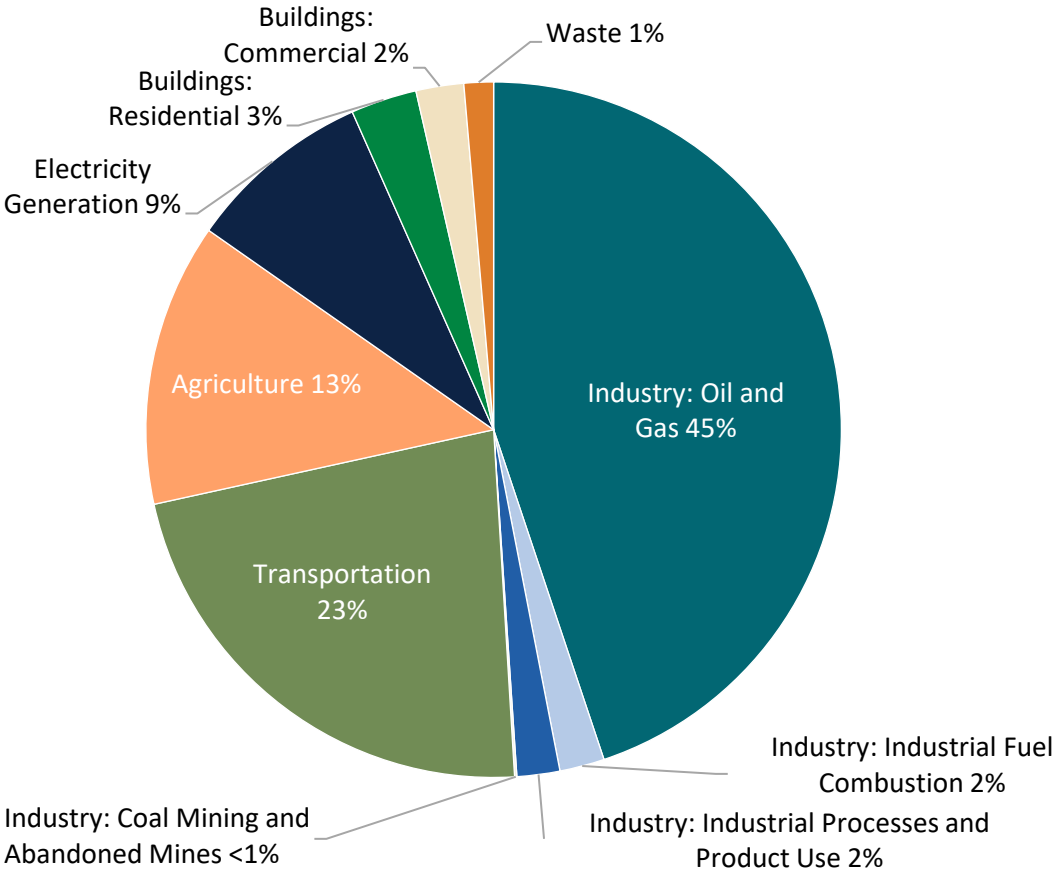



**Figure 2. Economy-wide GHG Emissions for Year 2023 by Sector.**

# 3 TRENDS AND ANALYSIS

Table 3 presents economy-wide GHG emissions by sector for the revised 2005 baseline inventory (developed as part of the 2021 inventory effort), the 2018 inventory, the 2021 inventory, and the 2023 inventory. Changes in 2023 emissions relative to 2005 and 2021 are also shown. Due to a difference in methodology, the 2018 inventory cannot be directly compared to the 2005, 2021, and 2023 inventories. Figure 3 compares economy-wide GHG emissions by sector for the revised 2005 baseline inventory, the 2021 inventory, and the 2023 inventory.

Between 2021 and 2023, electricity-related emissions fell by 36% despite a 17% increase in generation.[8] This decrease was primarily driven by the 2022 closure of the San Juan Generating Station, New Mexico's only remaining coal-fired plant, aside from the Four Corners Generating Station, which was excluded due to being located on Tribal land. Coal-fired generation fell to 0%, while electricity generation from natural gas, solar, and wind each rose by roughly 40% over the period.

[8] In-state generation—excluding the Four Corners Generating Station—equaled 27.2 million MWh in 2021 (eGRID with 2021 Data, 1/30/2023) and 31.8 million MWh in 2023 (eGRID with 2023 Data, Revision 2, 6/12/2025).

Between 2021 and 2023, Industry-related emissions fell by 7%. Oil and gas production emissions remained relatively constant despite increases of 46% and 40% in oil and gas production, respectively.[9,10] Therefore, this decrease was largely due to a 91% (0.85 MMT $CO_2e$) decrease in emissions from coal mining and abandoned mines and a 56% (2.04 MMT $CO_2e$) decrease in emissions from industrial fuel combustion. Part of the decrease in industrial fuel combustion emissions is due to revised methods for assessing $CO_2$ emissions from petroleum fuel combustion. For 2023, the GHGI team adjusted distillate fuel and motor gasoline quantities to avoid double-counting with the nonroad transportation sources. This adjustment was not made for 2021. Without making this adjustment, IFC emissions would be 2.51 MMT $CO_2e$, which is still a 31% decrease compared to 2021. For coal mining and abandoned mines, the decrease in emissions can be attributed to the closure of the San Juan mine in New Mexico. This underground mine was operational in 2021 but not in 2023.

Between 2021 and 2023, Natural and Working Lands emissions increased by 118%. This sector is tracked separately and excluded from the statewide totals. The increase in emissions for Natural and Working Lands reflects differences in data reporting between the 1990-2021 and 1990-2023 editions of the *U.S. GHG Inventory by State*. For the 1990–2023 edition of the *U.S. GHG Inventory*, EPA incorporated updates to *croplands remaining croplands*, *land converted to forest land*, and *land converted to flood land* that significantly affected New Mexico's natural and working land emissions. Additionally, New Mexico experienced the largest fire in state history in 2022 (the Hermit's Peak/Calf Canyon fire), totaling nearly three quarters of a million acres burned, or about 100 times more than the previous year[11]. This unprecedented increase in acres burned corresponded to a large increase in *forest land remaining forest land* emissions.

All other sectors and subsectors experienced relatively minor changes compared to 2021, with percentage changes in the single digits.

**Table 3. Summary of Economy-wide GHG Emissions Over Time.**

| Sector | Emissions [MMT $CO_2e$] | | | | Change [%] | |
|---|---|---|---|---|---|---|
| | Revised 2005 Baseline | 2018 | 2021 | 2023 | Change from 2005-2023 | Change from 2021-2023 |
| Industry | 47.72 | 66.23 | 40.43 | 37.52 | -21% | -7% |
| └ *Oil and Gas Production* | *38.82* | *60.40* | *34.39* | *34.32* | *-12%* | *-0%* |
| └ *Industrial Fuel Combustion* | *4.68* | *2.13* | *3.63* | *1.59* | *-66%* | *-56%* |
| └ *Industrial Processes and Product Use* | *2.53* | *2.75* | *1.48* | *1.52* | *-40%* | *+3%* |
| └ *Coal Mining and Abandoned Mines* | *1.69* | *0.95* | *0.93* | *0.08* | *-95%* | *-91%* |

[9] U.S. Energy Information Administration, *New Mexico Field Production of Crude Oil*, https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfpnm1&f=a.

[10] U.S. Energy Information Administration, *New Mexico Natural Gas Gross Withdrawals and Production*, https://www.eia.gov/dnav/ng/NG_PROD_SUM_DC_SNM_MMCF_A.htm.

[11] New Mexico Department of Energy, Minerals, and Natural Resources, *2022 Annual Report: Energy, Minerals, and Natural Resources Department* (n.d.), accessed September 25, 2025, https://www.emnrd.nm.gov/officeofsecretary/wp-content/uploads/sites/2/EMNRD_AnnualReport_2022_final.pdf.

**Table 3. Summary of Economy-wide GHG Emissions Over Time.**

| Sector | Emissions [MMT $CO_2e$] | | | | Change [%] | |
|---|---|---|---|---|---|---|
| | **Revised 2005 Baseline** | **2018** | **2021** | **2023** | **Change from 2005-2023** | **Change from 2021-2023** |
| Transportation | 15.85 | 15.85 | 16.77 | 17.24 | +9% | +3% |
| Agriculture | 11.15 | 7.70 | 10.25 | 10.07 | -10% | -2% |
| Electricity Generation | 16.33 | 12.10 | 10.31 | 6.60 | -60% | -36% |
| Buildings | 4.07 | 3.89 | 4.15 | 4.05 | -0% | -2% |
| └ *Residential* | *2.37* | *2.18* | *2.36* | *2.35* | *-1%* | *-0%* |
| └ *Commercial* | *1.70* | *1.71* | *1.79* | *1.70* | *-0%* | *-5%* |
| Waste and Materials Management | 1.32 | 1.83 | 1.06 | 1.05 | -21% | -1% |
| **Total Gross Emissions** | **96.44** | **107.60** | **82.97** | **76.52** | **-21%** | **-8%** |
| Natural and Working Lands | 9.57 | 6.06 | 2.95 | 6.44 | -33% | +118% |

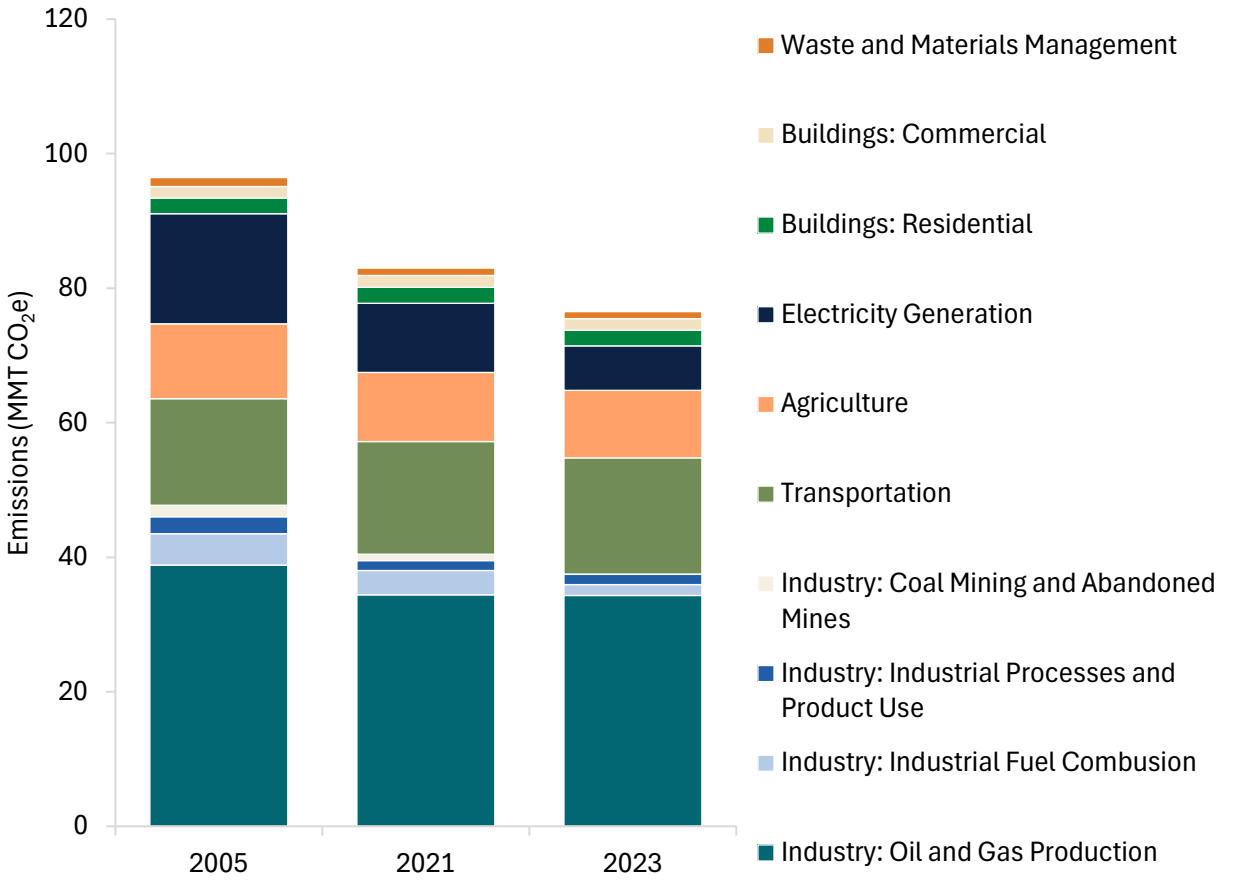



**Figure 3. Economy-wide Annual GHG Emissions: 2005, 2021, and 2023.**

# 4 Conclusion

This report presents New Mexico's estimated greenhouse gas emissions for 2023. Key conclusions include:

**New Mexico continues to make meaningful progress toward its climate goals.** Statewide emissions fell 8% between 2021 and 2023, and 21% since 2005. This is clear evidence that bold climate policy delivers results.

**In-state electricity generation is becoming significantly cleaner.** Electricity-related emissions dropped 36% since 2021 while total generation increased 17%. With the closure of the San Juan Generating Station, in-state electricity generation shifted from the third- to the fourth-largest source of emissions. This trend demonstrates that environmental progress and economic growth can advance together.

**Oil and gas production remains the largest contributor to statewide emissions.** Emissions from this subsector stayed relatively stable from 2021 to 2023, despite a 46% increase in oil production and a 40%

increase in gas production. Strong environmental policies like New Mexico's ozone precursor rule and methane waste rule are driving cleaner, safer, and more efficient operations. Although, achieving the state's climate goals will require additional measures. The **New Mexico Climate Action Plan**[12] outlines strategies to reduce emissions across all stages of oil and gas production, including expanding electrification to cut fuel use and strengthening methane-leak mitigation.

[12] https://service.web.env.nm.gov/urls/dagLwNOz