Cedar Renewable Services LLC GHG Emissions Report

Cedar Renewable Services LLC (CRS) operates a delivery service utilizing electric vans in Nevada County, California. This greenhouse gas (GHG) inventory estimates the emissions resulting from all CRS activities in 2025, beginning on June 24. As a micro-business with few emissions to report, this inventory accounts for just GHG emissions resulting from the operation of EV vehicle charging and employee commute. In addition, this report estimates the emissions saved by CRS operations compared to similar sized vehicles utilizing fossil fuels.

Inventory Methodology

This inventory was developed per the Local Government Operations Protocol using ClearPath, the trusted online GHG emissions inventory tool offered by the ICLEI USA - Local Governments for Sustainability (ICLEI), which, because of its high standards and the limited operations of CRS, was able to be repurposed for a commercial business.

GHG emissions are reported in terms of metric tons of carbon dioxide equivalent, or MT CO_2e. The carbon dioxide equivalent of each GHG is calculated using its global warming potential (GWP). Converting emissions from all gases to CO_2e allows for the consideration of GHGs in comparable terms. Emissions are calculated by applying emissions factors, which quantify the amount of a given pollutant emitted per unit of activity, as determined by the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report 100-year GWPs, released in 2023.

Table 1. IPCC Sixth Assessment Global Warming Potential Values

Common Name	Chemical Formula	GWP Values (100-Year) - IPCC Sixth Assessment Report
Carbon Dioxide	CO_2	1
Methane	CH_4	29.8
Nitrous Oxide	N_2O	273

GHG Emissions Summary

In 2025, CRS operations generated a total of 0.43 MT CO_2e. Approximately 93.2% of emissions can be attributed to employee commute. Employee commute mileage was estimated by assuming a 30 mile round trip once a week, across the 27 weeks of operation, in a gasoline powered truck. In 2025 alone, electricity emissions produced from vehicle fleet charging are due to the power content of electricity delivered by PG&E, estimating the kWh needed per mile driven, and converting to total kWh used.

It should be noted that upstream emissions from electricity generation and vehicle fossil fuels were not included in this study. For instance, GHG emissions generated from the operation of PG&E renewable, water, and nuclear power sources, emissions resulting from energy lost during transmission and distribution, and the emissions released during the extraction, refining, and transportation of fossil fuels were not included due to their scope. This inventory focuses solely on emissions generated due to CRS operations, in accordance with ICLEI protocols. All data was provided by CRS and verified by SNEW.

There are no standardized electricity per mile efficiency ratings for EVs, so to calculate total energy needed to charge the CRS fleet vehicle the electric fuel economy was estimated using the available usable battery energy and range identified for the Maximum Range version of the 2025 Chevy BrightDrop 600[1] (**Table 2**). Vehicle battery efficiency can also fluctuate due to terrain and temperature. **Table 3** and **Figure 1** summarize overall CRS operations activity and emissions results.

[1] GM Envolve. BrightDrop 400/600. 2026.

Table 2: Chevy Brightdrop Total 2025 Electricity Used Calculation

Useable Battery Energy (kWh)	Range (Miles)	kWh/Mile	2025 Miles Traveled	Total Electricity Used (kWh)
173.3	272	0.64	6303.94	4034.52

**Due to rounding, numbers presented throughout this document may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.*

Table 3: 2025 CRS Operations Emissions

Sector	Activity	Total Emissions (MT CO_2e)	Percent of Total
Employee Commute	810 Miles	0.40	93.2%
EV Fleet Charging	4034.52 kWh	0.03	6.8%
Total		**0.43**	**100%**

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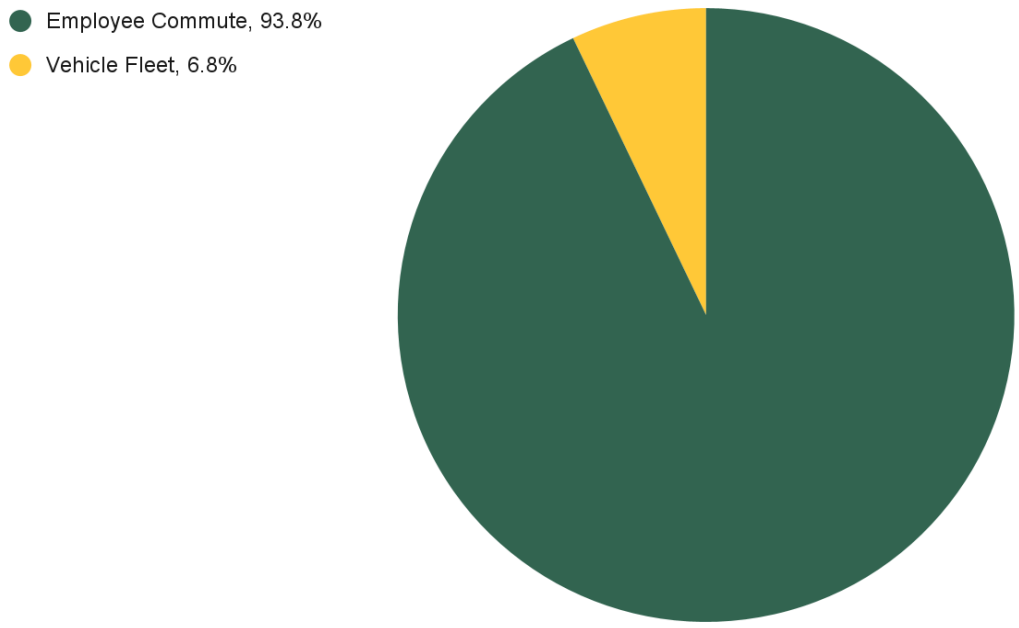
Figure 1: 2025 CRS Operations GHG Emissions



GHG Emissions Avoided

The second piece of this report estimates the emissions avoided by utilizing an EV van in place of similarly sized models (models around 11,000 lbs Gross Vehicle Weight Rating) powered by fossil fuels (diesel and gasoline). Because miles per gallon (MPG) efficiency for comparable vehicles are not rated by the EPA, estimates are made based on the best available real-world data. Emissions are summarized in **Table 4**, and compared to EV emissions in **Figure 2**. It is estimated that businesses utilizing CRS services helped to remove between 3.26 and 3.67 MT CO_2e by hiring an electric powered delivery option rather than gasoline or diesel alternatives.

Table 4: 2025 CRS Operations Emissions

Sector	Activity	Total Emissions (MT CO_2e)	EV Emission Difference (MT CO_2e)
Diesel Delivery Van (Mercedes-Benz Sprinter[2])	6303.94 Miles	3.29	-3.26
Gasoline Delivery Van (Ford Transit 250 EL 3.5L EcoBoost V6[3])	6303.94 Miles	3.70	-3.67

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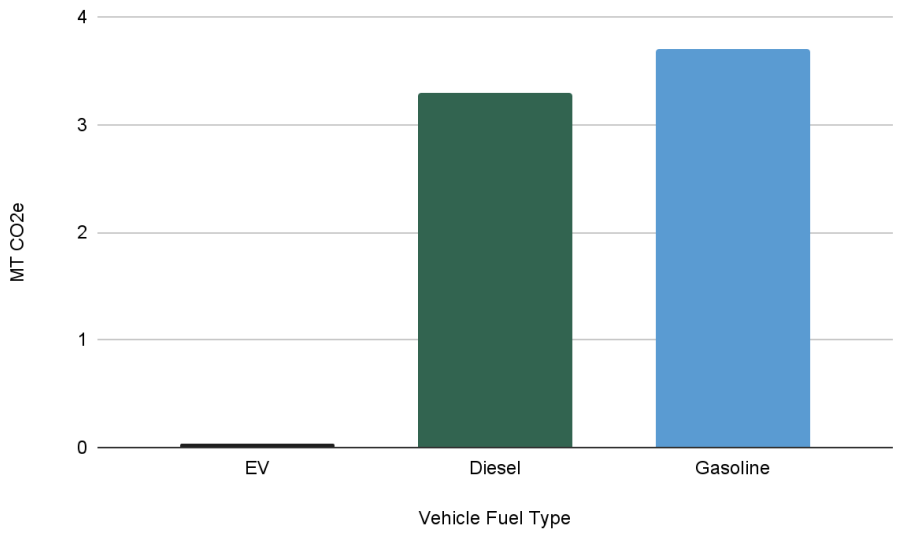
Figure 2: 2025 Emissions Comparison by Fuel Type



[2] Estimated 20 MPG
[3] Estimated 15 MPG

Appendix A. Emissions Factors & Factor Sets

Appendix A-1. Grid Electricity Factor Sets

Source	Value	Unit
Grid Electricity – PG&E	16	CO_2e lbs/MWh

Appendix A-2. Employee Commute Emissions Factors

Fuel Type	Value	Unit
Gasoline	0.070268	CO_2 MT/MMBtu
	3.2 x10-8	CH_4 MT/vehicle mile
	4.1 x10-9	N_2O MT/vehicle mile
Diesel	0.073964	CO_2 MT/MMBtu
	9.5 x10-9	CH_4 MT/vehicle mile
	4.31 x10-8	N_2O MT/vehicle mile