

Sample Report

Greenhouse Gas Report

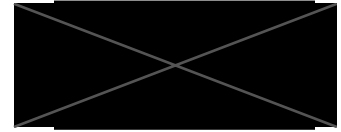


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Executive Summary

Background

ABC Company started over a century ago in a small town [REDACTED] and has become a global reputation for quality. ABC Company continues to innovate and bring [REDACTED] around the world. ABC Company is made up of facilities across the globe, with this report specifically focusing on ABC Company Americas. ABC Company currently tracks monthly utility data through invoices and excel workbooks to encompass all greenhouse gas (GHG) emission sources. Foresight Management (Foresight) has been engaging with the ABC Company team to identify additional emissions sources, develop a system for data collection, and create an ongoing plan to manage and track emissions moving forward. The results will be presented in two main parts: the Inventory Quality Management System (IQMS) and the annual GHG Inventory Report.

Purpose

The purpose of this report is to provide a detailed inventory of ABC Company’s GHG emissions for the CY 2022 reporting year. The report has been prepared in accordance with the World Resource Institute (*WRI*)/*World Business Council on Sustainable Development (WBCSD) GHG Reporting Protocol - A Corporate Accounting and Reporting Standard Revised Edition (2015)*.

Results

Emissions	Units	CY 2022 (Base Year)
Scope 1	MT CO ₂ e	1,593
Scope 2	MT CO ₂ e	1,832
Absolute Total	MT CO ₂ e	3,425
Normalized Total	MT CO ₂ e/Million Converted Bottles ¹	86.48

Key Takeaways

- ABC Company’s [REDACTED] site was the largest GHG emitter at 1,365 MT CO₂e.
- Scope 1 emissions account for 47% and scope 2 emissions 53% of total emissions in CY 2022.

Next Steps

ABC Company should take the following next steps to further reduce its GHG emissions and demonstrate leadership in its industry:

Short-Term

- Report on Entire Operational Boundary
- Facility Energy Audits
- Compressed Air Leak Audits
- Sustainability Roadmap

Medium-Term

- Set an Emissions Reduction Target
- Publicly Disclose Emissions
- Renewable Energy Feasibility Study
- Industry Benchmarking

Long-Term

- Life Cycle Assessments

[REDACTED] This metric will be used year over year to determine ABC Company’s normalized emissions.

GHG Inventory Boundary

Organizational Boundary

ABC Company will use the Operational Control approach for establishing its organizational boundary. The Operational Control approach means that ABC Company accounts for the GHG emissions from operations over which they have the authority to introduce and implement corporate or site-specific operating policies at the particular asset or operation. A full list of facilities under ABC Company’s operational control is provided in [Appendix A](#).²

Operational Boundary

Setting operational boundaries involves identifying the emissions associated with ABC Company’s established organizational boundary and categorizing them as direct or indirect emissions at each operational level. Scope 3 emissions have not been collected or calculated for this reporting year and are therefore not included or discussed further in this report.

Table 1. GHG Pollutants by Activity Type

GHG Emissions Scope ¹	Activity Type	Emission Sources (Typical Uses)	GHG Pollutants
Scope 1 (Direct)	Diesel	Mobile sources	CO ₂ , N ₂ O, CH ₄
	Gasoline	Mobile sources	CO ₂ , N ₂ O, CH ₄
	Propane	Forklifts	CO ₂ , N ₂ O, CH ₄
	Refrigerants	Air conditioning	HFCs, PFCs
	CO ₂ Shielding Gas	Welding	CO ₂
	Acetylene	Welding	CO ₂
	Natural Gas	Furnace, water heaters, boilers	CO ₂ , N ₂ O, CH ₄
Scope 2 (Indirect)	Grid Purchased Electricity	On-site electricity use	CO ₂ , N ₂ O, CH ₄

Notes:

1. Optional Scope 3 sources (other indirect emissions) are not included in the inventory at this time.
2. Reporting Period: January 1, 2022 – December 31, 2022

² ABC Company is reporting for all North American sites under their operational control. The addition of international sites within their operational control will be discussed in future iterations of this report.

Energy Results

Table 1. Total Energy Usage by Scope and Activity Type

Scope and Activity Type	CY 2022 (MMBTU)
Scope 1	24,804
Diesel	1,096
Gasoline	3,385
Natural Gas	19,917
Propane	406
Refrigerants	0
Scope 2	17,946
Electric	17,946
Grand Total	42,750

Emissions Results

Table 2. Total Emissions by Scope and Activity Type

Scope and Activity Type	CY 2022 (MTCO ₂ e)
Scope 1	1,593
Diesel	81
Gasoline	239
Natural Gas	1,062
Propane	26
Refrigerants	185
Scope 2	1,832
Electric	1,832
Grand Total	3,425

**A further detailed breakdown of emissions by facility, scope, and GHG type can be found in [Appendix E](#).*

Table 3. Normalized Emissions Data

Normalization Factor	CY 2022 Normalized Emissions
Net Sales (MTCO ₂ e/Million Converted Bottles)	86.48

Discussion

In CY 2022, ABC Company's [REDACTED] site generated the most scope 1 and 2 emissions at 1,365 MTCO₂e. [REDACTED] followed close behind at 1,121 MTCO₂e, [REDACTED] at 497 MTCO₂e, [REDACTED] at 91 MTCO₂e, and [REDACTED] at 31 MTCO₂e.

Figure 1. Total Emissions by Site for CY 2022 (MTCO₂e)

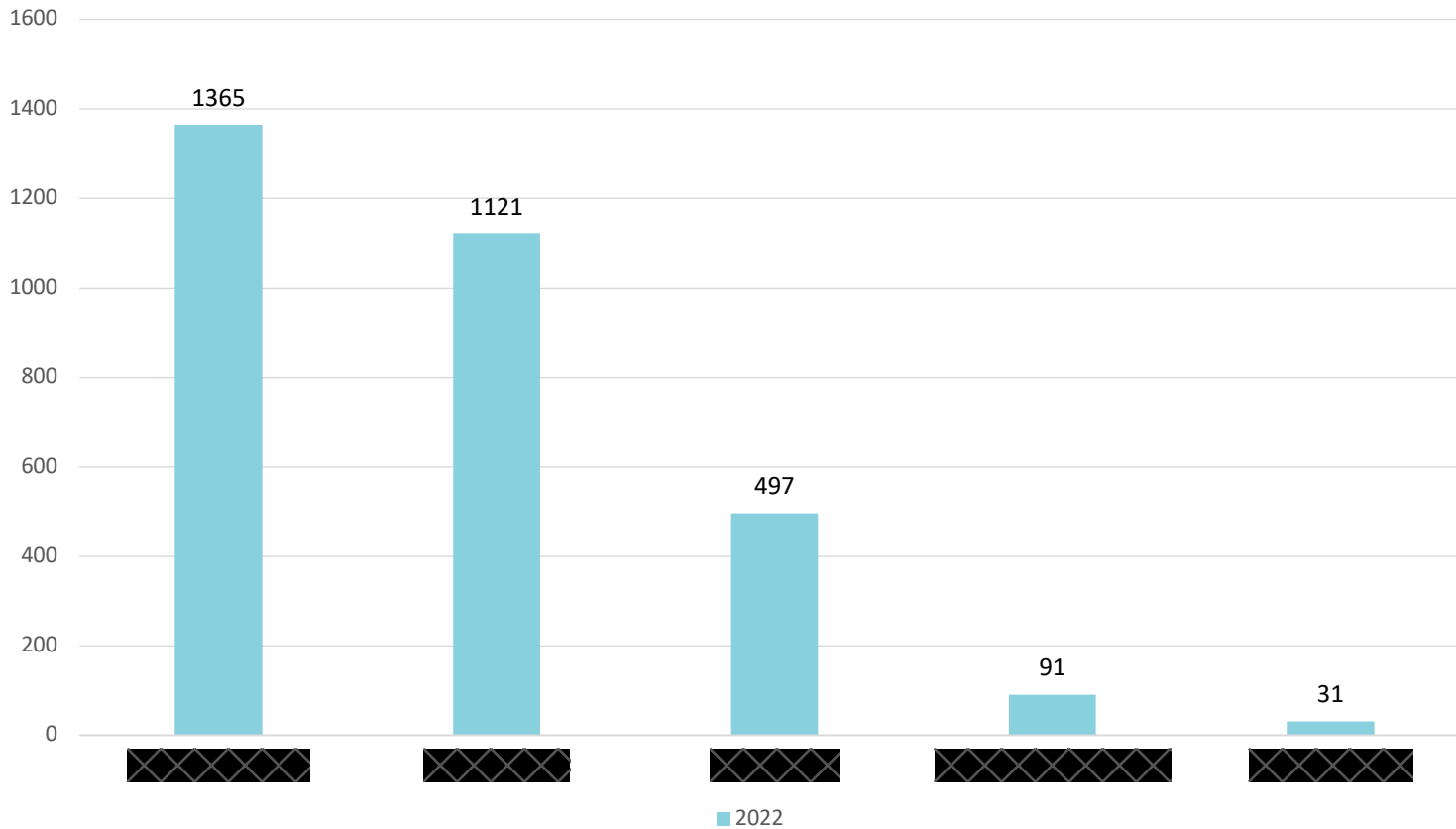


Figure 2. Total Emissions by Scope in CY 2022

In CY 2022, Scope 1 emissions accounted for 1,593 (47%) MTCO₂e of ABC Company’s total emissions and Scope 2 accounted for 1,832 MTCO₂e (53%).

As an organization, ABC Company has control over the generation of scope 1 emissions and can directly work to reduce these emissions over time through further efficiency measures. Scope 2 emissions are generated by the utility provider and decisions around the purchase of renewable energy could be considered to reduce these emission sources.

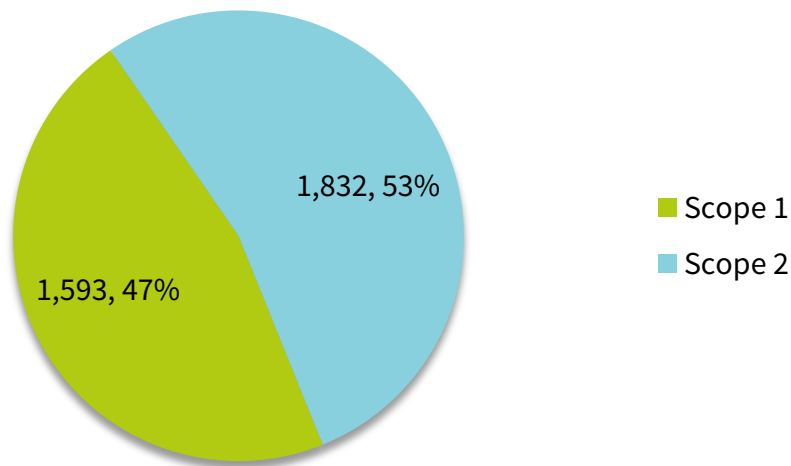
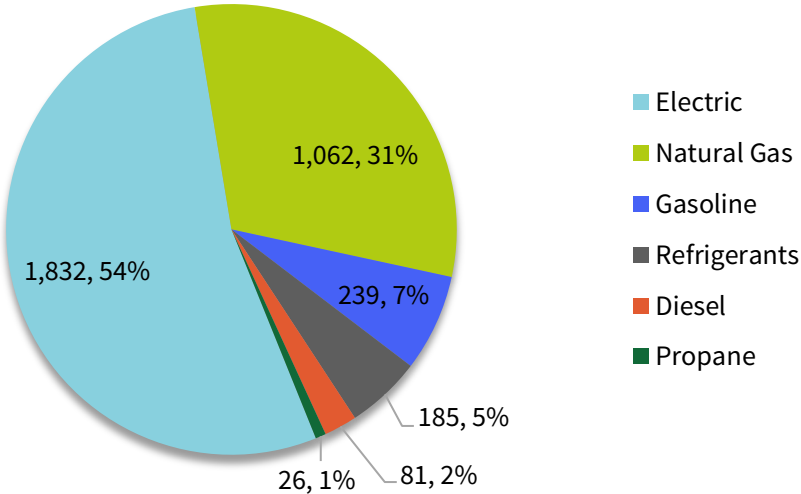


Figure 3. Emissions Breakdown by Source in CY 2022

The largest source of emissions at ABC Company was Electricity (54%). Natural Gas is the next largest source of emissions (31%) followed by Gasoline (7%), Refrigerants (5%), Diesel (2%), and Propane (1%).



Assumptions and Disclaimers

Foresight made the following assumptions when calculating ABC Company's GHG emissions:

- ABC Company owned and leased gasoline vehicles are allowed a certain mileage per year. As the actual miles driven weren't tracked, we assumed the mileage per year for each vehicle to be the miles driven.
- We were provided with the make, model, and year of all ABC Company owned and leased gasoline vehicles. We were able to gather average mpg through the EPA's Fuel Economy website to translate miles driven into gallons used.
- We used an average gasoline passenger car coefficient for all ABC Company owned and leased gasoline vehicles.
- ABC Company diesel vehicles are all [REDACTED] owned vehicles that ABC Company either leases or rents. Because we've decided to use the operational control approach, emissions associated with fuel combustion are categorized as a scope 1 emission.
- We used an average diesel medium and heavy-duty coefficient for all ABC Company leased and rented diesel vehicles.
- ABC Company's [REDACTED] facility was opened in 2022.
 - Electricity at this facility was all in the builder's name before May 23rd, 2022. Once ABC Company started paying for electricity, after May 23rd, all electricity data was captured and calculated for this report.
 - Natural gas at this facility is not billed every month.
 - Propane at this facility started being used in April 2022.

Recommendations

Foresight Management recommends ABC Company pursue the following next steps to further advance their sustainability initiatives. Should ABC Company pursue these next steps, Foresight can assist.

Short-Term

1) Report on Entire Operational Boundary

This GHG Report encompasses all of ABC Company's North American facilities. In order to claim a report is WRI Compliant, more than 95% of ABC Company's operational boundary needs to be accounted for. We recommend ABC Company account for ALL facilities globally in future iterations of this report.

2) Facility Energy Audits

Energy audits are a great way to identify energy-savings opportunities and budget for capital projects. Understanding a path forward to making your building efficient will lead to optimizing offset efforts.

3) Compressed Air Leak Audits



Performing a compressed air leak audit can reduce operating costs, and your overall carbon footprint. The first step towards GHG reductions is making sure your current system is as efficient as possible.

4) Sustainability Roadmap

Defining sustainability strategy is an essential component of identifying efforts that are important to ABC Company's stakeholders (i.e. customers, suppliers, communities they operate within). A Sustainability Roadmap will define the strategy, path forward, any changes or enhancements to existing systems, outline the process for new systems that may be needed, and timelines to achieve the desired goals. A roadmap will be revisited each year and updated with relevant changes to ABC Company and the Industry in general.

Medium-Term

5) Set an Emissions Reduction Target in line with the SBTi

ABC Company mentioned they do a lot of work with   is working with suppliers representing 67% of their scope 3 emissions to set science-based targets by 2026. By starting the process of setting science-based targets, you'll be ahead of the curve when your top customers start asking you about your reduction goals, initiatives, and progress.

6) Publicly Disclose Emissions – Respond to CDP

Carbon reporting is becoming even more essential for companies' future success and viability. Not only are carbon reporting mandates proposed to begin as early as April 2023, but investors, consumers, and supply chain partners are asking companies to disclose their emissions and plan toward reduction. The CDP is the leading global framework for publicly disclosing carbon

emissions.

7) Renewable Energy Feasibility Study

Conducting a renewable energy feasibility study helps you understand the various options that exist in the marketplace today for procuring renewable energy, the cost associated with it, and the impact.

8) Industry Benchmarking

Assessing an organizations customers and competitors helps to understand future market trends. This effort assesses questions around average GHG emissions generated by the industry and where does ABC Company fit within this sector. It can also assess competitor objectives around GHG emissions to determine if ABC Company is leading, mid-pack, or lagging in this sector.

Long-Term

9) Life Cycle Assessments (LCAs)

Conducting an LCA of your products can help improve and inform decision making for sustainable development. Carrying out an LCA can demonstrate transparency and credibility to stakeholders and customers.

Appendix A: List of Facilities

Below is a comprehensive list of all facilities, warehouses, offices, and fleet that are included within ABC Company’s operational boundary. Facilities and fleet highlighted in blue are currently being tracked and will be included in ABC Company’s CY 2022 GHG report. Facilities highlighted in gray are not currently being tracked. Efforts will be made to include international facilities in future reports.

Key

In boundary and actively tracking

In boundary and not currently tracking

ABC Company United States Facilities

Site Name	Address	City	State	Postal Code	Building Type
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Headquarters & Flavor Innovation Center
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Café
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Manufacturing
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Manufacturing
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Manufacturing

ABC Company International Facilities

Site Name	Address	City	Country	Building Type
[REDACTED]	[REDACTED]	Bourges	France	Factory
[REDACTED]	[REDACTED]	Fresnes-sur-Escaut	France	Factory
[REDACTED]	[REDACTED]	Paris	France	Café & Offices
[REDACTED]	[REDACTED]	Dubai	UAE	Café
[REDACTED]	[REDACTED]	London	UK	Café
[REDACTED]	[REDACTED]	Selangor	Malaysia	N/A
[REDACTED]	[REDACTED]	São Paulo	Brazil	N/A
[REDACTED]	[REDACTED]	Chhatarpur	Delhi	N/A
[REDACTED]	N/A	N/A	N/A	Headquarters

ABC Company Fleet Inventory

Vehicle Name	Country	State/Province	Leased/Owned/Rented	Fuel
[REDACTED]	United States	TX	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	CA	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	NV	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	NC	Leased	Gasoline
[REDACTED]	United States	CA	Leased	Gasoline
[REDACTED]	United States	NV	Leased	Gasoline
[REDACTED]	United States	TX	Leased	Gasoline
[REDACTED]	United States	VA	Leased	Gasoline
[REDACTED]	United States	TX	Leased	Gasoline
[REDACTED]	United States	SC	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	NV	Leased	Gasoline
[REDACTED]	United States	NJ	Leased	Gasoline
[REDACTED]	United States	NC	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	TX	Leased	Gasoline
[REDACTED]	United States	TX	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	NH	Leased	Gasoline
[REDACTED]	United States	CA	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	FL	Leased	Gasoline
[REDACTED]	United States	KS	Leased	Gasoline
[REDACTED]	United States	MA	Leased	Gasoline
[REDACTED]	United States	CA	Leased	Gasoline
[REDACTED]	United States	IL	Owned	Gasoline
[REDACTED]	United States	MI	Owned	Gasoline
[REDACTED]	United States	MA	Owned	Gasoline
[REDACTED]	United States	FL	Owned	Gasoline
[REDACTED]	United States	FL	Owned	Gasoline
[REDACTED]	United States	FL	Owned	Gasoline
[REDACTED]	United States	FL	Owned	Gasoline
[REDACTED]	United States	FL	Owned	Gasoline
[REDACTED]	United States	NV	Owned	Gasoline
[REDACTED]	United States	FL	Owned	Gasoline
[REDACTED]	Canada	Ontario	Leased	Gasoline
[REDACTED]	Canada	Ontario	Leased	Gasoline

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		United States	N/A	Leased	Diesel
		United States	N/A	Rented	Diesel
		United States	N/A	Rented	Diesel
		United States	N/A	Rented	Diesel
		United States	N/A	Rented	Diesel
		United States	N/A	Rented	Diesel

Appendix B: Emissions Calculation Methodology

Calculating emissions from GHG sources generally involves the following six steps:

1. Determine annual consumption of each combusted fuel or annual energy consumption;
2. Determine the CO₂ emission factor for each fuel or unit of energy consumption;
3. Determine CH₄ and N₂O emission factors for each fuel or unit of energy consumption;
4. Calculate CO₂ emissions by multiplying the emission factor by annual fuel or energy consumption;
5. Calculate CH₄ and N₂O emissions by multiplying emission factors by annual fuel or energy consumption; and
6. Convert CH₄ and N₂O emissions to CO₂e using their corresponding global warming potentials

A general formula for calculating emissions is:

Activity Data X Emissions Factor X Global Warming Potential (GWP) = GHG Emissions (CO₂e)

Global Warming Potentials

CO ₂	CH ₄	N ₂ O
1	28	265

Source: *The Climate Registry – General Reporting Protocol Appendix: Global Warming Potentials AR5*

Appendix C: List of Emission Factors

Below is a list of references and emission factors used to calculate GHG emissions for all fuel sources. The emissions factors listed below only show the most current emission factors that were available for the 2022 reporting year.

North America Scope 1 Emission Factors

Source	Scope	Reference	CO ₂	CH ₄	N ₂ O
Diesel	1	GHG Protocol - Emission Factors from Cross-Sector Tools	10.21 kg/gal	0.00004488 kg/gal	0.00004224 kg/gal
Gasoline	1	GHG Protocol – Emission Factors from Cross-sector tools	8.78 kg/gal	0.00038925 kg/gal	0.000081 kg/gal
Natural Gas	1	The Climate Registry	53.06 kg/MMBTU	0.9 g/MMBTU	0.9 g/MMBTU
Propane	1	EPA Emission Factors for Greenhouse Gas Inventories	5.72 kg/gal	0.00027 kg/gal	0.00005 kg/gal
Refrigerants	1	EPA HFC Refrigerants Tool	N/A (Provided in tCO ₂ e)	N/A (Provided in tCO ₂ e)	N/A (Provided in tCO ₂ e)

North America Scope 2 Emission Factors (Location-Specific)

Source	Scope	Reference	CO ₂	CH ₄	N ₂ O
Electricity (Grid Purchased)	2	EPA Power Profiler – NWPP 2021 eGRID	634.6 lb/MWh	0.058 lb/MWh	0.008 lb/MWh
Electricity (Grid Purchased)	2	EPA Power Profiler – RFCW 2021 eGRID	1046.1 lb/MWh	0.095 lb/MWh	0.014 lb/MWh
Electricity (Grid Purchased)	2	EPA Power Profiler – ERCT 2021 eGRID	813.6 lb/MWh	0.054 lb/MWh	0.008 lb/MWh
Electricity (Grid Purchased)	2	EPA Power Profiler – FRCC 2021 eGRID	832.9 lb/MWh	0.053 lb/MWh	0.007 lb/MWh

Appendix D: Site-Specific Data Tracking Mechanisms

Key – in order of preferred method of collection

Collect data via login through utility portal

Collect data through manual bill copies

ABC Company United States Facilities

Site Name	Building Name(s)	Site Contact	Activity	Collection Method	Collection Frequency
[REDACTED]	[REDACTED]	TBD	Refrigerants	Manual	Annual
[REDACTED]	[REDACTED]	TBD	Refrigerants	Manual	Annual
[REDACTED]	[REDACTED]	TBD	Refrigerants	Manual	Annual
[REDACTED]	[REDACTED]	TBD	Refrigerants	Manual	Annual
Vehicle	Vehicle	TBD	Gasoline	Manual	Annual
[REDACTED]	[REDACTED]	TBD	Natural Gas	Manual	Quarterly
[REDACTED]	[REDACTED]	TBD	Propane	Manual	Annual
[REDACTED]	[REDACTED]	TBD	Propane	Manual	Annual
Vehicle	Vehicle	TBD	Diesel	Login	Annual
[REDACTED]	[REDACTED]	TBD	Electric	Login	Monthly
[REDACTED]	[REDACTED]	TBD	Electric	Login	Monthly
[REDACTED]	[REDACTED]	TBD	Natural Gas	Login	Monthly
[REDACTED]	[REDACTED]	TBD	Electric	Login	Monthly
[REDACTED]	[REDACTED]	TBD	Natural Gas	Login	Monthly
[REDACTED]	[REDACTED]	TBD	Electric	Login	Monthly
[REDACTED]	[REDACTED]	TBD	Electric	Login	Monthly
[REDACTED]	[REDACTED]	TBD	Natural Gas	Login	Monthly

Appendix E: Detailed Breakdown of Emissions Results

CY 2022 Emissions (MTCO ₂ e)				
Row Labels	Sum of tCO ₂ e CO ₂	Sum of tCO ₂ e CH ₄	Sum of tCO ₂ e N ₂ O	Sum of tCO ₂ e
	1359.34	1.63	3.87	1364.83
Scope 1	572.05	0.22	2.11	574.39
Natural Gas	470.20	0.22	2.11	472.53
Refrigerants	101.85	0.00	0.00	101.85
Scope 2	787.29	1.40	1.75	790.44
Electric	787.29	1.40	1.75	790.44
	31.13	0.05	0.09	31.27
Scope 1	7.28	0.00	0.03	7.31
Natural Gas	5.82	0.00	0.03	5.85
Refrigerants	1.46	0.00	0.00	1.46
Scope 2	23.85	0.04	0.06	23.96
Electric	23.85	0.04	0.06	23.96
	494.91	0.78	0.99	496.67
Scope 1	71.64	0.03	0.04	71.71
Propane	18.93	0.03	0.04	19.00
Refrigerants	52.71	0.00	0.00	52.71
Scope 2	423.27	0.75	0.94	424.96
Electric	423.27	0.75	0.94	424.96
	1115.07	1.66	4.25	1120.98
Scope 1	566.71	0.26	2.42	569.38
Natural Gas	537.53	0.26	2.42	540.20
Refrigerants	29.18	0.00	0.00	29.18
Scope 2	548.36	1.40	1.83	551.60
Electric	548.36	1.40	1.83	551.60
	318.86	0.31	0.67	319.84
Scope 1	318.86	0.31	0.67	319.84
Diesel	81.11	0.01	0.09	81.21
Gasoline	237.75	0.30	0.58	238.63
	90.49	0.13	0.35	90.97
Scope 1	49.81	0.03	0.21	50.05
Natural Gas	43.23	0.02	0.19	43.44
Propane	6.58	0.01	0.02	6.61
Scope 2	40.68	0.10	0.14	40.92
Electric	40.68	0.10	0.14	40.92
Grand Total	3409.80	4.55	10.21	3424.56