

NET-ZERO GHG ASSESSMENT



Nimmo Bay Wilderness Resort

April 1, 2023 to March 31, 2024

Completed By	Kyle Bouwknecht & Chloe Shore
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Completed	7/3/2025

synergy

Executive Summary

Nimmo Bay Wilderness Resort is a remote luxury accommodation located in the Southern Great Bear Rainforest of British Columbia. Nimmo Bay owns and operates several cabins, a store, restaurant and 7 boats.

Nimmo Bay's 2024 business operations resulted in 4,136 tCO₂e (tonnes of carbon equivalent). The largest emission source was guest travel to the resort at 2,516 tCO₂e (61% of the footprint) followed by purchased goods and services at 728 tCO₂e (18%) and gasoline use at 240 tCO₂e (5.8%).

Nimmo Bay has set an emissions reduction target of 17% by 2030 based on 2024 levels. To achieve this goal, Nimmo Bay should prioritize implementing reductions to their 3 highest emission sources, with installing renewable energy and working with guests to find low-emission methods of travel as high priorities.

This report was completed in partnership with the BC Tourism Sustainability Network and serves as an entry point for Nimmo Bay to understand its GHG emissions hot spots and start planning for reducing these emissions.

Inventory Information

Company Name	Nimmo Bay Wilderness Resort		
Contact Information	Brianna Sloan	brianna@nimmobay.com	+1 (800) 837 4354
Company Description	Waterfront Cabins, Forest Cabins, Shop, Restaurant, 7 small marine vessels.		
Reporting Period	April 1, 2023 to March 31, 2024		
Inventory Boundary	Scope 1 (Direct Emissions) - Gasoline, Propane, Diesel, Aviation Fuel, Wood Fuel, Refrigerant (R404A and R448A)		
	Scope 2 (Indirect Emissions from Purchased Electricity) N/A		
	Scope 3 (Indirect Emissions from Other Sources) - Waste, Guest Travel, Purchased Goods & Services		
Scope 2 Approach	Location/Market Based Emissions Calculation		
Consolidation Approach	Operational Control: Accounting for 100% of emissions from operations over which the company has operational control.		
Primary Measurement	Greenhouse gas emissions measured in Carbon Dioxide Equivalent (CO ₂ e)		
Reporting Guidelines	Aligned with those defined in <i>The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (The GHG Protocol, www.ghgprotocol.org)</i> . Emissions factors reviewed & approved by Ostrom.		

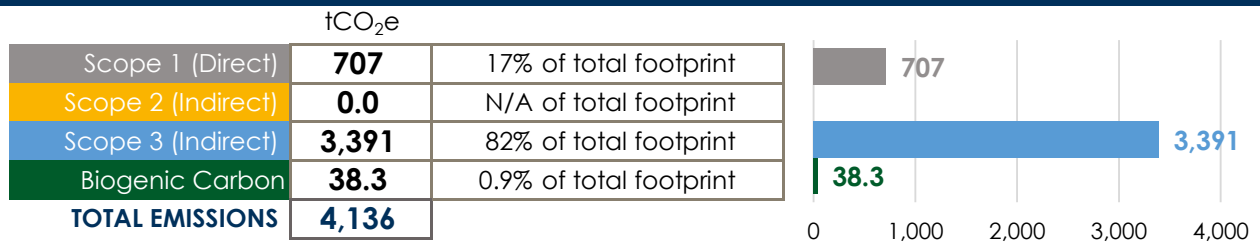
Summary of Results

Total tCO₂e 4,136

Equivalent to:

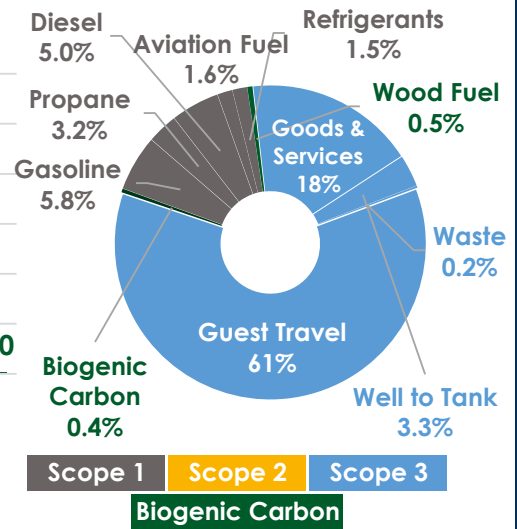
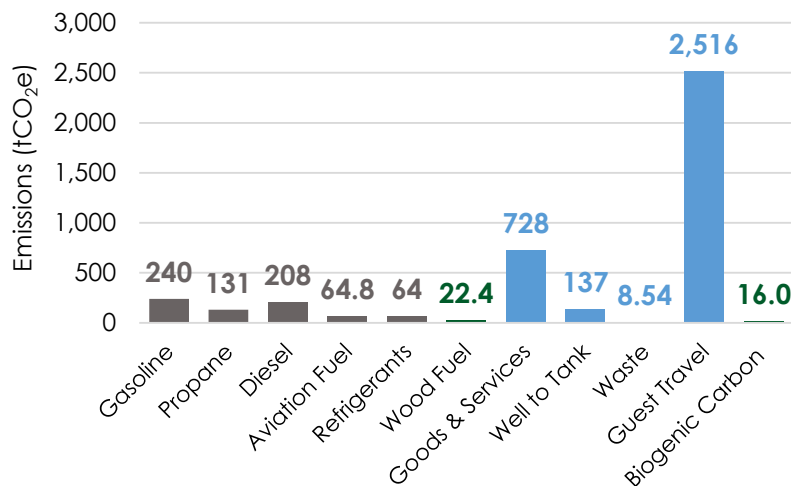
tCO₂e per guest 10.0

Carbon Footprint by Scope



Carbon Footprint By Activity

Emissions by Activity



Scope 1 Scope 2 Scope 3
Biogenic Carbon

Emission Reduction Target

Over 2024 baseline

Reduction Target **-17%** by 2030

Total Emissions **3412** 2024

Nimmo Bay has committed to reducing emissions by 17% by 2030 based on 2024 levels.



Highest Impact Initiatives



Install onsite renewable energy production using tidal or solar power.



Work with guests upon booking to explore low-emission travel options.



Explore electrification of vehicles and vessels after installing renewable energy.



Create and promote low-emission tours such as hiking and kayaking over heli and boat tours.



Increase the sustainable collection and use of foraged foods from around Nimmo Bay.



Limit meat purchases such as beef and lamb and promote meat alternatives and plant-based options.

Notes on Targets

Nimmo Bay has set a target to reduce emissions 17% by 2030 based on 2024 emissions. To achieve this target, it is recommended Nimmo Bay focus on their three highest emission sources; gasoline, purchased goods & services and guest travel. Installing renewable energy to reduce fuel use and working with guests to find low-emission travel alternatives are likely to see the biggest reductions in emissions and should be a high priority.

Reduction Opportunities Legend

Cost

Free / Cost Savings	\$
< \$4,999	\$
\$5,000 < \$50,000	\$\$
\$50,000 < \$150,000	\$\$\$
> \$150,000	\$\$\$\$

Impact

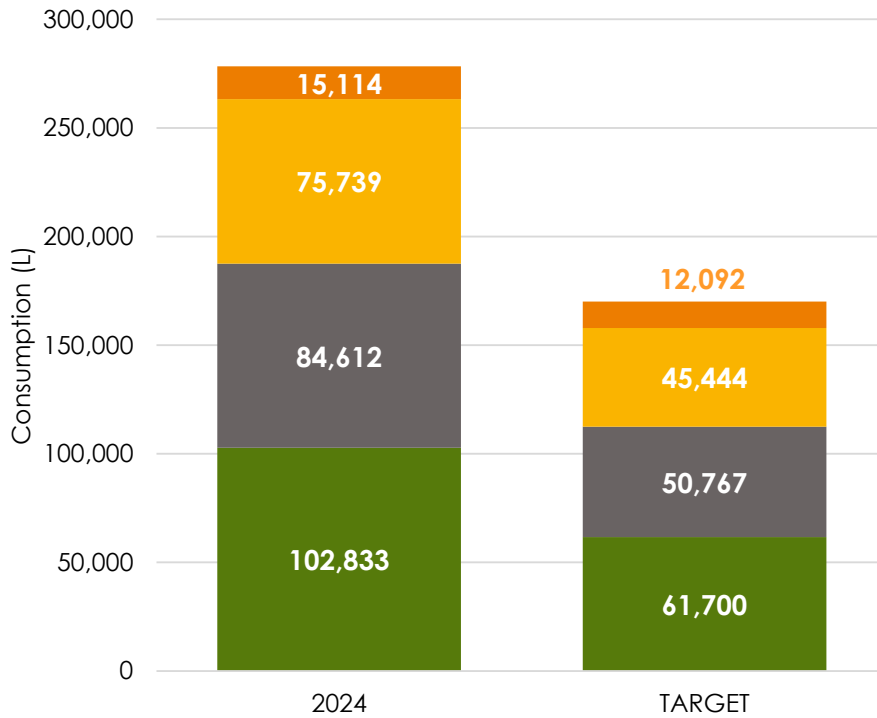
No Impact	Does not materially reduce carbon footprint but is an important sustainability initiative
Low	<2% reduction in emissions source
Medium	2% - 10% reduction in emissions source
High	>10% reduction in emissions source

Fuel

Annual Fuel Consumption

■ Gasoline ■ Propane ■ Diesel ■ Aviation Fuel

Analysis



Nimmo Bay's fuel consumption in FY 2024 totalled 643 tCO₂e, 16% of the total footprint. Gasoline used in boats and other recreational equipment made up 37% of fuel consumption, followed by the propane used to heat buildings, which made up 30% of fuel consumption.

Due to Nimmo Bay's remote location, electrification of the site, as well as its vehicles, will be most effective in unison with renewable energy implementations.

tCO₂e **643**

% of Total **16%**

Litres / day **1,525**

Recommended Actions

✓	Action	Estimated Cost	Impact
<input type="checkbox"/>	Install onsite renewable energy production using tidal or solar power.	\$\$\$-\$\$\$\$	High
<input type="checkbox"/>	Explore electrification of vehicles and vessels after installing renewable energy.	\$\$-\$\$\$	High
<input type="checkbox"/>	Source renewable diesel for generators as a bridging solution.	\$-\$	Low-Med
<input type="checkbox"/>	Install heat pumps for building heating, cooling, and hot water production.	\$\$-\$\$\$	Low-Med
<input type="checkbox"/>	Create and promote low-emission tours such as hiking and kayaking over heli and boat tours.	\$	Low-Med
Sustainability Goal:		Reduce fuel use 40% by 2030	

Fuel Emission Reduction Phasing

Procure renewable diesel to meet some or all generator fuel requirements

Renewable diesel is a high quality diesel class fuel produced from renewable and waste feedstocks. It is a drop in ready fuel, meaning that it can be used in any diesel engine without issue.

Renewable diesel typically reduces fossil GHG emissions by 80% to 90% across the fuel's lifecycle.

Invest in on-site renewable energy generation with generators as redundancy

Options for on site renewable energy include solar photovoltaics (PV), solar photovoltaic-thermal (PVT)¹, tidal energy, and micro-wind. Off-grid facilities are opting for a system that uses a mix of power generation methods to improve system performance and reduce times when energy is not being produced.

Renewable energy projects will enable future electrification of the site.

Electrify systems on site

Heat pumps can be used for heating, cooling, and hot water production. They are typically 3 to 5 times more efficient than fossil fuel equipment, leading to reduced operational costs and a lower total energy demand.

To help further reduce energy demand, look for 'low-hanging fruit', such as LED lighting upgrades and low-flow shower heads.

Purchase EV company vehicles as old vehicles are retired

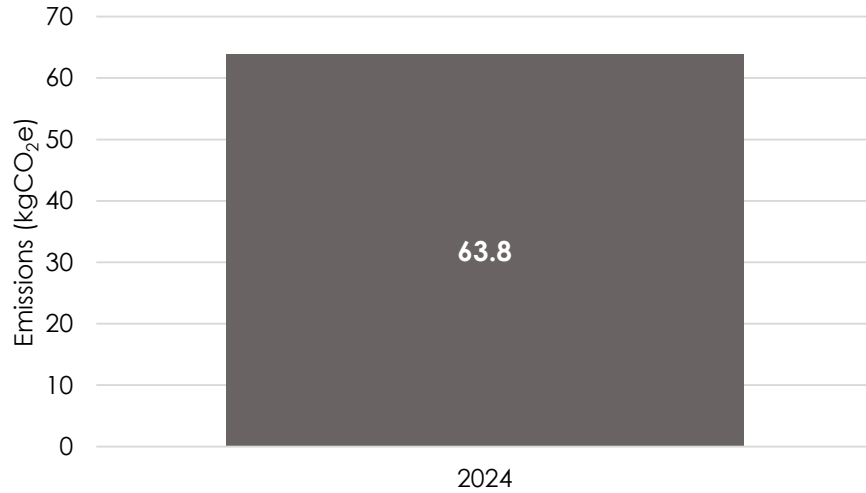
If renewable energy production on site is able to exceed demand, Nimmo Bay can replace existing vehicles with EVs as they reach end of life. EVs typically have a lower total cost of ownership than conventional vehicles, a figure which is further improved when self-generating the energy used to charge the vehicles. Some modern EVs also allow vehicle-to-grid charging, meaning the vehicle batteries could serve as energy back up for the site when necessary.

¹Solar PVT systems produce electricity and heat concurrently. The heat is used to pre-heat hot water, which reduces energy demand for water heating.



Refrigerants

Annual Refrigerants Consumption



Analysis

Refrigerants are used in cooling systems and only produce emissions during a leak. 45 lbs of refrigerant was replaced in 2024, resulting in 63.8 tCO₂e.

While some refrigerant leakage is typically unavoidable, Nimmo Bay can work with its HVAC company to identify opportunities to use low carbon refrigerants in existing or future equipment.

tCO₂e

63.8

% of Total

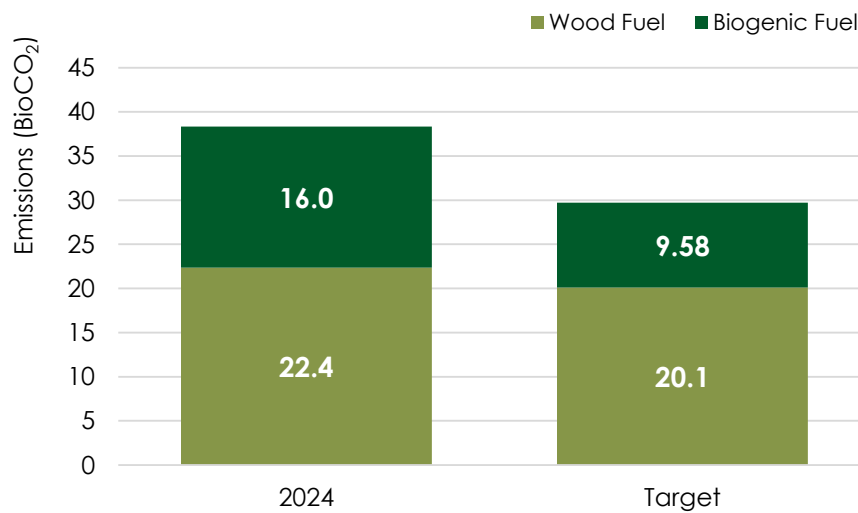
1.5%

kg / day

0.06

Biogenic CO₂

Annual Biogenic Carbon Emissions



Analysis

Biogenic carbon emissions originate from natural sources, emitting carbon already in the carbon cycle.

At Nimmo Bay, biogenic emissions are a result of burning wood fuel used in fireplaces and a standard amount of biogenic fuel added to gasoline and diesel. As a result, biogenic fuel will reduce in proportion with fuel reductions.

Bio-tCO₂

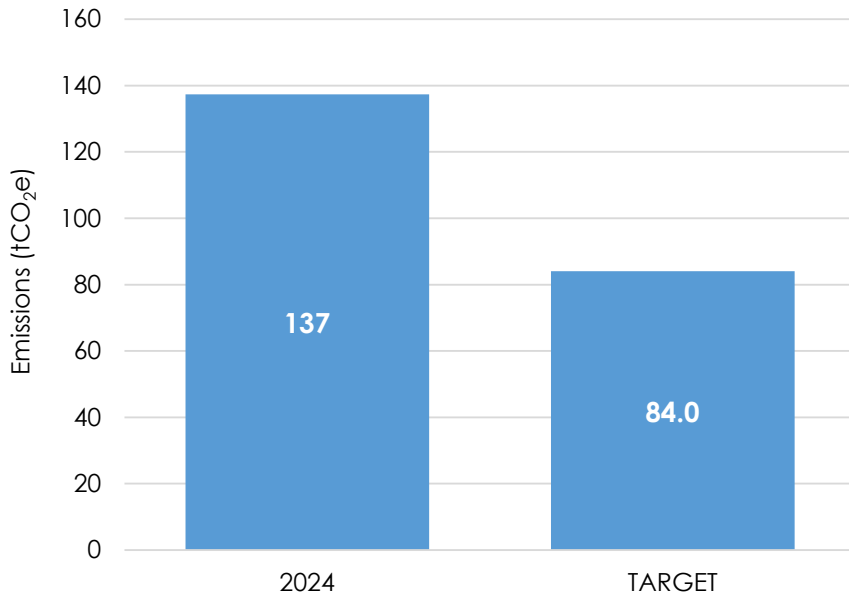
38.3

% of Total

0.9%

Well to Tank

Annual Well to Tank Emissions



Analysis

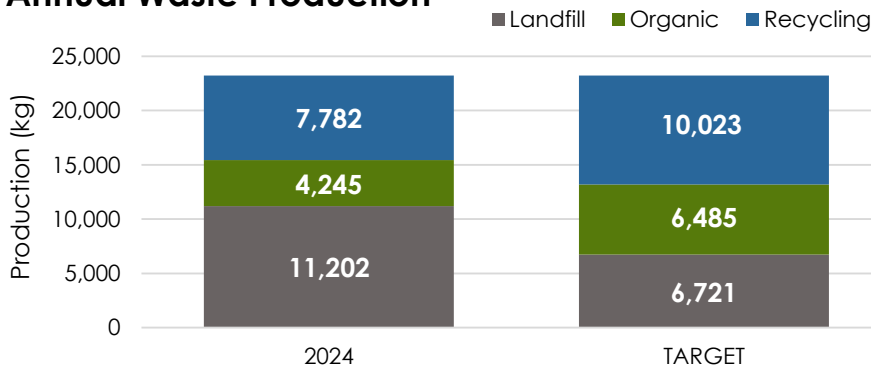
Well to tank (WTT) emissions are associated with the procurement, processing and transportation of fossil fuels. As a result, these emissions are a product of fuel consumption and will reduce in proportion with fuel reductions.

tCO₂e **137**

% of Total **3.3%**

Waste

Annual Waste Production



Analysis

Waste production in FY 2024 resulted in 8.54 tCO₂e, less than 1% of the total footprint, with a 52% diversion from landfill rate. Emission reduction efforts should focus on higher impact emission sources. To increase general sustainability, Nimmo Bay could focus on reducing the amount of waste shipped off site and increase their diversion from landfill rate.

- Perform an internal waste audit to assess what waste items could be swapped for reusable materials, items in landfill bins that could be recycled, and signage and guest education to increase recycling and composting.
- purchase an on site composter to increase circularity and reduce waste taken offsite.

tCO₂e **8.54**

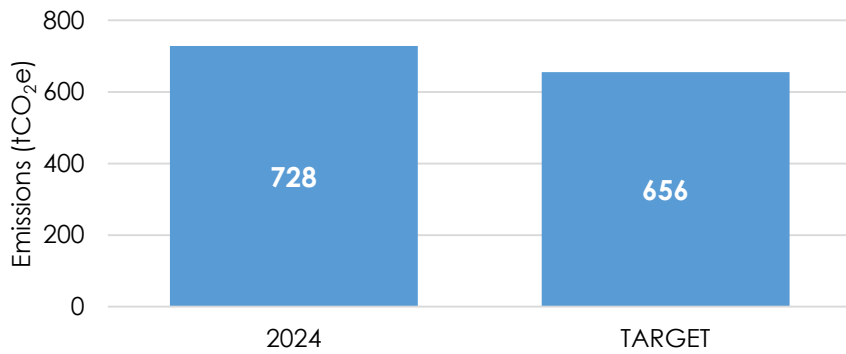
% of Total **0.2%**

Diversion Rate **52%**



Purchased Goods & Services

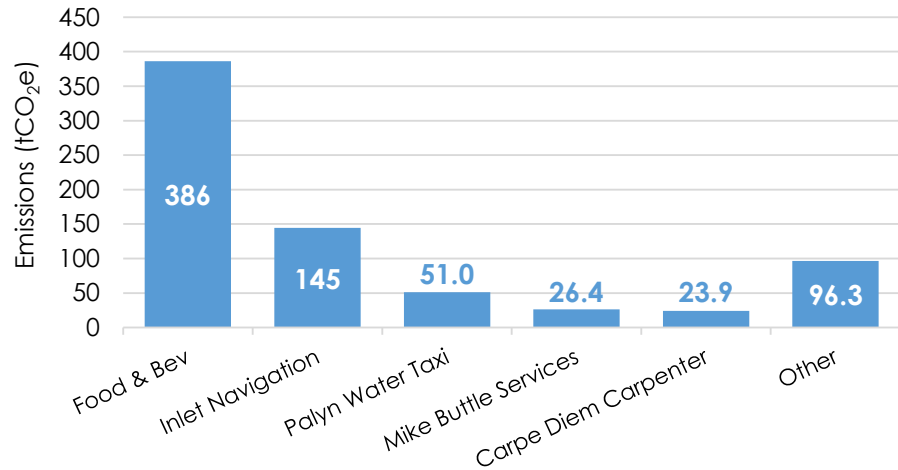
Annual PG&S Emissions



Analysis

Purchased goods and services (PG&S) was the second highest emission source at 728 tCO₂e, 18% of the total footprint¹. Food & Bev resulted in the highest emissions at 386 tCO₂e, 53% of PG&S, followed by Inlet Navigation at 145 tCO₂e, 20% of PG&S emissions.

Annual PG&S Emissions by Category



Of purchased foods, meat and fresh produce had the highest emissions due to quantity of produce purchased and the high emissions intensity of meat products.

tCO₂e **728**

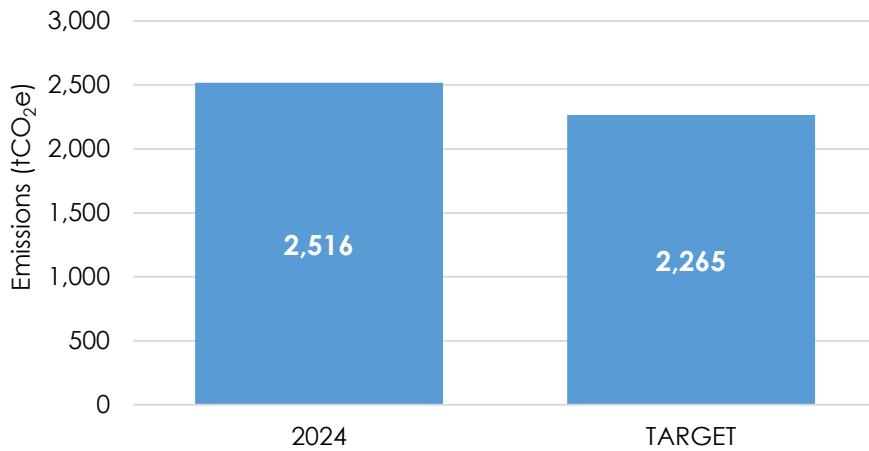
% of Total **18%**

tCO₂e / Guest **1.77**

Recommended Actions

✓	Action	Estimated Cost	Impact
<input type="checkbox"/>	Beef and lamb have the highest GHG emissions of any food product, nearly four times higher than chicken or pork and more than 12 times higher than tofu. Limiting meals that include red meat, instead offering more seafood, vegetarian, and vegan meal options, will reduce the GHG emissions from food.	\$-\$	Med to High
<input type="checkbox"/>	Increase the sustainable collection and use of foraged foods from around Nimmo Bay.	\$	Low to Med
<input type="checkbox"/>	Purchase second hand, recycled or refurbished items when possible.	\$-\$\$\$	Low
Sustainability Goal:		Reduce purchased goods & services emissions by 10% by 2030	

Annual Guest Travel Emissions



Analysis

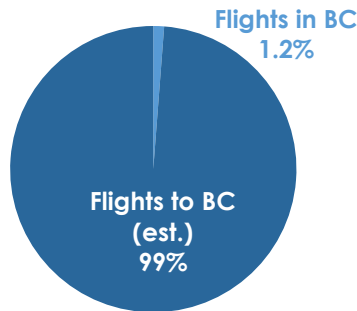
Guest Travel was Nimmo Bay's highest emission source at 2,516 tCO₂e, 61% of the total footprint. Due to Nimmo Bay's remote location, guests travel to the lodge by float plane or helicopter.

As Nimmo Bay is an internationally sought destination, guests travelling from abroad to BC was estimated using historical data². These emissions made up the majority of guest travel.

2024 Guest Travel



Methods of Travel (%)



tCO ₂ e	2,516	% of Total	61%	tCO ₂ e / Guest	6.11
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Recommended Actions

✓	Action	Estimated Cost	Impact
<input type="checkbox"/>	Work with guests upon booking to explore low-emission travel options.	\$	Low - Med
<input type="checkbox"/>	Suggest float planes over helicopters to guests, and encourage water taxi use wherever possible.	\$	Low
<input type="checkbox"/>	Conduct an internal audit of where guests are coming from and their methods of travel to understand true emissions impact.	\$	Low
<input type="checkbox"/>	Revisit marketing practices and consider 'close-to-home' marketing to attract more local guests.	\$	Low - Med
<input type="checkbox"/>	As availability increases, work with local aviation partners to procure sustainable aviation fuel.	\$-\$	Low - Med
Sustainability Goal:		Reduce guest travel emissions by 10% by 2030	

Conclusion

Nimmo Bay's 2024 business operations resulted in 4,136 tCO₂e. The largest emission source was guest travel to the resort at 2,516 tCO₂e (61% of the footprint) followed by purchased goods and services at 728 tCO₂e (18%), and gasoline use at 240 tCO₂e (5.8%).

Nimmo Bay has set an emissions reduction target of 17% by 2030 based on 2024 levels. To achieve this goal, Nimmo Bay should prioritize implementing reductions to their 3 highest emission sources, with installing renewable energy and working with guests to find low-emission methods of travel to and from Nimmo Bay as high priorities.

Achievements

- First year since 2016 measuring and reporting carbon footprint

Moving Forward

- Look into renewable energy and electrification to lower fuel emissions
- Work with guests to book low-emission travel to and from Nimmo Bay

Data Collection & Methodologies

Emission Source	Data Type	Data Quality	Notes
Gasoline	Financial data	14/16	This table details data received from Nimmo Bay to generate this report. Data quality is assessed on five categories: technology, time, geography, reliability and completeness. This table provides further information on the values in this report and what sources were used to calculate them. If a material emissions source has low quality data, it will affect the accuracy of the final inventory.
Propane	Financial data	14/16	
Diesel	Financial data	14/16	
Aviation Fuel	Financial data	14/16	
Refrigerants	Service Records	13/16	
Wood Fuel	purchase records	13/16	
Goods & Services	purchase records	13/16	
Waste	Estimate	12/16	
Guest Travel	Summary Sheet & historical Data	12/16	

Information on Inventory Uncertainty

* 1. Purchased goods & services (not including food) were calculated using spend data and only included top spending categories. Not all 2024 purchases were measured.

* 2. Guests travelling to Canada emissions were estimated based on historical data (2016) adjusted using psg-km and 2024 pax numbers.

Emissions References

1. 2022 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions
https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2021-best-practices-methodology_for_archive.pdf
2. Environment Canada's National Inventory Report (1990-2021); Part 2 & 3.
https://publications.gc.ca/collections/collection_2023/eccc/En81-4-2021-2-eng.pdf
https://publications.gc.ca/collections/collection_2023/eccc/En81-4-2021-3-eng.pdf
3. Department for Environment, Food & Rural Affairs (UK) Carbon Factors 2023
<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023>
4. Intergovernmental Panel on Climate Change (Global Warming Potentials)
https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf
5. UK WRAP Emissions Factor Database V1 .2 (2023)
<https://www.wrap.ngo/resources/guide/scope-3-ghg-measurement-and-reporting-protocols-food-and-drink>
6. Supply Chain GHG Emission Factors for US Commodities and Industries v1.1
<https://catalog.data.gov/dataset/supply-chain-ghg-emission-factors-for-us-commodities-and-industries-v1-1>







Policy for Base Year Recalculation:





Base year emissions, and other previous emissions, shall be retroactively recalculated if a change in organizational structure or data quality is expected to exceed a significance threshold of 10% of base year emissions. These changes may arise from structural changes such as mergers, acquisitions, divestments, outsourcing or insourcing, changes in calculation methodology and improvements in accuracy, or discovery of significant errors.






Glossary of Terms






Term	Description
Carbon Neutral	Companies are carbon neutral when they remove GHG emissions equivalent to all their scope 1, 2 and material (>5%) scope 3 emissions, usually by purchasing carbon offsets.
Biogenic	Carbon emissions generated from sources naturally occurring in the carbon cycle (i.e. organic matter), rather than the result of fossil fuel combustion.
Emissions Factor	The volume of emissions created by an emissions producing activity (i.e. fuel combustion), calculated based on the amount of the activity (volume, distance, etc.).
GHG	Greenhouse Gas (emissions): Atmospheric gasses contributing to the greenhouse effect, including Carbon Dioxide (CO ₂), Methane (CH ₄), Nitrous Oxide (N ₂ O), etc.
GJ	Gigajoule: Unit of natural gas equal to 26.137 m ³ or 0.947 MMBtu
kWh	Kilowatt-Hour: Common unit for measuring electrical consumption
m ³	Cubic Meter: Unit of measurement equal to 1,000 Litres
Net-Zero	Companies with a zero-emission carbon footprint, usually achieved by minimizing outputs and negating the remaining emissions through carbon removal activities.
PCR%	Post-Consumer Recycled Content (as a percentage)
psg-km	Passenger-Kilometer: Unit separating total emissions between passengers per km
tCO ₂ e	Tonnes of Carbon Dioxide Equivalent: a combined term capturing the emissions from various GHGs.
t-km	Tonne-kilometer: A unit of measurement used in shipping




Appendix B: Full List of Recommended Actions





✓	Highest Impact Initiatives
	Install onsite renewable energy production using tidal or solar power.
	Work with guests upon booking to explore low-emission travel options.
	electrification of vehicles after installing renewable energy.
	Create and promote low-emission tours such as hiking and kayaking over heli and boat tours.
	Increase the sustainable collection and use of foraged foods from around Nimmo Bay.
	Limit meat purchases such as beef and lamb and promote meat alternatives and plant-based options.

✓	Quick & Easy Implementations
	Set thermostat to 21C during operating hours, and 15C during vacant hours.
	Create a Zero Emissions Equipment policy that prioritizes the purchase of equipment and vehicles running on alternative fuels or electricity.
	perform an internal waste audit to assess waste streams, staff and guest use, and identify opportunities to reduce waste.
	Ensure all lights are LEDs.

✓	Low Emissions, High Sustainability
	Educate guests on Nimmo Bay's sustainability goals and suggest actions they can take to reduce their emissions impact while staying at Nimmo Bay.
	Replace all water fixtures with low-flow versions (toilets & aerators) to reduce water use.
	Use only refillable soaps and cleaning supplies in the office.
	purchase an on site composter to increase circularity and reduce waste taken offsite.
	Introduce recycling streams for Soft Plastics, Batteries, Light Bulbs, Styrofoam and Foil Wrapping.

✓	Cost Saving Initiatives
	Increase the sustainable collection and use of for aged foods from around Nimmo Bay.
	Conduct an energy audit to identify and prevent building heat loss.
	switch to energy efficient appliances to reduce propane use.
	Ensure all lights are LEDs.
	Limit meat purchases such as beef and lamb and promote meat alternatives and plant-based options.

✓	Best Practices
	Source renewable fuels such as renewable diesel and SAF.
	Regularly check cooling systems for refrigerant leaks, using low carbon refrigerants where possible.
	Purchase second hand, recycled or refurbished items when possible.

	Suggest float planes over helicopters to guests, and encourage water taxi use wherever possible.
	Conduct an internal audit of where guests are coming from and their methods of travel to understand true emissions impact.
	Assign a staff member to perform weekly leak checks of all water-consuming fixtures in the office.
	Implement an incentive program designed to reduce contamination of recycling and organics streams.

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