GREENHOUSE GAS EMISSIONS INVENTORY REPORT

Prepared in accordance with ISO 14064-1:2018

Horizons Regional Council

Prepared by (lead author): Leah Matehe

Dated: 16 December 2024

Verification status: Reasonable for categories 1 & 2 emissions and Limited for remaining categories. Limited for category 1 direct removal

Measurement period: 01 July 2023 to 30 June 2024

Base year period: 01 July 2019 to 30 June 2020

Approved for release by:

Ian Stuart - Assets and Facilities Team Leader

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REPORT STRUCTURE

The Inventory Summary contains a high-level summary of this year's results and from year 2 onwards a brief comparison to historical inventories.

Chapter 1, the Emissions Inventory Report is a complete and accurate quantification of the amount of GHG emissions and removals that can be directly attributed to the organisation's operations within the declared boundary and scope for the specified reporting period. The inventory is based on the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) and ISO 14064-1:2018 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals[1]. Where relevant, the inventory is aligned with industry or sector best practice for emissions measurement and reporting.

Chapter 2, the reduction plan and progress report, forms the manage step part of the organisation's application for Programme certification.

See Appendix 1 and the related Spreadsheet for detailed emissions inventory results, including a breakdown of emissions by source and sink, emissions by greenhouse gas type, and non-biogenic and bio-genic emissions.

[1] Throughout this document 'GHG Protocol' means the *GHG Protocol Corporate Accounting and Reporting Standard* and 'ISO 14064-1:2018' means the international standard *Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*.

Appendix 1 also contains detailed context on the inventory boundaries, inclusions and exclusions, calculation methodology, liabilities, and supplementary results.

This overall report provides emissions information that is of interest to most users but must be read in conjunction with the inventory workbook for covering all of the requirements of ISO 14064-1:2018

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EXECUTIVE SUMMARY

This is the annual greenhouse gas (GHG) emissions inventory report for Horizons Regional Council covering the measurement period 01 July 2023 to 30 June 2024.[2]

From the carbon footprint it can be seen that Horizons main carbon emission sources are fuel use from company vehicles, electricity and waste to landfill. With an understanding of the key emission sources Horizons now have the knowledge to be able to optimize and reduce their carbon emissions across their business.

Table 1: Inventory summary

Category (ISO 14064-1:2018)	**Scopes (ISO 14064-1:2006)**	**2020**	**2023**	**2024**
Category 1: Direct emissions (tCO_2e)	Scope 1	607.47	796.99	795.72
Category 2: Indirect emissions from imported energy (location-based method*) (tCO_2e)	Scope 2	118.28	116.67	62.73
Category 3: Indirect emissions from transportation (tCO_2e)	Scope 3	29.35	46.81	46.00
Category 4: Indirect emissions from products used by organisation (tCO_2e)		175.59	76.38	61.15
Category 5: Indirect emissions associated with the use of products from the organisation (tCO_2e)		0.00	0.00	0.00
Category 6: Indirect emissions from other sources (tCO_2e)		0.00	0.00	0.00
Total direct emissions (tCO_2e)		**607.47**	**796.99**	**795.72**
Total indirect emissions* (tCO_2e)		**323.23**	**239.86**	**169.89**
Total gross emissions* (tCO_2e)		**930.69**	**1,036.85**	**965.61**
Category 1 direct removals (tCO_2e)		-36,001.00	-107,624.00	-46,265.00
Purchased emission reductions (tCO_2e)		0.00	0.00	0.00
Total net emissions (tCO_2e)		**-35,070.31**	**-106,587.15**	**-45,299.39**

*Emissions are reported using a location-based methodology. See section 1.2.1 for details.1.2.1

[2] Throughout this document "emissions" means "GHG emissions". Unless otherwise stated, emissions are reported as tonnes of carbon dioxide equivalent (tCO_2e).

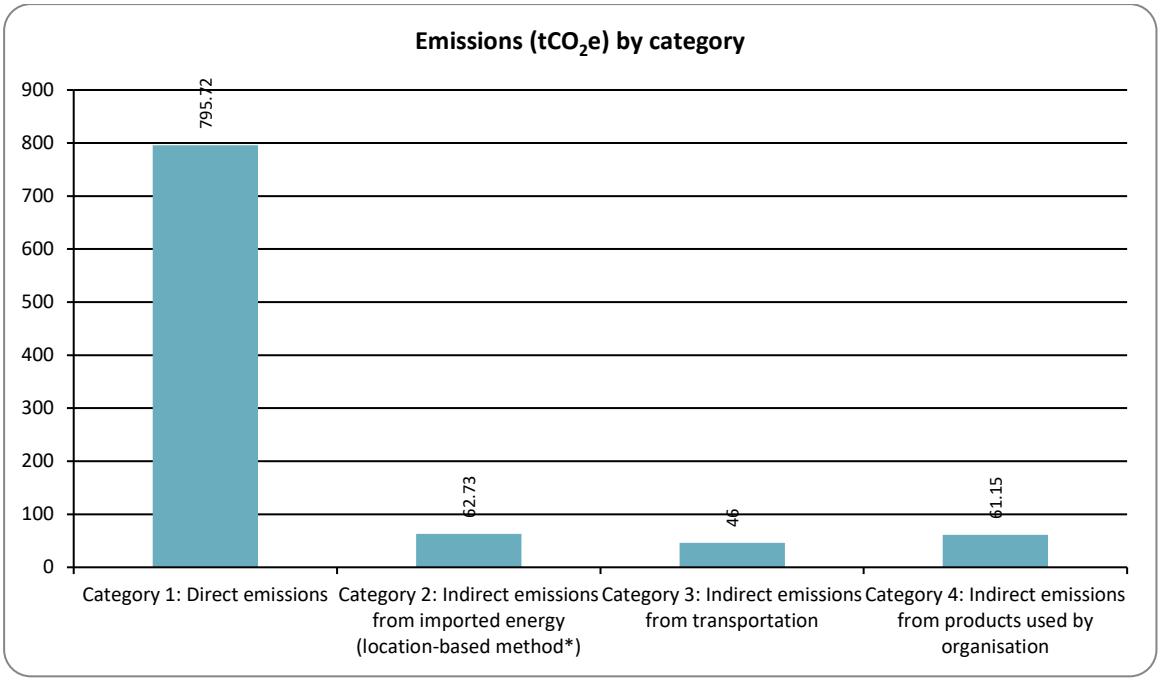

Figure 1: Emissions (tCO_2e) by Category for this measurement period

CHAPTER 1: EMISSIONS INVENTORY REPORT

1.1. INTRODUCTION

This report is the annual greenhouse gas (GHG) emissions inventory and management report for Horizons Regional Council.

The purpose of this report is to allow Horizons Regional Council to gain an understanding of the profile of their carbon emissions. Once this has been understood a plan will be developed around how this can be reduced in the coming years.

The inventory report and any GHG assertions are expected to be verified by a Programme-approved, third-party verifier. The level of assurance is reported in a separate Assurance Statement provided to the directors of the entity.

1.2. EMISSIONS INVENTORY RESULTS

Table 2: Emissions inventory summary for this measurement period

Measurement period: 01 July 2023 to 30 June 2024.

Category	(tCO_2e)	Total emissions (tCO_2e)
Category 1: Direct emissions	795.72 Diesel stationary combustion, Diesel, Fertiliser use Lime, Fertiliser use Nitrogen, HFC-32, Natural Gas distributed commercial, Petrol premium, Petrol regular	795.72

Category	(tCO_2e)	Total emissions (tCO_2e)
Category 2: Indirect emissions from imported energy (location-based method*)	62.73 Electricity	62.73
Category 3: Indirect emissions from transportation	46.00 Air travel (pre-verified tCO_2e), Air travel domestic (average), Air travel long haul (econ+), Bus travel (national average), Car Average (unknown fuel type), Rail travel (national), Rental Car average (fuel type unknown), Taxi (regular), Accommodation - New Zealand	46.00
Category 4: Indirect emissions from products used by organisation	61.15 Electricity distributed T&D losses, Natural Gas distributed T&D losses, Waste landfilled LFGR Office waste, Waste landfilled No LFGR Office waste	61.15
Category 5: Indirect emissions associated with the use of products from the organisation	0.00	0.00
Category 6: Indirect emissions from other sources	0.00	0.00
Total direct emissions	**795.72**	**795.72**
Total indirect emissions*	**165.48**	**169.89**
Total gross emissions*	**961.20**	**965.61**
Category 1 direct removals	-46,265.00	-46,265.00
Purchased emission reductions	0.00	0.00
Total net emissions	**-45,303.80**	**-45,299.39**
Emissions intensity		**Total emissions**
Operating revenue (gross tCO_2e / $Millions)		0.00

*Emissions are reported using a location-based methodology. See section 1.2.1 for details.1.2.1

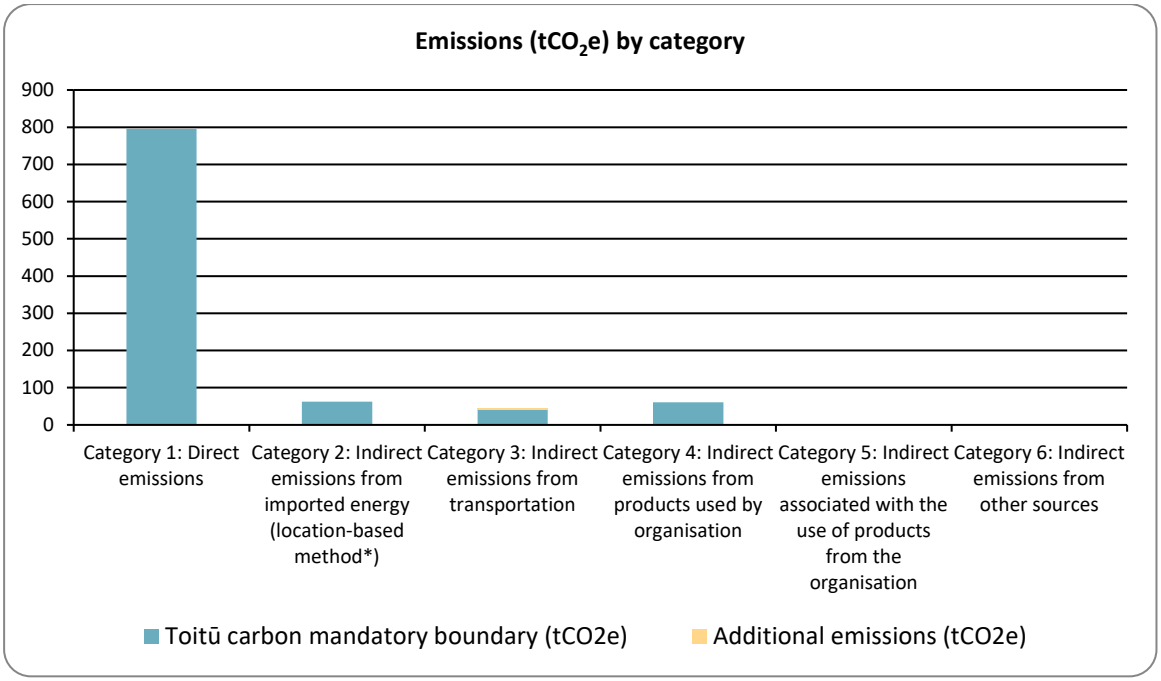

Figure 2: Emissions (tCO_2e) by category

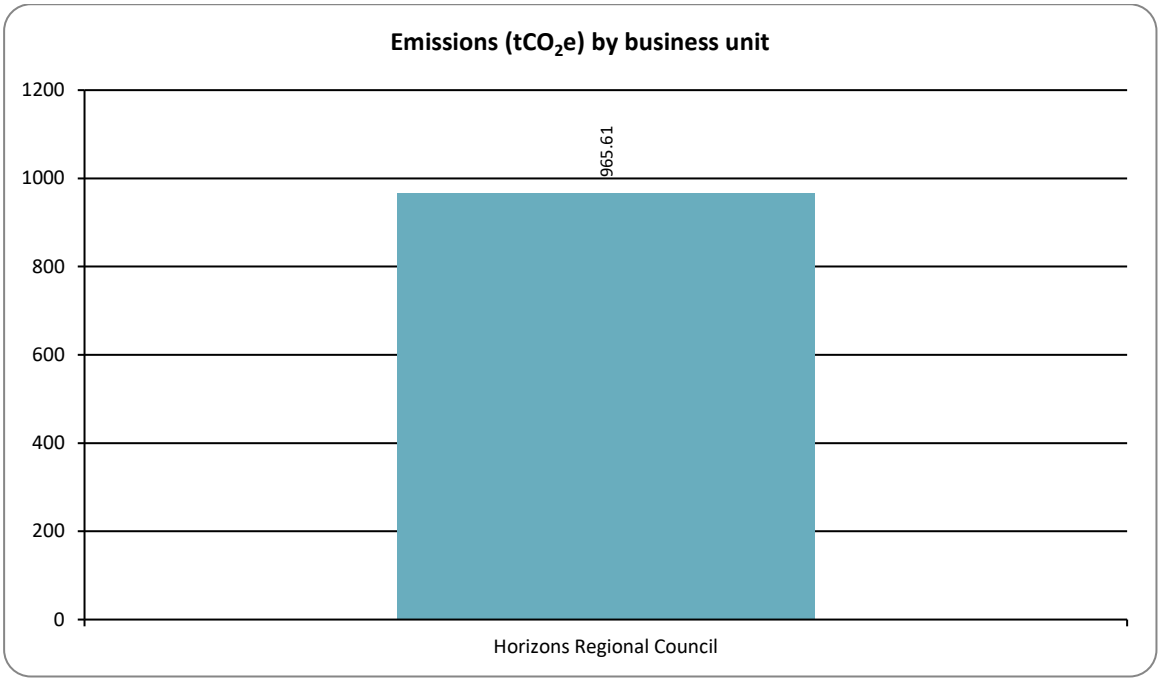

Figure 3: Emissions (tCO_2e) by business unit

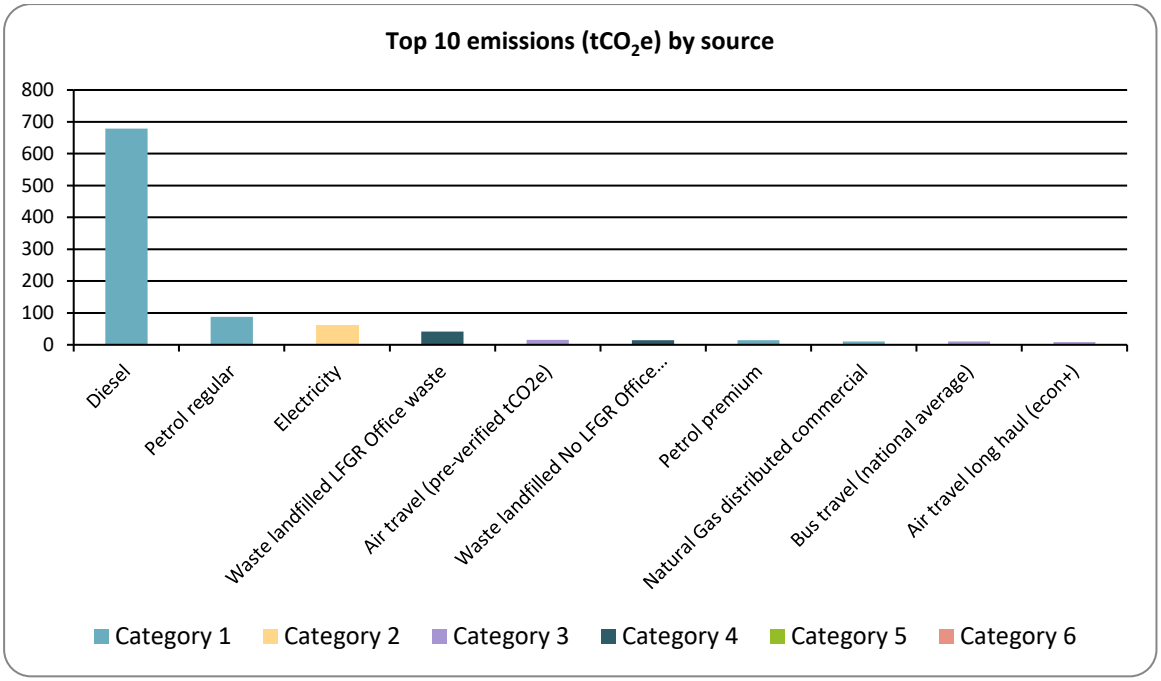

Figure 4: Top 10 emissions (tCO_2e) by source

1.2.1. Dual reporting of indirect emissions from purchased and generated energy

All purchased and generated energy emissions are dual reported using both the location-based method and market-based method. Dual reporting illustrates the role of supplier choice, onsite renewable energy generation and contractual instruments in managing indirect emissions from energy alongside any ongoing energy efficiency and reduction efforts.

Horizons Regional Council aligns to location-based reporting for tracking energy related emissions.

Solar energy serves as the primary heating source for the domestic hot water system in the Te Ao Nui Building. However, more information is needed to accurately assess the emissions reduction impact of this renewable energy source before it can be included in future inventories, such as those for 2024/25 and beyond. The same applies to the solar electricity panels at the Woodville Service Centre, which have been operational since 2021.

Table 3. Dual reporting of indirect emissions from imported energy

Category	Location-based methodology (tCO_2e)	Market-based methodology (tCO_2e)
Category 1: Direct emissions	795.72	795.72
Category 2: Indirect emissions from imported energy	62.73	67.48
Category 3: Indirect emissions from transportation	46.00	46.00
Category 4: Indirect emissions from products used by organisation	61.15	61.15
Category 5: Indirect emissions associated with the use of products from the organisation	0.00	0.00
Category 6: Indirect emissions from other sources	0.00	0.00

Category	Location-based methodology (tCO_2e)	Market-based methodology (tCO_2e)
Total direct emissions	**795.72**	**795.72**
Total indirect emissions	**169.89**	**174.64**
Total gross emissions	**965.61**	**970.36**
Category 1 direct removals	-46,265.00	-46,265.00
Total net emissions	**-45,299.39**	**-45,294.64**

1.3. ORGANISATIONAL CONTEXT

1.3.1. Organisation description

Our region sits at the nexus of the Lower North Island and is the gateway from Wellington to Taranaki, Hawke's Bay and the rest of the North Island. Horizons is the regional council for the Manawatū-Whanganui Region, which extends over 22,200km^2 - from Ruapehu in the north and Horowhenua in the south, to Whanganui in the west and Tararua in the east. It's a landscape as vast and varied as the 250,000 people who call it home, including three major river systems and two coasts. Horizons' responsibilities include managing the region's natural resources, leading regional land transport planning, contracting passenger transport services and coordinating our region's response to natural disasters. Our activities span several city and district council areas.

At Horizons Regional Council we work for a healthy environment where people are thriving. We have multiple offices, land holdings and investments around the country and offshore: our portfolio includes some activities that sequester carbon, as well as a diverse range of emitters.

GHG Reporting

As a council, our purpose is to enable local decision making for our communities and enable their social, economic, environmental and cultural wellbeing – in the present and for the future. As our communities respond to climate change, our council will need to make changes to mitigate or minimise its own impacts. Like many other councils, Horizons is committed to achieving carbon neutrality. This report is a first step on that journey. It allows us to understand our carbon footprint and reveals the main sources of our emissions. We will be able to use this knowledge to develop our carbon reduction plan, which will inform future investment decisions and operational policies.

Climate Change Impacts

1.3.2. Statement of intent

The intended uses of this inventory are:

Intended use and users

This document will allow Horizons Regional Council to report on our carbon footprint, to develop a reduction pathway and shape our sustainability and investment policies. It will provide a baseline for any future reporting council chooses to undertake.

1.3.3. Person responsible

David Neal, Business Services Manager is responsible for overall emission inventory measurement and reduction performance, as well as reporting results to top management. David Neal, Business Services Manager has the authority to represent top management and has financial authority to authorise budget for the Programme, including Management projects and any Mitigation objectives.

State any other people/entities involved

Megan Peterson, Corporate Projects Leader; Kristy Rodgers, Assets and Fleet Administrator; Ian Stuart, Assets Team Leader; Leah Matehe, Assets and Facilities Coordinator - Corporate.

The Horizons project team and DETA Consulting were involved in agreeing on the boundary conditions.

Leah Matehe was responsible for data collection and was responsible for entering the data into emanage. Leah Matehe has a background in administration and has been employed by Horizons Regional Council as Assets and Facilities Coordinator with particular focus on emissions reporting and reductions.

Top management commitment

Climate change is one of the key issues Horizons faces. We have adopted a Climate Action Strategy, which includes an interim target of reducing organisational emissions by thirty percent by 2030. This target is 'interim', to allow it to be refined once we understand our carbon footprint and options to reduce emissions.

1.3.4. Reporting period

Base year measurement period: 01 July 2019 to 30 June 2020

This is our most recent full financial year and aligns with our other reporting cycles. We consider that this is the best available dataset and that uncertainties in 'baseline' emissions can be reflected in future reporting.

Measurement period of this report: 01 July 2023 to 30 June 2024

Council has decided to undertake reporting on an annual basis.

This report covers the financial year 2023/2024. The base year report was conducted for 2019/2020 financial year and has been amended to account for various changes in the organisation.

1.3.5. Organisational boundary and consolidation approach

An operational control consolidation approach was used to account for emissions.[3]

Organisational boundaries were set with reference to the methodology described in the GHG Protocol and ISO 14064-1:2018 standards.

Justification of consolidation approach

Horizons has a range of emission sources from multiple different businesses which include electricity, fuel consumption and a continuously changing investment portfolio. Due to the complexity of the investment portfolio, the best approach is operational control. This allows us to capture all of the operational emissions across our multiple businesses. We believe this approach aligns best with our forward plan and gives us control to be able to make changes that will have an impact.

[3]control: the organisation accounts for all GHG emissions and/or removals from facilities over which it has financial or operational control. equity share: the organisation accounts for its portion of GHG emissions and/or removals from respective facilities.

Organisational structure

Figure 5 shows what has been included in the context of the overall structure.

We can see from Figure 5 that 15 of the Horizons Facilities have been included and 6 facilities are excluded under the operational control model. These are excluded as we have no control over how these 6 facilities operate.

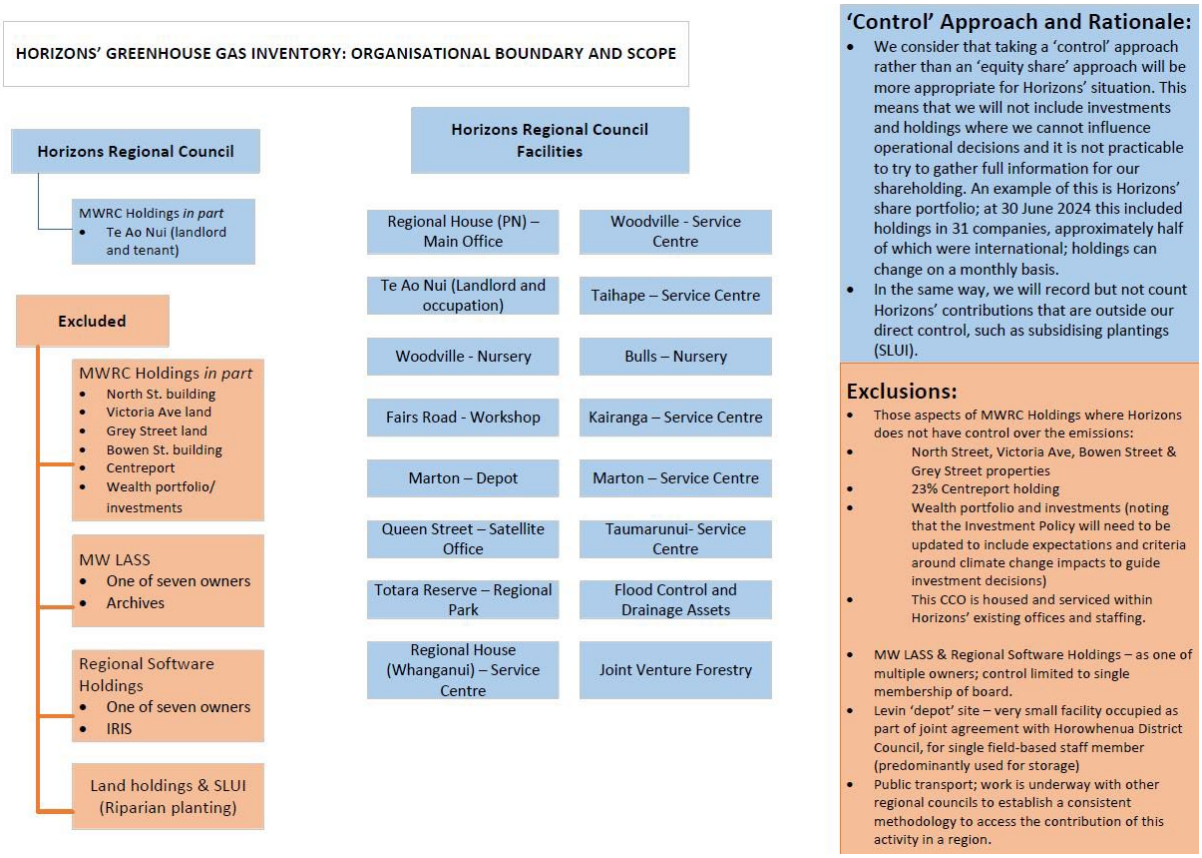

Figure 5: Organisational structure

Table 4. Brief description of business units, sites and locations included in this emissions inventory

Company/Business unit/Facility	Address	Description
Regional House Palmerston North	11 - 15 Victoria Avenue, Palmerston North	Main Horizons office
Regional House Whanganui	181 Guyton Street, Whanganui	Service Centre
Marton	9 Hammond Street, Marton	Service Centre
Marton Yard	Ngahina Street, Marton	Depot
Taihape	243 Wairanu Road, Taihape	Service Centre
Totara Reserve	2250 Pohangina Road, Ashhurst	Regional Park
Taumarunui	34 Maata Street, Taumarunui	Service Centre
Woodville	118 Vogel Street, Woodville	Service Centre

Company/Business unit/Facility	Address	Description
Kairanga	1128 Kairanga-Bunnythorpe Road, Palmerston North	Service Centre
Queen Street Office	47 Queen Street, Palmerston North	Satellite Office
Fairs Road Workshop	158 Fairs Road, Palmerston North	Workshop
Bulls Nursery	Bulls	Plant Nursery
Woodville Nursery	109 Pinfold Road, woodville	Plant Nursery
Te Ao Nui (as landlord and tenant)	17 Victoria Avenue, Palmerston North	Commercial building owned by MWRC Holdings.
Flood Control and Drainage Scheme	Various Locations	Pump sites that aid in flood control
Flow Metering/Monitoring Scheme	Various Locations	Sites that assist with monitoring water quality

1.3.6. Excluded business units

Some emissions associated with Horizons activities (but not under Horizons' control) have been excluded from this report, due to a lack of data.

Freight has been excluded due to the limited information that we hold. Currently, we only record cost; locations and weights (which would be required to estimate emissions) are not captured. Current systems do not allow for efficient capture of this data; enhancements will be investigated when negotiating future contracts with service providers. Emissions from outbound freight likely make up a small proportion of our total emissions.

Horizons' investment company, MWRC Holdings, owns 4 commercial property on North Street, Palmerston North; Victoria Avenue, Palmerston North; Grey Street, Palmerston North; & Bowen Street, Feilding. Horizons has no control over the building's emissions, as they are fully occupied and operated by tenants. In accordance with standard reporting practice, this building is excluded from our inventory. Conversely, Te Ao Nui (also owned by MWRC Holdings, but operated and partially occupied by Horizons) is included in the inventory, except for tenants' electricity usage.

Emissions associated with other investments are excluded as they are outside of our operational control boundary. We propose to update our investment guidelines to reflect our position on greenhouse-gas emissions. Contracted out work for the management and protection of river assets are not included as we do not have operational control over the emissions generated by the contractors.

Should Horizons decide to regularly report in emissions as part of its emissions reduction strategy, progressive improvements in data availability and quality will be able to be made.

CHAPTER 2: EMISSIONS MANAGEMENT AND REDUCTION REPORT

2.1. EMISSIONS REDUCTION RESULTS

Electricity consumption has significantly decreased during this reporting period. This decline is attributed to reduced demand from the River Management pump stations. These pump stations are responsible for discharging stormwater from surrounding communities into various rivers and streams within the floodplain, even when river levels are high. Their operation is highly dependent on rainfall and river levels. For example, if the river is high and there is little local rainfall, the pumps are unlikely to operate. Conversely, if there is substantial local rainfall but the river is low, stormwater will likely discharge via gravity, rendering the pump stations unnecessary.

The 2023/2024 reporting period was relatively dry compared to the previous year, likely leading to a reduction in pumping hours. Additionally, there has been a correction of previously estimated electricity meter readings with actual readings. We are collaborating with power metering companies to upgrade these meters to smart meters, which will provide more accurate electricity consumption data.

Table 5: Comparison of historical GHG inventories

Category	2020	2021	2022	2023	2024
Category 1: Direct emissions (tCO_2e)	607.47	612.61	700.26	796.99	795.72
Category 2: Indirect emissions from imported energy (location-based method*) (tCO_2e)	118.28	145.71	217.68	116.67	62.73
Category 3: Indirect emissions from transportation (tCO_2e)	29.35	132.11	12.10	46.81	46.00
Category 4: Indirect emissions from products used by organisation (tCO_2e)	175.59	43.84	78.18	76.38	61.15
Category 5: Indirect emissions associated with the use of products from the organisation (tCO_2e)	0.00	0.00	0.00	0.00	0.00
Category 6: Indirect emissions from other sources (tCO_2e)	0.00	0.00	0.00	0.00	0.00
Total direct emissions (tCO_2e)	**607.47**	**612.61**	**700.26**	**796.99**	**795.72**
Total indirect emissions* (tCO_2e)	**323.23**	**321.66**	**307.97**	**239.86**	**169.89**
Total gross emissions* (tCO_2e)	**930.69**	**934.27**	**1,008.23**	**1,036.85**	**965.61**

Category	2020	2021	2022	2023	2024
Category 1 direct removals (tCO_2e)	-36,001.00	-30,625.00	-70,929.00	-107,624.00	-46,265.00
Purchased emission reductions (tCO_2e)	0.00	0.00	0.00	0.00	0.00
Total net emissions (tCO_2e)	**-35,070.31**	**-29,690.73**	**-69,920.77**	**-106,587.15**	**-45,299.39**
Emissions intensity					
Operating revenue (gross tCO_2e / $Millions)	0.00	0.00	0.00	0.00	0.00
Operating revenue (gross mandatory tCO_2e / $Millions)	0.00	0.00	0.00	0.00	0.00

*Emissions are reported using a location-based methodology. See section 1.2.1 for details.1.2.1

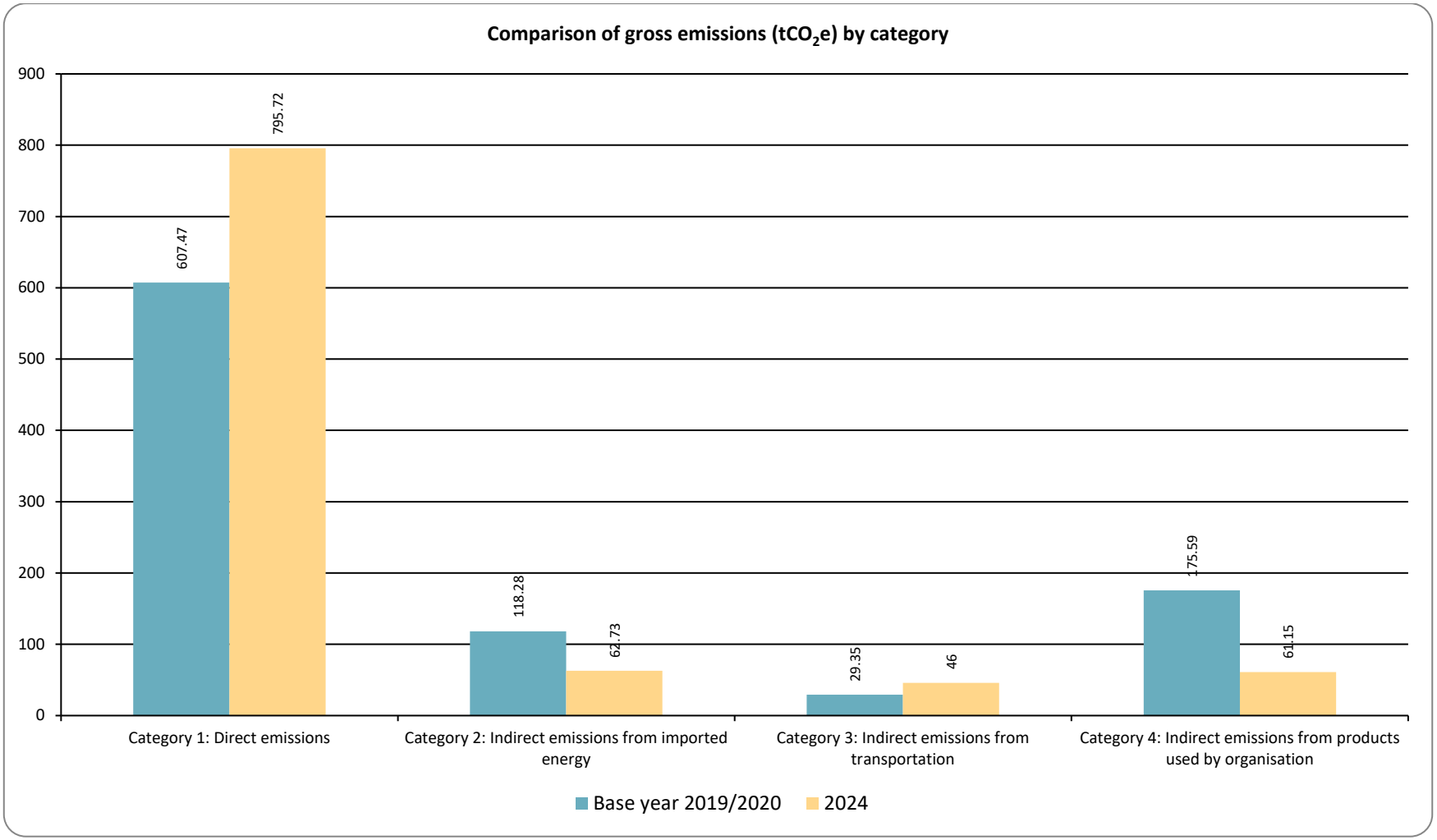

Figure 6: Comparison of gross emissions (tCO_2e) by category between the reporting periods

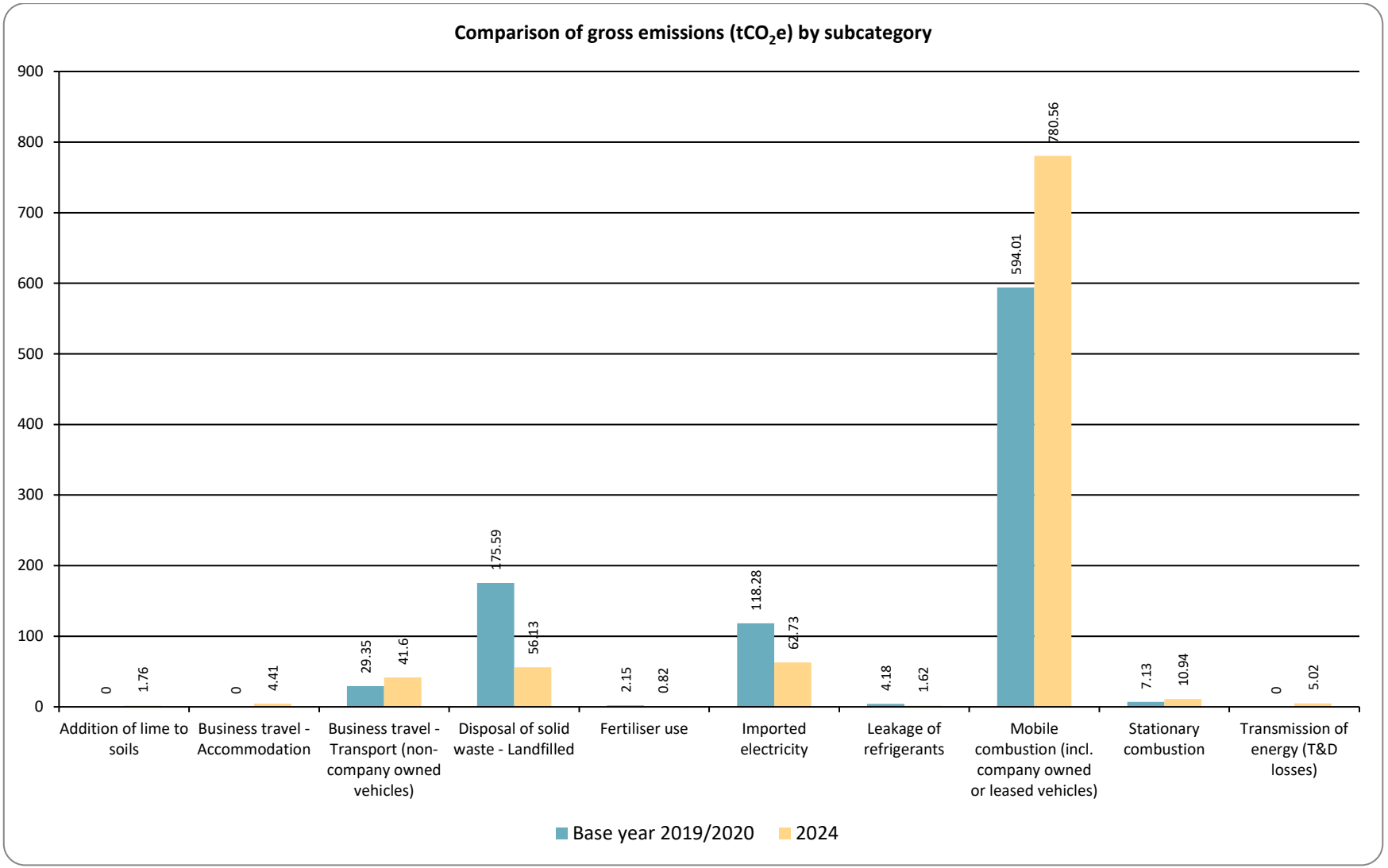

Figure 7: Comparison of gross emissions (tCO_2e) by subcategory between the reporting periods

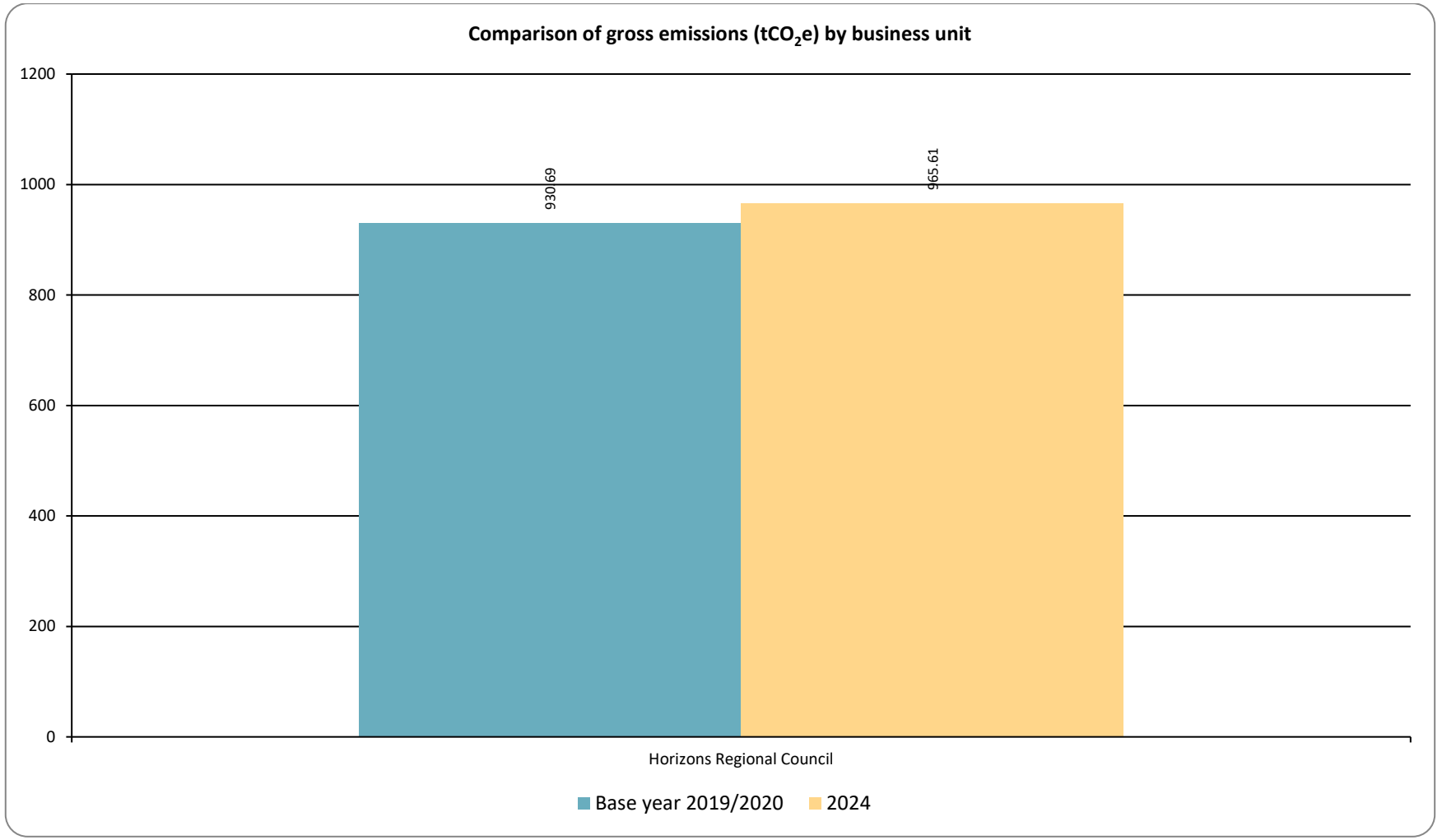

Figure 8: Comparison of gross emissions (tCO_2e) by business unit between the reporting periods

2.2. SIGNIFICANT EMISSIONS SOURCES

Significant sources

The majority of our emissions are from diesel and petrol fuel consumption by our company vehicle fleet. The other two main emitters are waste to landfill and purchased electricity use across all facilities.

Activities responsible for generating significant emissions

In years prior, there has been limited charter bus use. This year, given the significant increase YoY and from our base year, we have collected enough data to make reasonable assumptions as to our charter bus use and impact.

Influences over the activities

Many aspects of Horizons' business (including resource consent processing and monitoring, site-specific advice, environmental monitoring, flood protection and environmental enhancement work, and community engagement) require travel within the region. This contributes significantly to our carbon footprint. Tackling these emissions would require us to either find ways to reduce vehicle use, or reduce emissions per kilometre travelled (or both). At this point in time, there are technological, operational, and cost constraints on the reductions in emissions that are possible.

Significant sources that cannot be influenced

The diesel fuel usage is the top emissions source that cannot be easily reduced or influenced due to most of the vehicle fleet being made up of 4WD diesel Utes. The 4WD diesel Utes are the only suitable vehicle available on the market currently for accessing remote locations to undertake the required work. During this reporting period, where appropriate, three transitions have been made from ICE or hybrid 2WD vehicles to fully electric options. Further opportunities for similar transitions will continue to be explored.

2.3. STAFF ENGAGEMENT

It remains that we have not established specific emissions reduction commitments, but there is still a committed focus on emissions reductions and staff are kept well informed and engaged at various levels. Examples of this include council workshops to discuss the last Toitū IMR, all staff meetings with an emissions reduction focus and a Sustainability Group who are staff who meet regularly to collaborate to establish 'on the ground' initiatives such as waste minimisation (worm farms, waste audits, recycling stations to replace desk bins) which is implemented across all controlled sites.

2.1. MONITORING AND REPORTING

We are using emanage to monitor and report on our emissions

APPENDIX 1: DETAILED GREENHOUSE GAS INVENTORY

Additional inventory details are disclosed in the tables below, and further GHG emissions data is available on the accompanying spreadsheet to this report (Appendix1-Data Summary Horizons Regional Council.xls).

Table 6. Direct GHG emissions and removals, quantified separately for each applicable gas

Category	CO_2	CH_4	N_2O	NF_3	SF_6	HFC	PFC	Desflurane	Sevoflurane	Isoflurane	Emissions total (tCO_2e)
Stationary combustion	10.91	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.94
Mobile combustion (incl. company owned or leased vehicles)	765.79	2.30	12.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	780.56
Emissions - Industrial processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Removals - Industrial processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leakage of refrigerants	0.00	0.00	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00	1.62
Treatment of waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Treatment of wastewater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions - Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Removals - Land use, land-use change and forestry	-46,265.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-46,265.00
Fertiliser use	0.00	0.00	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
Addition of livestock waste to soils	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Addition of crop residue to soils	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Addition of lime to soils	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
Enteric fermentation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Open burning of organic matter	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity generated and consumed onsite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medical gases	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exported electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total net emissions	-45,486.54	2.33	13.30	0.00	0.00	1.62	0.00	0.00	0.00	0.00	-45,469.28

Table 7. Non-biogenic, biogenic anthropogenic and biogenic non-anthropogenic CO_2 emissions and removals by category

Category	Anthropogenic biogenic CO_2 emissions	Anthropogenic biogenic (CH_4 and N_2O) emissions (tCO_2e)	Non-anthropogenic biogenic (tCO_2e)
Category 1: Direct emissions	0.00	0.00	0.00
Category 2: Indirect emissions from imported energy	0.00	0.00	0.00
Category 3: Indirect emissions from transportation	0.00	0.00	0.00
Category 4: Indirect emissions from products used by organisation	0.00	56.13	0.00
Category 5: Indirect emissions associated with the use of products from the organisation	0.00	0.00	0.00
Category 6: Indirect emissions from other sources	0.00	0.00	0.00
Total gross emissions	**0.00**	**56.13**	**0.00**

A1.1 REPORTING BOUNDARIES

A1.1.1 Emission source identification method and significance criteria

The GHG emissions sources included in this inventory were identified with reference to the methodology described in the GHG Protocol and ISO 14064-1:2018 standards.

In years prior, workshops were held with a number of Horizons staff to discuss the organisational boundary consolidation approach. The operational control model was confirmed, and thus the list of emissions sources and sinks included and excluded within the boundary remain confirmed.

Significance of emissions sources within the organisational boundaries has been considered in the design of this inventory. The significance criteria used comprise:

- All direct emissions sources that contribute more than 1% of total Category 1 and 2 emissions

No changes to the significance criteria have been made since this inventory was initially developed in the base year.

A1.1.2 Included sources and activity data management

As adapted from ISO 14064-1, the emissions sources deemed significant for inclusion in this inventory were classified into the following categories:

- **Direct GHG emissions (Category 1):** GHG emissions from sources that are owned or controlled by the company.
- **Indirect GHG emissions (Category 2):** GHG emissions from the generation of purchased electricity, heat and steam consumed by the company.
- **Indirect GHG emissions (Categories 3-6):** GHG emissions that occur as a consequence of the activities of the company but occur from sources not owned or controlled by the company.

Table 13 provides detail on the categories of emissions included in the GHG emissions inventory, an overview of how activity data were collected for each emissions source, and an explanation of any uncertainties or assumptions made based on the source of activity data. Detail on estimated numerical uncertainties are reported in Appendix 1.

Table 8. GHG emissions activity data collection methods and inherent uncertainties and assumptions

Business unit	GHG emissions source or sink	GHG emissions category	GHG contribution to inventory (tCO_2e)	Data source	Data collection unit	Uncertainty (qualitative)	Availability of evidence	Pre-verified?
Company Vehicle Fleet petrol	Transport	Cat 1	106.589	BP Fuel Card Web Report + Allied Fuel Invoices	Litres	Assume all fuel card consumption is captured on invoices	BP Fuel Card Web Report + Allied Fuel Invoices	no
Company Vehicle Fleet diesel	Transport	Cat 1	563.751	BP Fuel Card Web Report + Allied Fuel Invoices	Litres	Assume all fuel card consumption is captured on invoices	BP Fuel Card Web Report + Allied Fuel Invoices	no
Refrigerant	All sites Refrigeration	Cat 1	3.55	SC Co Ordinators + Ruapehu Refrigeration	kg	Assumed all 'top-ups' done by service provider represents actual leakage that occurred during this measurement period	Emails from SC Co Ordinators and Technicians	no
Natural Gas	Heating	Cat 1	23.994	Invoice - Percentage of total use	kWh	Assume all Natural gas use is captured on invoices	Invoices from Supplier	no
Stationary Combustion	Generators	Cat 1	0.214	Testing usage	Litres	Assume fuel usage supplied about generator usage is correct	Email from suppliers	no
Electricity	Office Electricity	Cat 2	194	Supplied direct from electricity supplier + Invoices	kWh	Assume all electricity use is captured on invoices	Data direct from electricity supplier + Invoices	no
Air travel- Domestic	Flights	Cat 3	4.987	Air NZ Travel Card Statements	person km	Assume booked through our official process	Statements from Air New Zealand	no
Staff Travel own car Fuel Type Unknown	Transport	Cat 3	4.921	Staff Travel Job Cost Report - Finance	km	Assume all travel recorded is done for work	Staff Travel Job Cost Report	no

Business unit	GHG emissions source or sink	GHG emissions category	GHG contribution to inventory (tCO_2e)	Data source	Data collection unit	Uncertainty (qualitative)	Availability of evidence	Pre-verified?
Rental Cars	Transport	Cat 3	0.056	Rental Car Company Invoices	kms	Assume booked through our official process	Rental Car Company Invoices	no
Taxi (taxi/shuttles)	Transport	Cat 3	0.036	Other taxi charges	$	Assume all taxi use has been captured in invoices	Report from Taxi Charge	no
Taxi (taxi/shuttles)	Transport	Cat 3	0.096	Direct from Taxi Charge	$	Assume all taxi use has been captured in invoices	Report from Taxi Charge	no
Accommodation	visitor nights	Cat 3	1.814	Staff Travel Job Cost Report - Finance	visitor nights	Assume booked through our official process	Staff Travel Job Cost Report	no
Waste to Landfill with gas recovery	Rubbish	Cat 4	44.372	SC Co Ordinators + Invoices	kg	We assume it is going to LFGR due to it's location	Emails from SC Co Ordinators and Invoices	no
Waste to Landfill without gas recovery	Rubbish	Cat 4	56.80	SC Co Ordinators + Invoices	kg	Assumed to be primarily made up of office waste	Emails from SC Co Ordinators and Invoices	no

A1.1.3 Excluded emissions sources and sinks

Emissions sources in Table 14 have been identified and excluded from this inventory.

Table 9. GHG emissions sources excluded from the inventory

Business unit	GHG emissions source or sink	GHG emissions category	Reason for exclusion
Freight	Source	Cat 4	Km and weight of freight is unknown, only current costs are known. The organisation as a whole is low freight consumer and this emissions source is de minimis.
Travel	Source	Cat 3	The collection method of this emission source relies on information provided by financial reporting. The financial report in this case is a data extract of the 'Travel' code which has limited breakdowns within this code, for example taxi, train, food, and relies on the description written by staff. Some trips have combined costs with other travel related costs, such as food. As there is limited information some travel related emissions have been excluded. Based on the historical trend, travel is a minor emissions source.
Environmental Data sites (unmetered electricity)	Source	Cat 2	There are 15 unmetered water monitoring sites. These have been set up like this for more than 10 years. They only power a small battery charger each.
Imported Electricity - Levin Depot	Source	Cat 2	The electricity consumption of this leased space is difficult to obtain as the site is a shared space with Horowhenua District Council. As it is occupied by only one Horizons staff member and is predominantly used for storage the consumption is de minimis.
Accommodation - International Travel	Source	Cat 3	Have not been to source evidence of the accommodation for international travel. This has been excluded due to the low number of international travel during this reporting period.

A1.2 QUANTIFIED INVENTORY OF EMISSIONS AND REMOVALS

A1.2.1 Calculation methodology

A calculation methodology has been used for quantifying the emissions inventory based on the following calculation approach, unless otherwise stated below:

Emissions = activity data x emissions factor

The following alternative emissions quantification approaches have been used in this inventory:

Forest removals using programme supplied template based on growth rate lookup tables. All emissions were calculated using Toitū emanage with emissions factors and Global Warming Potentials provided by Toitū. Global Warming Potentials (GWP) from the IPCC fifth assessment report (AR5) are the preferred GWP conversion[4].

[4] If emission factors have been derived from recognised publications, which still use earlier GWPs, the emission factors have not been altered from as published.

Where applicable, unit conversions applied when processing the activity data has been disclosed.

There are systems and procedures in place that will ensure applied quantification methodologies will continue in future GHG emissions inventories.

A1.2.2 GHG Storage and liabilities

A1.2.2.1 GHG STOCKS HELD ON SITE

Refrigerants and fuels may be stored on site, but their accidental leakage or release could result in a large increase in emissions for that period. Refrigerants such as HFCs, PFCs and SF_6 are GHGs with high global warming potentials, so material volumes of these or fuel are reported as potential liabilities.

Table 10. Total storage as of year end with potential GHG emissions liabilities.

GHG gas stock held	Quantity	Unit	Potential liability (tCO_2e)
Diesel stationary combustion	2,510.00	litres	6.72
HFC-32	84.00	kilograms	56.87
R-404A	0.00	kilograms	0.00
R-407C	0.00	kilograms	0.00
R-410A	97.90	kilograms	188.31
Total potential liability			251.90

A1.2.2.2 LAND-USE LIABILITIES

Organisations that own land subject to land-use change may achieve sequestration of carbon dioxide through a change in the carbon stock on that land. Where sequestration is claimed, then this also represents a liability in future years should fire, flood, management activities or other intentional or unintentional events release the stored carbon.

Table 11. Land-use liabilities (total)

Site name	Total sequestration during reporting period (tCO_2e)	Contingent liability (tCO_2e)	Total potential liability (tCO_2e)
Horizons Regional Council	-46265	332329	332329

A1.2.3 Supplementary results

Holdings and transactions in GHG-related financial or contractual instruments such as permits, allowances, verified offsets or other purchased emissions reductions from eligible schemes are reported separately here.

A1.2.3.1 PURCHASED OR DEVELOPED REDUCTION OR REMOVAL ENHANCEMENT PROJECTS

Horizons lease land from landowners which is used to grow forests. This is part of 10 joint venture programmes. Horizons gets a portion of the carbon credits associated with these. Over the reporting period no forests were harvested, and Horizons were credited with 46,265 carbon credits.

APPENDIX 2: SIGNIFICANCE CRITERIA USED

Table 12. Significance criteria used for identifying inclusion of indirect emissions

Emissions source	Magnitude	Level of influence	Risk or opportunity	Sector specific guidance	Level of influence	Outsourcing	Employee engagement
Accommodation	Yes	Yes	Yes	No	Yes	No	Yes
Air travel	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Employee commuting	Yes	Yes	No	Yes	Yes	No	Yes
Staff mileage claims	No	Yes	No	No	Yes	No	Yes
Taxi	No	Yes	No	Yes	No	Yes	Yes
Waste to landfill	Yes	No	Yes	No	No	Yes	Yes
Refrigerants	Yes	No	Yes	No	No	Yes	No
Fertilisers	Yes	Yes	No	No	No	Yes	No
Company Fleet fuel use	Yes	Yes	Yes	No	Yes	Yes	Yes
Electricity	Yes	Yes	No	No	Yes	Yes	Yes
Rail Travel	No	No	No	No	Yes	Yes	Yes

APPENDIX 3: REFERENCES

International Organization for Standardization, 2018. ISO 14064-1:2018. Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals. ISO: Geneva, Switzerland.

World Resources Institute and World Business Council for Sustainable Development, 2004 (revised). The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. WBCSD: Geneva, Switzerland.

World Resources Institute and World Business Council for Sustainable Development, 2015 (revised). The Greenhouse Gas Protocol: Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard. WBCSD: Geneva, Switzerland.

APPENDIX 4: REPORTING INDEX

This report template aligns with ISO 14064-1:2018. The following table cross references the requirements against the relevant section(s) of this report.

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A1.1.1 Emission source identification method and significance criteria	9.3.1 e
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