



GREENHOUSE GAS EMISSIONS INVENTORY AND MANAGEMENT REPORT

Toitū carbonreduce programme

Prepared in accordance with ISO 14064-1:2018 and the Technical Requirements of the Programme



Waikato Regional Council

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Dated: 02 November 2023

Verification status: Reasonable for all categories except Category 3 public transport and Limited for Category 3 public transport

Measurement period: 01 July 2022 to 30 June 2023

Base year period: 01 July 2016 to 30 June 2017

Approved for release by:

A handwritten signature in black ink, appearing to read "Karen Bennett".

Karen Bennett, Manager of the Chief Executive's Office

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The consolidation approach chosen for the greenhouse gas inventory should not be used to make decisions related to the application of employment or taxation law.

This report shall not be used to make public greenhouse gas assertions without independent verification and issue of an assurance statement by Toitū Envirocare.

AVAILABILITY

The report will be published on Waikato Regional Council's website at <https://www.waikatoregion.govt.nz/council/about-us/our-performance>, and reported to a governance committee of council.

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, includes the inventory details and forms the measure step of the organisation's application for Programme certification. The inventory 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 has been prepared in accordance with the requirements of the Programme¹, which 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 Removals². 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. 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.

¹ Programme refers to the Toitū carbonreduce, Toitū net carbonzero and the Toitū climate positive programmes.

² 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*.

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EXECUTIVE SUMMARY

This is the annual greenhouse gas (GHG) emissions inventory and management report for Waikato Regional Council covering the measurement period 01 July 2022 to 30 June 2023.³

Table 1: Inventory summary

Category (ISO 14064-1:2018)	Scopes (ISO 14064-1:2006)	2017	2022	2023
Category 1: Direct emissions	Scope 1	806.75	596.75	1,041.66
Category 2: Indirect emissions from imported energy (location-based method*)	Scope 2	566.45	258.23	425.90
Category 3: Indirect emissions from transportation	Scope 3	147.13	7,009.42	6,498.06
Category 4: Indirect emissions from products used by organisation		4.09	30.24	54.84
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 direct emissions		806.75	596.75	1,041.66
Total indirect emissions*		717.67	7,297.89	6,978.80
Total gross emissions*		1,524.42	7,894.63	8,020.46
Category 1 direct removals		0.00	0.00	0.00
Purchased emission reductions		0.00	0.00	0.00
Total net emissions		1,524.42	7,894.63	8,020.46

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

³ Throughout this document "emissions" means "GHG emissions".

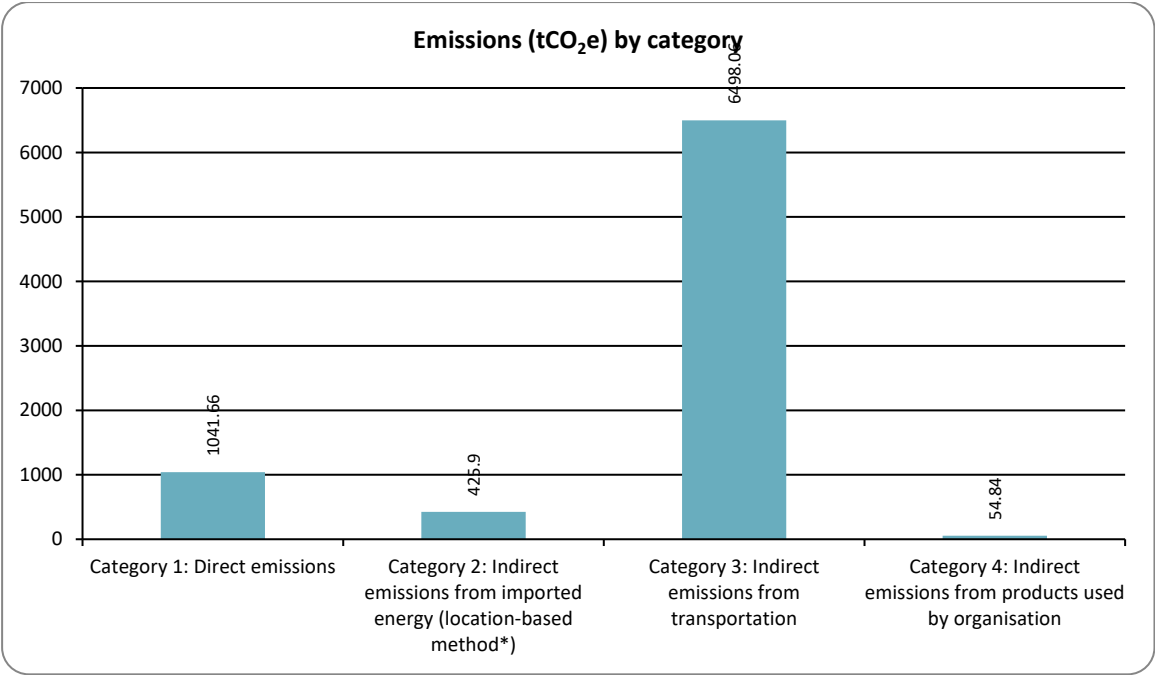


Figure 1: Emissions (tCO₂e) by Category for this measurement period

CHAPTER 1: EMISSIONS INVENTORY REPORT

1.1. INTRODUCTION

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

The purpose of this report is to quantify the GHG emissions that can be directly attributed to Waikato Regional Council's operations within the declared boundary and scope for the July 2022 to June 2023 period. The inventory is aligned with industry or sector best practice for emissions measurement and reporting and is part of an ongoing commitment to measure and reduce emissions on a regular basis.

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 certification entity.

1.2. EMISSIONS INVENTORY RESULTS

Table 2: GHG emissions inventory summary for this measurement period

Measurement period: 01 July 2022 to 30 June 2023.

Category	Toitū carbon mandatory boundary (tCO ₂ e)	Additional emissions (tCO ₂ e)	Total emissions (tCO ₂ e)
Category 1: Direct emissions	1,041.66 Diesel stationary combustion, Diesel, Natural Gas distributed commercial, Petrol premium, Petrol	0.00	1,041.66
Category 2: Indirect emissions from imported energy (location-based method*)	425.90 Electricity	0.00	425.90
Category 3: Indirect emissions from transportation	163.68 Air travel domestic (average), Air travel short haul (average), Private Car average (fuel type unknown), Rental Car Small (diesel 1350-1600cc) - post-2015, Taxi (regular)	6,334.38 Accommodation - Australia, Accommodation - New Zealand, Working from home, CO ₂	6,498.06
Category 4: Indirect emissions from products used by organisation	54.84 Electricity distributed T&D losses, Natural Gas distributed T&D losses, Waste landfilled LFGR Mixed waste	0.00	54.84
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

Category	Toitū carbon mandatory boundary (tCO ₂ e)	Additional emissions (tCO ₂ e)	Total emissions (tCO ₂ e)
Total direct emissions	1,041.66	0.00	1,041.66
Total indirect emissions*	644.42	6,334.38	6,978.80
Total gross emissions*	1,686.08	6,334.38	8,020.46
Category 1 direct removals	0.00	0.00	0.00
Purchased emission reductions	0.00	0.00	0.00
Total net emissions	1,686.08	6,334.38	8,020.46
Emissions intensity		Mandatory emissions	Total emissions
Full time employees (gross tCO ₂ e / unit)		2.81	13.36
Operating revenue (gross tCO ₂ e / \$Millions)		8.86	42.14

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

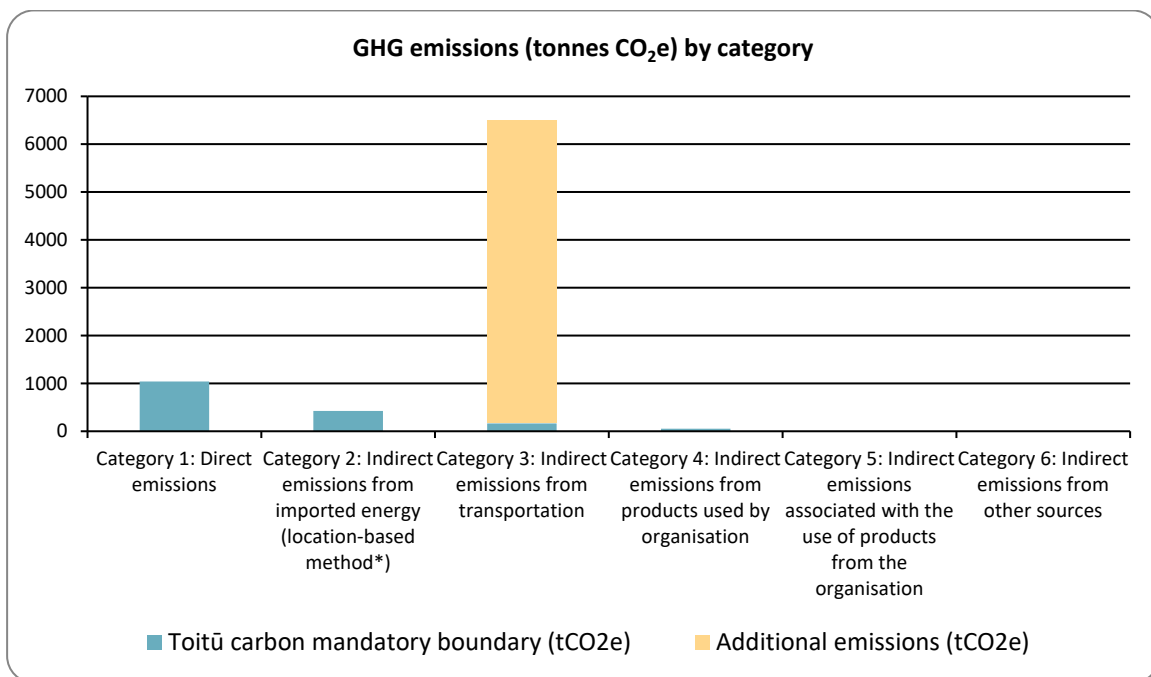


Figure 2: GHG emissions (tonnes CO₂e) by category

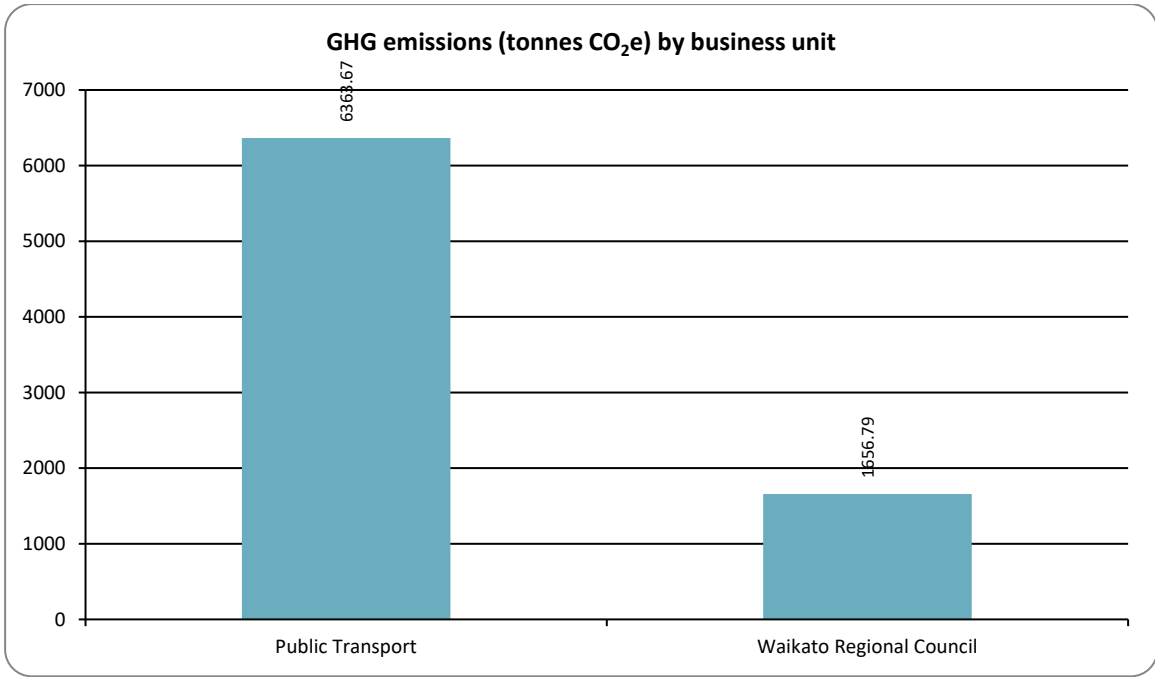


Figure 3: GHG emissions (tonnes CO₂e) by business unit

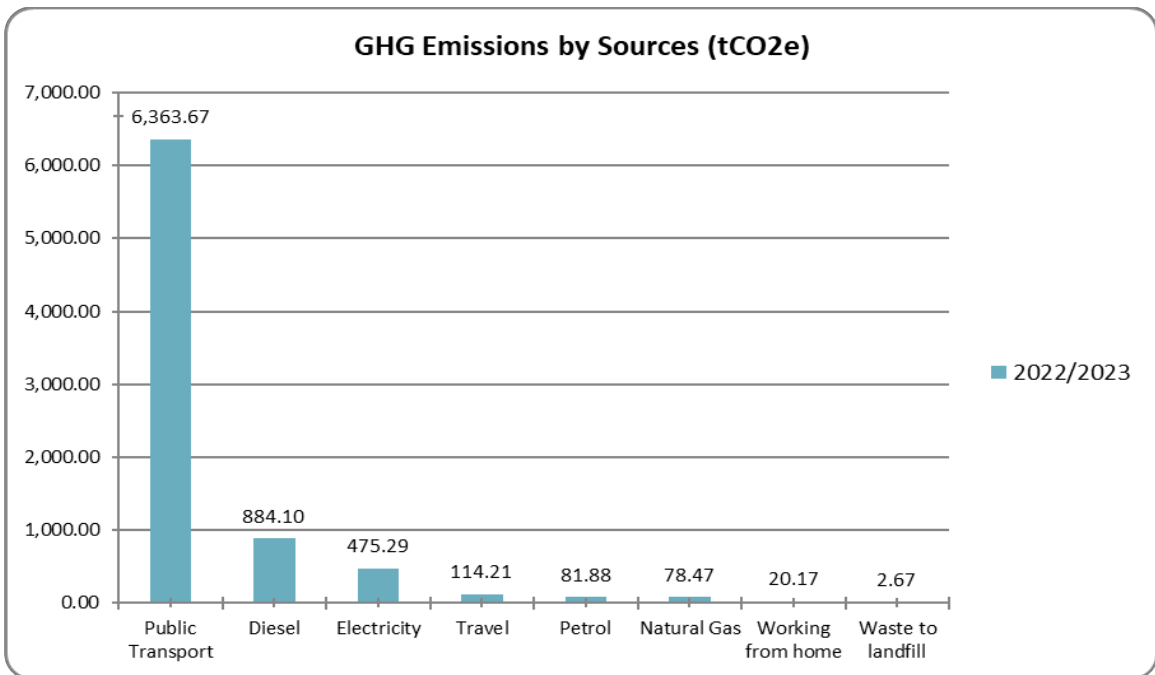


Figure 4: GHG emissions (tonnes CO₂e) by source

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.

Waikato Regional Council aligns to location-based reporting for tracking energy related emissions and reductions over time.

For clarity, market-based emissions and location-based emissions are two methods of calculating greenhouse gas (GHG) emissions. The main difference between the two is that market-based emissions are calculated based on the electricity that a company purchases, while location-based emissions are calculated based on the average emissions of the electricity grid.

Market-based emissions are calculated using energy supply-specific emission factors, which are often spelled out in contracts or instruments like Renewable Energy Certificates (RECs). This method is most accurate when emissions calculations use energy supply-specific emission factors. For example, if a company buys its energy on the open market, it can ask the supplier to provide an emissions factor specific to the energy mix.

Location-based emissions, on the other hand, are calculated based on the average emissions of the electricity grid in the region where the company operates. This method is less precise than market-based accounting because it does not take into account the specific sources of electricity that a company purchases. However, it is still useful for companies that do not have access to detailed information about their electricity supply.

Council is investing in solar panel arrays on the rooftops of some of its key buildings. In August 2023, a 112kW system was installed at the main offices 160 Ward Street Hamilton, and a 20kW solar array was installed at the Paeroa office in March 2023. A 15kW solar array is planned for its Northgate Depot in Te Rapa. These arrays are designed to match and offset baseload use of the buildings.

Table 3. Dual reporting of indirect emissions from imported energy

Category	Location-based methodology (tCO ₂ e)	Market-based methodology (tCO ₂ e)
Category 1: Direct emissions	1,041.66	1,041.66
Category 2: Indirect emissions from imported energy	425.90	636.00
Category 3: Indirect emissions from transportation	6,498.06	6,498.06
Category 4: Indirect emissions from products used by organisation	54.84	54.84
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	1,041.66	1,041.66
Total indirect emissions	6,978.80	7,188.90
Total gross emissions	8,020.46	8,230.56
Category 1 direct removals	0.00	0.00
Total net emissions	8,020.46	8,230.56

1.3. ORGANISATIONAL CONTEXT

1.3.1. Organisation description

The Waikato Regional Council (WRC) is the local government body representing the Waikato region, the fourth largest region in New Zealand. The Waikato region comprises more than 2.5 million hectares of land

and 10,000km² of coastal marine area. WRC's work, functions and priorities are mandated by legislation or community direction.

We are responsible for:

- Governance and management of natural and physical resources – such as land, air, freshwater, biodiversity, infrastructure and the coastal marine area – on which our primary sector and export economy are based.
- Strategic planning at the regional scale delivered through statutory instruments such as the Regional Policy Statement, the Regional Land Transport Plan, the Regional Pest Management Plan, Regional Plan and Regional Coastal Plan, civil defence and emergency management, and non-statutory instruments such as regional economic development strategies.
- Provision of regional scale infrastructure, such as flood protection assets that protect billions of dollars' worth of urban areas, roading infrastructure and productive farmland.
- Transport planning and provision to keep our region moving economically and socially.
- Regional-scale response to, and assessment of, natural hazards, including floods, earthquakes and tsunamis, to protect communities and assets.
- Biosecurity/biodiversity activities to safeguard the productive and export-earning capacity of the natural environment, a key foundation to a sustainable economy, and to support indigenous biodiversity.
- Obtaining, storing and evaluating information so we know how well the region is doing environmentally and economically.
- Managing catchments in a holistic way.

Fourteen elected council members represent the region's interests. Councillors work in committees and make decisions and recommendations on a wide range of matters that are reported to or decided on by the full council once a month.

Our Executive Leadership Team (ELT) has overall responsibility for implementing council decisions and ensuring the effective and efficient performance of the organisation. The executive includes the Chief Executive, six directors with directorate responsibilities for Customer, Community and Services, Finance and Business Services, Integrated Catchment Management, Resource Use, Science, Policy and Information, and Regional Transport Connections. The executive managers of the Chief Executive's Office and People and Capability are also ELT members.

Waikato Regional Council is based in Kirikiriroa Hamilton, with regional offices in Taupō, Paeroa and Whitianga, and works depots in Tuakau, Te Aroha and Horotiu. The council employed approximately 546 full time equivalent staff during the year under review.

Commitment to certification

The council's mission "working together to build a Waikato region that has a healthy environment, vibrant communities and a strong economy" signals the council's commitment to valuing our natural resources and the ecosystem services they provide for people's wellbeing and economic activity. Sustainability principles and values are interwoven into our policies, the services we provide, and the way we operate.

Each triennium, the council sets its strategic direction, responding to stakeholder priorities and the drivers that will affect the region and the operating environment for the council over the next three to five years. The strategic direction guides the council's ongoing conversations with its communities and the work programmes and budgets which are agreed through the long-term plan (Mahere Whānui). The council's Strategic Direction 2023-2025 and the Waikato Regional Council Strategy 2020-2030 embed climate change considerations, mitigation and adaptation in all aspects of the council's operations and services and reference the United Nations Sustainable Development Goals.

The council's six strategic priorities are:

WATER / WAI – Clean water and healthy aquatic ecosystems that meet iwi aspirations and community needs within environmental limits.

BIODIVERSITY AND BIOSECURITY / RERENGA RAUROPI, TIAKITANGA TAIAO – People working together to protect and restore our unique local native plants and animals, and the indigenous ecosystems they live in.

COASTAL AND MARINE / TAKUTAI MOANA – Healthy marine ecosystems that provide us with many benefits like recreation, food, improved water quality, increased resilience to climate change, and sustainable economic opportunities.

SUSTAINABLE DEVELOPMENT AND INFRASTRUCTURE / HANGANGA TAUWHIRO – Resilient communities that plan for intergenerational wellbeing, develop with nature in mind and are able to respond to and recover from adversity.

COMMUNITY CONNECTIONS / HONONGA HAPORI – vibrant communities that are well connected with each other and to services.

TRANSITION TO A LOW CARBON EMISSIONS ECONOMY / WHAKAHEKE TUKUNGA – Work with others to transition to a competitive low emissions economy that's fair for everyone and enhances community wellbeing for the future.

To support the council's strategic direction, the Climate Action Committee was established in February 2020. One of the first actions of the Climate Action Committee was the development of the Climate Action Roadmap (Te Mahere Aarai Aahuarangi), an evidence-based discussion document that identifies nine priority pathways for our region and sets out the council's direction in adaptation and mitigation. An update of the Climate Action Roadmap is expected to be approved by the council in September 2023. The roadmap will continue to be reviewed and updated on a regular basis as actions and activities are completed, and new regulations are put in place.

The Climate Action Committee meets regularly to help inform and direct the councils' operations and responsibilities. In New Zealand, regional councils have statutory responsibilities regarding climate adaptation, particularly with a view to natural hazards, infrastructure and assets management. In addition, it has been recognised that regional and local councils can also contribute to climate mitigation and transition to a low carbon economy and address the opportunities and risks that climate change presents. The council is a signatory to Local Government New Zealand's 2017 Leaders Climate Change Declaration, which outlines the key commitments and actions that councils plan to undertake to support action on climate change.

The council has committed to pursuing a leadership approach to both climate change mitigation and adaptation. It applies a climate change lens or assessment to all its decision making, ensures climate change risk is proactively and appropriately communicated, and conducts regional inventories every three years – as well as measuring its own carbon footprint every year, with improvements made year on year. The regional greenhouse gas inventories enhance the council's understanding of the region's carbon profile and is used to facilitate discussions regarding options and pathways for transition to a lower carbon regional economy. At a corporate level, the council has committed to managing and reducing its corporate greenhouse gas emissions by 68 per cent by 2030 and achieve net zero CO₂e emissions by 2050. This emissions management and reduction programme applies only to the council's corporate activities and does not include regional policy interventions.

As well as reducing its corporate emissions to help mitigate climate change, the council is adapting its services and operations to changing weather and climate conditions and seeks to embed environmental best practices into all operations, systems and decision-making.

The council encourages staff and the wider Waikato community to engage with sustainability issues and initiatives. It is working with others to lead the transition to a low carbon, climate resilient Waikato region.

GHG Reporting

This report is an important annual measure that we undertake to assess how we are progressing towards our climate change targets.

Climate Change Impacts

Climate change affects many aspects of our organisation's activities and our six strategic priorities. A changing climate challenges the integrity of our regional infrastructure, our operational processes, increases risk to our communities and the way in which we must prepare and respond for the future. It will require increased resources, capability and skills from our organisation to manage the impacts of climate change.

Unusual and prolonged rainfall in the first part of this year led to our flood-pumps running for many months to remove water from pasture lands. As a result our corporate emissions inventory for this year was very high as we used large amounts of electricity and diesel to manage this event.

1.3.2. Statement of intent

This inventory forms part of the organisation's commitment to gain Toitū carbonreduce certification. The intended uses of this inventory are:

Intended use and users

The Essential Intended use of the inventory is compliance with Toitū carbonreduce programme certification.

The Essential Intended users of the inventory are The Toitū certifier and our elected members and senior council staff.

The inventory allows us to understand our GHG emission sources from activities the organisation undertakes and the degree to which they contribute to our total emissions. WRC use this information to implement policy and adjust our operations to minimise emissions from our activities. Additionally, the users of the inventory will include our iwi partners, stakeholders and the Waikato community (general information). We enable this by placing the information on our website and promoting its content through social and media releases.

Other schemes and requirements

This inventory is also intended to inform relevant decision-making relating to the organisation's commitments to sustainability and environmental best practice.

1.3.3. Person responsible

Executive Leadership Team is responsible for overall emission inventory measurement and reduction performance, as well as reporting results to top management. Executive Leadership Team 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

The Manager of the Chief Executive's Office is supported by the Emissions and Energy Reduction Group, comprising staff members with functional responsibility for emissions management and reduction. This group is supported by an energy management reduction specialist provided through the Waikato councils' shared services arrangement, CoLab. Further expertise and support is provided by contractors and external organisations (including eBench and Toitū) on an as required basis.

The collection of data for this inventory involves a wide range of personnel with different competencies. WRC administrators provide the more straightforward emission sources such as natural gas, fuel and electricity. Specialist staff undertake the collation of data for Public Transport which includes the regional bus and Te Huia train service. The processing of the information and reporting is undertaken by experienced staff and contractors who are competent in emission's reporting. Toitū subject matter experts provide guidance through all stages of the process.

Top management commitment

Waikato Regional Council aims for sustainability to be integral to all activities, including its customer and stakeholder relationships and approach to risk management. Sustainability is part of the organisational values of doing the right thing for people and planet and making a positive difference to Waikato and New Zealand by making sure our activities add value environmentally, socially, economically, and culturally. As part of its commitment to improving its sustainability performance, the council has committed to managing and reducing emissions, and reporting on progress, through participation in the Toitū carbonreduce programme.

Management involvement

Executive management provides the necessary resources to enable collection and preparation of this data and reporting to Councillors.

1.3.4. Reporting period

Base year measurement period: 01 July 2016 to 30 June 2017

Our Base Year period of July 2016 to June 2017 was selected because it represents the first year in which we had access to a materially complete set of data to calculate the inventory.

Measurement period of this report: 01 July 2022 to 30 June 2023

Our inventory reporting is done annually.

Our inventory reporting is aligned to our financial year July to June. This allows us to readily compare emissions reporting with our financial measures.

1.3.5. Organisational boundary and consolidation approach

An operational control consolidation approach was used to account for emissions.⁴

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

Justification of consolidation approach

The operational control consolidation approach is the best fit for our organisation. We account for 100% of the emissions from operations that we control. We do not account for emissions from operations in which we own a financial interest but have no control. Where we have operational control, we are able to introduce and implement operating policies which enable us to reduce emissions.

Waikato Regional Council does have financial interests in a small number of other organisations; however these have relatively small emissions which are not material when compared to Council. The Council does not have the ability to implement operating policies at these organisations.

For wider information purposes, Council has chosen to report emissions from regional public transport (since July 2020). This sits outside our mandatory organisational emissions.

Organisational structure

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

The structure identifies our business units which have control over our operational emissions. Councillors lead high level decision-making for the organisation. The Office of the Chief Executive oversees management of the organisation and fulfilling the decisions made by Council through six directorates. Each Directorate employs staff and contractors.

In addition to emissions arising from the Waikato Regional Council organisational activities we report emissions from public transport, a region-wide activity:

⁴control: 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.

1) Public Transport - this includes emissions generated by public transport vehicles delivered or co-delivered by Waikato Regional Council. It only includes the emissions from combusted fuel and comprises buses, the Te Huia train, and the taxi mobility service.

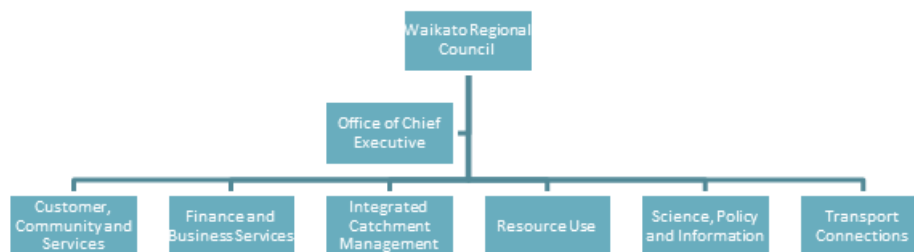


Figure 5: Organisational structure

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

Company/Business unit/Facility	Physical location	Description
WRC Head Office	160 Ward Street, Hamilton Central, Kirikiriroa Hamilton, 3204	Corporate headquarters for Council staff and accommodates the majority of staff across an 8,000m ² tenancy.
Paeroa Office	13 Opatito Road, Paeroa, 3600	Regional office for Council staff and field workers.
Taupo Office	100 Horomatangi Street, Taupo 3551	Regional office for Council staff and field workers.
Whitianga Office	33-35 Albert Street, Whitianga, 3510	Regional office for Council staff and field workers.
Te Aroha Depot	5 Terminus Street, TeAroha	Regional depot for Council staff and field workers.
Tuakau Depot	2650 River Road, Tuakau	Regional depot for Council staff and field workers.
Flood Pumps	Waikato Region	Located across farmland to prevent flooding

1.3.6. Excluded business units

Waikato Regional Council aims to enhance environmental, social, cultural and economic outcomes through its sustainable procurement policy and approach to the engagement and management of contractors. While sustainable practices and performance are a key consideration in all contracts, some of our smaller contractor activities have not been included as part of this inventory due to insufficient data. Contractor activities included into reporting since July 2020 include public transport (regional bus service and Te Huia train), and taxi use associated with the Mobility Service (regional taxi subsidy service for qualifying community members).

These are included as part of our transition to the reporting standards aligning with ISO 14064-1:2018, where organisations look more broadly at the scope of their inventory and include a wider range of indirect emissions.

Fugitive emissions resulting from land drainage services delivered by Waikato Regional Council have also been investigated. This information will be updated in future emissions inventories, as understanding of fugitive emissions from Drained Organic Soils increases and more accurate data is collected.

CHAPTER 2: EMISSIONS MANAGEMENT AND REDUCTION REPORT

2.1. EMISSIONS REDUCTION RESULTS

Our emission's reduction target for the July 2022 to June 2023 period was a 41% reduction on our Base Year inventory of 1,673 TCO₂e (excluding Public Transport). Note that Table 5 shows Base Year Inventory as 1,524 TCO₂e due to a retrospective update in the 2017 electricity emissions factor. Actual emissions (excluding Public Transport) reported for the July 2022 to June 2023 period were 1,657 TCO₂e. This was a 1% reduction in emissions against Base Year. In the previous years, Council has been able to demonstrate year on year reductions and was ahead of target. Unusually high rainfall in the last 12 months has led to a massive increase in flood pumping run hours and corresponding increases in electricity and diesel. While emissions have been unusually high this year, they are expected to return to normal levels in the following financial year as weather patterns are forecast to return to drier conditions.

Table 5: Comparison of historical GHG inventories

Category	2017	2018	2019	2020	2021	2022	2023
Category 1: Direct emissions	806.75	739.91	656.10	719.14	625.79	596.75	1,041.66
Category 2: Indirect emissions from imported energy (location-based method*)	566.45	444.65	317.53	306.00	267.62	258.23	425.90
Category 3: Indirect emissions from transportation	147.13	128.48	196.17	102.08	7,063.49	7,009.42	6,498.06
Category 4: Indirect emissions from products used by organisation	4.09	4.18	2.81	2.61	29.97	30.24	54.84
Category 5: Indirect emissions associated with the use of products from the organisation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Category 6: Indirect emissions from other sources	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total direct emissions	806.75	739.91	656.10	719.14	625.79	596.75	1,041.66
Total indirect emissions*	717.67	577.30	516.51	410.69	7,361.08	7,297.89	6,978.80
Total gross emissions*	1,524.42	1,317.21	1,172.62	1,129.83	7,986.88	7,894.63	8,020.46
Category 1 direct removals	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Purchased emission reductions	0.00	0.00	-192.00	0.00	0.00	0.00	0.00
Total net emissions	1,524.42	1,317.21	980.62	1,129.83	7,986.88	7,894.63	8,020.46

Category	2017	2018	2019	2020	2021	2022	2023
Emissions intensity							
Full time employees (gross tCO ₂ e / unit)	0.00	0.00	0.00	0.00	0.00	0.00	13.36
Full time employees (gross mandatory tCO ₂ e / unit)	0.00	0.00	0.00	0.00	0.00	0.00	2.81
Operating revenue (gross tCO ₂ e / \$Millions)	12.50	10.50	8.67	7.28	48.88	48.11	42.14
Operating revenue (gross mandatory tCO ₂ e / \$Millions)	12.50	10.50	8.67	7.28	5.98	5.76	8.86

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



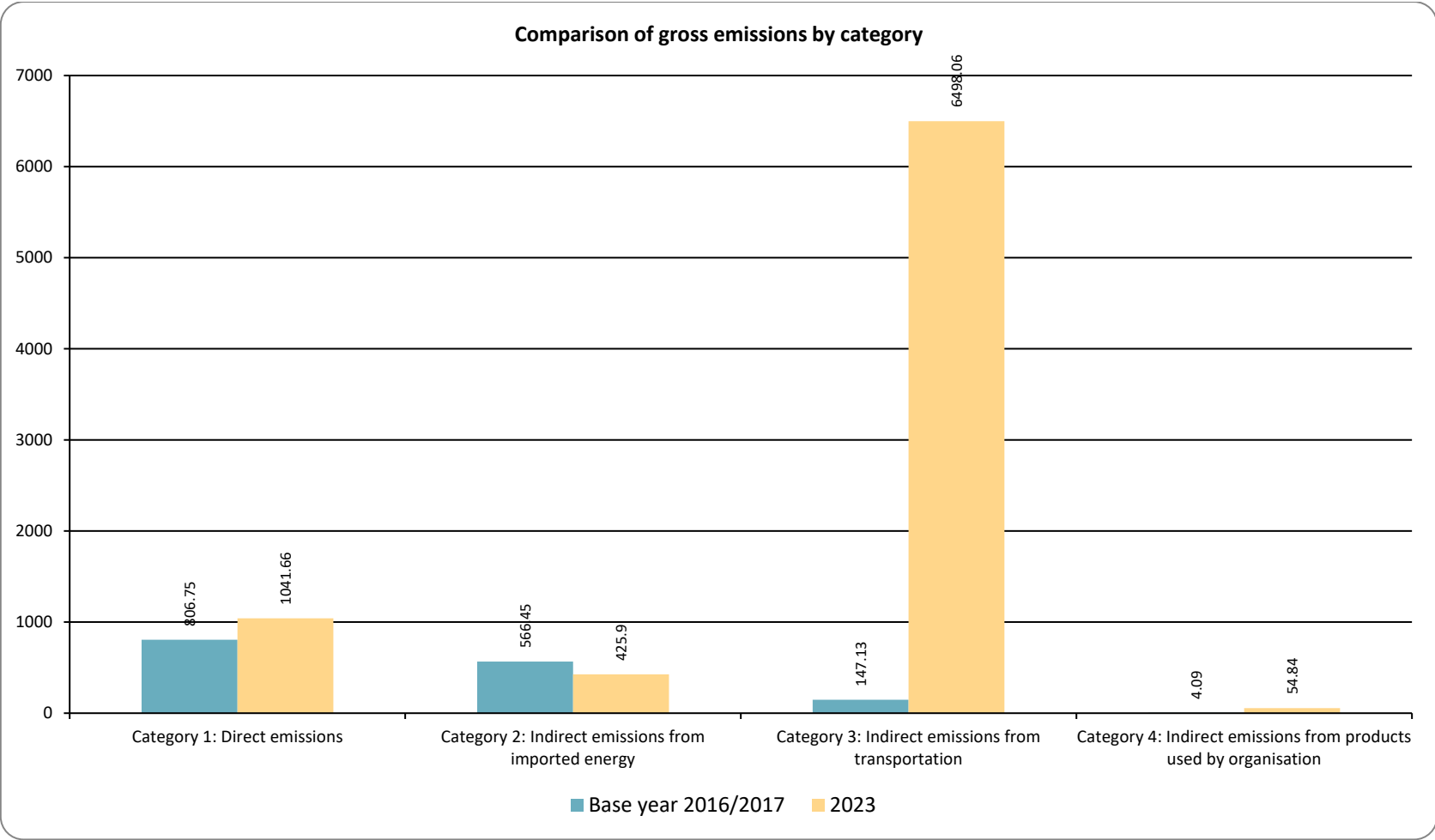


Figure 6: Comparison of gross emissions by category between the reporting periods



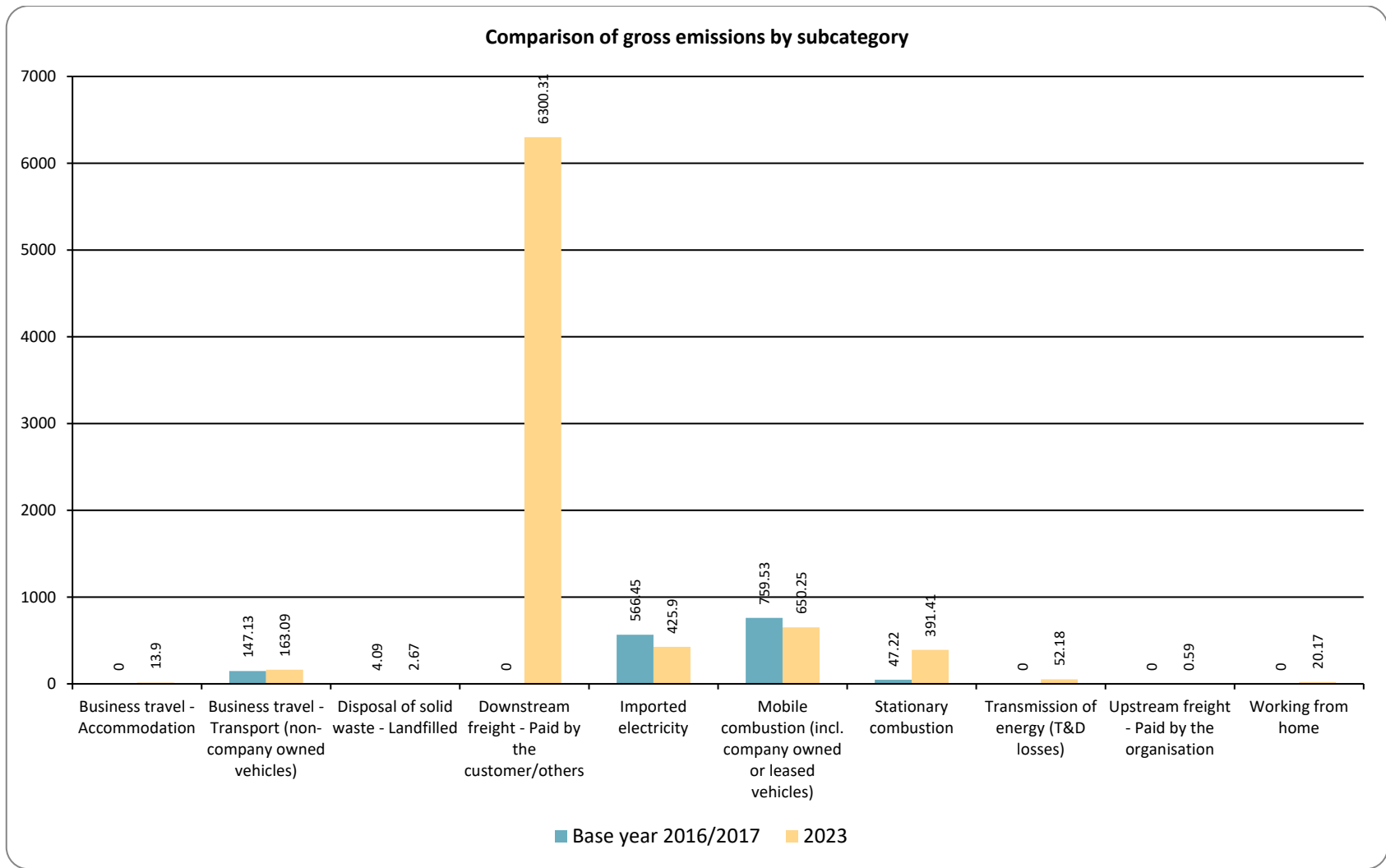


Figure 7: Comparison of gross emissions by subcategory between the reporting periods



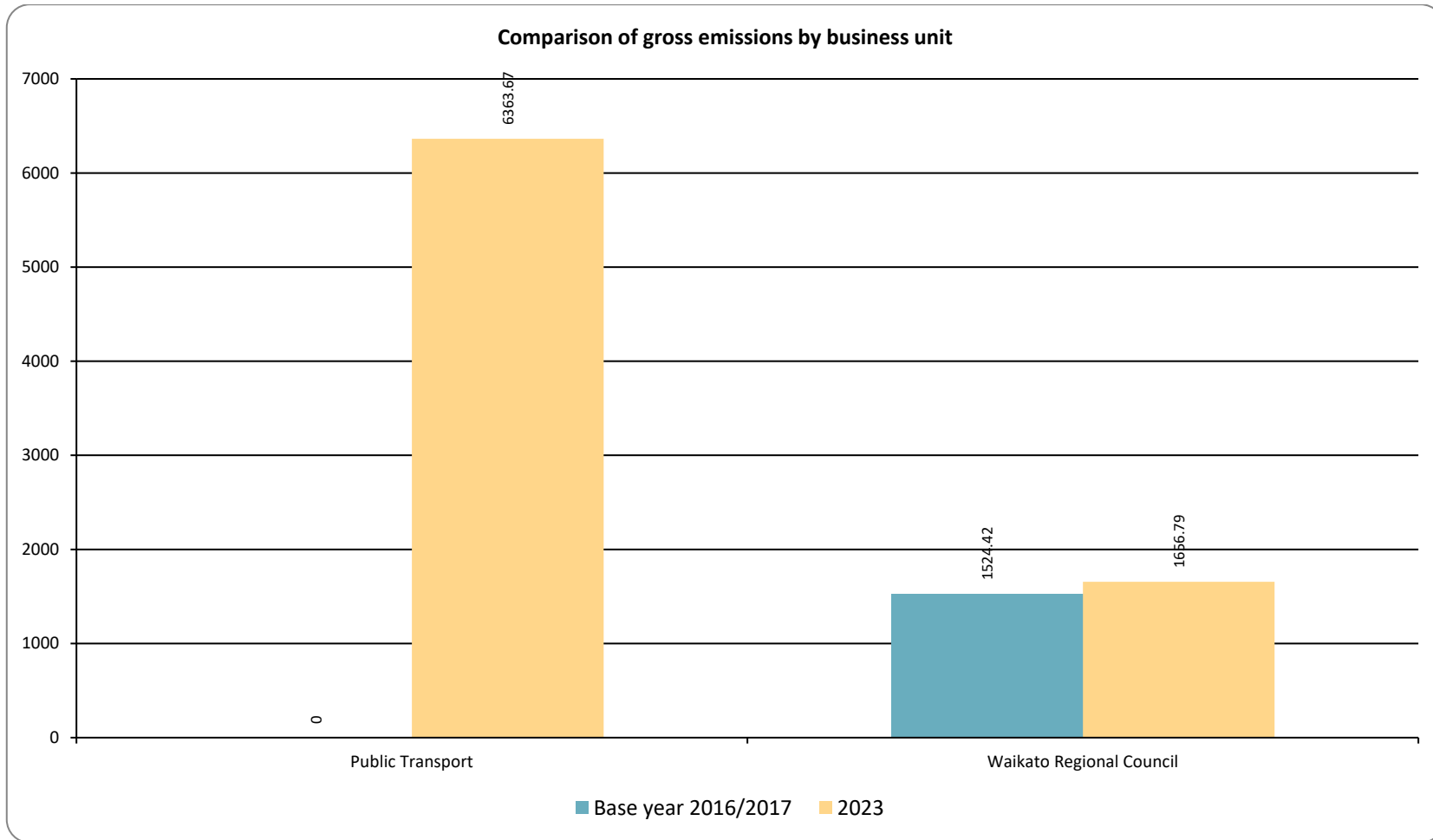


Figure 8: Comparison of gross emissions by business unit between the reporting periods



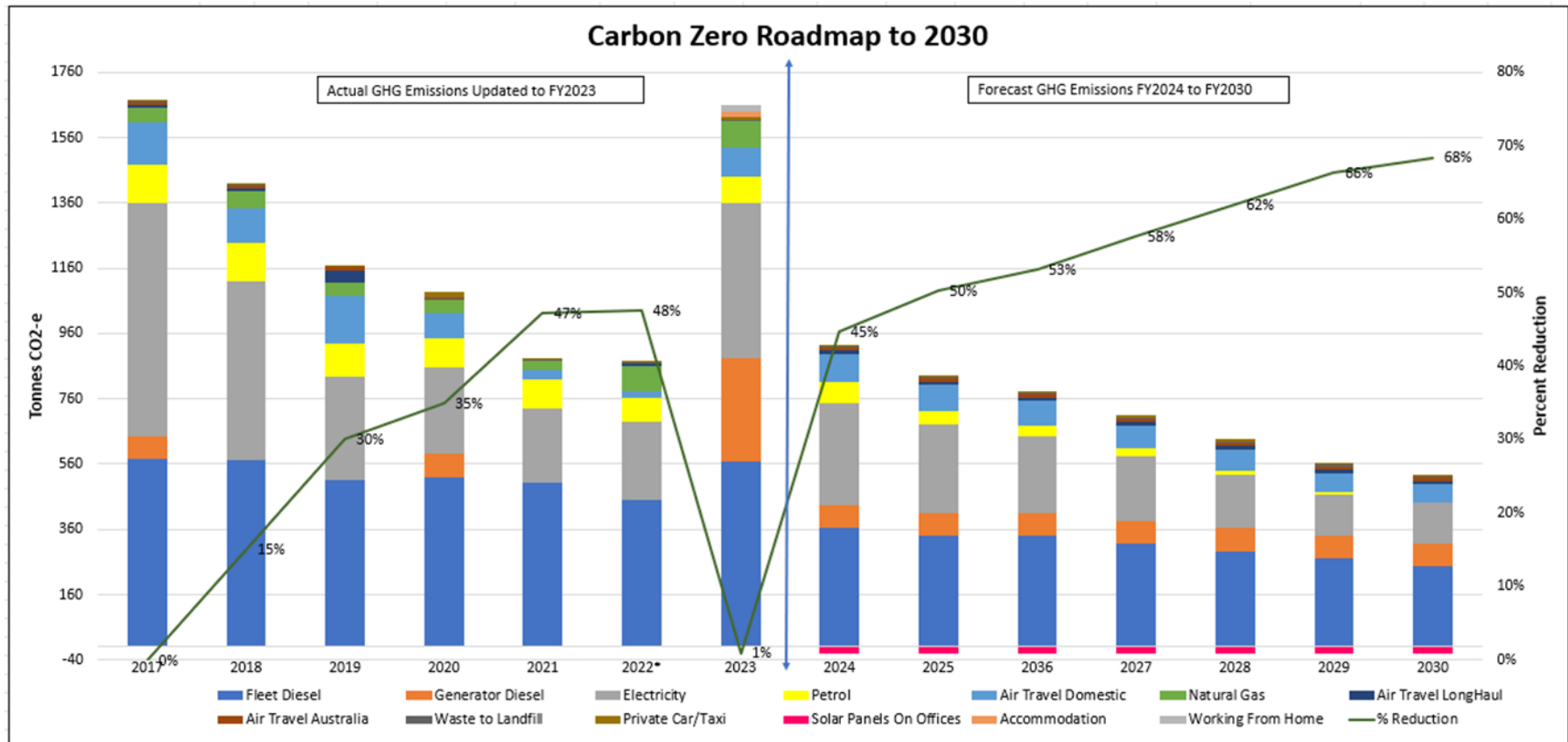


Figure 9: Performance against target since base year

Table 6. Performance against plan

Target name	Baseline period	Interim Target date	Type of target (intensity or absolute)	Current performance (tCO ₂ e)	Current performance (%)	Comments
Reduce total category 1 to 2 emissions in compliance to Toitū Rule R6.4a						
Reduce category 3 Toitū programme boundary emissions (supplementary to Toitū Rules)	1/07/16 to 30/06/17	30/06/2023	Absolute	1657	-1%	Interim target was -41%. Not achieving target due to abnormal rainfall year leading to increased flood-pumping.
Electricity	1/07/16 to 30/06/17	30/06/2023	Absolute	475	-34%	Interim target was -49%. Not achieving target due to increased flood-pumping requirements.
Diesel	1/07/16 to 30/06/17	30/06/2023	Absolute	884	37%	Interim target was -28%. Diesel usage exceeded Base Year. Not achieving target due to increased flood-pumping requirements.



2.2. SIGNIFICANT EMISSIONS SOURCES

Significant sources

Emissions from Waikato Regional Councils regional public transport service was first included in the 2020-21 reporting period. In 2020-21, fuel emissions from the regional bus service were 6,600 TCO₂e and in 2021-22 they were 6,450 TCO₂e because of a reduced timetable. This financial year, the regional bus service emissions were 5,116 TCO₂e. The reduction in emissions is due to an improved calculation methodology which allowed actual km travelled and updated speeds for rural roads to be used.

Emissions from the Te Huia passenger service rose from 410 TCO₂e in 2020-21 to 800 TCO₂e in 2021-22 and this reporting period 1,181 TCO₂e. The increase is due to a slightly higher emissions factor per trip and a full year's operation. The service did not run for all months in the previous two years of operation. A strategy towards net zero emissions from public transport services has been committed to in the Regional Public Transport Plan 2022 - 2032. This transition includes the objective to deliver public transport services in a way that results in at least net neutral carbon emissions for the period 2025 to 2050.

Compared to the emissions from public transport services, Waikato Regional Council's operational emissions are much smaller. For the purpose of analysis, only operational emissions are considered in the remainder of this section.

The Emissions Inventory and Management Report identifies the most significant ongoing emissions sources as diesel and electricity (53% & 29% of operational emissions respectively). Absolute emissions from diesel increased from 452 TCO₂e last year to 884 TCO₂e this year, because of diesel generators required to run remotely located flood-pumps.

Electricity use increased from 2.15 million kWhs to 5.72 million kWhs or a 266% increase. This is due to increased flood pumping. The emissions factor for electricity was less this financial year and compared to the previous year, electricity emissions only increased by 200% even though usage was up by 266%. Emissions from natural gas, petrol and travel each contributed a further 5% to the emissions portfolio. Aside from natural gas, Waikato Regional Council has direct control over these emission sources, and is using a mix of behaviour, operational and investment interventions to reduce emissions from these areas.

Emissions from fleet diesel rose this year after many years of incremental reduction. This is put down to increased travel and monitoring of flood plain conditions. Electricity use in Council facilities was at similar levels to last year when a large reduction was recorded. The benefits of consolidating staff into one energy efficient tenancy continues to reap dividends.

Emissions from natural gas were 79 TCO₂e this year compared to 74 TCO₂e in the previous year. This is part of the new head office tenancy whereby the organisation pays for a share of the building's boiler plant energy based on tenancy floor area.

Emissions from fleet petrol are steady and are only 72% of Base Year emissions. There has been significant work undertaken in rationalisation of vehicles and greater use of hybrid engines leading to better fuel economy, with seven full electric vehicles also being introduced.

Covid restrictions on travel are no longer in force and this has led to resumption of normal work travel and increased domestic air travel emissions, up from 21 TCO₂e last year to 89 TCO₂e this year. The highest domestic air travel emissions occurred in 2019 prior to Covid and reached 146 TCO₂e.

Activities responsible for generating significant emissions

Public transport emissions arise from diesel fuel used in buses and the locomotives on the Te Huia passenger line. Most of the emissions are from diesel use in buses due to the greater number of trips.

Within Council, activities that contribute to use of diesel are the vehicle fleet, diesel generation for flood pumps where electricity supply is not available, and for other mobile plant. Petrol use arises from the passenger fleet and some plant equipment. Electricity use is predominately from the operation of flood pumps across the various drainage schemes. Depending on rainfall, electricity use can vary considerably

from year to year. Aside from flood pump electricity, the next major electricity load is Waikato Regional Council's head office tenancy in Ward Street Hamilton.

Influences over the activities

In regards public transport emissions, there is a strong drive to encourage the public to utilise these services over and above existing levels. In the short-term this may increase emissions of this public service but has the benefit of reducing emissions in private vehicles. In the longer term, low carbon energy sources combined with new technology including electric buses mean public transport emissions will reduce.

Council has many utility vehicles in its fleet. The functional ability of these vehicles is necessary to gain safe access onto farmland and remote sites. These vehicles typically need a large carrying/towing capacity and may be fitted out for particular tasks. Council has been investigating and implementing several initiatives to minimise fuel use. In the future, use of hybrid engines and electric or hydrogen fuel sources should reduce fuel emissions further.

Flood pump electricity use is greatly impacted by rainfall and flooding events. This report has highlighted the significant impact of a wet year on Council's emissions profile. Flood pump systems are relatively long-lived assets and efficiency falls away over time. Several pump systems are presently being renewed and where possible energy efficient pumps are being installed. Council made a considerable reduction in building electricity use in the last 12 months by consolidating multiple office locations into the Ward Street tenancy. The tenancy is adjacent to Hamilton's Transport Centre giving staff easy access to public transport and the building includes electric vehicle chargers which are allocated to Council's passenger fleet.

Significant sources that cannot be influenced

The gas fired boiler in the Ward Street tenancy is new and will likely have a lifespan of twenty years. The emissions may be somewhat reduced if additional optimisation of the heating and cooling system can be achieved. However generally speaking these emissions are now locked in.

There are four large flood pump sites that currently run off diesel generators as they are infrequently required and the costs to supply an electricity connection are prohibitive. Unless the land use changes, it is expected that diesel fuel will continue to be required on an irregular basis.

2.3. EMISSIONS REDUCTION TARGETS

The organisation is committed to managing and reducing its emissions in accordance with the Programme requirements. Table 7 provides details of the emission reduction targets to be implemented. These are 'SMART' targets (specific, measurable, achievable, realistic, and time-constrained).

Our targets are supported by the Council's Corporate Emissions Reduction Plan (CERP), which was developed to provide medium to long-term planning for emissions reductions. The CERP provides detailed analysis and yearly reduction targets to 2030, with actions to reduce absolute emissions by 68% by 2030.

Our original target was to reduce emissions intensity by 2% per year from the base year, however in recent years we explored the development of targets that are more aligned with science-based target setting (especially considering that the original target has been exceeded considerably for each year we have been reporting for the CEMARS/Toitū carbon-reduce programme).

Table 7 shows specific sub-targets at a more detailed level by emission source. This has been updated to show the required reduction needed by 2030. By achieving each sub-target, the aggregated results will mean we achieve 68% reduction target for the total inventory.

In respect of its corporate emissions (which excludes those emissions reported as public transportation), Council did not meet its 2023 reduction target of 41%. However a return to drier conditions in 2024 should enable Council to meet its 2023-24 target, being a 45% reduction in emissions.

Table 7. Emission reduction targets

Target name	Baseline period	Target date	Type of target (intensity or absolute)	Categories covered	Target		KPI	Responsibility	Rationale
Reduce total category 1 to 2 emissions in compliance to Toitū Rule R6.4a Reduce category 3 Toitū programme boundary emissions (supplementary to Toitū Rules)	1/07/16 to 30/06/17	30/06/2030	Absolute	Category 1 to 4 combined	-68%	Base year emissions (tCO ₂ e): 1,673 Target year emissions (tCO ₂ e): 518	n/a (not applicable , no intensity target set)	Karen Bennett, Manager Chief Executive's Office	Achievable through the application of reduction projects discussed further below.
Electricity	1/07/16 to 30/06/17	30/06/2030	Absolute	Category 2	-82%	Base year emissions (tCO ₂ e): 715 Target year emissions (tCO ₂ e): 127	n/a (not applicable , no intensity target set)	Karen Bennett, Manager Chief Executive's Office	Achievable through the application of reduction projects discussed further below.
Diesel	1/07/16 to 30/06/17	30/06/2030	Absolute	Category 1	-51%	Base year emissions (tCO ₂ e): 646 Target year emissions (tCO ₂ e): 197	n/a (not applicable , no intensity target set)	Karen Bennett, Manager Chief Executive's Office	Achievable through the application of reduction projects discussed further below.
Petrol	1/07/16 to 30/06/17	30/06/2030	Absolute	Category 1	-100%	Base year emissions (tCO ₂ e): 114 Target year emissions (tCO ₂ e): 0	n/a (not applicable , no intensity target set)	Karen Bennett, Manager Chief Executive's Office	Achievable through the application of reduction projects discussed further below.

Target name	Baseline period	Target date	Type of target (intensity or absolute)	Categories covered	Target		KPI	Responsibility	Rationale
Air Travel (All)	1/07/16 to 30/06/17	30/06/2030	Absolute	Category 3	-48%	Base year emissions (tCO ₂ e): 145 Target year emissions (tCO ₂ e): 75	n/a (not applicable, no intensity target set)	Karen Bennett, Manager Chief Executive's Office	Achievable through the application of reduction projects discussed further below.

2.4. EMISSIONS REDUCTION PROJECTS

In order to achieve the reduction targets identified in Table 7, specific projects have been identified to achieve these targets, and are detailed in Table 8 below.

Table 8. Projects to reduce emissions

Objective	Project	Responsibility	Completion date	Potential co-benefits	Potential unintended consequences	Actions to minimise unintended consequence
Reduction of emissions from electricity	Installation of up to five enclosed Archimedes screw pumps. We expect the high efficiency design will reduce our emissions through less energy consumption.	ICM Unit Manager	Ongoing. To date one pump has been installed and the second site agreed upon.	The use of Archimedes screw pumps for ongoing flood protection of farmland will enable the safe passage of native fish (tuna/ eels). This pump design offers many benefits over conventional pumping assets: they rotate very slowly, deliver very high efficiency, and their design means the screw does not inflict damage on fish, even significantly large tuna/eels.	None anticipated	n/a
	Relocated staff from multiple Hamilton offices to an energy efficient tenancy in Ward St Hamilton.	Team Leader Property and Fleet Services	31/07/2021	The new office is located adjacent to the Hamilton Transport Centre improving access to public transport.	None anticipated	n/a

Objective	Project	Responsibility	Completion date	Potential co-benefits	Potential unintended consequences	Actions to minimise unintended consequence
				The basement of the building has been fitted with electric vehicle chargers which will support Council's transition to an electric fleet.		
	Installation of a 112kW solar array at the Ward St tenancy and a 20kW solar array at the Paeroa office.	Team Leader Property and Fleet Services	30/08/2023 & 31/03/2023 respectively	The solar arrays are expected to deliver a positive financial return over their lifetime and promote the use of localised renewable energy generation.	None anticipated	n/a
	Installation of a 15kW solar array at the Northgate Te Rapa tenancy.	Team Leader Property and Fleet Services	30/06/2024	The solar arrays are expected to deliver a positive financial return over their lifetime and promote the use of localised renewable energy generation.	None anticipated	n/a
Reduction of vehicle fuel use	Engagement campaign and training offered in fuel efficient driving. Includes only using specialist vehicles (V8, Landcruiser and SUVs) for specialist tasks. Includes minimising unnecessary trips and putting in place easy access to alternative modes of transport.	Team Leader Property and Fleet Services and WRC Communications	Annual Campaign	Staff may incorporate these skills into use of their private vehicles.	None anticipated	n/a
	Actively manage fleet utilisation and vehicle numbers, regular service and maintaining of vehicles.		Ongoing	Reduce costs to WRC	Ensure that service delivery is not compromised.	Working closely with departments and the management team to address issues.



Objective	Project	Responsibility	Completion date	Potential co-benefits	Potential unintended consequences	Actions to minimise unintended consequence
	Transition WRC fleet to lower emissions vehicles. This includes hybrid on a business-as-usual basis and electric cars as funding allows. At a later date it may include purchasing electric 4WD vehicles (assuming safety and other functional requirements are met).	Team Leader Property and Fleet Services and WRC Communications	Ongoing	Reduce operating costs to WRC	Ensure that safety and functionality is not compromised.	Working closely with departments and the management team to address issues.
Reduction of natural gas use	The Ward St base building services include a gas fired boiler for heating which is not a low carbon emission source. Investigate WRC's heating and ventilation controls to minimise use of natural gas.	Team Leader Property and Fleet Services	30/06/2024, check meters are being utilised to support investigations.	Reduce operating costs to WRC.	None anticipated	n/a
Reduction of air travel	Investigate whether an air travel emissions budget for WRC is necessary, or if targets can be achieved through voluntary measures.	Executive Team	30/06/2024, a formal budget to be produced. Currently emissions are tracking just below the provisional target for FY24.	Reduce operating costs to WRC	Ensure that staff can continue to deliver the required outcomes	Working closely with departments and the management team to address issues.
Biodiversity & Environmental Best Practice	Investigate opportunities across the region to help deliver short and long-term benefits that contribute to biodiversity, improve resilience and quantify ecosystem services while sequestering carbon.	Executive Team	Ongoing	Adaption, improved eco-systems and biodiversity.	None anticipated	n/a



Table 9 highlights emission sources that have been identified for improving source the data quality in future inventories.

Table 9. Projects to improve data quality

Emissions source	Actions to improve data quality	Responsibility	Completion date
Fugitive emissions from drainage of organic soils	Work with stakeholders to better understand emissions and increase data certainty. Considerable progress has been made.	Soil scientists from Science, Policy and Information Directorate	30/06/2024
Waste	Annual waste audit, collect data from waste management contractors. Continues to be delayed.	Sustainability & Climate Change Senior Advisor	30/06/2024
Taxi travel	Ensure taxi travel is coded in a way to enable distinction between taxi travel associated with Total Mobility and staff use.	Sustainability & Climate Change Senior Advisor	30/06/2024
Suppliers	WRC has conducted preliminary investigations into the indirect emissions based on \$ spend of its key suppliers. Next steps are to identify the scope of activities and match these with specific emission factors. This will support actions to encourage WRC's supplier chain to reduce their emissions.	Sustainability & Climate Change Senior Advisor	30/06/2024

The emissions inventory chapter identified various emissions liabilities (see GHG Storage and liabilities section). Table 10 details the actions that will be taken to prevent GHG emissions from these potential emissions sources.

Table 10. Projects to prevent emissions from liabilities

Liability source	Actions to prevent emissions	Responsibility	Completion date
Air conditioning units	Regular servicing and preventing damage to units	Facilities Manager	Quarterly
Building lighting and heating systems	Regular night audits to identify inefficiencies	Facilities Manager	Annually
Fleet vehicles	Regular servicing and preventing damage to vehicles	Fleet Manager	Ongoing

2.5. STAFF ENGAGEMENT

Staff and contractors are made aware of our commitment to sustainability through organisation culture and purpose. Information on emissions reduction commitments is shared through internal communications and campaigns, as well as publicly available reports and communications. New staff are informed via the staff induction process.

Staff who provide emission source data or who have major influence on the management and reduction of emissions are invited to be part of the Emissions and Energy Reduction Group, which meets on a regular basis to discuss options for and progress towards emissions reduction. All staff have opportunities to engage in campaigns and/or workshops and/or training to support them reduce the emissions and other environment-related impacts of their role and activities.

2.6. KEY PERFORMANCE INDICATORS

In the base year, turnover was \$122 million and total tonnes CO₂e (excluding Public Transport) were 1,673 giving a base KPI of 13.71 tCO₂e/\$M. In this reporting period, turnover is \$190.3 million and emissions (excluding Public Transport) are 1,657 TCO₂e. The 2022-23 KPI is 8.71 tonnes CO₂e/\$M.

This is a 36% reduction in emissions intensity compared to the base year.

2.7. MONITORING AND REPORTING

At an organisation-wide level, the emissions intensity has been calculated using the mandatory KPI of \$ turnover as defined in Rule 59b of the technical requirements. Additional KPIs of 'FTE' and 'absolute emissions' are being used to monitor performance in specific reductions projects.

Emissions will be reviewed regularly throughout the year, as will progress towards emissions reduction targets. The EMRP is reviewed and updated annually in June.

Karen Bennett, Manager of the Chief Executive's Office, is responsible for overseeing overall emissions management and reduction. Karen is supported by appropriate staff (Emissions and Energy Reduction Group), contractors, and external organisations (including eBench and Toitū).

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 Waikato Regional Council.xls).

Table 11. Direct GHG emissions and removals, quantified separately for each applicable gas

Category	CO ₂	CH ₄	N ₂ O	NF ₃	SF ₆	HFC	PFC	Desflurane	Sevoflurane	Isoflurane	Emissions total (tCO ₂ e)
Stationary combustion	389.32	1.38	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	391.41
Mobile combustion (incl. company owned or leased vehicles)	638.10	1.87	10.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	650.25
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	0.00	0.00	0.00	0.00	0.00	0.00
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
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fertiliser use	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
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	1,027.42	3.25	10.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,041.66

Table 12. Non-biogenic, biogenic anthropogenic and biogenic non-anthropogenic CO₂ emissions and removals by category

Category	Anthropogenic biogenic CO ₂ emissions	Anthropogenic biogenic (CH ₄ and N ₂ O) emissions (tCO ₂ e)	Non-anthropogenic biogenic (tCO ₂ e)
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	2.67	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	2.67	0.00

A1.1 REPORTING BOUNDARIES

A1.1.1 Emission source identification method and significance criteria

The GHG emissions sources included in this inventory are those required for Programme certification and were identified with reference to the methodology described in the GHG Protocol and ISO 14064-1:2018 standards as well as the Programme Technical Requirements.

To identify our sources and sinks we start with our previous inventories and use that data as a base. We run reports through our finance system searching for vendors that may have supplied Scope 1 sources which were missed during the year. A good example is where staff may have engaged a fuel supplier directly for delivery of bulk fuel. The Sustainability team meets at regular intervals across the year, and this is another avenue for discovering sources or sinks that were not previously known about. For this report we conducted a review of the General Ledger and identified preliminary indirect emission sources which we will investigate further in the coming 12 months.

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
- All indirect emissions sources that are required by the Programme.

Additional detail on significance criteria used, by source and sink, is included in Appendix 2.

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.

All information used for compiling the inventory is stored in a dedicated folder on the company system under the sustainability programme. Records are stored and managed in compliance to the organisation's Standard Operating Procedures for document retention practices. Specifically, emissions source data is collated into one central folder. This includes any pre-work such as methodology, filtering, calculations and source of data.

Table 13. GHG emissions activity data collection methods and inherent uncertainties and assumptions

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Category 1: Direct emissions and removals	Stationary combustion	Natural Gas distributed commercial	Natural gas is used in the Ward St Office building plantroom boiler for space heating and provision of domestic hot water. As WRC is only a tenant in the Ward St Office, gas use is paid for by the landlord. The landlord recovers this cost by dividing up the gas use according to the floor area leased by the three tenants in the building. WRC has the bulk of the building floor area. The other tenants operate similar hours to WRC and so it is assumed that apportionment of gas use by floor area is appropriate. However it is noted that the natural gas used by WRC is a best guess estimation and it is not metered tenant by tenant.	The default emissions factor is used.	No
		Diesel	Diesel is used to run four large diesel generators at flood pump sites where it is not economical to run from the electricity network. Fuel is delivered to site and held in onsite fuel tanks. Fuel purchases have been used to determine the emissions arising from stationary combustion. Actual fuel consumption may differ from fuel purchased.	The default emissions factor is used.	No
	Mobile combustion (incl. company owned or leased vehicles)	Diesel, Petrol, Petrol premium	In this last financial year WRC switched fuel suppliers in May 2023, which required a composite collection of data for the May and June months. Fuel data information was supplied by Fleet Partners for July 2022 to April 2023 and includes all transactions through WRC's fleet cards. This information was loaded into e-bench and reports provided for the July to April period. For May and June, fuel data was collected directly from BP and via Custom Fleet for Z Energy stations. In addition, bulk diesel was collected directly from Waitomo Petroleum, and this relates to fuel used for mobile machinery such as diggers out in the field.	The default fuel factors were used.	No
Overall assessment of uncertainty for Category 1 emissions and removals		2%	Very low		



GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Category 2: Indirect emissions from imported energy	Imported electricity	Electricity	Electricity use is derived from reports run from the eBench system for the period. eBench collects all electricity invoice data from WRC's electricity suppliers on a monthly basis and verifies contracted rates.	The latest default electricity factors were used.	No
Overall assessment of uncertainty for Category 2 emissions and removals		2%	Very low		
Category 3: Indirect emissions from transportation	Business travel - Transport (non-company owned vehicles)	Air travel domestic (average), Rental Car (regular)	Travel provider Orbit provides a travel report of all flights and hotel stays undertaken by staff. It is assumed these reports are accurate. This includes the number of rental car days.	The default travel factors were used.	Yes
		Taxi	Taxi use is for the Mobility Service (a regional taxi subsidy service for qualifying community members.) Only the dollar amount is available not the fuel used, or distance travelled.	Estimates are based on proxy data and calculated with an accuracy of (+/- 64%).	No
		Public Transport (regional buses)	Data calculated by Contract Performance Lead from Regional Transport Connections, using internally collected data and Waka Kotahi NZ Transport Agency emissions factors	The factor used takes into account likely fuel use at different speeds, bus type, and actual kms travelled to determine the emissions.	Yes
		Public Transport (Te Huia train)	Data calculated by Director from Regional Transport Connections, using internally collected data and KiwiRail emissions factors	The factor used is supplied by Kiwirail.	Yes
Overall assessment of uncertainty for Category 3 emissions and removals		7%	Medium		



GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Category 4: Indirect emissions from products used by organisation	Purchased fuel and energy related activities	Electricity distributed T&D losses, Natural Gas distributed T&D losses	Based on data collected in Categories 1 & 2	The default factors were used.	No
	Disposal of solid waste - Landfilled	Waste landfilled LFGR Mixed waste	Complete data is unavailable, and no waste audit was carried out for FY 2022-23, so data from the most recent waste audit (May 2019) is extrapolated in order to calculate an estimate of waste generated per person per day.	The default factors were used.	No
Overall assessment of uncertainty for Category 4 emissions and removals		42%	High		



A1.1.3 Excluded emissions sources and sinks

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

Table 14. GHG emissions sources excluded from the inventory

Business unit	GHG emissions source or sink	GHG emissions category	Reason for exclusion
Waikato Regional Council	Significant Indirect Emissions	Category 3: Indirect emissions from services.	We have undertaken preliminary significance analysis of our General Ledger. A number of services have been identified that warrant further investigation. These will be reported in our 2023-24 inventory.
Organic Soils	Fugitive emissions resulting from drainage of organic soils	Category 5: Indirect emissions associated with the use of products from the organisation.	Fugitive emissions resulting from drainage of organic soils have been excluded until understanding of fugitive emissions from organic soils drainage increases and more accurate data can be collected. Available data and estimations will be provided in future inventories.

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:

$$\text{Emissions} = \text{activity data} \times \text{emissions factor}$$

The quantification approach(es) has not changed since the previous measurement period

All emissions were calculated using Toitū emanage with emissions factors and Global Warming Potentials provided by the Programme (see Appendix 1 - data summary.xls). Global Warming Potentials (GWP) from the IPCC fifth assessment report (AR5) are the preferred GWP conversion⁵.

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 Historical recalculations

Historical recalculations have been conducted

Details

WRC subsidises a health mobility service for the Waikato Region. This was previously reported as a corporate emission as staff taxi travel when in fact it was a public service and should have been reported as part of our public transport business unit. We have updated our inventory reporting back to 2020-21. This does not change the amount of emissions reported as a total it simply re-categorises where it appears and shows where the emission source comes from.

⁵ If emission factors have been derived from recognised publications approved by the programme, which still use earlier GWPs, the emission factors have not been altered from as published.

A1.2.3 GHG Storage and liabilities

A1.2.3.1 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 SF₆ are GHGs with high global warming potentials, so material volumes of these or fuel are reported as potential liabilities.

Table 15. Total storage as of year end with potential GHG emissions liabilities.

GHG gas stock held	Quantity	Unit	Potential liability (tCO ₂ e)
Diesel commercial	95,900.00	litres	257.89
HFC-32	7.50	kilograms	5.08
R-290 (Propane)	0.40	kilograms	0.00
R-410A	160.00	kilograms	307.76
Total potential liability			570.73

A1.2.4 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 recognised by the Programme are reported separately here.

APPENDIX 2: SIGNIFICANCE CRITERIA USED

Table 16. Significance criteria used for identifying inclusion of indirect emissions

Emission source	Magnitude	Level of influence	Risk or opportunity	Sector specific guidance	Outsourced	Employee engagement	Intended Use and Users	Include in inventory?
ADMINISTRATIVE SERVICES	Significant (>5% of estimated total)	Low	Opportunities	No	No	Yes	Yes	Exclude
COMMUNITY SERVICE ORG	Moderate (1-5% of estimated total)	Low	Opportunities	No	Yes	Yes	Yes	Exclude
COMPANY	Moderate (1-5% of estimated total)	Low	None identified	n/a	n/a	n/a	n/a	Exclude
ENGINEERING/ CONSTRUCTION	Significant (>5% of estimated total)	Moderate	Opportunities	Yes	Yes	Yes	Yes	Exclude
ENVIRONMENTAL SERVICES	Significant (>5% of estimated total)	Low	Opportunities	Yes	Yes	Yes	Yes	Exclude
FACILITY MAINTENANCE	Moderate (1-5% of estimated total)	Moderate	Opportunities	Yes	Yes	Yes	Yes	Exclude
FIELD CONTRACT AND WORK	Significant (>5% of estimated total)	Moderate	Opportunities	Yes	Yes	Yes	Yes	Exclude
GOVERNMENT SERVICES	Significant (>5% of estimated total)	Low	None identified	No	No	No	n/a	Exclude
IT SOFTWARE AND SERVICES	Moderate (1-5% of estimated total)	High	Opportunities	Yes	No	Yes	No	Exclude
LABORATORY / RESEARCH	Moderate (1-5% of estimated total)	Moderate	None identified	No	Yes	No	No	Exclude
LEGAL/ FINANCE SERVICES	Moderate (1-5% of estimated total)	Low	Opportunities	No	Yes	No	No	Exclude

Emission source	Magnitude	Level of influence	Risk or opportunity	Sector specific guidance	Outsourced	Employee engagement	Intended Use and Users	Include in inventory?
PEST AND PLANT CONTROL	Significant (>5% of estimated total)	High	Opportunities	Yes	No	Yes	Yes	Exclude
Plant Nurseries	Significant (>5% of estimated total)	High	Opportunities	Yes	Yes	Yes	Yes	Exclude
PR AND COMMUNICATIONS	<i>De minimis</i> (<1% of estimated total)	High	Opportunities	No	No	Yes	Yes	Exclude
PROFESSIONAL FEES	Significant (>5% of estimated total)	Low	Reputational risk	No	Yes	No	Yes	Exclude
PUBLIC SECTOR COMPANIES	Moderate (1-5% of estimated total)	Low	None identified	No	Yes	No	Yes	Exclude
RESOURCE MANAGEMENT SVC	Moderate (1-5% of estimated total)	Moderate	Regulatory risk	Yes	No	No	Yes	Exclude
Telecommunications	<i>De minimis</i> (<1% of estimated total)	Low	None identified	No	Yes	No	No	Exclude
TRANSPORTATION SERVICES	Significant (>5% of estimated total)	High	Opportunities	Yes	Yes	Yes	Yes	Exclude
Travel	Significant (>5% of estimated total)	High	Opportunities	Yes	No	Yes	Yes	Exclude
Utilities	Significant (>5% of estimated total)	High	Opportunities	Yes	Yes	Yes	Yes	Exclude
Civil Works	Moderate (1-5% of estimated total)	Moderate	Opportunities	Yes	Yes	No	Yes	Exclude

APPENDIX 3: CERTIFICATION MARK USE

The Toitū certification mark is used on the front page of our Greenhouse Gas Emissions Inventory and Management Report.

APPENDIX 4: 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 5: REPORTING INDEX

This report template aligns with ISO 14064-1:2018 and meet Toitū carbonreduce programme Organisation Technical Requirements. The following table cross references the requirements against the relevant section(s) of this report.

Section of this report	ISO 14064-1:2018 clause	Organisational Technical Requirement rule
Cover page	9.3.1 b, c, r 9.3.2 d,	TR8.2, TR8.3
Availability	9.2 g	
Chapter 1: Emissions Inventory Report		
1.1. Introduction	9.3.2 a	
1.2. Emissions inventory results	9.3.1 f, h, j 9.3.3	TR4.14, TR4.16, TR4.17
1.3. Organisational context	9.3.1 a	
1.3.1. Organisation description	9.3.1 a	
1.3.2. Statement of intent		TR4.2
1.3.3. Person responsible	9.3.1 b	
1.3.4. Reporting period	9.3.1 l	TR5.1, TR5.8
1.3.5. Organisational boundary and consolidation approach	9.3.1.d	TR4.3, TR4.5, TR4.7, TR4.11
1.3.6. Excluded business units		
Chapter 2: Emissions Management and Reduction Report		
2.1. Emissions reduction results	9.3.1 f, h, j, k 9.3.2 j, k	TR4.14, TR6.18
2.2. Significant emissions sources		
2.3. Emissions reduction targets		TR6.1, TR6.2, TR6.4, TR6.6, TR6.8,
2.4. Emissions reduction projects	9.3.2 b	TR6.8, TR6.11, TR6.12, TR6.13, TR6.14, TR6.15

Section of this report	ISO 14064-1:2018 clause	Organisational Technical Requirement rule
2.5. Staff engagement		TR6.1, TR6.9
2.6. Key performance indicators		TR6.19
2.7. Monitoring and reporting	9.3.2 h	TR6.2
Appendix 1: Detailed greenhouse gas inventory	9.3.1 f, g	TR4.9, TR4.15
A1.1 Reporting boundaries		
A1.1.1 Emission source identification method and significance criteria	9.3.1 e	TR4.12, TR4.13
A1.1.2 Included emissions sources and activity data collection	9.3.1 p, q 9.3.2 i	TR5.4, TR5.6, TR5.17, TR5.18,
A1.1.3 Excluded emissions sources and sinks	9.3.1 i	TR5.21, TR5.22, TR5.23
A1.2 Quantified inventory of emissions and removals		
A1.2.1 Calculation methodology	9.3.1 m, n, o, t	
A1.2.2 Historical recalculations		
A1.2.3 GHG Storage and liabilities		
A1.2.3.1 GHG stocks held on site		TR4.18
A1.2.3.2 Land-use liabilities	9.3.3.	TR4.19
A1.2.4 Supplementary results		
A1.2.4.1 Carbon credits and offsets	9.3.3.3	
A1.2.4.2 Purchased or developed reduction or removal enhancement projects	9.3.2 c	
A1.2.4.3 Double counting and double offsetting		
Appendix 2: Significance criteria used	9.3.1.e	TR4.12
Appendix 3: Certification mark use		TR3.6
Appendix 4: References		
Appendix 5: Reporting index		