



# GREENHOUSE GAS EMISSIONS INVENTORY REPORT

Toitū carbonreduce and Toitū carbonzero programme



## Waikato Regional Council

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For the period: 01 July 2018 to 30 June 2019

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Verification status: Reasonable



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## GREENHOUSE GAS EMISSIONS INVENTORY SUMMARY

**Table 1: GHG emissions data summary.**

	2017	2018	2019
Scope 1	806.75	739.91	656.10
Scope 2	714.99	546.89	315.38
Scope 3 Mandatory	151.21	132.65	198.98
Scope 3 Additional	0.00	0.00	0.00
Scope 3 One time	0.00	0.00	0.00
Total gross emissions	1,672.95	1,419.45	1,170.47
Certified green electricity	0.00	0.00	0.00
Purchased emission reductions	0.00	0.00	192.00
Net GHG emissions (all scopes)	1,672.95	1,419.45	978.47
Total gross GHG emissions per Turnover/revenue (\$Millions)	13.71	11.31	8.65
Total mandatory GHG emissions per Turnover/revenue (\$Millions)	13.71	11.31	8.65

*Note: total mandatory emissions includes scope 1, scope 2, and scope 3 (i.e. excludes scope 3 one-time and scope 3 additional).*

**Table 2: Gross organisation GHG emissions by scope for current measurement year.**

Indicator	tCO <sub>2</sub> e
Scope 1	
Other fuels	39.56
Transport fuels	616.54
Scope 2	
Electricity	315.38
Scope 3	
Passenger vehicles - default age	2.16
Transport - other	194.01
Waste	2.81
Total	1,170.47

**Table 3: GHG emissions inventory summary by scope and business unit.**

Component gas	Scope 1	Scope 2	Scope 3	Total	Removals	After removals
CH <sub>4</sub>	1.94	14.17	3.07	19.18	0.00	19.18
CO <sub>2</sub>	642.71	300.92	194.36	1,137.99	0.00	1,137.99
HFCs	0.00	0.00	0.00	0.00	0.00	0.00
N <sub>2</sub> O	11.45	0.29	1.55	13.29	0.00	13.29
PFCs	0.00	0.00	0.00	0.00	0.00	0.00
SF <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00
Total	656.10	315.38	198.98	1,170.47	0.00	1,170.47

**Table 4: Mobile and stationary combustion of biomass.**

Biomass	Quantity	Tonnes Biogenic CO <sub>2</sub>
No activity recorded	n/a	n/a

**Table 5: Deforestation of two hectares or more.**

Source	Mass	tCO <sub>2</sub> e
Deforestation tCO <sub>2</sub> e (tCO <sub>2</sub> e)	0.00	0.00

**Table 6: GHG stock liability (see Table 13: for mass of individual gases).**

Source	Units	Quantity	Potential Liability tCO <sub>2</sub> e
No activity recorded	n/a	n/a	n/a

**Table 7: Land-use liabilities.**

Type of sequestration	Liability tCO <sub>2</sub> e
Contingent liability (carbon sequestered this reporting period)	0.00
Potential sequestration liability (total carbon stock)	0.00

**Table 8: Renewable electricity generation on-site.**

Renewable generation on-site	kWh generated	tCO <sub>2</sub> e avoided
No activity recorded	n/a	n/a

**Table 9: Purchased emissions reductions.**

Type of emission reductions purchased	Amount	tCO <sub>2</sub> e
Certified green electricity (tCO <sub>2</sub> e)	0.00	0.00
Purchased emission reductions (tCO <sub>2</sub> e)	192.00	192.00
Total	192.00	192.00

## 1 INTRODUCTION

This report is the annual greenhouse gas (GHG) emissions<sup>1</sup> inventory report for the named organisation. The inventory is a complete and accurate quantification of the amount of GHG emissions 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 **measure**-step<sup>2</sup> of the Programme, which is based on the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004)* and *ISO 14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*<sup>3</sup>. Where relevant, the inventory is aligned with industry or sector best practice for emissions measurement and reporting.

## 2 STATEMENT OF INTENT

This inventory forms part of the organisation's commitment to gain Programme certification.

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

## 3 ORGANISATION DESCRIPTION

The Waikato Regional Council (WRC) is the local government body representing the Waikato, the fourth largest region in New Zealand. The region comprises more than 2.5 million hectares of land and 10,000km<sup>2</sup> of coastal marine area. The Council's mission "working together to build a Waikato region that has a healthy environment, strong economy and vibrant communities" signals the council's commitment to valuing our natural capital and the ecosystem services it provides to ensure healthy, connected and thriving communities.

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.

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<sup>1</sup> Throughout this document "emissions" means "GHG emissions".

<sup>2</sup> Programme refers to the Toitū carbonreduce and the Toitū carbonzero programme.

<sup>3</sup> Throughout this document 'GHG Protocol' means the *GHG Protocol Corporate Accounting and Reporting Standard* and 'ISO 14064-1:2006' means the international standard *Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*.

- 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. Waikato Regional Council's work, functions and priorities are mandated by legislation or community direction.

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, five directors with directorate responsibilities for Community and Services, Finance, Integrated Catchment Management, Resource Use and Science and Strategy. The Manager of the Chief Executive's Office and the Manager of People and Capability are also ELT members.

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 then guides the council's ongoing conversations with its community and the work programmes and budgets which are agreed through the Long Term Plan. For the 2016-2019 period, the priority work areas have been:

- \* Support communities to take action on agreed outcomes for the region.
- \* Forge and strengthen partnerships to achieve positive outcomes for the region.
- \* Positively influence future land use choices to ensure long term sustainability.
- \* Manage freshwater more effectively to maximise regional benefit.
- \* Increase communities' understanding of risks and resilience to change.
- \* Enhance the value of the region's coasts and marine area.
- \* Shape the development of the region so it supports our quality of life.

Waikato Regional Council is based in Hamilton, though we also have offices in Taupō, Paeroa and Whitianga, and works depots in Tuakau, Te Aroha and Gordonton. The council employed approximately 540 full time equivalent staff.

## 4 ORGANISATIONAL BOUNDARIES INCLUDED FOR THIS REPORTING PERIOD

Organisational boundaries were set with reference to the methodology described in the GHG Protocol and ISO 14064-1:2006 standards. The GHG Protocol allows two distinct approaches to be used to consolidate GHG emissions: the equity share and control (financial or operational) approaches. The Programme specifies that the operational control consolidation approach should be used unless otherwise agreed with the Programme.

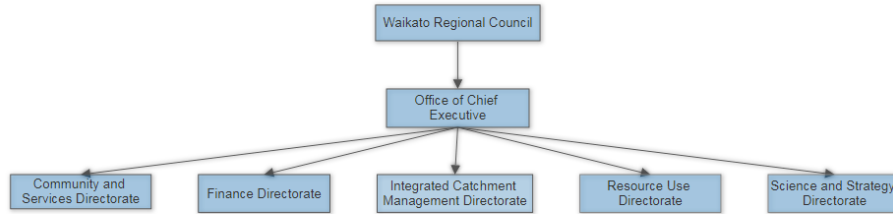
An operational control consolidation approach was used to account for emissions.

The first figure below shows the organisation structure for the Waikato Regional Council. 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. The Office of the Chief Executive does this by managing and co-ordinating the work of the 5 Directorates. Each Directorate employs staff and contractors.

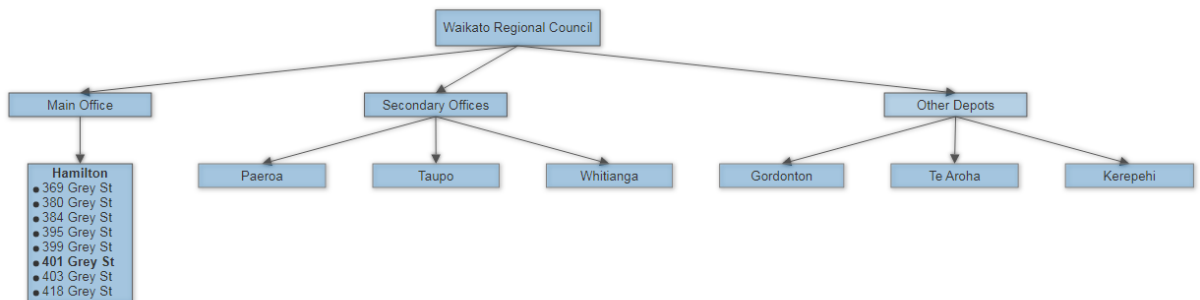


The second figure shows the structure of Waikato Regional Council based on physical sites occupied by the organisation. There are other activities which take place off-site around the Waikato Regional Council, as well. Off-site activities are also accounted for in the emissions inventory.

**Organisational Structure of Waikato Regional Council**  
(data collection meters organised by Directorate)



**Physical Locations of Waikato Regional Council Offices**



**Figure 1: Organisational structure.**

**Table 10: Brief description of business units in the certifying entity.**

Business units
<p><b>Hamilton:</b> 369, 380, 384, 395, 399, 401, 403 &amp; 418 Grey Street, Hamilton East, Kirikiriroa Hamilton 3216</p> <p><b>Paeroa:</b> 13 Opatito Road, Paeroa 3600</p> <p><b>Taupō:</b> Corner of Paora Hapi and Titiraupenga Streets, Taupō 3351</p> <p><b>Whitianga:</b> 33-35 Albert Street, Whitianga 3510</p> <p>Also included are:</p> <ul style="list-style-type: none"> <li>* Depots in Tuakau, Te Aroha and Gordonton</li> <li>* Other sites and activities managed by Waikato Regional Council.</li> </ul>

## 5 ORGANISATIONAL BUSINESS UNITS EXCLUDED FROM INVENTORY

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, contractor activities have not been included as part of this inventory. However, we are gathering information so that some larger contractor activities can be included in next year's reporting.

## 6 GHG EMISSIONS SOURCE INCLUSIONS

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 ISO14064-1:2006 standards. Identification of emissions sources was achieved via personal communications with Waikato Regional Council staff, and cross-checked against operational expenditure records for the reporting period. These records were viewed in order to see what activities may be associated with emissions from all of the operations.

As adapted from the GHG Protocol, these emissions were classified into the following categories:

- **Direct GHG emissions (Scope 1):** GHG emissions from sources that are owned or controlled by the company.
- **Indirect GHG emissions (Scope 2):** GHG emissions from the generation of purchased electricity, heat and steam consumed by the company.
- **Indirect GHG emissions (Scope 3):** GHG emissions required by the Programme that occur as a consequence of the activities of the company but occur from sources not owned or controlled by the company. Inclusion of other Scope 3 emissions sources is done on a case-by-case basis.

After liaison with the organisation, the emissions sources in Table 11 have been identified and included in the GHG emissions inventory.

**Table 11: GHG emissions sources included in the inventory**

<b>Business unit</b>	<b>GHG emissions source</b>	<b>GHG emissions level scope</b>	<b>Data source</b>	<b>Data collection unit</b>	<b>Uncertainty (description)</b>
Waikato Regional Council	Air travel domestic (average)	Scope 3	Travel provider (Orbit) provides activity report.	pkm	It is assumed supplier records are complete and accurate
Waikato Regional Council	Air travel long haul (average)	Scope 3	Travel provider (Orbit) provides activity report.	pkm	It is assumed supplier records are complete and accurate
Waikato Regional Council	Air travel short haul (average)	Scope 3	Travel provider (Orbit) provides activity report.	pkm	It is assumed supplier records are complete and accurate
Waikato Regional Council	Diesel	Scope 1	Invoices from fuel supplier (McFall Fuels Ltd).	L	It is assumed supplier records are complete and accurate
Waikato Regional Council	Electricity	Scope 2	Online consumption report downloaded from supplier's (Trustpower) customer online login area	kWh	It is assumed supplier records are complete and accurate
Waikato Regional Council	Natural Gas distributed commercial	Scope 1	Invoices from fuel supplier (Genesis Energy).	GJ	It is assumed supplier records are complete and accurate
Waikato Regional Council	Petrol	Scope 1	Consumption report received from supplier (BP).	L	It is assumed supplier records are complete and accurate

Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Waikato Regional Council	Private Car average (fuel type unknown)	Scope 3	Data collected and stored by Procurement Manager (Bob Hamon).	km	It is assumed data source represents a complete and accurate account of all travel activity. It is possible a small amount of travel is unaccounted for. However, this is deemed de minimis in terms of overall private car travel.
Waikato Regional Council	Taxi (regular)	Scope 3	Data collected and stored by Procurement Manager (Bob Hamon).	\$	It is assumed data source represents a complete and accurate account of all travel activity. It is possible a small amount of taxi travel is unaccounted for. However, this is deemed de minimis in terms of overall private car travel.
Waikato Regional Council	Waste landfilled LFGR Mixed waste	Scope 3	2019 waste audit (conducted by Sunshine Yates Consulting)	kg	Complete data is unavailable, so data from the most recent waste audit is extrapolated in order to calculate an estimate of waste generated per person per day.

## 6.1 Other emissions – HFCs, PFCs and SF<sub>6</sub>

No refrigeration or air-conditioning or other equipment containing hydrofluorocarbons (HFCs) is used in the operations and therefore no emissions from these sources are included in the inventory.

No operations use perfluorocarbons (PFCs), Nitrogen Trifluoride (N<sub>3</sub>) nor sulphur hexafluoride (SF<sub>6</sub>), therefore no holdings of these are reported and no emissions from these sources are included in this inventory.

## 6.2 Other emissions – biomass

No biomass is combusted in the operations and therefore no emissions from the combustion of biomass are included in this inventory.

## 6.3 Other emissions – deforestation

No deforestation has been undertaken by the organisation on land it owns and that is included in this inventory. Therefore no emissions from deforestation are included in this inventory.

## 6.4 Pre-verified data

No pre-verified data is included within the inventory.

# 7 GHG EMISSIONS SOURCE EXCLUSIONS

Emissions sources in Table 12 have been identified and excluded from the GHG emissions inventory.

**Table 12:** GHG emissions sources excluded from the inventory

Excluded emissions
Freight emissions have been excluded from this inventory as useful data cannot be collected with current purchasing and courier systems.
Rental vehicle emissions have been excluded from this inventory as it was not possible to extract information on GHG emissions from the data collected during this reporting year.

# 8 DATA COLLECTION AND UNCERTAINTIES

Table 11 provides an overview of how data were collected for each GHG emissions source, the source of the data and an explanation of any uncertainties or assumptions made. Estimated numerical uncertainties are reported with the emissions calculations and results.

All data was calculated using Toitū emanage and GHG emissions factors as provided by the Programme (see Appendix 1 - data summary.xls).

A calculation methodology has been used for quantifying the GHG emissions inventory using emissions source activity data multiplied by GHG emissions or removal factors.

Most data has been collected and sorted using E-Bench software. Exceptions to this include data about private car and taxi travel, and data about waste.

Private car and taxi travel data has been stored in an Excel spreadsheet managed by the Procurement Manager (Bob Hamon).

Data for waste has been extrapolated from limited available data obtained from the 2019 waste audit conducted by Sunshine Yates Consulting. The audit data is directly comparable with data from previous years. The average weight of waste-to-landfill generated per FTE staff per week was calculated at 0.43kg, or 0.086kg per weekday. Data was generated for each month by multiplying 0.086kg by the number of working days (taking public holidays into consideration) and then multiplied again by number of FTE staff (540).

## 9 GHG EMISSIONS CALCULATIONS AND RESULTS

GHG emissions for the organisation for this measurement period are provided in Table 1 where they are stated by greenhouse gas, by scope, by business unit and as total emissions.

There are 10 main sources of CO<sub>2</sub>e emission by Waikato Regional Council that have contributed to its 1170 tCO<sub>2</sub>e being emitted in the financial year of 2018-19.

The largest two contributing factors are diesel and electricity. However, both of these sources have seen significant emissions reductions in the past two years:

- Emissions from electricity consumption have reduced from 715 tCO<sub>2</sub>e in the base year of 2016-17, to 315 tCO<sub>2</sub>e in 2018-19: a reduction of 56%.
- Emissions from diesel consumption have reduced from 646 tCO<sub>2</sub>e in the base year, to 511 tCO<sub>2</sub>e in 2018-19: a reduction of 21%.

Emissions from domestic air travel are 146 tCO<sub>2</sub>e; an increase from both last year and the base year 2016-17.

Emissions from petrol contribute 105 tCO<sub>2</sub>e; a reduction from both the previous and base year.

Natural gas contributes 40 tCO<sub>2</sub>e; a reduction from previous years.

Emissions from long and short haul air travel have both increased considerably from previous years:

- Long haul emissions have increased from 7 tCO<sub>2</sub>e in the 2016-17 base year to 35 tCO<sub>2</sub>e in 2018-19 (400% increase).
- Short haul emissions have increased from 7 tCO<sub>2</sub>e in the 2016-17 base year to 11 tCO<sub>2</sub>e in 2018-19 (57% increase).

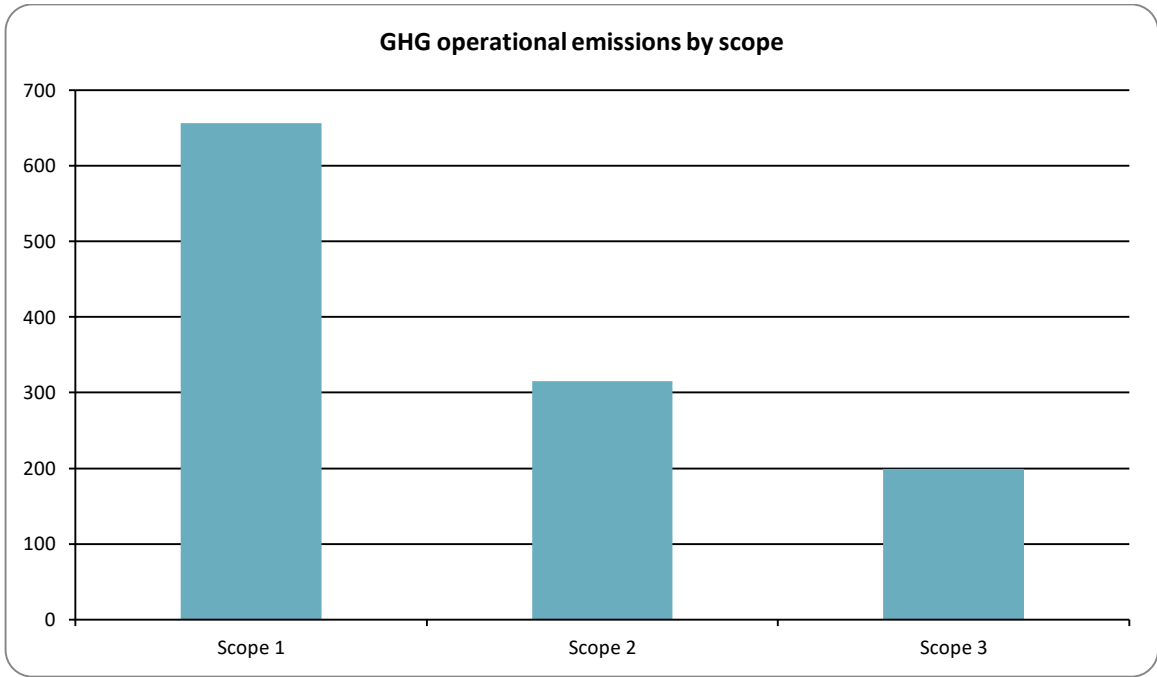
The remaining 7 tCO<sub>2</sub>e are comprised of emissions from landfilled waste, taxi travel and travel in private vehicles.

The result is that overall emissions for 2018-19 are:

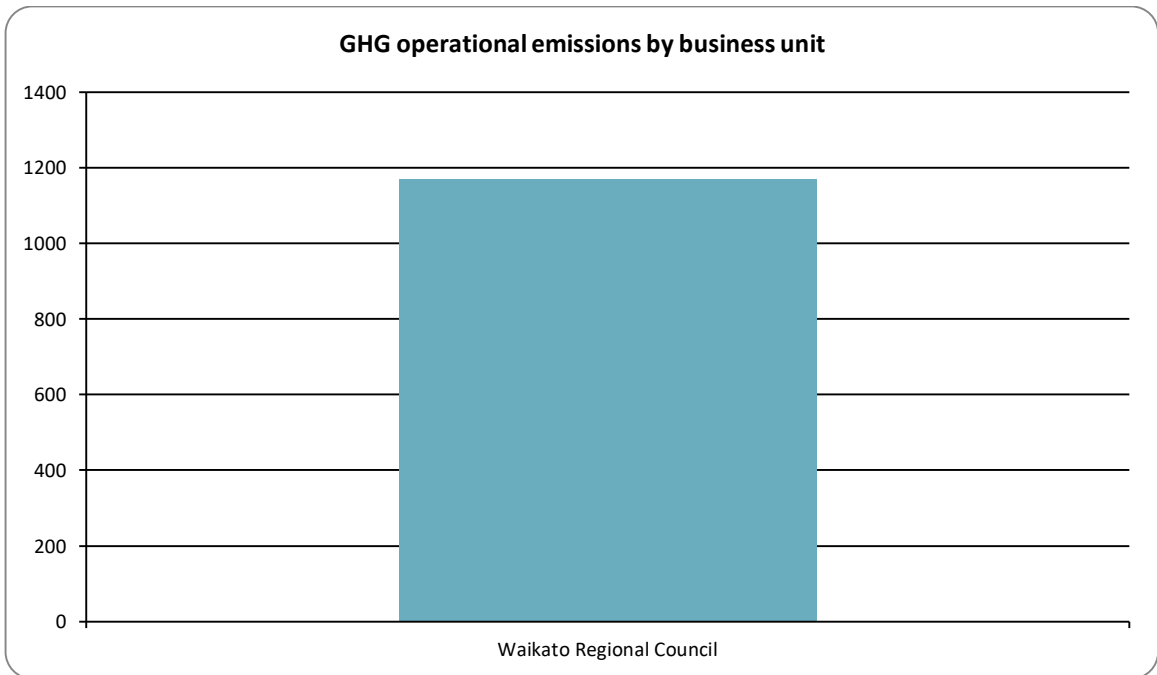
- 249 tCO<sub>2</sub>e (17.5%) lower than emissions of the previous year 2017-18.
- 503 tCO<sub>2</sub>e (30%) lower than emissions of the base year 2016-17.

A proportion of this emissions reduction is due to reduced use of flood pumps (precipitation events in March and April 2017 led to consumption spikes, as can be seen in the graph titled 'Waikato Regional Council Consumption' below).

However, baseload electricity consumption has also decreased over the two years, as explained below.



**Figure 2: GHG emissions (tonnes CO<sub>2</sub>e) by scope**



**Figure 3: GHG emissions (tonnes CO<sub>2</sub>e) by business activity.**

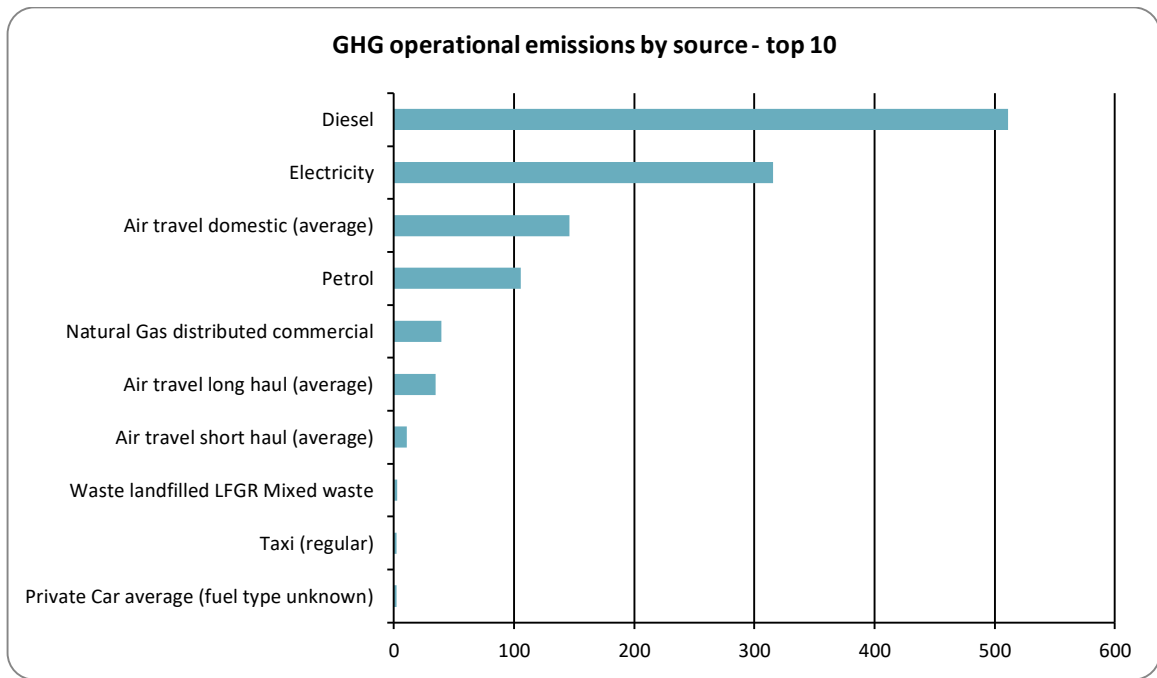
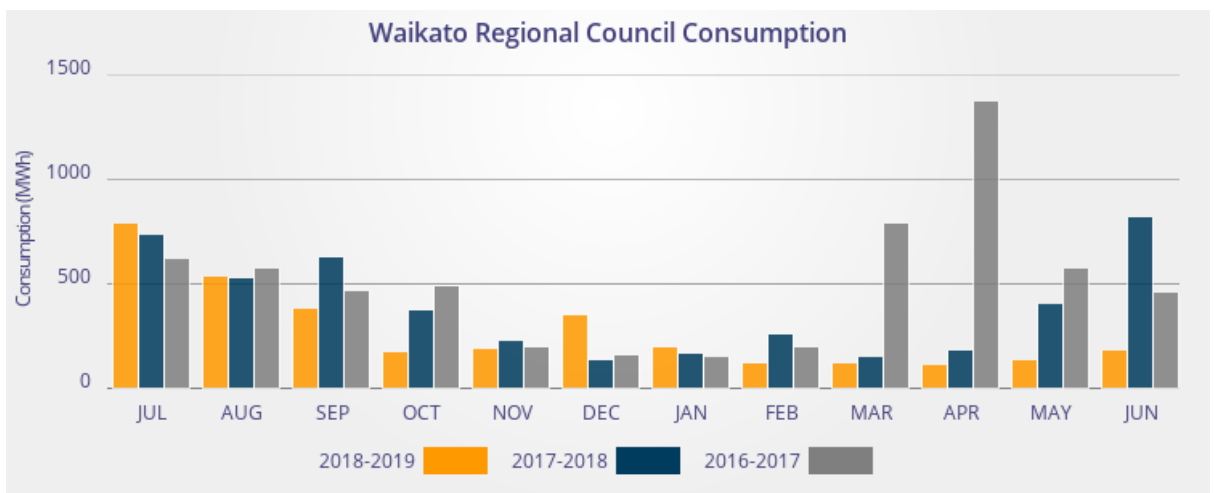


Figure 4: GHG emissions sources by source.



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 certified entity.

## 10 EMISSIONS REDUCTIONS AND REMOVALS ENHANCEMENT

GHG emissions for the organisation for the current reporting period are detailed in Table 1. The result is that overall emissions for 2018-19 are:

- 249 tCO<sub>2</sub>e (17.5%) lower than emissions of the previous year 2017-18.
- 503 tCO<sub>2</sub>e (30%) lower than emissions of the base year 2016-17.

A proportion of this emissions reduction is due to reduced use of flood pumps (precipitation events in March and April 2017 led to consumption spikes, as can be seen in the graph titled 'Waikato Regional Council Consumption' below).



However, baseload electricity consumption has also decreased over the two years. This reduction is a result of adjusting systems to increase efficiency and a number of behaviour change campaigns.

Reductions in vehicle fuel consumption (petrol and diesel) have also occurred as a result of changing fleet vehicles to more fuel efficient models, as well as campaigns promoting more fuel-efficient driving behaviours.

Emissions associated with waste generation have increased steadily between the base year and the current reporting year. This is unsurprising as the most recent waste audit shows waste generated per person per day has increased considerably in recent years (especially since 2015). There continue to be a variety of behaviour change campaigns and initiatives aimed at addressing this trend.

Emissions from long and short haul air travel have both increased considerably from previous years. The reasons behind this are being investigated and automatic carbon off-setting of emissions when purchasing flight tickets has been introduced into the flight booking procedure in order to help mitigate the effects of air travel emissions.

The management and reduction plan has been changed since certification. Waikato Regional Council annually reviews and updates its Emissions Management and Reduction Plan to reflect current activities, priorities and capabilities of the organisation.

For example as initiatives and actions are completed, they are removed from the EMRP. They will be replaced with new actions and initiatives, to ensure continual improvement.

The organisation will have an updated management plan in place for managing and reducing emissions in the future in order to maintain Programme recertification.

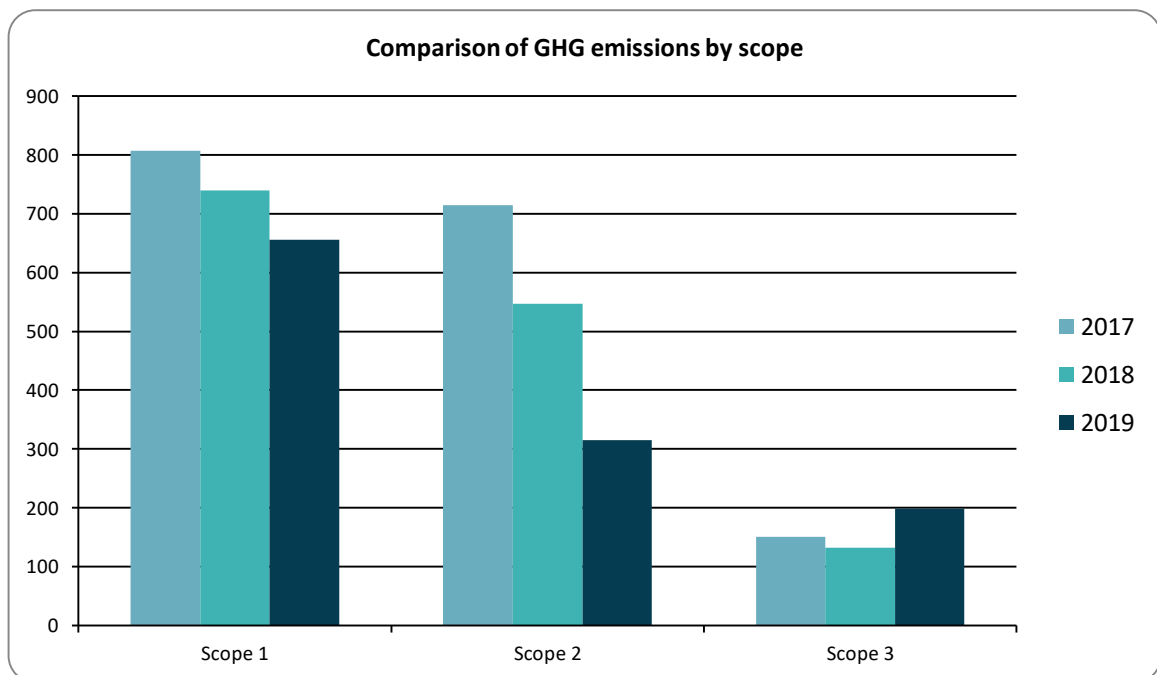
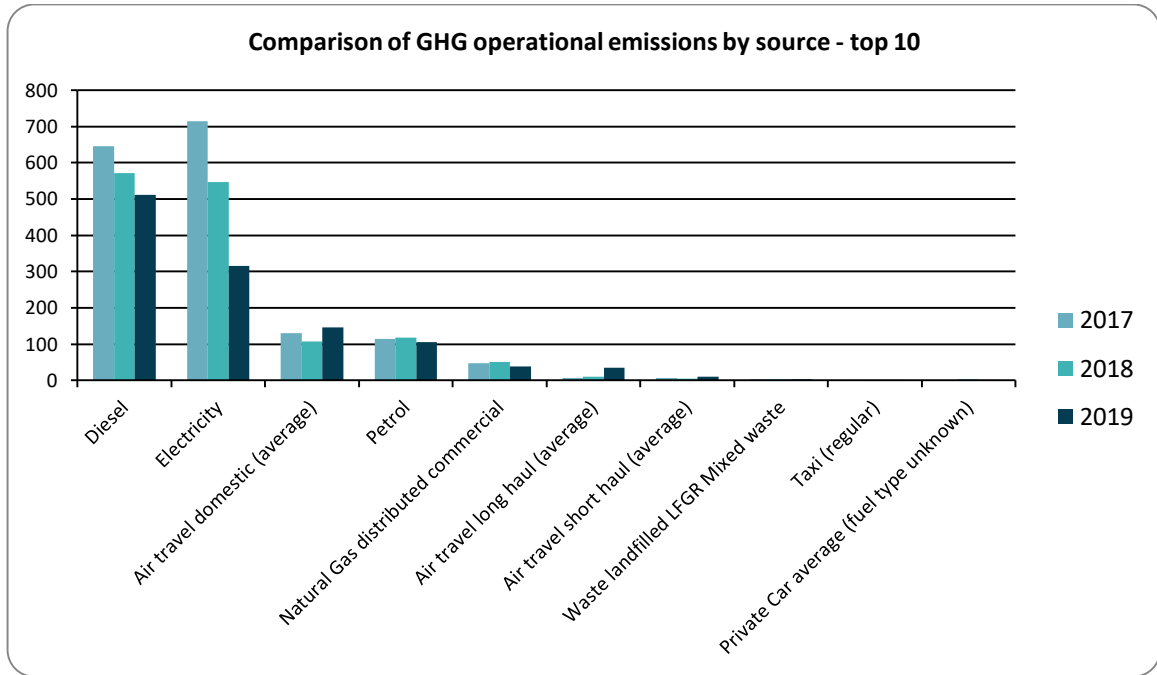
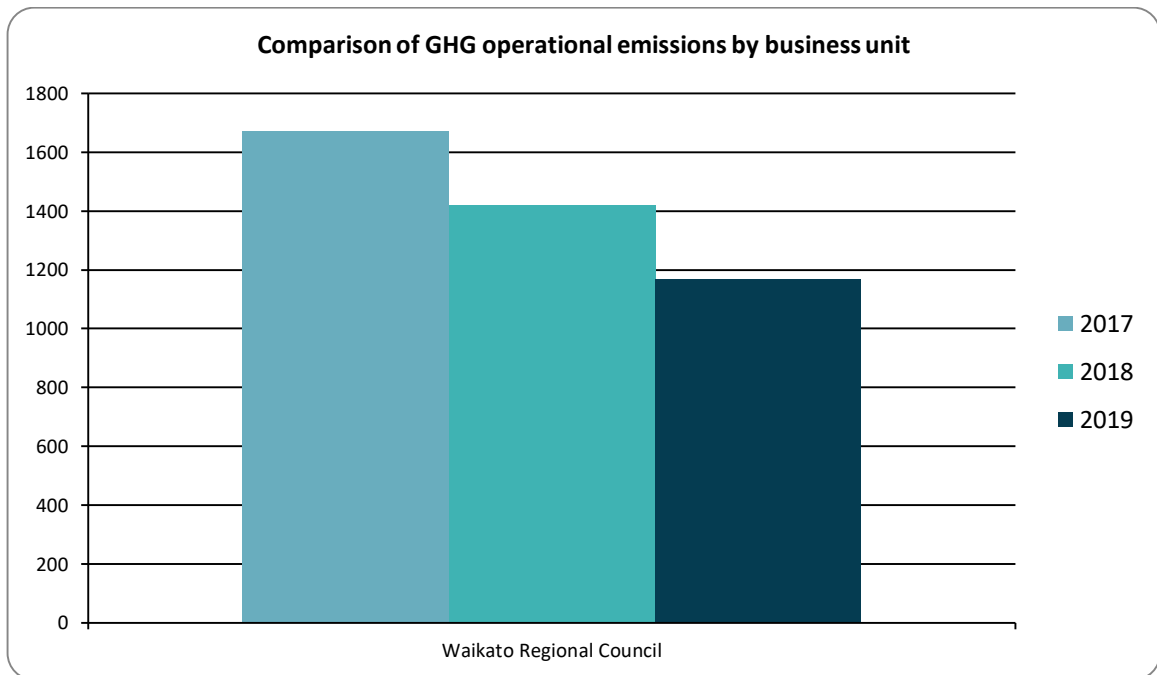


Figure 5: Comparison of GHG operational emissions by scope between the reporting periods.



**Figure 6:** Comparison of GHG operational emissions by emissions sources between the reporting periods.



**Figure 7:** Comparison of emissions by business unit between the reporting periods.

## 11 LIABILITIES

### 11.1 GHG stocks held<sup>4</sup>

HFCs, PFCs and SF<sub>6</sub> represent GHGs with high global warming potentials. Their accidental release could result in a large increase in emissions for that year, and therefore the stock holdings are reported under the Programme (Table 13).

GHG stocks have been reported in this inventory and added into the GHG Stock Liability questionnaire. There are a number of above ground diesel storage tanks managed by the Waikato Regional Council. These are a potential liability as greenhouse gases could be released if there was an accident that resulted in their combustion.

There are five diesel storage tanks. Their details are as follows:

- \* Stocks Pumpstation, SH2, Paeroa - 20,000L
- \* Mill Road No 2 Pumpstation, Mill Road, Paeroa - 20,000L
- \* Paeroa Main Drive Pumpstation, Stopbank Road, Paeroa - 20,000L
- \* Roger Harris Pumpstation, 294 Old Netherton Road, Paeroa - 20,000L
- \* Alexanders Pumpstation, Ferry Road, Hikutaia - 15,000L

**Table 13:** HFCs, PFCs and SF<sub>6</sub> GHG emissions and liabilities.

Business Unit	Source	Units	Amount held - start of reporting period	Amount held - end of reporting period	Potential Liability tCO <sub>2</sub> e
Unchanged from previous years					

### 11.2 Land-use change

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 a sequestration is claimed, then this also represents a liability in future years should fire, flood or other management activities release the stored carbon.

Land-use change has not been included in this inventory. Land-use change has not been included in the inventory for 2018-19 as Waikato Regional Council is still developing its understanding of its CO<sub>2</sub>e emissions, sequestration, and carbon stocks. It is likely deforestation, afforestation and other land-use changes will be included in future emission inventories.

## 12 PURCHASED REDUCTIONS

Purchased reductions includes certified “green” electricity, verified offsets or other carbon-neutral-certified services. Organisations may choose to voluntarily purchase carbon credits (or offsets) or green electricity that meets the eligibility criteria set by a regulatory authority.

Purchased emission reductions have been included in this inventory. The Air New Zealand 'Fly Neutral Programme' has been used to offset all air travel emissions for this reporting period. Certified green electricity has not been included in this inventory.

<sup>4</sup> HFC stock liabilities for systems under 3 kg can be excluded.

## 13 DOUBLE COUNTING / DOUBLE OFFSETTING

Double counting/offsetting refers to situations where:

- Parts of the organisation have been prior offset.
- The same emissions sources have been reported (and offset) in both organisation and product.
- Emissions have been included and potentially offset in the GHG emissions inventories of two different organisations, e.g. a company and one of its suppliers/contractors. This is particularly relevant to indirect (Scope 2 and 3) emissions sources.
- The organisation generates renewable electricity, uses or exports the electricity and claims the carbon benefits.
- Emissions reductions are counted as removals in an organisation's GHG emissions inventory and are counted or used as offsets/carbon credits by another organisation.

Double counting / double offsetting has not been included in this inventory.

## 14 REFERENCES

International Organization for Standardization, 2006. ISO14064-1:2006. Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas GHG 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.

## 15 APPENDIX 1: GHG EMISSIONS DATA SUMMARY

More GHG emissions data is available on the accompanying spreadsheet to this report:

(no documents provided)