# Greenhouse Gas Inventory Report

2022/2023

This report has been produced in accordance with ISO 14064-1:2018 and the Greenhouse Gas Protocol.

Emissions are discussed in Scopes, for consistency with other reports.

| **Version** | Author | Date | Description |
|---|---|---|---|
| **V 1.0** | Shane Gogo | 30/01/2024 | Reviewed by George Gray, Lumen |
| **V 2.0** | Shane Gogo | 13/3/2024 | 2nd review by George Gray |
| **FINAL** | Shane Gogo | 14/3/2024 | Approved by J Scherzer |
| **FINAL corr** | Shane Gogo | 27/3/2024 | Corrected water emissions figure; approved by J Scherzer |

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# SUMMARY

Hutt City Council (HCC) has in place its Carbon Reduction and Climate Resilience Plan 2021-31, with an organisational target to reduce emissions to net zero by 2050. This report on the greenhouse gas inventory 2022/23 assesses HCC's performance against this plan. Hutt City Council's total carbon footprint for 2022/23 has been estimated at 67,702 $tCO_{2-e}$.

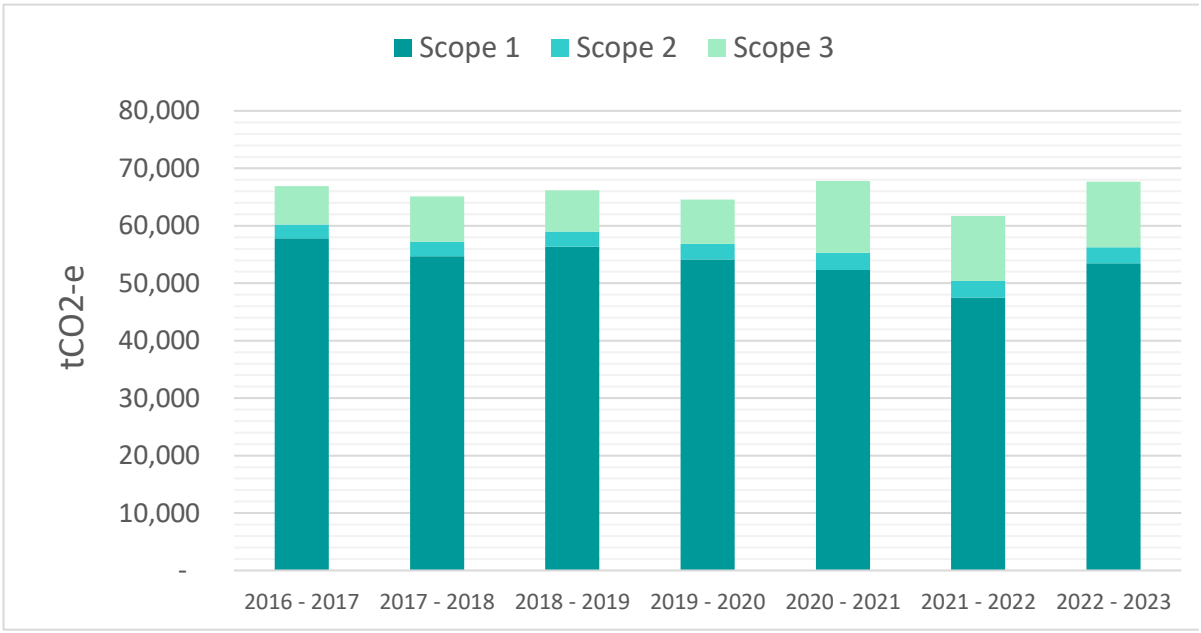
Overall emissions have increased compared to the previous year (refer Figure 1).

Increases in emissions have been recorded for Silverstream landfill (associated with an increase in the amount of waste received due to development activity in the city), the closed Silverstream Stage 1 landfill (insufficient gas extraction and destruction), and to a much lesser extent for corporate flights, and employee commuting post the Covid-19 pandemic.

There has also been a significant increase in emissions associated with contracts, which includes Naenae Pool as a major building and construction project. However, note that the majority of emissions associated with contracted services is still estimated by applying industry-wide emission factors to the amount of money spent in various categories. Hence, there is significant uncertainty associated with those estimates.

Reductions in emissions have occurred in the use of electricity to heat and power our facilities, and in Council's transport fleet, with the vehicle fleet now over 50% electric.

Figure 1: Hutt City Council's annual emissions

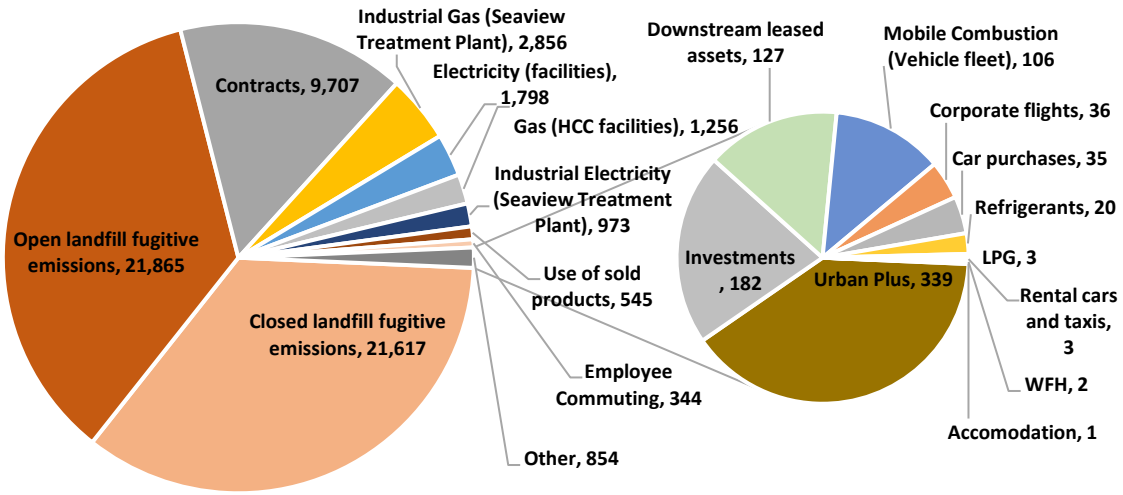



Note that emissions associated with IT networking and data services have been excluded from the reported total emissions, as there is uncertainty in the emissions reported by Microsoft. However, this emissions source is addressed in the body of the report. This approach also applies to LULUCF, as the focus of the report is on gross emissions, and because any credits arising from forests registered under the NZ Emissions Trading Scheme are scheduled to be sold, with revenue to be used to facilitate emission reductions.

Lastly, industrial and invoiced emissions for Wellington Water are based on the 2022 financial year report as the council-controlled organization was not able to provide updated data. The results are only used as a means for estimating the entity's emissions.

The following figure shows a detailed breakdown of emissions for 2022/23.

Figure 2: Hutt City Council emissions profile for 2022/23




Hutt City Council's largest emission sources are the open Silverstream landfill (Stage 2), and the closed Wainuiomata landfill and Silverstream landfill Stage 1/1A. Emissions from contracted services is the next biggest emission source, followed by a range of smaller sources.

# 1. INTRODUCTION

## 1.1 ORGANISATIONAL BOUNDARIES

The consolidation approach is applied to define carbon emissions for operational boundaries.

The following methods are widely used in organizational carbon footprint reporting: the control approach (either financial or operational control), and the equity share approach.

There are advantages and disadvantages to each approach, and a useful summary is available in the Global Greenhouse Gas Protocol Accounting and Reporting Standard for the Financial industry via the Greenhous Gas Protocol website.

For this greenhouse gas inventory, an equity share consolidation approach is used, which means that Council Controlled Organisations (CCOs) are considered an equal component of the footprint, alongside the Council's own operations. This is in order to consider Hutt City Council's overall performance and considering that Hutt City Council either has complete or significant financial interest in its CCOs, which results in significant active influence.

Hutt City Council has three CCOs:

Seaview Marina and Urban Plus Limited are 100% owned by HCC; governance is conducted via the companies' respective boards of directors, with the boards accountable to Hutt City Council.

Wellington Water as a whole is 20% owned by Hutt City Council. Each shareholding council is represented on the Wellington Water Committee by one representative, Wellington Water additionally has a board of independent directors. Hutt City has varying stakes in particular assets that are managed by Wellington Water; for example, Hutt City Council has 100% legal ownership of the Seaview Wastewater Treatment Plant, with varying degrees of annual funding responsibilty (averaging at 70% split between Hutt City Council and Upper Hutt City Council).

Hutt City has complete ownership and operational control of the Silverstream landfill, which receives waste from Lower Hutt and other districts in the Greater Wellington region. This results in Hutt City Council having a disproprtionately large carbon footprint compared to other organisations within the city, as waste itself is estimated at 7% of Lower Hutt City's emissions. Hutt City Council also owns, or has management responsibility, for various closed landfills in Lower Hutt, including a closed municipal landfill in Wainuiomata.

## 1.2 REPORTING BOUNDARIES

Scope 1, 2, and 3 are included. Specific categories are reported as below:

| Scope and categories | Subcategories | Included |
|---|---|---|
| **Scope 1 - Direct emissions and removals** | | |
| **Stationary combustion** | Fossil gas used in facilities (HCC) | YES |
| | Direct flaring form landfills | YES |
| | Marina Seaview LPG use | YES |
| | Diesel used in generators | NO |
| | Biomass fuel | NO (no biomass is used) |
| **Mobile combustion** | Fuel used in owned vehicles | YES |
| **Direct process emissions and removals from industrial processes.** | Seaview Wastewater treatment Plant | YES |
| **Direct fugitive emissions** | Refrigerants (HFC) | YES |
| | Open landfill fugitive emissions | YES |
| | Closed landfills fugitive emissions | YES |
| **Scope 2 – Indirect emissions from imported energy** | | |
| **Purchased energy** | Electricity | YES |
| | Steam | NO (no steam is used) |
| | Heating & cooling | NO (no additional purchased heating and cooling) |
| **Scope 3 - Indirect emissions** | | |
| **Upstream scope 3 emissions** | | |
| **Purchased goods and services** | Contracts | YES |
| | Urban Plus | YES |
| | Water Supply network | YES |
| | IT networking and data storage | NO (due to data uncertainty) |
| **Capital goods** | Buildings owned, Seaview Marina | NO (excluded as these cannot currently be accurately assessed) |
| | Cars | YES |
| **Fuel- and energy-related activities (not included in scope 1 or scope 2)** | Boat activities within Marina area | YES |
| **Upstream transportation and distribution** | Three-water management and network | NO (no available data) |
| **Waste generated in operations** | Seaview Wastewater Treatment Plant | Captured in Scope 1, via open landfill fugitive emissions |
| | Demolition wastes | Captured in Scope 1, via open landfill fugitive emissions |
| | Corporate wastes | Captured in Scope 1, via open landfill fugitive emissions |

| | | |
|---|---|---|
| **Business travel** | Corporate flights | YES |
| | Rental cars and Taxis | YES |
| **Employee commuting** | Staff travel to work | YES |
| **Working from Home** | Working from Home | YES |
| **Upstream leased assets** | Building owned and leased | YES |
| **Couriers** | Couriers | YES |

#### Downstream scope 3 emissions

| | | |
|---|---|---|
| **Downstream transportation and distribution** | Product transportation | NO (no distributed sold products) |
| | Three-water management and network | NO |
| **Processing of sold products** | | NO (no processed sold products) |
| **Use of sold products** | Urban Plus houses | YES |
| **End-of-life treatment of sold products** | Urban Plus houses | NO (no products have reached end of life) |
| **Downstream leased assets** | Facilities | YES |
| **Franchises** | | NO (HCC does not have franchises) |
| **Investments** | Public investments | YES |

#### OTHERS

| | |
|---|---|
| **Land Use change** | NO |

## 1.3 EXCLUSIONS

Scope 3 emissions are not captured in their entirety. IT networking and data services (including cloud computing) are excluded as there is uncertainty in the emissions reported by Microsoft. However, this emissions source is addressed in the body of the report.

This approach also applies to LULUFC, as the focus of the report is on gross emissions, and because any credits arising from forests registered under the NZ Emissions Trading Scheme are scheduled to be sold, with revenue to be used to facilitate emission reductions

The emissions associated with capital goods are excluded as they cannot currently be assessed with accuracy. Hutt City Council is required to maintain financial records for the prior seven years, and many of HCC's assets are older than seven years.

The method of deriving emissions associated with contracts also differs, depending on the size of contract:

a) For large contracts ($250,000 or more in spend per year), Hutt City Council requests that contractors provide information on their carbon footprints associated with delivering Council's services. Emissions data is usually limited to scope 1 and 2 emissions.

b) For smaller contracts, emissions are estimated via a spend based method (i.e. an industry/activity emission factor is multiplied with the amount of dollars spent).

## 1.4 BASE YEAR

The base year for assessing HCC's emission reduction performance is 2016-2017, this was the year first assessed by HCC (carried out by AECOM). There are several differences in methodology and exclusions between the initial assessment and the present assessment, so these reports cannot be directly compared (e.g. the initial report excluded fugitive emissions from closed landfills). However, where possible, emissions data has been back-calculated in order to enable a comparison between different years.

# 2. METHODOLOGY

Generally, emissions were calculated as per *Ministry for the Environment. 2023. Measuring Emissions: A Guide for Organisations: 2023 Detailed Guide. Wellington: Ministry for the Environment,* (hereafter referred to as 'the MFE guide'). Where the methodology differs, the differences are discussed in this methodology section.

While some emission factors used could be considered out of date, such as those retrieved from Motu publications that are based on spend, an inflationary factor has been applied to update these.

## 2.1 SCOPE 1 – DIRECT GREENHOUSE GAS EMISSIONS

### 2.1.1 Stationary combustion

#### Direct flaring from landfills

Refer to Appendix 1.

#### Seaview Marina

Calculated as per the MFE guide, using invoiced consumption. Seaview Marina consumes bottled LPG and standard diesel.

### 2.1.2 Industrial processes

Emissions associated with the Seaview Wastewater Treatment plant are calculated as an estimate in relation to current population growth figures, using the data from the last available footprint for 2021/22. Wellington Water (WW) were unable to provide actual data for this financial year. Note that WW's greenhouse gas inventory was produced with reference to Water NZ Guidelines 2021 and as per the MFE guide.

### 2.1.3 Direct fugitive emissions

#### Open landfill fugitive emissions

Refer to Appendix 1.

#### Closed landfill fugitive emissions.

Refer to Appendix 1.

## 2.2 SCOPE 2 – INDIRECT EMISSIONS FROM IMPORTED ENERGY

Emission factors from the MFE guide are used. Since MFE has only published factors up to July 2023 this most recent factor is used for all following months. Renewable Energy Certificates are not used by Hutt City Council.

## 2.3 SCOPE 3 – UPSTREAM INDIRECT EMISSIONS

### 2.3.1 Purchased goods and services

#### Contracts

Emissions data was requested from HCC's larger contractors (typically those where HCC's expenditure exceeds $250,000 per year), in line with HCC's expectations. In most cases, relevant contractors and suppliers only provided Scope 1 and Scope 2 emissions data, as some contractors do not yet collect such data, and most existing contracts do not yet require the collection of this data. Note that work is under way to ensure that emissions data is available from a wider range of HCC's suppliers, and that relevant contracts include objectives and actions to reduce emissions.

Where contractors and suppliers did not provide emissions data, emissions were estimated based on contract spend and emission factors provided by Motu ("*Consumption-based greenhouse gas emissions input-output model", 2014, obtained by Motu Economic and Public Policy Research from Statistics New Zealand, MBIE and MFE in 2013. Unrestricted dataset available online from www.motu.org.nz).* While this is not a precise method, it acts as a suitable proxy. These factors have been adjusted based on MBIE inflation figures. Only the net figures are reported.

#### Urban Plus

Urban Plus Limited provided information on expenses associated with construction and demolition, equipment, operational expense, and cleaning. Emissions have been estimated by using Motu factors and are included here.

#### Wellington Water

Wellington Water (WW) completed an operational footprint for the financial year 2021/22 and did not include emissions associated with purchased goods and services. They have not updated footprint data since, thus, the emission figures for 22/23 have been adjusted based on population growth, in order to derive an estimate for 2022/23.

In 2021 Wellington Water provided an inventory of maintenance related expenses, emissions associated with these are included and assumed to be the same as the previous year.

#### IT networking and data storage

HCC uses Microsoft (MS) Azure for cloud-based information sharing and storage. While Microsoft Azure reports all scopes of emissions associated with this usage, there is some uncertainty with the data collected. The offshore MS storage facility in Australia manages storage for all businesses and organisations in the Oceania region, and there is uncertainty around whether the emissions data is representative of HCC's emissions or emissions for the Oceania region. As a result, emissions associated with IT networking and data storage have been excluded from total reported emissions, until the accuracy of Microsoft Azure's scope of emissions data can be confirmed.

### 2.3.2 Capital Goods

#### Cars (vehicle purchases)

Upstream emissions associated with the purchase of vehicles have been estimated based on Motu factors and amortised across the duration of vehicle ownership.

### 2.3.3 Business travel

#### Corporate flights

HCC uses Orbit Travel as a travel agent. As part of this service, they produce a report based on distance travelled, in kilometres, associated with air travel. This information is submitted to CarbonEES, who organise and present the data on their software platform eBench. Emissions are calculated using the appropriate emission factors from the MFE guide 2023.

### 2.3.4 Employee commuting

A staff survey was completed in December 2023, and the associated emissions of each respondent was calculated as per the MFE guide. These emissions were averaged and extrapolated to account for every council staff member.

### 2.3.5 Employees working from home

A staff survey was completed in December 2023, and the associated emissions of each respondent was calculated as per the MFE guide. These emissions were averaged and extrapolated to account for every council staff member.

### 2.3.6 Couriers

Emissions associated with couriers were estimated based on contract spend and emission factors provided by Motu (in "*Consumption-based greenhouse gas emissions input-output model". 2014. Obtained by Motu Economic and Public Policy Research from Statistics New Zealand, MBIE and MFE in 2013. Unrestricted dataset available online from www.motu.org.nz).* The specific factor used was "Postal and courier pickup and delivery services". While this is not a precise method, it acts as a suitable proxy. These factors have been adjusted based on MBIE inflation data.

## 2.4 SCOPE 3 – DOWNSTREAM INDIRECT EMISSIONS

### 2.4.1 Downstream transportation and distribution

The only significant downstream transportation and distribution that Hutt City Council carries out is associated with the Three Waters. These emissions are therefore captured elsewhere (Scope 2, Scope 3 – purchased goods and service, and Scope 3 – capital goods).

Houses sold by Urban Plus are built on site and not transported.

### 2.4.2 Use of sold products

Emissions associated with houses sold by Urban Plus have been estimated based on the cumulative number of houses sold by UPL and StatsNZ data on regional household emissions.

### 2.4.3 Downstream leased assets

The majority of HCC's leased assets are captured within Scope 1 and 2. Although HCC is invoiced for the energy consumption at these sites, it passes this on to the lessee to settle. Council leases property under operating leases. A majority of these leases have a non-cancellable term of 36 months, with the exception of housing leases that have a non-cancellable term of 22 working days.

For the remaining sites, especially tenanted houses, the emissions are estimated based on the average Wellington household emissions from StatsNZ, as well as StatsNZ data on the average number of occupants in a household.

### 2.4.4 Public investments

The emissions associated with HCC's public investments are calculated by using the Motu derived emission factor for the *Banking and financing; financial asset investing* industry.

## 2.5 LAND USE, LAND USE CHANGE, FORESTRY

Regarding the land use, land use change, forestry category (LULUCF), Council owns forest land in Lower Hutt, some of which results in net carbon sequestration (eg post-1989 native forests). Some of the forests have been registered under the NZ Emissions Trading Scheme and earn carbon credits, most of which are intended to be used to facilitate emissions reductions (through the sale of carbon credits, and the use of proceeds for implementing carbon emission reductions or facilitating additional carbon sequestration through planting). Therefore, for the purposes of this carbon footprint report, LULUCF has been excluded, to avoid double counting.

# 3. RESULTS

## 3.1 2022/2023 EMISSIONS

| Scope and categories | Subcategories | Included |
|---|---|---|
| **Scope 1 - Direct GHG emissions and removals** | | |
| **Stationary combustion** | Fossil gas (HCC facilities) | 1256 |
| | Direct flaring from landfills | Included with fugitive emissions to avoid double counting |
| | Marina Seaview LPG use | 3 |
| | Fossil gas (industrial – Seaview Wastewater Treatment Plant) | 2,856 |
| | Diesel used in generators | - |
| | Biomass fuel | - |
| **Mobile combustion** | Fuel used in owned vehicles | 106 |
| **Industrial Processes - Direct process emissions and removals from industrial processes.** | Seaview Wastewater Treatment Plant | 5,748 |
| **Direct fugitive emissions** | Refrigerants (HFC) | 20 |
| | Open landfill fugitive emissions | 21,865 |
| | Closed landfills fugitive emissions | 21,617 |
| **Scope 2 - Indirect emissions from imported energy** | | |
| **Purchased energy** | Electricity (HCC facilities) | 1,798 |
| | Electricity (industrial – Seaview Wastewater Treatment Plan) | 973 |
| | Steam | No steam is used |
| | Heating & cooling | No additional purchased heating and cooling |
| **Scope 3 - Indirect emissions** | | |
| **Upstream scope 3 emissions** | | |
| **Purchased goods and services** | Contracts | 9,707 |
| | Urban Plus | 339 |
| | Water Supply network | 109 |
| | IT networking and data storage | 27 (but excluded from total report emissions due to some data uncertainty) |
| **Capital goods** | Buildings owned | Excluded as these cannot be accurately assessed |
| | Seaview Marina | |
| | Cars (vehicle purchases) | 35 |
| **Fuel- and energy-related activities (not included in scope 1 or scope 2)** | Boat activities within Marina area | Included in use of sold products |
| **Upstream transportation and distribution** | Three-water management and network | Captured in other categories |
| **Waste generated in operations** | Seaview Wastewater Treatment Plant | Captured in Scope 1, via open landfill fugitive emissions |

| | | |
|---|---|---|
| | Demolition wastes | Captured in Scope 1, via open landfill fugitive emissions |
| | Corporate wastes | Noted, however captured in Scope 1, via open landfill fugitive emissions |
| **Business travel** | Corporate flights | 36 |
| | Rental cars and Taxis | 3 |
| **Employee commuting** | Staff travel to work | 344 |
| **Working from Home** | | 2 |
| **Upstream leased assets** | Building owned and leased | - |
| **Couriers** | Couriers | 29 |

**Downstream scope 3 emissions**

| | | |
|---|---|---|
| **Downstream transportation and distribution** | Product transportation | No distributed sold products |
| | Three-water management and network | Captured elsewhere |
| **Processing of sold products** | Not relevant | - |
| **Use of sold products** | Urban Plus houses | 545 |
| **End-of-life treatment of sold products** | Urban Plus houses | - |
| **Downstream leased assets** | Facilities | 127 |
| **Franchises** | Not relevant | - |
| **Investments** | Public investments | 182 |

**OTHERS**

| | | |
|---|---|---|
| **Land Use change** | Land use change | excluded |

## 3.2 SCOPE 1 – DIRECT GREENHOUSE GAS EMISSIONS

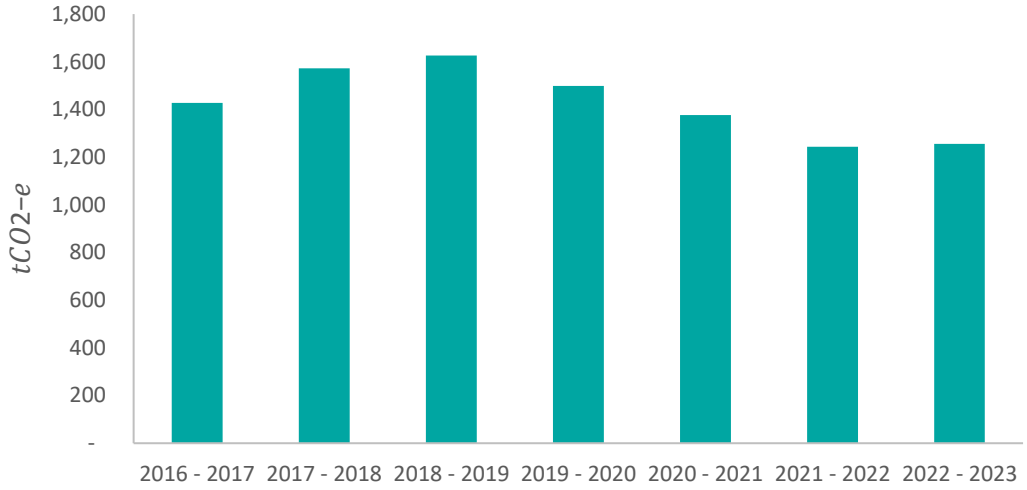
### 3.2.1 Stationary combustion

#### Fossil gas used in facilities

Emissions from fossil gas consumption have been steadily reducing since the 2019 calendar year, initially due to the closure of Naenae pool, and then due to the decarbonisation programme to phase out gas and improve energy efficiency (e.g. replacement of a gas boiler with a heat pump at the Eastbourne Summer Pool).

Hutt City Council is committed to removing fossil gas from all facilities by 2030, which consequentially means that HCC is not expected to directly consume any fossil fuels from the next decade outside of emergency situations (during a civil defence emergency Hutt City Council may operate diesel generators to support the emergency response).

Figure 3: Fossil gas consumption, for HCC facilities




### Direct flaring from landfills

Direct flared emissions are those associated with the engines of the power plant (and a supplementary flare) at Silverstream landfill, which destroys methane, producing carbon dioxide and electricity. These are noted separately as some landfill emissions are fugitive, whilst these are direct emissions.

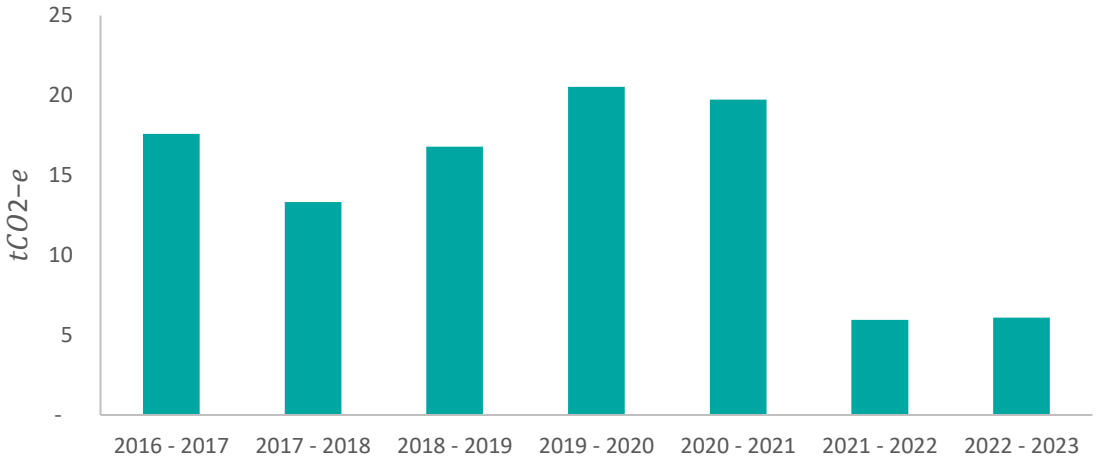
In all totals and time series these emissions are included with 'open landfill emissions', due to this breakdown only being available for one year (please refer to Appendix 1 for more detail on landfill emissions.

| Financial year | Silverstream fugitive emissions separated by pathway (tCO2e) | | | |
|---|---|---|---|---|
| | Stage 1 & 1a | | Stage 2 | |
| | Through cap | From engines | Through cap | From engines |
| 2021/22 | 1,472 | 1,856 | 7,833 | 9,923 |
| **2022/23** | **5,384** | **1,461** | **10,744** | **11,122** |

### Seaview Marina

Seaview Marina uses LPG to heat its showers and ablution blocks.

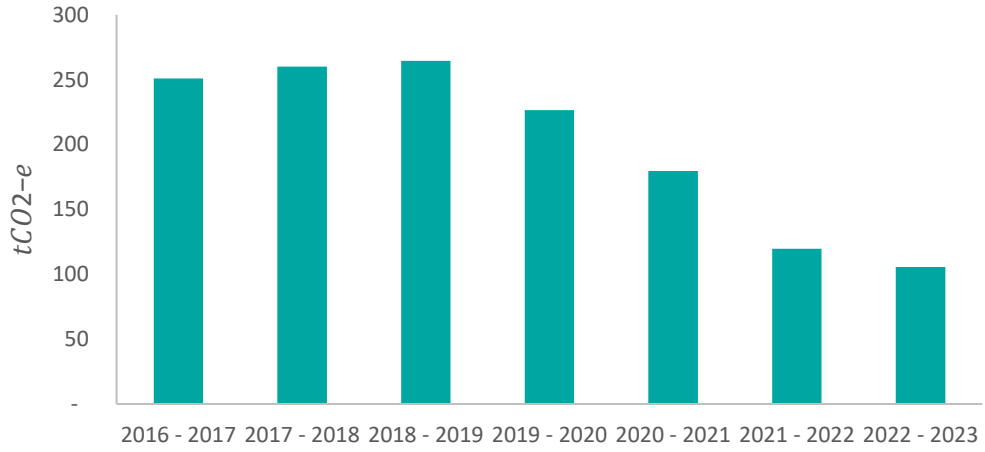
Figure 4: LPG emissions, Seaview Marina




## 3.2.2 Mobile combustion

Emissions from transport fuels (the operation of Council's vehicle fleet) continue to reduce, in line with Council's electrification of its fleet. By the end of the 2022/2023 financial year, about 50% of Council's vehicle fleet was electric.

Figure 5: Mobile combustion, HCC transport fuel use



### 3.2.3 Industrial processes

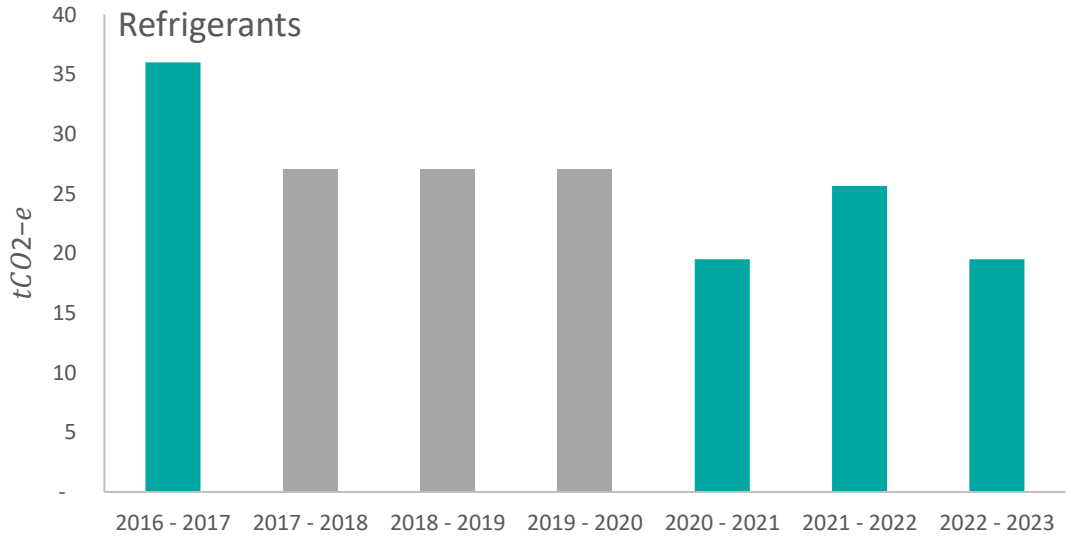
Scope 1 emissions associated with Seaview Wastewater Treatment plant, other than stationary combustion, are included here and estimated to be 5,748 $tCO_{2-e}$. Due to inconsistent monitoring and reporting from Wellington Water, the estimated tonnage of carbon emissions was derived by factoring current population growth onto actual reported figures supplied in the 2020-2021 financial year report.

### 3.2.4 Direct fugitive emissions

#### Refrigerants

Emissions associated with refrigerant use is calculated to have decreased compared to the previous year. There was a reported leakage of the 134a refrigerant in a plant room at the HCC main administration building. The refrigerant itself has a high emission factor because of its global warming potential, but in terms of emissions, it is significantly less compared to the previous financial year's results. Note that 2017/18 – 2019/20, highlighted in grey, are averages of those years for which we have data.

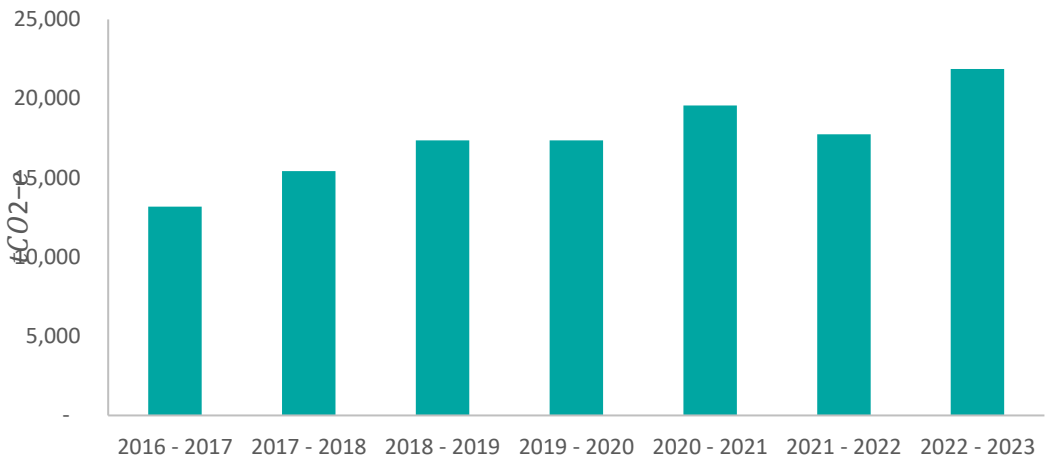
Figure 6: Refrigerant emissions



## Open landfill emissions

The emissions associated with Silverstream landfill (Stage 2) have increased, due to the increase in the amount of waste disposed. Please refer to Appendix 1 for more detail.

Figure 7: Open landfill fugitive emissions



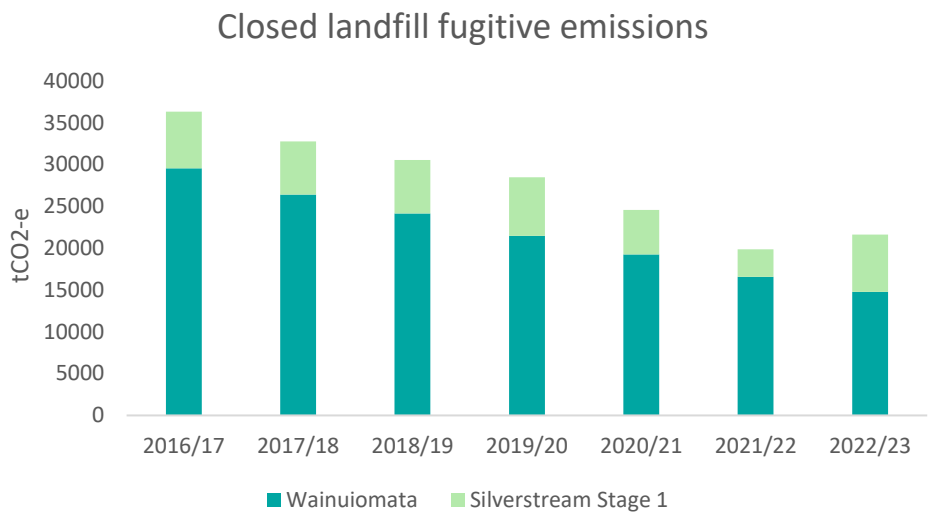

## Closed landfill fugitive emissions

Emissions from the closed Silverstream landfill (Stage 1) increased due to technology limitations, i.e. there was insufficient gas extraction and destruction capacity, despite the power plant and flare operating as expected. Note that LMS is planning to install a new engine, and new wells may be considered for Stage 1, which is expected to mitigate this issue in the future (as emissions from both Stage 1 and Stage 2 are combusted in the on-site power plant).

Please refer to Appendix 1 for more detail.

| **Financial year** | **Fugitive emissions estimate in t $CO_2e$ (emissions destroyed by combustion in brackets)** | | |
|---|---|---|---|
| | **Silverstream** | | **Wainuiomata** |
| | **Stage 1 & 1a** | **Stage 2** | |
| 2016/17 | 6,814 (24,713) | 13,182 (42,583) | 29,545 (0) |
| 2017/18 | 6,375 (23,137) | 15,416 (53,106) | 26,412 (0) |
| 2018/19 | 6,375 (23,137) | 17,362 (58,805) | 24,173 (0) |
| 2019/20 | 6,995 (25,390) | 17,356 (67,228) | 21,487 (0) |
| 2020/21 | 5,350 (19,416) | 19,559 (58,766) | 19,249 (0) |
| 2021/22 | 3,328 (20,231) | 17,757 (87,024) | 16,563 (0) |
| 2022/23 | 6,845 (14,611) | 21,865 (100,095) | 14,772 (0) |

Figure 8: Closed landfill fugitive emissions

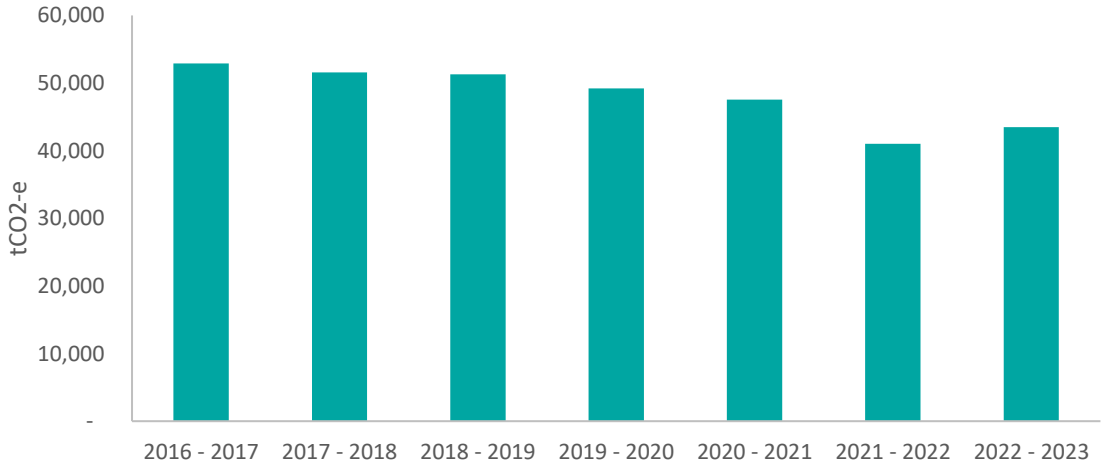



### 3.2.5 Biogenic emissions

As below, biogenic methane emissions increased compared to the previous year, but note that biogenic emissions are not additional to those noted elsewhere (e.g. section 3.2.4). Please refer to Appendix 1 for more detail on biogenic emissions.

There is significant work under way to continuously improve methane capture (e.g. new wells) and destruction (e.g. new engines) at Silverstream landfill.

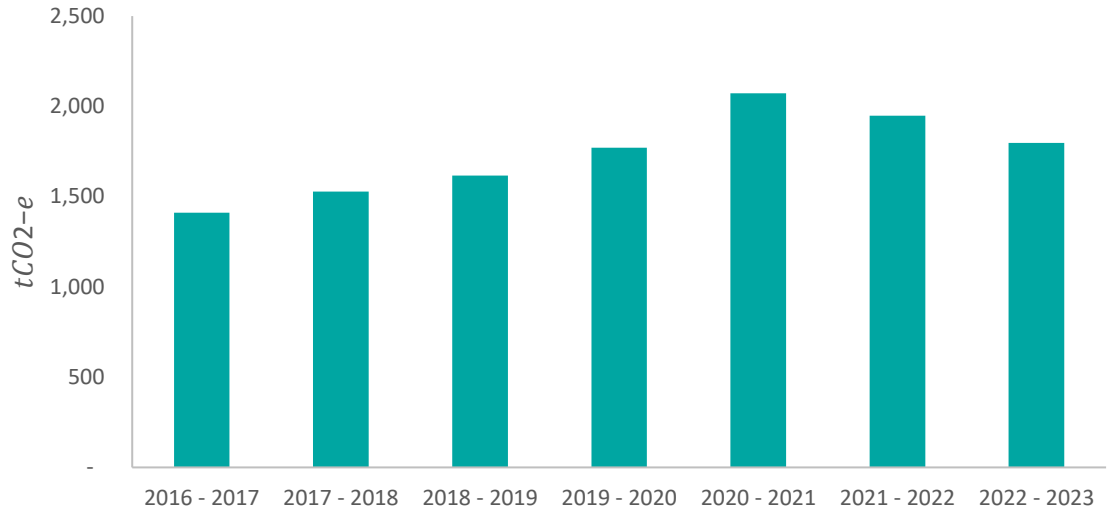
Figure 9: Total fugitive landfill emissions: biogenic



## 3.3 SCOPE 2 – INDIRECT EMISSIONS FROM IMPORTED ENERGY

The below figure shows emissions associated with invoiced electricity consumption.

Figure 10: Electricity use




Note that emissions associated with electricity consumption can fluctuate from year to year, depending on the carbon intensity of New Zealand's electricity generation.

Emissions for the previous years have been re-calculated, as updated emission factors have been released by the Ministry for the Environment.

Electricity consumption associated with Seaview Wastewater Treatment Plant cannot be compared to prior years and are estimated to be 973 $tCO_{2-e}$ for the 2022/2023 year, based on previous year estimates.

## 3.4 SCOPE 3 – UPSTREAM INDIRECT EMISSIONS

### 3.4.1 Purchased goods and services

#### Contracts

For most contracts and purchases services, emissions have been estimated based on spend and MOTU factors. However, for some larger contracts over $250,000 per year in spend (see Figure 11), it was possible to obtain actual emissions data, as reported by contractors and suppliers. One example is the emissions associated with kerbside rubbish and recycling collection, with Waste Management NZ as the supplier of that service. However, note that the data underlying this figure excludes contracts for certain services, such as gas, electricity, and Wellington Water, as these are addressed elsewhere.

This year, total emissions for this category have been estimated at 9,707 $tCO_{2-e}$. Within that, 2,015 $tCO_{2-e}$ are associated with major contracts (see Figure 11).

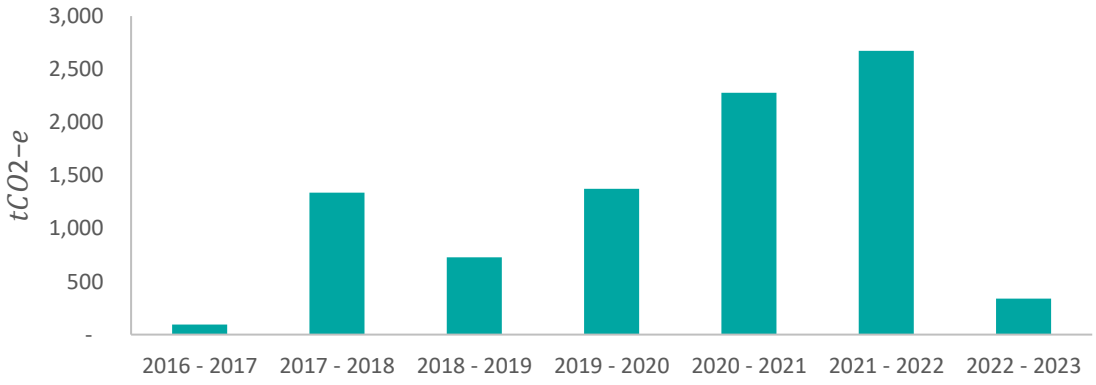
Note also that, compared to the previous year, there has been a significant increase in emissions associated with contracts, which includes Naenae Pool as a major building and construction project.

Figure 11: Emissions associated with major operational contracts and services


## Urban Plus

These emissions are primarily derived from the construction activity that Urban Plus limited undertakes (via suppliers that undertake services and activities for Urban Plus). Due to only having financial figures that combines the demolition and construction costs, this is likely an overestimation of emissions. Urban Plus also accounts for the costs of a project upon completion, which accounts for some of the annual variation in these emissions. Work is being undertaken to reduce operational emissions of the properties (via Homestar), but it is not apparent if the embodied emissions will be reduced. Urban plus emissions remain low as existing housing projects reach completion stages.

Figure 12: Urban Plus emissions from purchased goods and services



### 3.4.2 IT networking and data storage

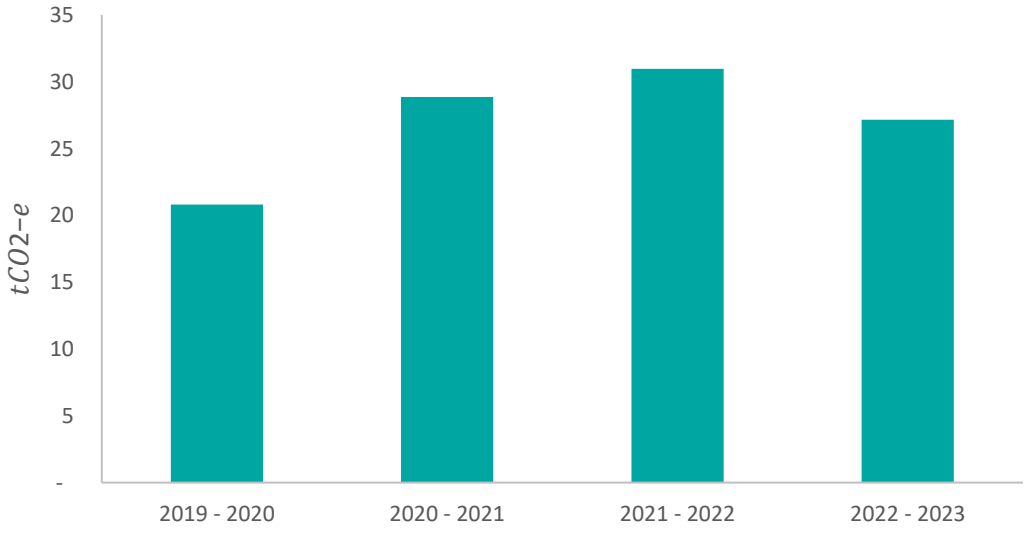
HCC uses Microsoft (MS) Azure for cloud-based information sharing and storage. Microsoft's ''Azure" emissions dashboard accounts for HCC's cloud usage. In 2020 HCC switched from on-premise storage (CM9/TRIM) to cloud storage (SharePoint/Te Pātaka), which utilises Microsoft's offshore servers in Australia. This resulted in data migration from the old system TRIM to SharePoint. Collection and transfer of new data onto SharePoint increased cloud storage capacity. Hence, only the last four years of data is shown here, as there is uncertainty around the emissions associated with IT networking and data storage prior to that point.

The movement, storage, and increased cloud capacity for data results in energy use and translates to increased emissions from storage systems, which is evident in the increase in emissions between 2019/20 and 2021/22.

In addition, the offshore MS storage facility in Australia manages storage for all businesses and organisations in the Oceania region, and there is uncertainty around whether the emissions data is representative of HCC's emissions or emissions for the Oceania region.

As a result of the limited data and uncertainty, emissions associated with IT networking and data storage have been excluded from HCC's total reported emissions.

Figure 13: IT network and storage emissions



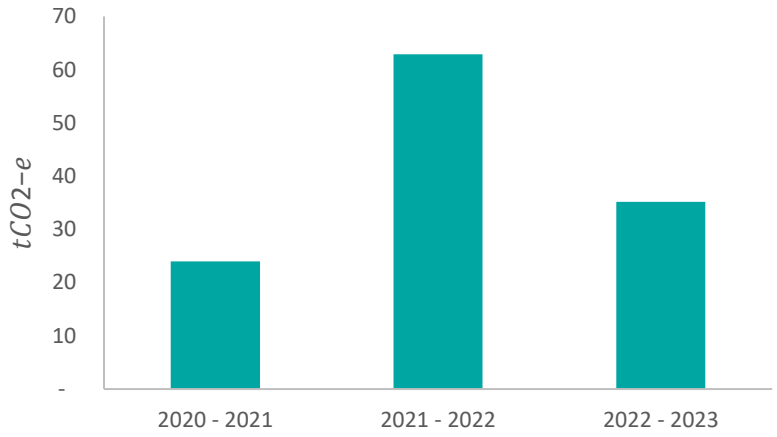
### 3.4.3 Capital goods

#### Cars (vehicle purchases)

The embodied emissions of purchased cars is estimated to reduce gradually, as HCC converts its fleet to electric.

Note that HCC's fleet has not grown but has reduced since 2019. Hence, emissions reported here are associated with vehicle purchases per financial year, to replace vehicles, in line with Council's vehicle fleet policy and replacement guidance.

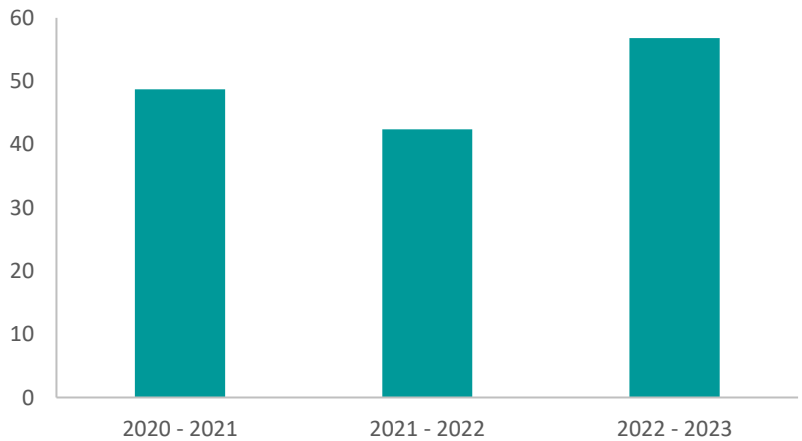
Figure 14: Embodied Emissions of Cars




### 3.4.4 Waste from facilities

Emissions associated with HCC's facility waste has increased moderately. This emission source is provided as an information item only, as emissions are captured under Scope 1 (Silverstream landfill fugitive emissions).

Figure 15: Facility waste

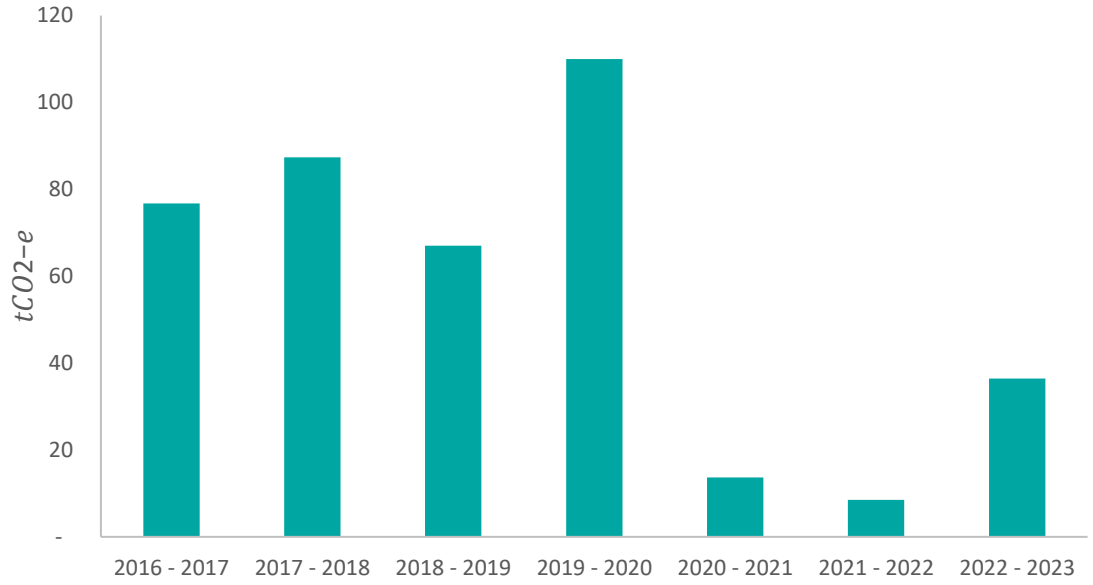


### 3.4.5 Business travel

#### Corporate flights

Since the end of the COVID-19 pandemic, emissions from corporate flights have again increased. While there has been an increase in these emissions for 2022/23 and physical attendance at conferences may increase again, it does not appear likely that emissions will return to pre-pandemic levels, due to the general acceptance of online and remote working technologies (e.g. MS Teams).

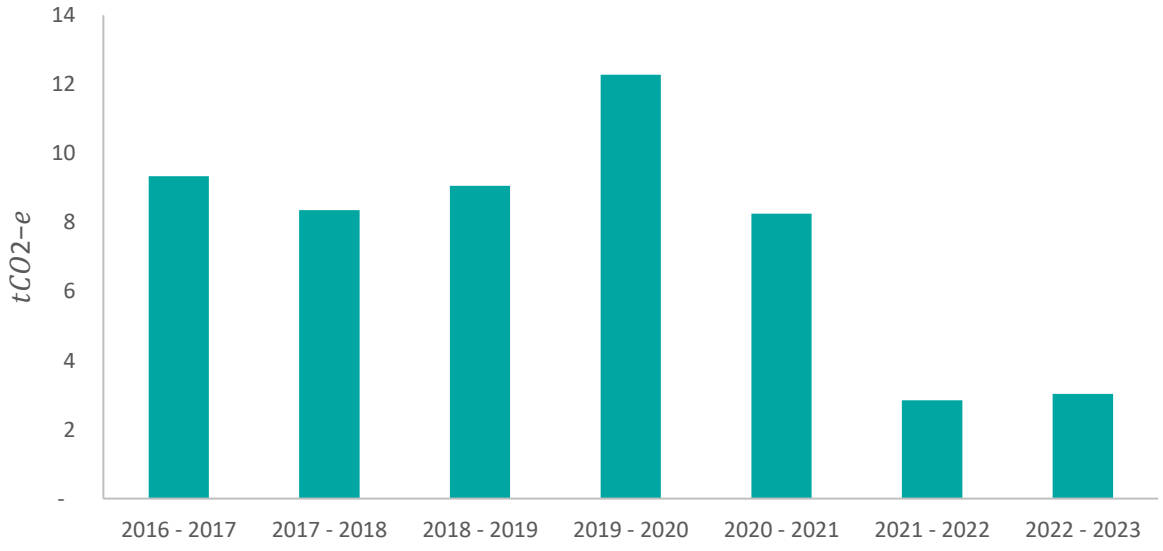
Figure 16: Corporate flight emissions




#### Rental cars and taxis

Emissions associated with rental car and taxi use has remained low.

Figure 17: Rental car and taxi emissions



### 3.4.6 Employee commuting

The emissions associated with HCC's employees commuting are estimated to be 344 $tCO_{2-e}$, for this inventory a staff survey was produced specifically for commute emissions calculations (total tonnage is extrapolated, based on the survey results).[1]

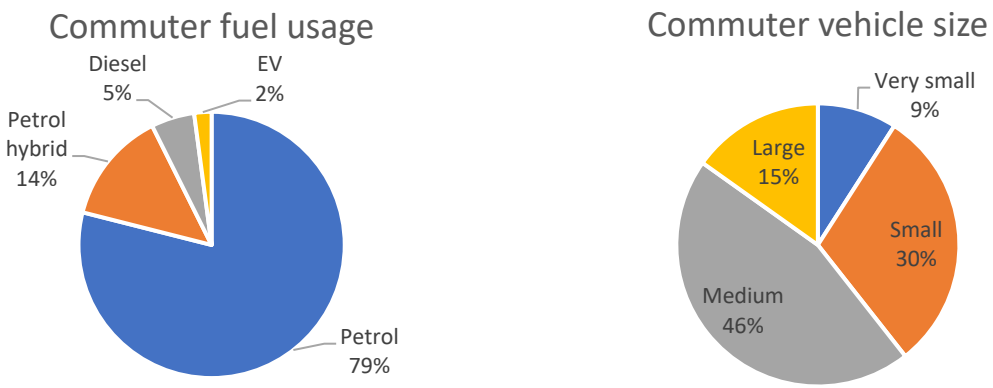
Notable insights include:

- 5% respondents use public transport at least once per week.
- 20% of reported commutes are on public transport.
- 4% reported commutes are through active transport.
- 9% respondents have a multimodal commute.
- 62% of respondents drive a personal car to work daily.

Most of HCC staff seem to commute from within the Hutt Valley, with a mean commute distance of 26.7 km.

With regard to staff using motor vehicles to travel to and from work, the majority of vehicles are petrol and diesel vehicles. The use of EVs is still low.

Figure 18: Vehicle technologies, and vehicle size




### 3.4.7 Employees working from home

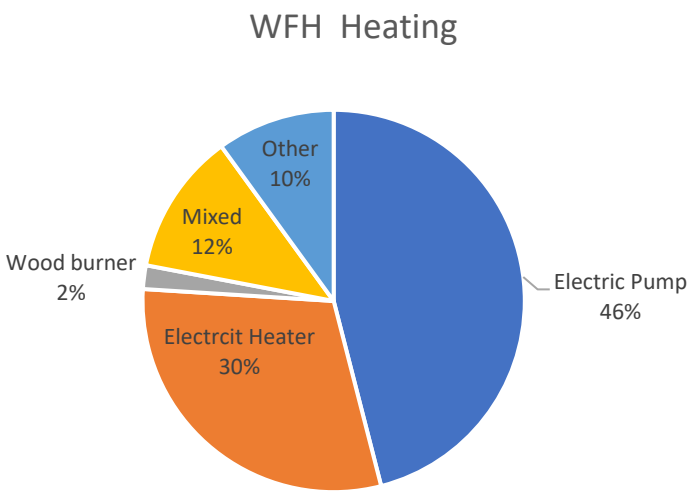
Emissions associated with staff working from home have been estimated at 2.12 T$tCO_{2-e}$, which is significantly less than the emissions associated with commuting (345 $tCO_{2-e}$). Emissions are primarily associated with space heating. According to survey data, 62% of staff working from home typically use electric heat pumps and electric heaters, and emissions could

[1] The number of respondents differed (was higher than) last year's survey results. While results are extrapolated so that we derive emissions totals across all staff, results are not fully comparable and are an estimate only for this emission category.

be reduced by staff switching away from gas to alternative technologies for heating, such as heat pumps.

Based on these findings, there appear to be emissions benefits associated with working from home and hybrid/flexible working arrangements, including by reducing transport emissions through reduced commuting. However, those benefits also need to be viewed in light of other benefits associated with staff working in the office (e.g. relationship building, face to face interactions).

Figure 19: Heating technologies used by staff at home



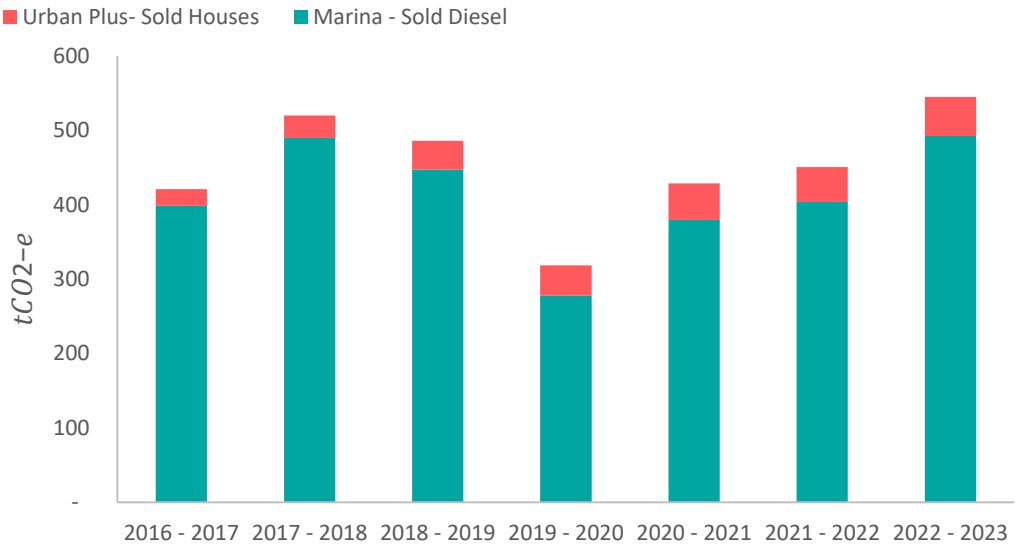

## 3.5 SCOPE 3 – DOWNSTREAM INDIRECT EMISSIONS

### 3.5.1 Use of sold products

Hutt City Council only has two sold products, including diesel from the Marina to boat users, and UPL selling houses. The latter are a small emission source through the occupant's usage of energy for heating and cooking.

Emissions associated with sold houses could be lower than is estimated here. This is because UPL builds homes to Homestar 6 as a minimum, and no longer installs fossil gas for any home and water heating, and cooking. Average TOITU figures do not reflect actual occupant emissions per household. The amount of diesel sold to boat users is subject to demand. The emergence of electrified boat options is yet to have an impact as traditional fuelled boats remain popular. Emissions associated with sold diesel may reduce through the adoption of electric boats in the medium to long term, which the Seaview Marina may choose to incentivise/promote in the future.

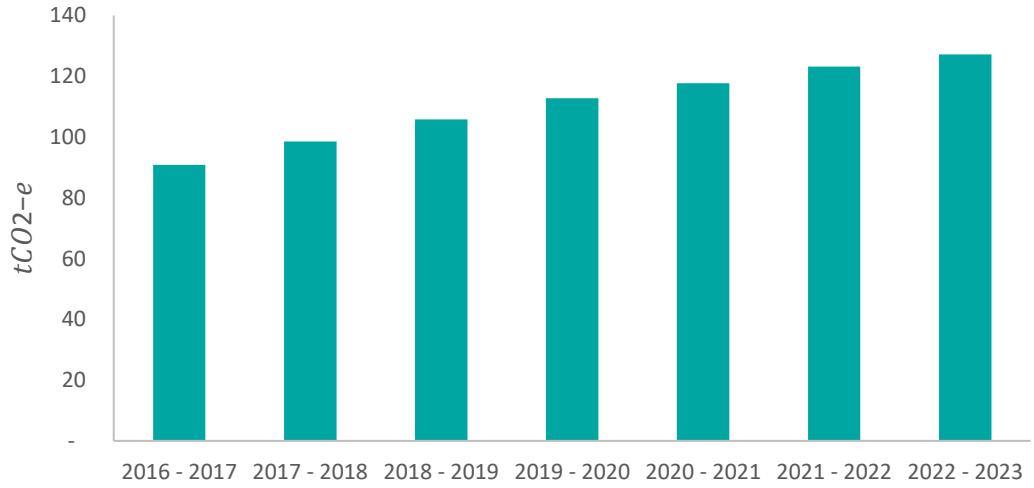
Figure 20: Indirect Emissions - sold houses & sold diesel




### 3.5.2 Downstream leased assets

These emissions are related to occupants living in houses owned by Urban Plus, these are estimated to have increased due to the increasing number of rentals owned by UPL.

Figure 21: Downstream leased assets



### 3.5.3 Public investments

Hutt City Council does not currently have a green investment policy, in contrast Auckland, Dunedin, Palmerston North, Waikato Regional, and Christchurch City Councils have already adopted binding policies to divest from fossil fuels.

## 3.6 LAND USE, LAND USE CHANGE, FORESTRY

Council owns forest land in Lower Hutt, some of which results in net carbon sequestration (e.g. post-1989 native forests). While some of the forests have been registered under the NZ Emissions Trading Scheme, the resulting carbon credits are intended to be used to facilitate emissions reductions (through the sale of carbon credits, and the use of proceeds for implementing carbon emission reductions and facilitating additional sequestration through planting). Therefore, for the purposes of this carbon footprint report, land use, land use change and forestry has been excluded, to avoid double counting.

## 3.1 COUNCIL CONTROLLED ORGANISATION EMISSIONS

Note that the following sections and associated emissions are represented within their appropriate category above and provided as an information item only.

### 3.1.1 Wellington Water

Wellington Water (WW) where not able to provide an updated emission report for this financial year. Although WW is a council-controlled organization, it is 100% responsible to account for its operational emissions. HCC continues to work with WW to have updated data for the purpose of future reports.

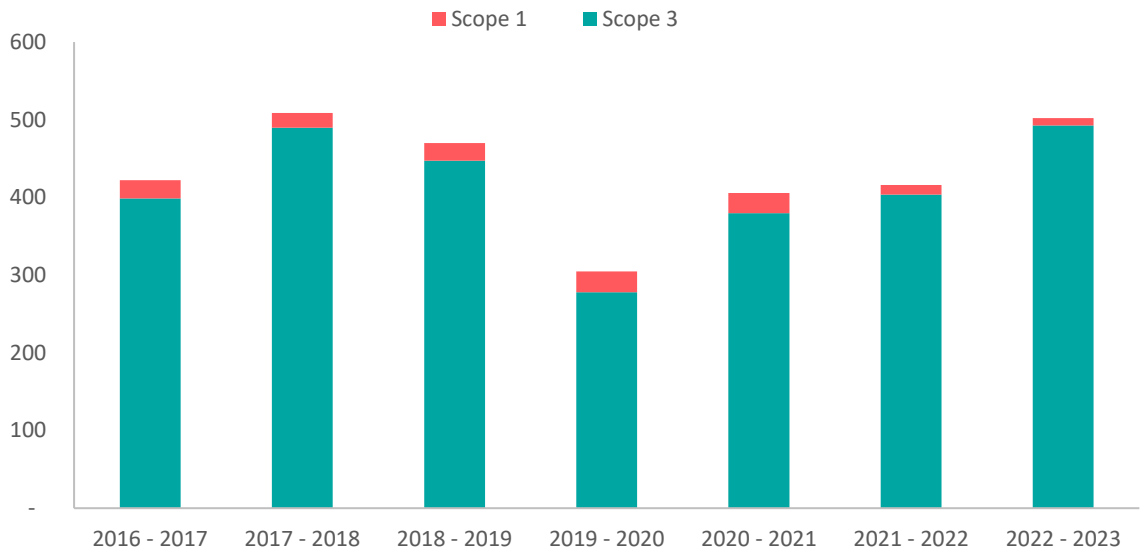
WW's emissions have last been provided for the 2020/21 financial year, estimated at 3,534 tonnes, and there have been no significant changes in technology or fuel sources used since. However, Lower Hutt's population has grown, so their footprint from 2020/21 financial year may underestimate emissions for 2022/23.

### 3.1.1 Seaview Marina

The majority of Seaview Marina's carbon footprint is associated with diesel sold to marina customers (Scope 3). Scope 1 for the marina includes diesel used for the ute and travel lift, and LPG bottles for the showers.

Note that the Seaview Marina's Scope 2 emissions (electricity) are invoiced directly to Hutt City Council and included in Hutt City Council's Scope 2 emissions (refer section 2.2) and are therefore not included below.

Figure 22: Seaview Marina emissions

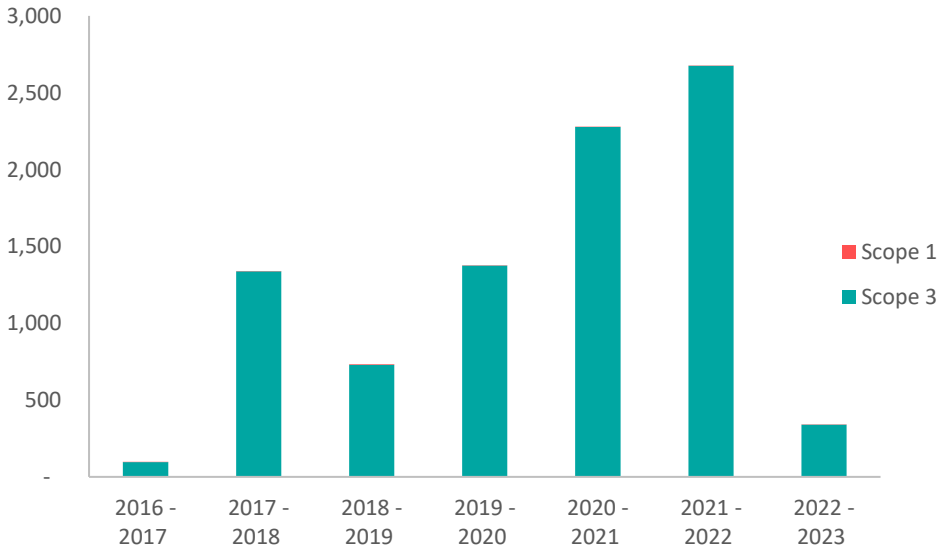



### 3.1.2 Urban Plus Limited

As below, almost the entirety of Urban Plus's emission profile is estimated to originate from its emissions associated with the buildings it constructs (refer sections 3.4.1 and 3.5.1). Therefore, the timing of the completion of builds will heavily influence the emissions profile. Existing housing projects have reached final stages hence emissions for this financial year remain low.

Note that Urban Plus's Scope 2 emissions (electricity) are invoiced directly to Hutt City Council and included in Hutt City Council's Scope 2 emissions (refer section 2.2) and are therefore not included below.

Figure 23: Scope 1 & Scope 3 Urban Plus Emissions



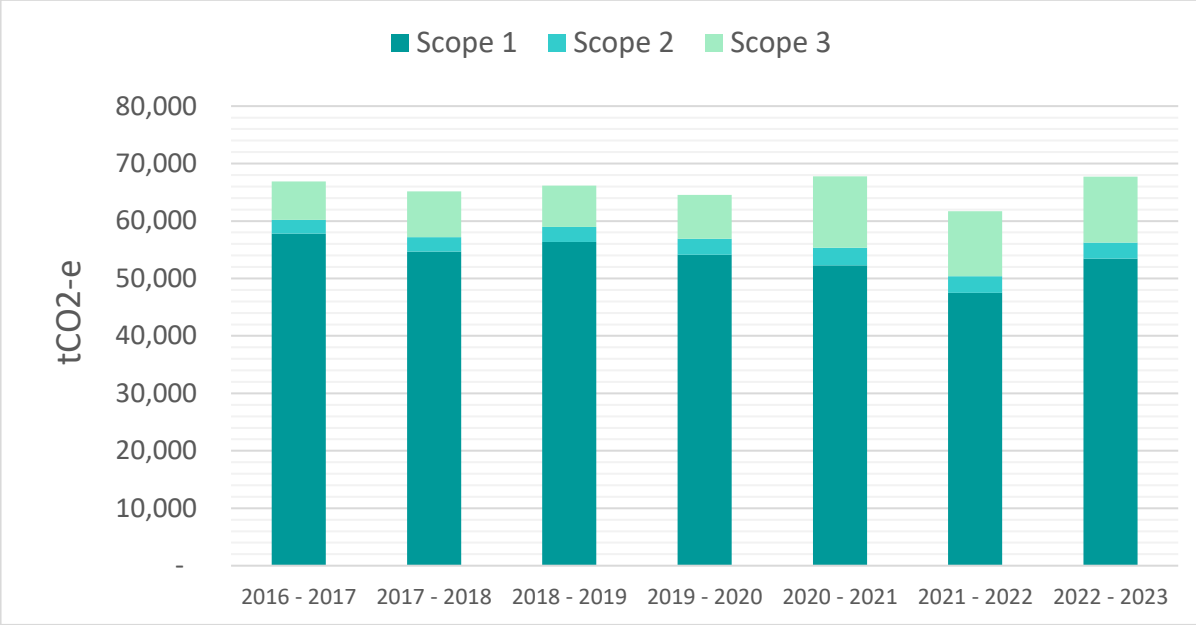
# 4. PERFORMANCE ASSESSMENT

## 4.1 PERFORMANCE COMPARED TO THE BASE YEAR

In light of changes to emissions reporting methodologies, and changes in scope, where possible emission results have been recalculated to enable a comparison.

Compared to the base year, emissions have increased slightly, this is largely due to the emissions increases associated with Silverstream landfill Stage 2, lack of sufficient destruction of gas at the closed Silverstream Stage 1, and a significant increase in emissions associated with contracts, which includes Naenae Pool as a major building and construction project.

Figure 24:: Hutt City Council's annual emissions




## 4.2 PERFORMANCE COMPARED TO PRIOR REPORTS

Hutt City Council's total carbon footprint for 2022/23 has been estimated at 67,702 $tCO_{2-e}$. As noted above, in light of changes to emissions reporting methodologies, and changes in scope, where possible emission results have been recalculated to enable a comparison.

Overall emissions have increased compared to the previous year, largely due to increases in open and closed landfill emissions, and emissions associated with contracted services.

Note that emissions associated with IT networking and data services have been excluded from the reported total emissions, as there is uncertainty in the emissions reported by Microsoft, and with data limited to the last four years. This approach also applies to LULUCF, as the focus of the report is on gross emissions, and because any credits arising from forests registered under the NZ Emissions Trading Scheme are scheduled to be sold, with revenue to be used to facilitate emission reductions or additional carbon sequestration through planting.

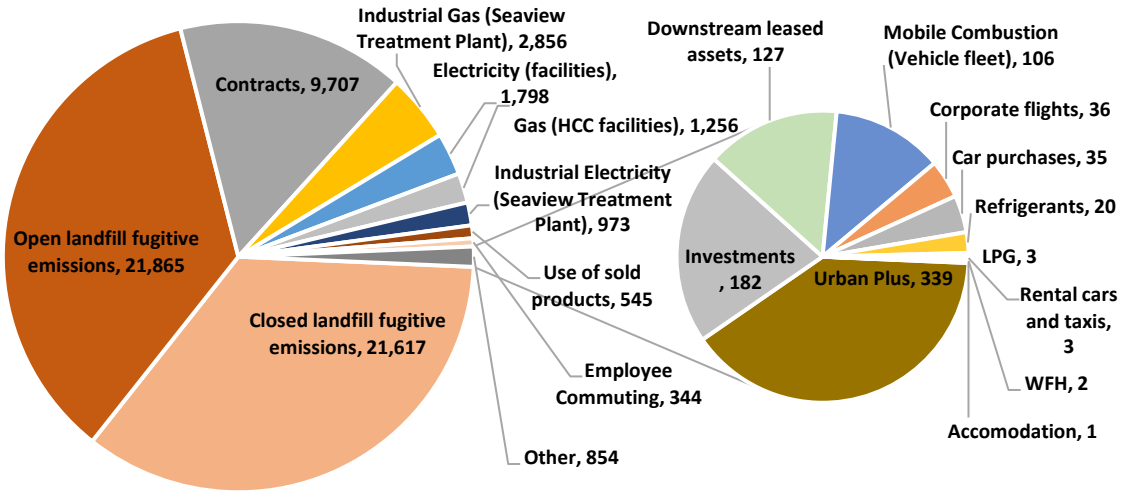
Increases in emissions have been recorded for Silverstream landfill (associated with an increase in the amount of waste received due to development activity in the city), and to a much lesser extent corporate flights, and employee commuting post the Covid-19 pandemic. Reductions in emissions have occurred in the Council's transport fleet, with 64% of vehicles now electric (compared to 58% as at March 2023).

There has also been a significant increase in emissions associated with contracts, which includes Naenae Pool as a major building and construction project. However, note that the majority of emissions associated with contracted services is still estimated by applying industry-wide emission factors to the amount of money spent in various categories. Hence, there is significant uncertainty associated with those estimates.

Lastly, industrial, and invoiced emissions for Wellington Water are based on the 2022 financial year report as the council-controlled organization was not able to provide updated data. The results are only used as a means for estimating the entities' emissions, and to avoid distorting the results if these emissions were to be excluded.

The following figure shows a detailed breakdown of emissions for 2022/23.

Figure 25: Hutt City Council emissions profile for 2022/23




Hutt City Council's largest emission sources are the open Silverstream landfill (Stage 2), and the closed Wainuiomata landfill and Silverstream landfill Stage 1/1A. Emissions from contracted services is the next biggest emission source, followed by a range of smaller sources.

## 4.3 PERFORMANCE COMPARED TO CARBON REDUCTION AND CLIMATE RESILIENCE PLAN 2021-2031

Hutt City Council (HCC) has in place its Carbon Reduction and Climate Resilience Plan 2021-31, with an organisational target to reduce emissions to net zero by 2050, and various actions to give effect to this target. Hutt City Council provides quarterly updates to its Climate Change and Sustainability Committee on progress regarding the implementation of this plan.

The latest report with a full overview on the status of each action is available online (refer report number CCASC2023/4/270, page 143) .

# APPENDIX 1 - ACTIVE AND CLOSED LANDFILL ASSESSMENT

Tonkin+Taylor

4 October 2023
Job No: 0083091.5010

Hutt City Council
Private Bag 31-912
Lower Hutt 5040

Attention: Geoffery Roberts

Dear Geoffery

**Tonkin & Taylor Wellington GHG Emissions Assessment**
**Solid Waste Projects - Financial Year 2022/23**

## Scope

Hutt City Council (HCC) | Te Kaunihera o Te Awakairangi have asked T+T to complete an annual review of greenhouse gas (GHG) emissions related to the solid waste project services T+T provides to HCC. This information will assist HCC with quantifying their overall GHG emissions and contribute to HCC's goal of reducing their GHG emissions to net zero by 2050. T+T's services for HCC include operational management, specialist advice, and capital works for Silverstream landfill, environmental monitoring of closed landfills in the Hutt City district and environmental monitoring and maintenance of Wainuiomata cleanfill.

In this letter the following is covered:

- T+T Group's Sustainability Strategy Update;
- T+T Group's Greenhouse Gas Emissions Management Update;
- Operational GHG Emissions associated with T+T's solid waste project services for HCC; and
- HCC Projects GHG Emissions Reduction Opportunities.

## T+T Group's Sustainability Strategy Update

In June 2021 we updated our strategy and published Our Pathway 2025. The pathway outlines T+T Group's Purpose, Values and Strategy in which being sustainable is embedded in everything we do. Our strategy drives our Vision and propels us toward the future. It speaks to how we will power the world toward a sustainable future, reach new clients, connect to international ideas and talent, and decide who we partner with and where we will live, work and play.

Our T+T Group Sustainability Framework (see Figure 1) provides a clear description of what 'sustainability' means at T+T Group. At the centre are our three big focus areas; Governance + Economy, Society + Culture and the Natural Environment. Surrounding these are our outcome areas - things we can influence through our operations and projects. Each outcome area maps back to the United Nations' Sustainable Development Goals and the framework for the Infrastructure

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PO Box 2083, Wellington 6140 P +64-4-381 8560 F +64-9-307 0265 E wlg@tonkintaylor.co.nz

Sustainability Council. GHG emissions including (GHG emissions) sits as a priority area within the Natural Environment portion of our Sustainable Framework.

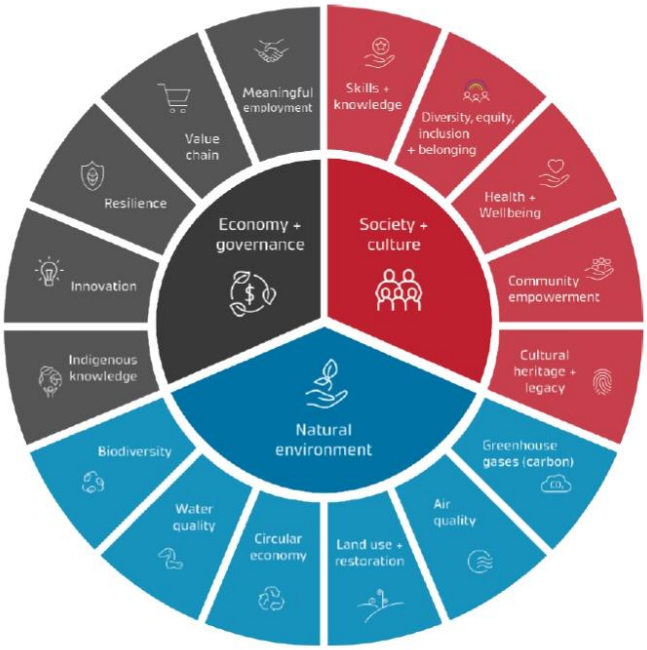


*Figure 1: T+T Sustainability Framework*

## T+T Group's Greenhouse Gas Emissions Management Update

The 'Greenhouse Gases (carbon)' outcome area is focused on climate change mitigation – reducing the impact of GHG to slow and reduce the impacts of climate change. The objective of T+T Group is to eliminate or reduce its GHG emissions associated with all our activities. We intend to achieve this through measuring our emissions and making our staff aware of them, communicating the importance of reducing emissions to our staff, adjusting our travel policies over time to reduce the amount we travel, using more energy efficient offices etc. Please refer below for further initiatives to help us reduce our emissions. T+T has been measuring and monitoring its scope 1, 2 and 3[1] GHG emissions in accordance with the requirements of the ISO 14064-1 (2018) standard since 2018. We have received independent third-party verification of our GHG emissions inventory for the 2020, 2021 and 2022 financial year ensuring it is materially complete and correct. We have offset the GHG emissions associated with our business operations since 2020, which has shown that our most significant sources of GHG emissions are the electricity in our offices, equipment, and our travel by car and plane.

**How we are improving this outcome:**

- We track our annual GHG emissions and get this information audited;
- We have set science-based targets to reduce our GHG emissions;

[1] Currently T+T Group are measuring scope 3 emissions associated with business travel. Further work is being undertaken to capture the data of other scope 3 emissions.

- Since 2020, we have also been offsetting our GHG emissions with high quality offsets;
- We have a group wide GHG Inventory;
- Have achieved Ekos-certified Zero Carbon status, making us one of the first major consulting and testing firms to become net GHG neutral;
- We have an energy and GHG reduction plan which outlines our pathway towards our targets;
- We maximise the use of virtual meetings / video conferencing;
- We use automatic car sharing notifications; and
- We engage with our internal stakeholders on our GHG reduction activities, and share our annual footprint with external stakeholders through our annual reporting.

**How we are striving to do better:**

- We are transitioning all our offices to GHG neutral electricity (eight of eleven offices transitioned as of February 2023);
- We are transitioning of our car fleet to EVs, and we address our travel through the hierarchy of avoid, reduce, replace, offset;
- We are working towards establishing a system to allow us to track our emissions on a more regular basis to support day-to-day decision making;
- As our work progresses, we will look to engage with specific stakeholders to inform our next actions;
- Near-term and long-term emissions reduction targets covering scope 1, 2 and 3 emissions in line with Science Based Targets Net-Zero standard to support the delivery of reductions needed to limit future warming to 1.5 degrees Celsius;
  - 51% reduction by 2030 compared to 2018 baseline;
  - 90% reduction by 2040 compared to a 2018 baseline;
- Develop detailed GHG emissions action plan for future activities;
- Assess categories of procurement spend associated with high GHG; and
- Require Manager sign off for flights.

## Operational GHG Emissions Associated with T+T's Services for HCC

T+T started collating the T+T Group GHG emissions from January 2018 as such, T+T can provide emissions data for the last five HCC financial years (July to June). We have calculated the operational GHG emissions for Scope 1, 2 and 3 in line with the Ministry for the Environment's (MfE) guidelines (see Appendix A for list of scope inclusions and exclusions). The scope associated results are reported below.

### Annual Assessment Results

T+T's operational GHG emissions associated with the HCC projects for FY 2022/23 have increased on a tonne of $CO_2e$ basis by 34%, since the last financial year (2021/22), from 3.08 $tCO_2e$ to 4.13 $tCO_2e$. This increase is due to an increase in the scope of works of the programme following the COVID-19 pandemic, resulting in an increase in travel to site and air travel. When assessing the emissions intensity in $tCO_2e$ per $100,000 of fees spent on HCC's projects, the emissions remain consistent with the previous financial year period (0.24 $tCO_2e$ per $100,000) and show a 57% decrease since FY 2018/19. This data demonstrates the success of reduction initiatives implemented in the past five years. A full breakdown of emissions by scope for the past five financial years is provided in Table 1 and Figure 2 below.

**Table 1: T+T GHG emissions associated with HCC projects**

| Scope | FY 2018/19 | | FY 2019/20 | | FY 2020/21 | | FY 2021/22 | | FY 2022/23 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | T $CO_2e$ | % | T $CO_2e$ | % | T $CO_2e$ | % | T $CO_2e$ | % | T $CO_2e$ | % |
| Scope 1 | 4.24 | 78 | 3.84 | 85 | 3.52 | 88 | 2.87 | 93 | 3.13 | 76 |
| Scope 2 | 0.50 | 9 | 0.52 | 11 | 0.29 | 7 | 0.22 | 7 | 0.14 | 3 |
| Scope 3 | 0.73 | 13 | 0.16 | 3 | 0.20 | 5 | 0.00 | 0 | 0.86 | 21 |
| **Total** | **5.47** | **100** | **4.52** | **100** | **4.02** | **100** | **3.09** | **100** | **4.13** | **100** |
| $tCO_2e$ per $100,000 spent | 0.56 | | 0.47 | | 0.35 | | 0.24 | | 0.24 | |

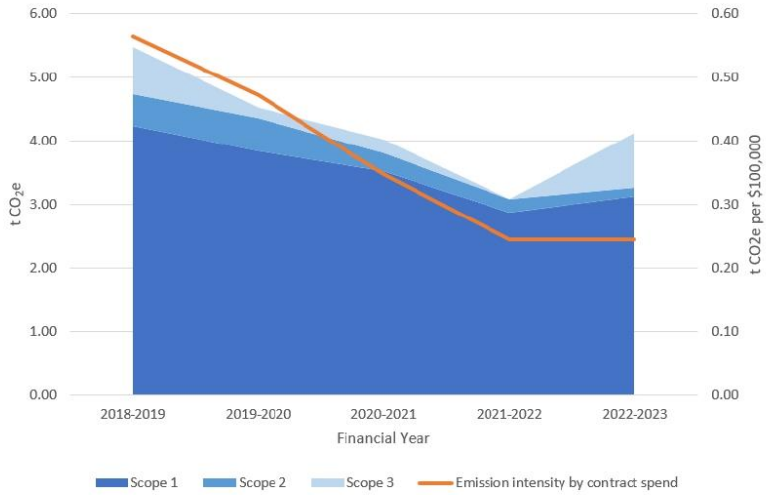


*Figure 2: Tonkin + Taylor - Hutt City Council Projects GHG Emissions 2018 to 2023*

Since T+T started to record GHG emissions for HCC we have seen a steady decrease in emissions intensity by contract spend. Most notably the addition of the PHEV Mitsubishi Outlander to the T+T Wellington fleet which has priority use for HCC projects, contributed to this reduction in GHG emissions. This has reduced the emissions intensity per km travelled of the T+T fleet for HCC projects from 0.224 $tCO_2e$ per km (FY 2018/19) to 0.186 $tCO_2e$ per km (FY 2022/23). We will continue to implement the emissions reduction initiatives discussed in Table 2, although it is likely that due to the activities required on these projects, which require site presence from T+T, reductions of this magnitude will plateau in the next few years or increase slightly. This is due to the expected need for our presence on site in association with increased CAPEX works required, i.e. development of Silverstream Landfill Stage 2 phase 3 and the asbestos cell.

## HCC Projects GHG Emission Reduction Opportunities

Detailed in Table 2 are emissions reductions opportunities for T+T's HCC projects. It details the opportunity, current progress, expected emissions savings and the period for implementation including short (1 – 12 months), medium (1 – 3 years) and long term (>3 years).

**Table 2: Emission reduction opportunities**

| Reduction opportunity | Reduction option reference | Progress | | Scope area *(Scope 1, Scope 2, or Scope 3)* | Period for implementation *(Implemented, short, medium, or long term)* | Estimated / actual emissions savings *($tCO_2e$ per annum)* |
|---|---|---|---|---|---|---|
| | | Progress and ongoing action | Implementation date / period | | | |
| Remote meetings to be held with HCC and contractors to reduce travel where possible | 1 | T+T continues to meet with HCC and contractors remotely where feasible (site visit or monitoring works are not required). This will continue moving forward. | Pre 2020 | Scope 1 | Implemented | Actual – 0.34 $tCO_2e$ per annum[2] |
| Utilising low emissions vehicles for travel to/from site and other project related travel. | 2.1 | T+T will continue to utilise low emissions car share vehicles (Cityhop and Mevo) where T+T's low emissions pool vehicles are unable where possible. | 2020 onwards | Scope 1 | Implemented | Actual – 0.02 tCO2e per annum[3] |
| | 2.2 | T+T replaced a 2010 Subaru Forrester with a 2022 PHEV Mitsubishi Outlander in October 2022. This vehicle is currently prioritised for HCC projects.[4] From 2024 onwards the PHEV will continued be used for HCC project work as far as possible with it also being available for other T+T project work as required. This is to ensure T+T Wellington office also benefit from the emissions reduction benefits of the PHEV. | October 2022 | | Implemented | Actual – 0.68 $tCO_2e$ per annum[5] |
| | 2.3 | In August 2022 T+T undertook a feasibility study investigating the addition of an electric all-terrain vehicle (ATV) the eTuatara for on-site use. The study concluded that investment was best directed to the emissions savings which can be | To be confirmed | | Long term | Potential – 1.02 $tCO_2e$ per annum[6] |

[2] T+T have reduced on-site meeting requirements which has saved on average 24 return trips to Silverstream Landfill per year.
[3] Travelling on average 300km per year in Cityhop vehicles.
[4] T+T's Company Vehicle Policy and Procedures detail the purchasing and replacement criteria of vehicles, and any commitments within this letter will be in accordance with this policy.
[5] Assuming 50% of all travel to take place in the PHEV Mitsubishi Outlander once in fleet.
[6] Assuming all travel to site will take place in low emission vehicle (Prius or PHEV Mitsubishi Outlander) and travel around site will take place in an eTuatara.

| Reduction opportunity | Reduction option reference | Progress | | Scope area *(Scope 1, Scope 2, or Scope 3)* | Period for implementation *(Implemented, short, medium, or long term)* | Estimated / actual emissions savings *($tCO_2e$ per annum)* |
|---|---|---|---|---|---|---|
| | | Progress and ongoing action | Implementation date / period | | | |
| | | achieved travelling to and from site. As such a PHEV was acquired by T+T which is prioritised for HCC project work (reference reduction option 2.2).<br>As more low emissions and affordable 4WD and ATV vehicles become available in New Zealand T+T will evaluate these options to further reduce emissions associated with project work. | | | | |
| | 2.4 | T+T will continue to upgrade the Wellington fleet to include PHEV and BEV where possible. We note that 4WD PHEV and BEV are not currently readily available in New Zealand. This effects the ability for T+T to upgrade the fleet in line with the needs of the business, ensuring the vehicles are fit for purpose. | 2025 onwards | | Medium/Long term | Potential – 0.56 $tCO_2e$ per annum |
| Reduced travel to site. | 3 | We aim to reduce travel to site where possible. This is highly dependent on the programme of works for all HCC facilities (e.g. Silverstream landfill and closed landfills). During 2022/23 there was an increase in emissions associated with travel to site as expected due to programme. An additional 3,626 km by travel in vehicles were completed which is 33% more than in FY 2021/22. Although there was an increase in kilometres the kg CO2e per km has decreased from 0.229 in FY 2021/22 to 0.201 in FY 2022/23 due to the priority use of the PHEV. | 2021 onwards | Scope 1 | Implemented / on-going | Variable due to programme of works[7] |

[7] Emissions in relations to the reduction of travel to site is variable due to the programme of works in a given financial year. Reduction opportunity 2.4 will continue to contribute towards the reduction in emissions associated with travel to HCC sites.

| Reduction opportunity | Reduction option reference | Progress | | Scope area *(Scope 1, Scope 2, or Scope 3)* | Period for implementation *(Implemented, short, medium, or long term)* | Estimated / actual emissions savings *($tCO_2e$ per annum)* |
|---|---|---|---|---|---|---|
| | | Progress and ongoing action | Implementation date / period | | | |
| Utilise telemetry equipment where possible. | 4.1 | During FY 2021/22, T+T increased the use of telemetry equipment and monitoring leachate pumping and leachate level depths remotely. As of FY 2021/22 gas well monitoring has also been outsourced to LMS, who are based at Silverstream landfill reducing travel related emissions on the project significantly. These initiatives have in turn reduced travel required to site with a reduction of 1,000km from FY 2020/21 to FY 2021/22. | 2020 onwards | Scope 1 | Implemented / on-going | Actual – 0.24 $tCO_2e$ per annum |
| | 4.2 | The telemetry at Silverstream Landfill continued to be expanded in FY 2022/23 with the implementation of the leachate pump and dam safety monitoring systems. Over the previous year, the landfill telemetry was instrumental in promptly responding to GWRC concerns around Silverstream's discharge water quality. | 2022/23 | | Implemented / on-going | Potential – 0.17 $tCO_2e$ per annum[8] |
| Install EV chargers in the Wellington office. | 5.1 | During November 2022 T+T installed an EV charger to support the PHEV Mitsubishi Outlander added to the fleet. | Implemented | Scope 1 | Medium term | Potential – 0.16 $tCO_2e$ per annum[9] |
| | 5.2 | During FY 2023/24 T+T will be moving office to a Green Star accredited building which will have EV charging facilities in all our designated car parks. This infrastructure will allow for the upgrade in our fleet as per reduction option 2.4. | 2023/24 | | Short term | Reference reduction option 2.4 |

[8] T+T have reduced the need for in person site visits by one per month with the telemetry equipment. Reducing 768km of travel over the year.
[9] Potential emission saving reflective of greater use of PHEV Mitsubishi Outlander for HCC project related travel.

| Reduction opportunity | Reduction option reference | Progress | | Scope area *(Scope 1, Scope 2, or Scope 3)* | Period for implementation *(implemented, short, medium, or long term)* | Estimated / actual emissions savings *($tCO_2e$ per annum)* |
|---|---|---|---|---|---|---|
| | | Progress and ongoing action | Implementation date / period | | | |
| Communicating HCC's zero GHG initiative with contractors to assess how we can assist them with emissions reductions. | 6 | T+T have incorporated sustainability and emissions initiatives as an agenda item into regular meetings with contractors. | 2021 onwards | All scopes | Short term | Potential – unknown[10] |
| Emissions reduction support to the client | 7.1 | T+T will be supporting and undertaking an active role in HCC's initiative to install EV chargers for heavy plant at Silverstream landfill for the use of contractors, members of the public and HCC staff. This includes the electrification of the landfill compactor, which is a first in NZ. | 2023/24 | Scope 1 | Medium term | Potential – unknown |
| | 7.2 | In October 2022, T+T investigated the viability of a low permeability fill (LPF) alternative on Slopes 10 and 11 in Phase 2 and Slope 12 in Phase 5. The comparison was between the use of LPF and geosynthetic clay liner (GCL) on these slopes and assessing the alternative design against the existing design for GHG emissions, cost, and construction impact.<br>The outcome of the investigation indicated the GCL option's GHG emissions were 9.5 times less than that of the LPF option. Utilising the GCL on the proposed slopes will generate additional revenue for the Council and add several months of airspace for the landfill. | 2023/24 ongoing | n/a | Medium term | 0.047/$m^2$ |
| | 7.3 | T+T will be considering sustainability, carbon reduction and material used within the Stage 2 | 2023/24 | n/a | Medium term | Potential – unknown |

[10] Any emission savings will not contribute to T+T's emissions inventory.

| Reduction opportunity | Reduction option reference | Progress | | Scope area *(Scope 1, Scope 2, or Scope 3)* | Period for implementation *(Implemented, short, medium, or long term)* | Estimated / actual emissions savings *($tCO_2e$ per annum)* |
|---|---|---|---|---|---|---|
| | | Progress and ongoing action | Implementation date / period | | | |
| | | Phase 3 design. T+T plan to host a sustainability workshop in late 2023 or early 2024. | | | | |

## The Future

As mentioned in T+T's Sustainability Strategy section above, to achieve T+T's purpose, we are working collaboratively with our clients to create and sustain a better world. T+T will continue to support HCC initiatives which align with Our Pathway 2025.

We will continue to provide HCC with an annual report detailing our operational GHG emissions associated with HCC projects at no cost to Council. The document will include the breakdown of emissions by each scope and tonnes of $CO_2e$ per $100,000 spent. We will provide this report to HCC at the end of September following the HCC's financial year reporting period (July – June).

## Applicability

This report has been prepared for the exclusive use of our client Hutt City Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Report prepared by:

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Environmental Scientist

Report reviewed by:

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Michelle van Niekerk
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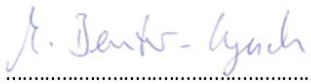
Report reviewed by:



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Markus Benter-Lynch
Sustainability and Climate Change Specialist

Authorised for Tonkin & Taylor Ltd by:

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Simon Grundy
Project Director

4-Oct-23
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# Appendix A Scope Inclusions and Exclusions

**Appendix A Table 1: Scope inclusions and exclusions FY 2022/23**

| Scope | Emissions source | Included or excluded | Reason for exclusion |
|---|---|---|---|
| Scope 1 | T+T fleet | Included | N/A |
| | Geotechnics fleet | Included | N/A |
| | Personal mileage | Included | N/A |
| | Credit card fuel | Excluded | Credit card fuel purchases were assessed for FY 18/19, FY 19/20 and FY 20/21. There were no fuel expenses on credit cards for pool vehicles during these years, as fuel cards are available in each vehicle. Therefore, this item was deemed de minimis[11] for FY 21/22 and FY 22/23. |
| Scope 2 | Wellington office electricity | Included | N/A |
| | Other New Zealand offices electricity | Included | N/A |
| | Australian offices electricity | Excluded | Hours worked on HCC projects from our Australian offices were calculated for FY 18/19, FY 19/20 and FY 20/21. In FY 20/21 this represented 0.02% of total emissions. Therefore, this item was deemed de minimis for FY 21/22 and FY 22/23. |
| | Working from home emissions | Excluded | Assumptions for hours spent working from home on HCC projects were calculated for FY 18/19, FY 19/20 and FY 20/21. During these periods the highest emissions were report in FY 19/20 as 1.59% of total emissions. Therefore, this item was deemed de minimis for FY 21/22 and FY 22/23. |
| Scope 3 | Flights | Included | N/A |
| | Taxis | Excluded | Taxi travel was assessed for FY 18/19, FY 19/20 and FY 20/21. There were no taxi travel expenses during these years. Therefore, this item was deemed de minimis[12] for FY 21/22 and FY 22/23. |

[11] As per the Ministry for the Environment Emission Guidance August 2023 '*GHG emissions may contribute such a small portion of the inventory that they make up less than (for instance) 1 per cent of the total inventory. These are known as de minimis and may be excluded from the total inventory, provided that the total of excluded emissions does not exceed the materiality threshold set by your organisation*'. T+T Group have established a 5% materiality threshold.

[12] As per the Ministry for the Environment Emission Guidance August 2023 '*GHG emissions may contribute such a small portion of the inventory that they make up less than (for instance) 1 per cent of the total inventory. These are known as de minimis and may be excluded from the total inventory, provided that the total of excluded emissions does not exceed the materiality threshold set by your organisation*'. T+T Group have established a 5% materiality threshold.

| Scope | Emissions source | Included or excluded | Reason for exclusion |
|---|---|---|---|
| | Credit card travel expenses | Excluded | Credit card travel expenses were assessed for FY 18/19, FY 19/20 and FY 20/21. During these periods the highest emissions associated with travel from credit cards was in FY 18/19 as 0.6% of total emissions. Therefore, this item was deemed de minimis for FY 21/22 and FY 22/23. |
| | City Hop rental | Excluded | City Hop rental was assessed for FY 18/19, FY 19/20 and FY 20/21. During these periods the highest emissions associated with travel from credit cards was in FY 20/21 as 1.31% of total emissions. Therefore, this item was deemed de minimis for FY 21/22 and FY 22/23. |
| | Other rental vehicles | Excluded | Other rental vehicles were assessed for FY 18/19, FY 19/20 and FY 20/21. There were no other rental vehicle expenses during these years. Therefore, this item was deemed de minimis[13] for FY 21/22 and FY 22/23. |
| | Ferry | Excluded | Ferry travel was assessed for FY 18/19, FY 19/20 and FY 20/21. During these periods the highest emissions associated with ferry travel was in FY 20/21 as 0.01% of total emissions. Therefore, this item was deemed de minimis for FY 21/22 and FY 22/23. |

[13] As per the Ministry for the Environment Emission Guidance August 2023 '*GHG emissions may contribute such a small portion of the inventory that they make up less than (for instance) 1 per cent of the total inventory. These are known as de minimis and may be excluded from the total inventory, provided that the total of excluded emissions does not exceed the materiality threshold set by your organisation*'. T+T Group have established a 5% materiality threshold.

# Appendix B T+T Wellington Fleet

**Appendix B Table 1: T+T's fleet utilised during FY 2022/23**

| Vehicle brand and model | Fleet owner | Vehicle type | 4WD / 2WD[1] | Year of Registration | Emissions factor[2] |
|---|---|---|---|---|---|
| Toyota Prius | T+T | Petrol (hybrid) | 2WD | 2015 | 0.130 |
| Mitsubishi Outlander | T+T | Petrol hybrid (PHEV) | 4WD | 2022 | 0.163 |
| Toyota Corolla | T+T | Petrol | 2WD | 2010 | 0.178 |
| Subaru Forrester | T+T | Petrol | 4WD | 2016 | 0.206 |
| Subaru Outback | T+T | Diesel | 4WD | 2015 | 0.206 |
| Subaru Outback | T+T | Petrol | 4WD | 2010 | 0.223 |
| Subaru Forrester | T+T | Petrol | 4WD | 2010 | 0.223 |
| Mitsubishi Triton | Geotechnics | Diesel | 4WD | 2016 | 0.223 |
| Mitsubishi Triton | Geotechnics | Diesel | 4WD | 2019 | 0.223 |
| Mitsubishi Triton | T+T | Diesel | 4WD | 2019 | 0.223 |
| Toyota RAV4 | Geotechnics | Diesel | 4WD | 2014 | 0.238 |
| Toyota Hilux | T+T | Diesel | 4WD | 2012 | 0.264 |

1 – 2WD (2 Wheel Drive) and 4WD (4 Wheel Drive/all wheel drive)

2 – Ministry for the Environment (MfE) 2023 emissions factors have been used in calculations

# APPENDIX 2 – INDEPENDENT REVIEW OF REPORT

LUMEN

Engineering for
a better future

14 March 2024

Shane Gogo
Advisor - Energy & Carbon
Hutt City Council
Shane.Gogo@huttcity.govt.nz

Dear Shane,

## Hutt City Council – Organisational Carbon Footprint: Peer review

I have completed my peer review of the council's Organisational Carbon Footprint report, for the council's financial year which runs July 2022 to June 2023.

I have reviewed the overall methodology, calculations, emissions factors, and source data. Below are my findings.

## 1. Summary of findings

1.1 Discrepancy found in how embodied emissions from cars (capital goods) were being calculated vs how the standard followed (GHGP) suggests they should be calculated. Recommend removing the depreciation calculation and only account for capital investments made during the financial year.

- This has been sufficiently addressed. 14/3/24

1.2 Embodied emissions from cars were incorrectly categorised as purchased goods rather than capital goods.

- This has been sufficiently addressed. 14/3/24

1.3 Emissions from Seaview marina was excluded due to lack of updated data; however, this makes comparison difficult. Recommend leaving in the last reported data and including a disclaimer to explain.

- This has been sufficiently addressed. 14/3/24

1.4 IT – as recognised, the data from Microsoft seems to be out by at least a factor of 1000. Recommend not using until more reliable data is available.

- This has been sufficiently addressed. 14/3/24

1.5 Employee commuting current approach does not extrapolate the sample data to the population. Recommend extrapolation using FTE.

- This has been sufficiently addressed. 14/3/24

Yours sincerely,

George Gray
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