



QUEENSTOWN LAKES DISTRICT COUNCIL

Corporate Greenhouse Gas Emissions FY2019

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Glossary

Greenhouse Gas	Greenhouse gases (GHG) are gases that influence the way in which the Earth's atmosphere traps heat. Increasing levels of GHGs in the atmosphere are causing the phenomenon of climate change.
Carbon Dioxide Equivalent (CO₂e)	A standard unit for measuring carbon footprints. The impact of each different GHG is expressed in terms of the global warming potential (GWP) of one unit of CO ₂ . Standard ratios are used to convert gases into equivalent amounts of CO ₂ ; these are based on each gas's GWP.
GHG Inventory	A measure of the amount of GHGs emitted by an organisation. Typically expressed in terms of CO ₂ e, and for a 12-month reporting period. Used interchangeably with carbon footprint.
Emission Factor	A metric that converts a specific emission source - such as a litre of diesel - into terms of CO ₂ or CO ₂ e.
Global Warming Potential	A measure of a gas's ability to cause radiative forcing in the atmosphere (or global warming) relative to the ability of CO ₂ . For example, methane has 25 times the GWP of CO ₂ over 100 years, and 72 times the GWP over 20 years. Thus it is 25 times more potent over 100 years and 72 times more potent over 20 years contributing to global warming than CO ₂ . The difference is due to the rate at which it is broken down by natural processes.
Greenhouse Gas Protocol	This Standard provides guidance for companies preparing a GHG emissions inventory. It defines three Scopes (or operational boundaries) for accounting and reporting purposes (explained below).
Scope 1 Emissions	Direct greenhouse gas emissions that occur from sources owned or controlled by Queenstown Lakes District Council, such as emissions from the combustion of diesel in the vehicle fleet.
Scope 2 Emissions	Emissions associated with the purchase of electricity that is consumed by Queenstown Lakes District Council.
Scope 3 Emissions	An optional reporting category that covers all other indirect emissions. These emissions are a consequence of Queenstown Lakes District Council's activities but occur from sources it does not own or control. Examples include the embodied carbon in materials, and business travel.

Executive Summary

Queenstown Lakes District Council commissioned CarbonEES to calculate its organisational greenhouse gas (GHG) inventory for their financial year 2018-2019.

This inventory is a calculated estimate of all GHGs emitted as a result of activities under the control of Queenstown Lakes District Council between 1st July 2018 and 30th June 2019. FY 18/19 was chosen as the corporate baseline since COVID-19 has created a distortion in FY 19/20, which if used, would create a flawed baseline.

This report serves to compare key emission sources to the baseline year, provide recommendations on carbon reducing opportunities and importantly demonstrate to key stakeholders that the Queenstown Lakes District Council is actively involved in measuring, monitoring, and managing its GHG emissions.

Organisational GHG emissions for Queenstown Lakes District Council for the 2018/19 reporting period are calculated to be **25,219 tonnes carbon dioxide equivalent (tCO₂e)**.

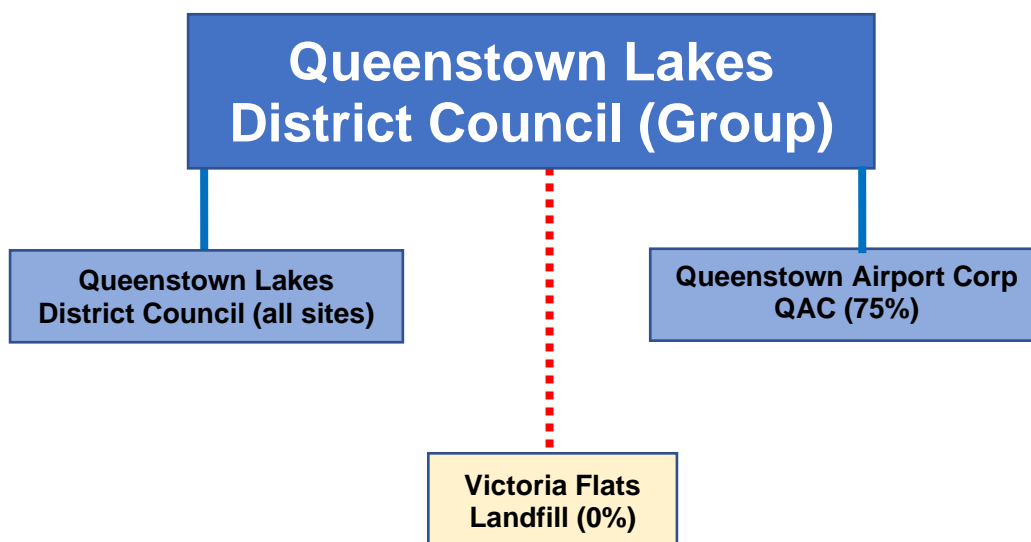
Methodology

The Queenstown Lakes District Council GHG Emissions Report was developed in accordance with the “Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard” (2004). The emissions calculations for Scope 3 emission sources were informed by “Corporate Value Chain (Scope 3) Accounting and Reporting Standard” (2011).

Boundary

The geographic boundary of the Queenstown Lakes District Council is defined by the location of Queenstown Lakes District Council’s facilities. The organisational boundary follows an operational control approach. As such, this emissions inventory includes all sources associated with activities Queenstown Lakes District Council had operational control (authority to introduce and implement operating policies) over in the period 1st July 2018 to 30th June 2019. Emissions from the landfill have been reported in the inventory as “outside of boundary” as Scope Resources Limited is contracted to operate the landfill on behalf of the Queenstown Lakes and Central Otago Districts.

Figure 1 - Queenstown Lakes District Council organisational boundary



Legend

No ownership, no control - - - - -

Ownership and control —

Results

Overall, it was calculated that total GHG emissions from Queenstown Lakes District Council were 25,219 tonnes of CO₂e from 2019/20.

Most of the emissions were a result of capital goods (primarily from roading and water supply) (49.5%), wastewater treatment (19.9%), purchased goods and services (14.9%) and purchased electricity (6.7%).

A high-level breakdown of the emission sources and their related gross emissions is provided below.

Figure 2 – Top emissions sources and their related gross emissions tCO₂e

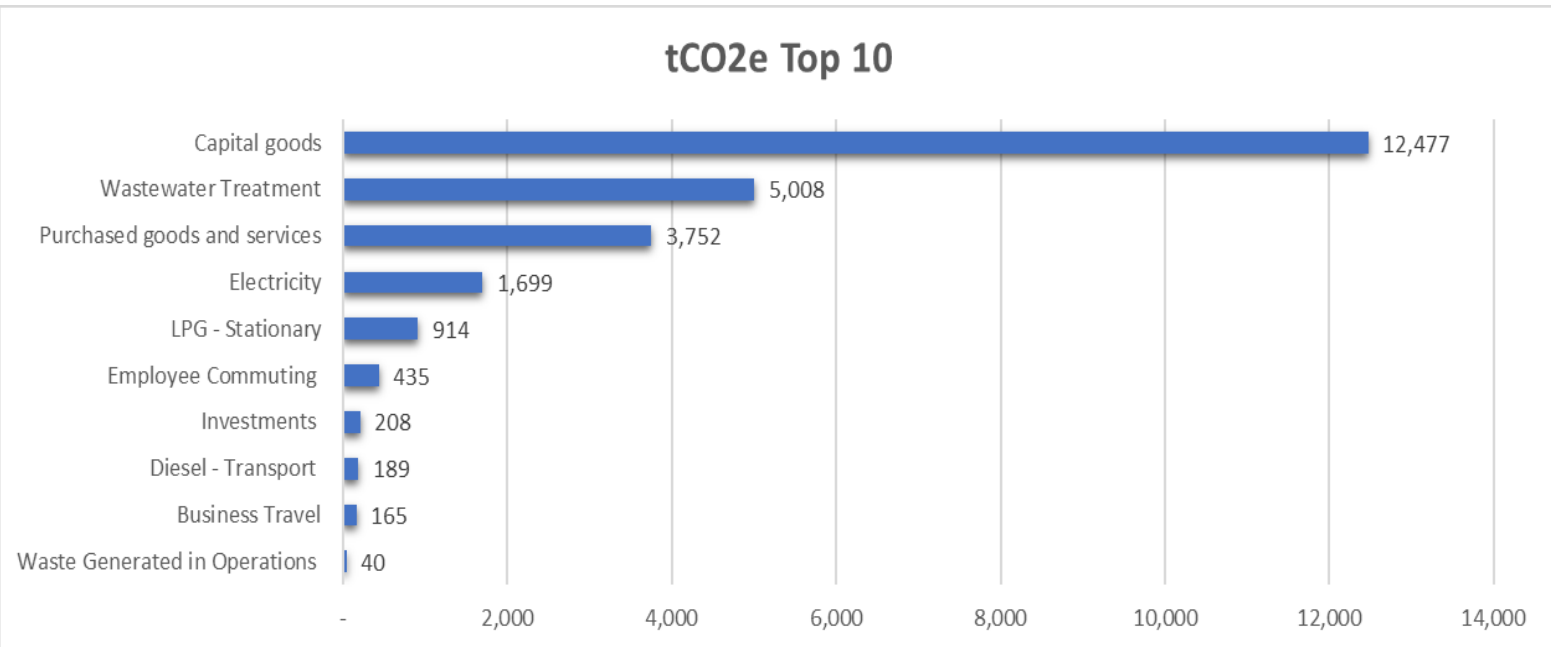


Table 1 – Gross emissions by scope and their proportions

Scope	tCO ₂ e	% of Total
Scope 1 – Direct Emissions (Fuel, WWTP)	6,149	24%
Scope 2 – Indirect Emissions (Electricity)	1,699	7%
Scope 3 – Other Indirect Emissions	17,371	69%
Total	25,219	tCO₂e

Opportunities and Recommendations

We see opportunities to reduce organisational emissions around landfill, wastewater treatment, and sustainable procurement.

We recommend:

- Looking at opportunities to reduce water treatment emissions by first gathering primary data via direct methane emission measurements, then exploring process improvements to reduce methane emissions.
- Implement sustainable procurement policies and guidelines to select relevant providers and require larger contract providers to estimate and report their Scope 1 and Scope 2 emissions (at a minimum) and demonstrate their reduction performance.
- Discuss with supply chain the need for readily available supply data so these can be easily reported on. E.g., refrigerant suppliers, which had to be left out of this report due to an inability to obtain the data.

1.0 Introduction

Queenstown Lakes District Council commissioned CarbonEES in December 2019 to calculate its organisational greenhouse gas (GHG) inventory. This report contains the results and discussion around that assessment and provides recommendations on possible GHG emission reduction measures.

This GHG inventory is a calculated estimate of all GHGs emitted as a result of activities under the control of the Queenstown Lakes District Council between 1st July 2018 and 30th June 2019.

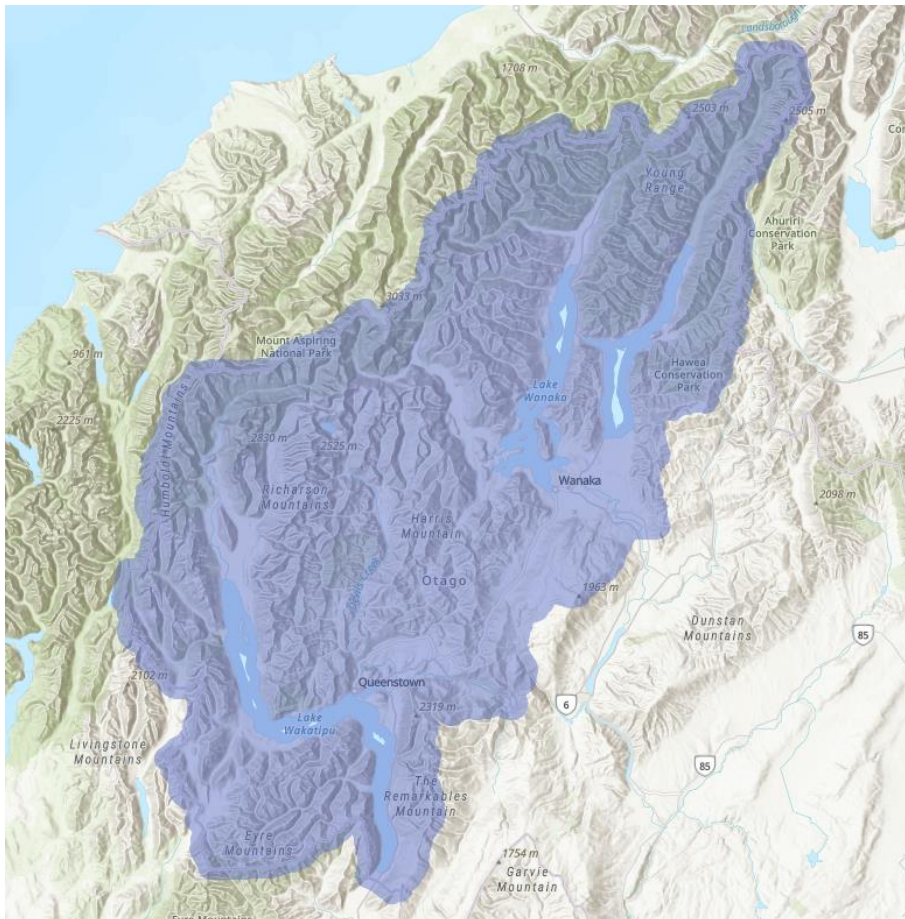
The objectives of this foot-printing project are to:

- Provide information to the Queenstown Lakes District Council on their overall organisational GHG emissions for Scope 1, 2 and 3 emission sources.
- Highlight key emission sources for future management.
- Recommend high level actions that would enable the Queenstown Lakes District Council to reduce its emissions.
- Provide a GHG emissions baseline to measure future performance against and to provide the context to set an organisational emissions target.

2.0 Methodology

This assessment follows the guidelines in the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*, published by the World Business Council for Sustainable Development and the World Resources Institute, 2004. This section covers the following areas: boundary definition and exclusions, emission factors, activity data, assumptions, and limitations.

Figure 3 – Queenstown Lakes District Council geographic boundary



Source: ARCGIS (2021)

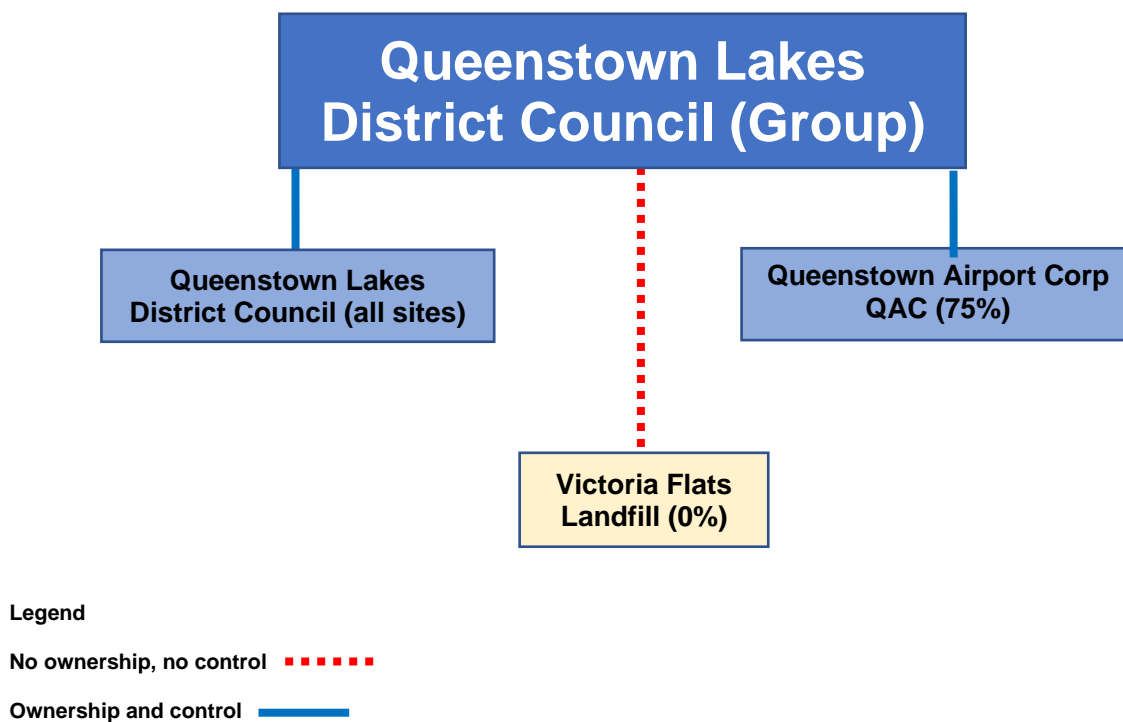
2.1 Organisational Boundary

When undertaking an emissions inventory study, it is essential to first establish the organisational boundary for the inventory. In this study, the organisational boundary is defined using the operational control approach.

As such, this emissions inventory includes all sources and sinks associated with activities where Queenstown Lakes District Council has control and the full authority to introduce and implement its operating policies.

Figure 1 illustrates the organisational boundaries as defined in this report. Queenstown Lakes District Council includes council owned and operated sites but does not include sites owned but not operated by council. These are considered outside of the organisational boundary due to no operational control.

Figure 1 - Queenstown Lakes District Council organisational boundary



2.1.1 Exclusions

The following emissions have been excluded from the organisational GHG emissions inventory.

Table 2 - Emission sources excluded from Queenstown Lakes District Council GHG emissions inventory.

Potential emission source	Reason for Exclusion
Fugitive emissions from vehicles (Scope 1)	Consumption data unavailable. These emissions are assumed to be de minimis (<1%).
Refrigerant usage (Scope 1)	Unable to obtain data from supplier. Recommend discussion with supplier to obtain this going forward.
Upstream leased assets (i.e., assets leased by 3rd parties - Scope 3, Category 8)	No operational control.
Upstream transportation and distribution [Postal Service] (Scope 3, Category 4)	Unable to obtain data. As only a very small amount is sent, believed to be de minimis (<1%).
Downstream transportation and distribution (Scope 3, Category 9)	Consumption data unavailable. These emissions are assumed to be de minimis (<1%).
Processing of sold products (Scope 3, Category 10)	Not applicable.
Use of sold products (Scope 3, Category 11)	Not applicable.
End-of-life treatment of sold products (Scope 3, Category 12)	Not applicable.
Downstream leased assets (i.e., assets leased to 3rd parties – Scope 3, Category 13)	Not applicable.
Franchises (Scope 3, Category 14)	Not applicable.

2.2 Operational Boundary

Within the organisational boundary, an operational boundary of emission sources or activities is then defined. Using the operational control approach, all direct emission sources within the organisational boundary defined above are reported as Scope 1, with all remaining emissions reported as Scope 2 or 3 emissions. The table below provides more explanation on the concept of Scope.

Table 3 - Scopes as defined in the Greenhouse Gas Protocol

	Definition	Example
Scope 1: Direct emissions	Direct emissions that occur from sources owned or controlled by Queenstown Lakes District Council	The combustion of fuels in the vehicle fleet
Scope 2: Electricity indirect emissions	Emissions associated with the generation of electricity that is purchased by Queenstown Lakes District Council	Electricity consumed in Queenstown Lakes District Council buildings
Scope 3: Other indirect emissions	Emissions that are a consequence of Queenstown Lakes District Council's activities, but from sources they do not own or directly control	Purchased goods and air travel

2.3 Inventory Emission Sources, Emission Factors and Activity Data

This section describes the activities covered within each Scope. A brief description is provided on each activity, covering where activity data was collected and where emission factors were sourced, along with a comment on the data quality (see Appendix A for details). Emission factors all include the 7 greenhouse gases (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃) in accordance with requirements under the GHG Protocol. All emissions factors convert to carbon dioxide equivalents (CO₂e) based on the global warming potential (GWP) of the GHG. Emission factors are derived from a range of sources, principally from MfE (2020) with missing factors acquired from DEFRA (2019), Motu (2014). In the case of wastewater calculations, the newest guidelines from Water NZ (2020) were applied to data gathered from Tonkin & Taylor (2020), Deta Consulting (2020), Bloomberg, Lovett & Rissmann (2018); (Beca 2020) and (Beca 2021). The individual sources are provided in the accompanying Excel spreadsheet.

2.3.1 Scope 1 Direct Emissions

Wastewater Treatment

Queenstown Lakes District Council is responsible for treating community wastewater for residents within the district boundary. The treatment occurs at five plants. GHG emissions were derived from reports undertaken by Beca (2020 & 2021) and Bloomberg et al (2018). The emissions factors were taken from Water NZ (2021); Data quality is considered satisfactory (E2).

Stationary Fuel Combustion (LPG)

LPG is used at Queenstown Lakes District Council sites for water and space heating. Fuel consumption has been provided by Rock Gas and the emission factor were taken from MfE (2020). Both activity data and emission factors are considered to be robust (M1).

Mobile Fuel Combustion (Diesel, Petrol)

Queenstown Lakes District Council has both petrol and diesel vehicles in its fleet. Fuel consumption data has been provided by Z Energy. Emission factors were taken from MfE (2020). Both activity data and emission factors are considered to be robust (M1).

Rental Car (Petrol)

Petrol has been consumed in rental car vehicles which council used during the financial year. Distanced travelled (kms) consumption data has been provided by Avis Rental Cars. Emission factors were taken from MfE (2020). Both activity data and emission factors are considered to be robust (E1).

Fugitive Emissions (Refrigerants) - OMITTED

This covers the leakage of refrigerant gases used in refrigeration systems and the heating, ventilation and cooling (HVAC) systems of council operated sites. Though used by QLDC, they have unfortunately been unable to secure this information from suppliers.

2.3.2 Scope 2 Indirect Emissions**Purchased Electricity**

Electricity is used at all Queenstown Lakes District Council sites for council offices, water pumps and wastewater treatment. Electricity consumption data has been provided by Meridian and Genesis Energy. Emission factors were provided by MfE (2020) for the 2018 calendar year. Both activity data and emission factors are considered to be of a high quality (M1).

2.3.3 Scope 3 Other Indirect Emissions**Purchased Goods and Services**

Activity data for these Scope 3 indirect emission sources were extracted from the Queenstown Lakes District Council's OPEX summary that was provided by council. Contractor fuel emissions were calculated using a factor from MfE (2020). The remainder of the emissions under this category were estimated based on Motu (2014) emissions factors for average industry sectors and activities in New Zealand. Both the quality of the activity data and the emissions factors are considered to be satisfactory (E2).

Capital Goods

Activity data for these Scope 3 indirect emission sources were extracted from the Queenstown Lakes District Council's CAPEX summary that was provided by council. These include upstream construction and manufacturing emissions. The emissions under this category were estimated based on Motu (2014) emissions factors for average industry sectors and activities in New Zealand. Both the quality of the activity data and the emissions factors are considered to be satisfactory (E2).

Fuel and Energy-Related Activities

As this category estimates the upstream emissions from fuel and energy use, activity data is the same as the relevant Scope 1 and 2 emissions sources (Electricity, Petrol, Diesel) already mentioned. Emissions factors were from MfE (2020) and DEFRA (2019). This data is considered to be of a high quality (M1).

Waste Generated in Operations

Data presented was based upon a waste audit conducted by Envision Ltd in 2019, over several days. As the audit was conducted at two sites, Queenstown Event Centre and Church St offices, waste numbers were extrapolated based on current staff numbers. Per day data was used to estimate the year's waste generation. Emissions factors for recycling were from David et. al. (2015) and factors for waste were taken from MfE (2020). This data is considered to be satisfactory (E2).

Upstream Transportation and Distribution- OMITTED

These are the emissions from postal, courier and delivery. Activity data was unavailable; however, and OPEX calculations were unable to be obtained, within the required timeframe.

Business Travel

Air Travel - data has been provided by Air New Zealand and has been reported for “Domestic”, “Short haul”, and “Long haul”. The emissions factors applied to this data have been sourced from MfE (2020). Both activity data and emission factors are considered to be of a high quality (M1).

Accommodation - The emissions under this category were estimated based on spending reports provided by QLDC and an average NZ room night of \$150. Emissions factors were from MfE (2020). Both the quality of the activity data and the emissions factors are considered to be of a high quality (E1).

Employee Commuting

Employee commuting was estimated based on an employee commuting survey conducted by Abley Limited during financial year 2021. The total figure used was provided by Abley for a no-lockdowns, 47 working weeks year. Emissions factors were sourced from MfE (2019). The data is considered to be satisfactory (E2).

Investments

QLDC has a 75% share holding of Queenstown Airport. The emissions for the airport were reported in a Carbonreduce certificate presented by TOITŪ (2021). As such, QLDC took on 75% of the airport’s Scope 1 and Scope 2 emissions. The level of assurance provided for Scope 1 and Scope 2 emissions was Reasonable and overall Data Quality Score was Poor. For the purposes of this inventory, the data is considered satisfactory, but without the knowledge of specific data collection methodology.

2.3.4 Out of Boundary Emissions

Queenstown Lakes District Council does not own or operate the landfill at Victoria Flats Gibbston, so these emissions are considered outside of corporate boundary. Scope Resources operates the landfill whilst Council ensures compliance with the New Zealand Emissions Trading Scheme (ETS), including payment of ETS levies for the emissions generated. The emissions from the landfill have therefore been reported as an out of boundary emission source but are not included in the organisational inventory.

Table 4 – Emissions sources and their related data quality.
Please refer to Appendix A for data quality explanation.

Emissions Source	Data Management	Data Collection
Wastewater Treatment	Satisfactory	E2
Stationary Fuels (LPG)	Robust	M1
Transport Fuels (Petrol, Diesel, Rental Car)	Robust	M1/E1
Purchased Electricity	Robust	M1
Purchased goods and services	Satisfactory	E2
Capital goods	Satisfactory	E2
Fuel and energy-related activities	Robust	M1
Waste generated in operations	Satisfactory	E2
Business Travel - Air Travel	Robust	M1
Business Travel - Accommodation	Satisfactory	E2
Employee Commuting	Satisfactory	E2
Investments	Satisfactory	Unknown

3.0 Results

This section presents the results of this GHG Emissions Inventory. It offers a broad overview covering all the activities or groups combined and a detailed review at each individual activity or group. It concludes with a focus on each of the key emission sources.

3.1 All Activities and Scopes

In 2018/19, Queenstown Lakes District Council's total gross GHG emissions is calculated as 25,219 tonnes CO₂e, of which 6,149 tonnes are direct emissions (Scope 1), 1,699 tonnes are from electricity indirect emissions (Scope 2) and 17,371 tonnes are indirect Scope 3 emissions.

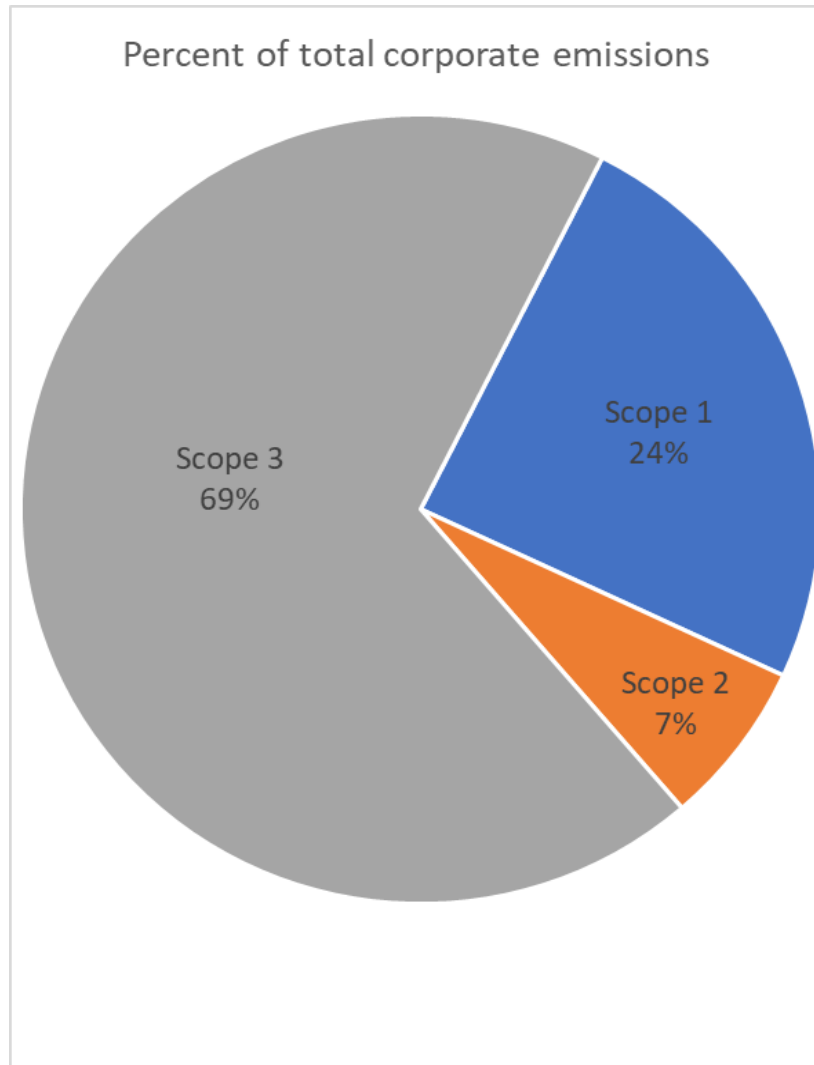
Table 5 – Emissions sources and their related emissions

Source	t CO ₂ e	% of Total	% of scope
Scope 1			
Wastewater Treatment	5,008	19.9%	81%
Transport Fuels (Petrol, Diesel)	227	0.9%	3.7%
Stationary Fuels (LPG)	914.2	3.6%	14.9%
Fugitive Emissions (Refrigerants)	Not Found	Not Found	Not Found
Scope 2			
Purchased Electricity	1,699	6.7%	100%
Scope 3			
Capital goods	12,477	49.5%	72%
Purchased goods and services	3,752	14.9%	22%
Employee Commuting	435	1.7%	2.5%
Fuel and energy-related activities	294	1.2%	1.7%
Investments (Queenstown Airport)	208	0.8%	1.2%
Business travel	165	0.7%	0.9%
Waste Generated In Operations	40	0.2%	0.2%
Upstream Transportation and Distribution	Not Found	Not Found	Not Found
Outside of corporate boundary			
Landfill	61,699	N/A	N/A
Total t CO₂e incl. landfill	86,918		
Corporate t CO₂e	25,219		

3.2 Organisational Emissions

Most Queenstown Lakes District Council organisational emissions are Scope 3 (17,371), followed by Scope 1 emissions (6,149) and Scope 2 emissions (1,699).

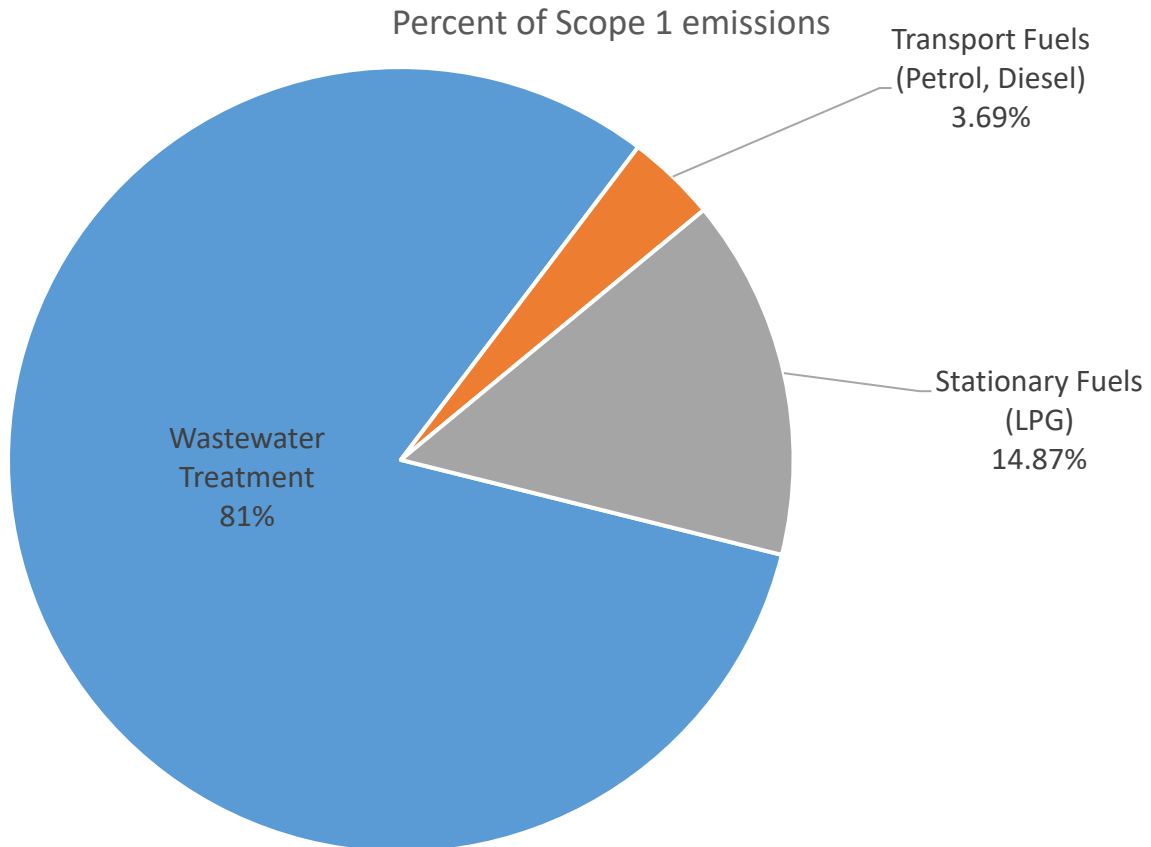
Figure 4 – Organisational Emissions by Scope (total 25,179 tCO₂e)



3.2.1 Scope 1 Emissions

Representing 6,149 tCO₂e of the overall organisational footprint are Scope 1 emissions. Most of the Scope 1 direct emissions are from Wastewater Treatment (81%) with the remainder coming from Stationary Fuels (14.87%), and Transport Fuels (3.69%).

Figure 5 - Scope 1 Emissions by Source (total 6,149 tCO₂e)

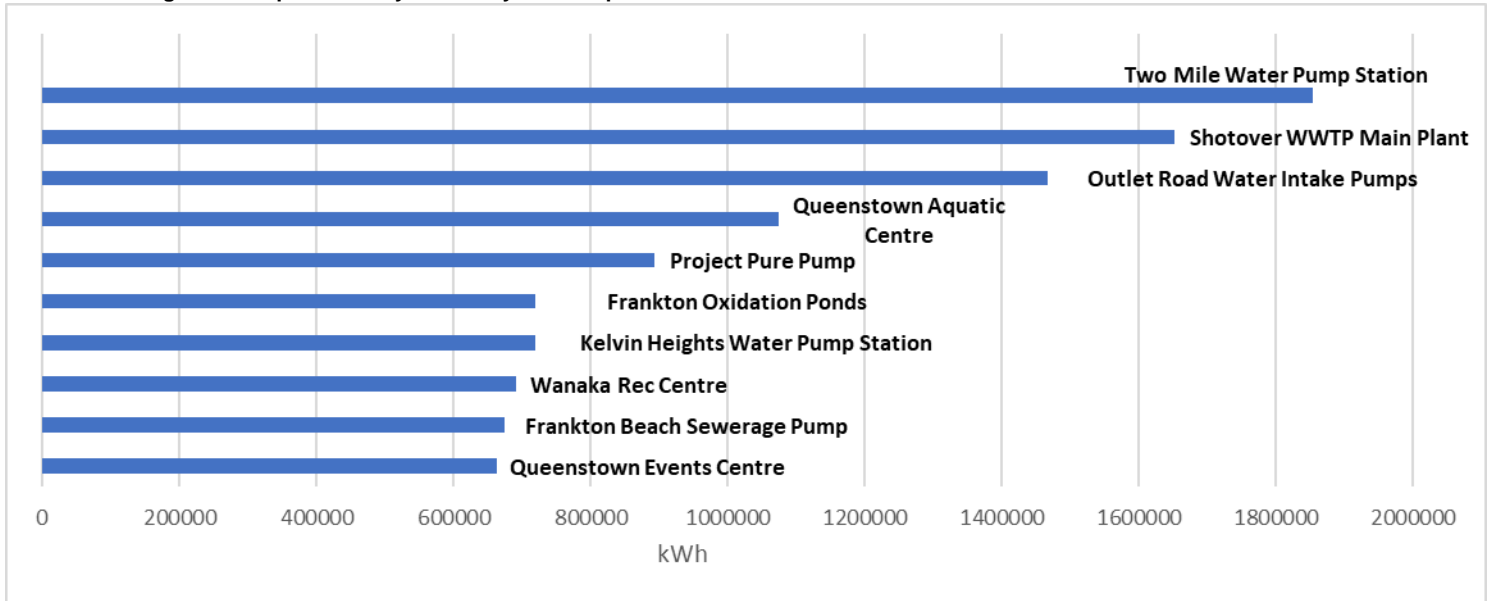


3.2.2 Scope 2 Emissions

Scope 2 emissions are from purchased electricity (at all sites) and during the 2019 financial year resulted in 1,699 tonnes of CO₂e of the GHG emissions. Electricity is used for council offices, libraries, water pumps, wastewater treatment and other council sites.

As shown in Figure 6, most of the Scope 2 emissions come from the electricity consumed by the top 10 sites (62%) while the remainder (38%) are from council's other 243 sites.

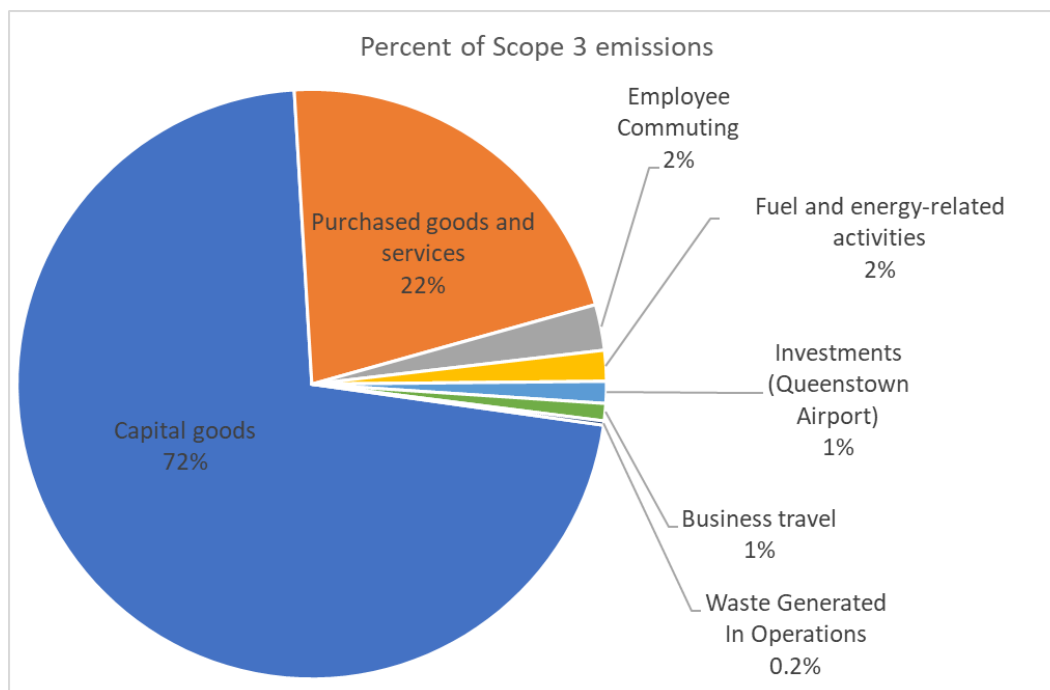
Figure 6 – Top 10 Sites by Electricity Consumption



3.2.3 Scope 3 Emissions

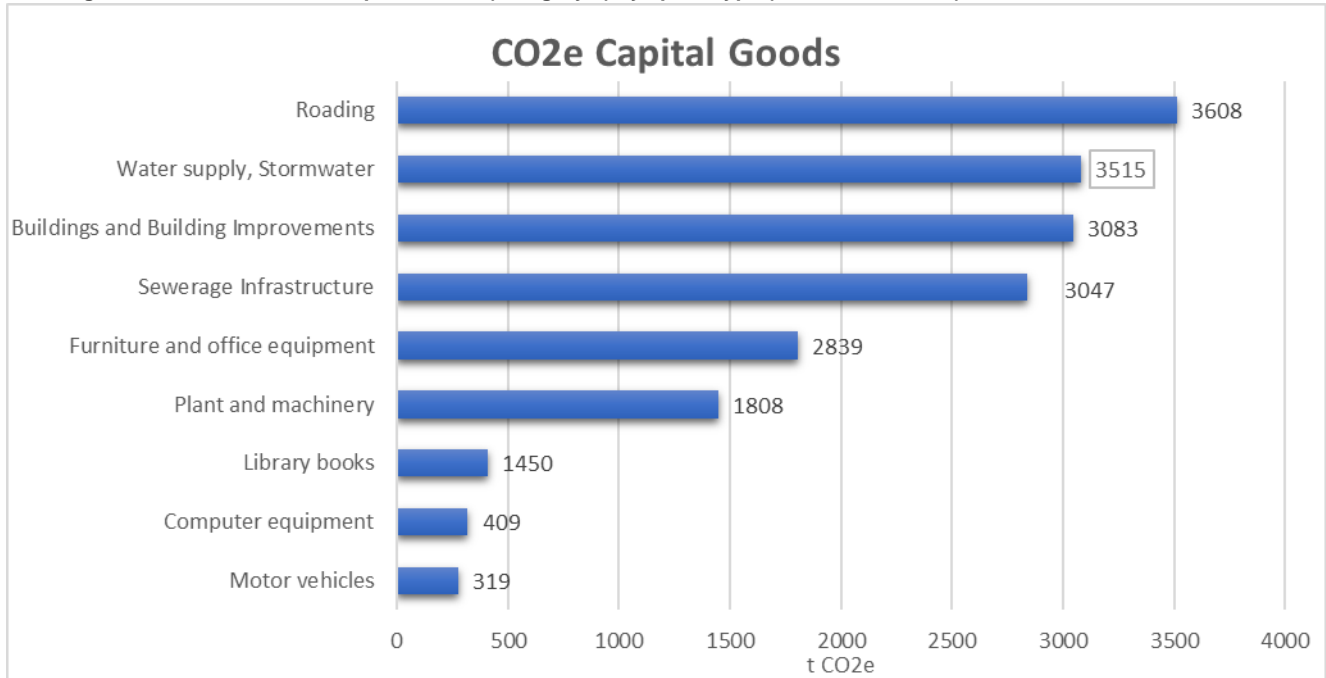
Scope 3 emissions are the other indirect emissions from Queenstown Lakes District Council's activities, resulting in 17,371 tCO₂e or 69% of the GHG emissions of Queenstown Lakes District Council.

Figure 7 - Scope 3 Emissions by Category (total 17,331 tCO₂e)



Shown as a percentage of Scope 3 emissions: Capital Goods (72%) represent the largest Scope 3 emission source followed by Purchased Goods and Services (22%), Employee Commuting (2.5%), Fuel and Energy-Related Activities (1.7%), Investments (1.2%), Business Travel (1.0%), and Waste Generated In Operations (0.2%).

Figure 8 – Emissions from Capital Goods (Category 2) by spend type (total 12,477 tCO₂e)



4.0 GHG Emissions Reduction Opportunities

This section describes a range of GHG emission reduction opportunities that Queenstown Lakes District Council might consider implementing. In many cases, there will be financial savings or other economic benefits associated with implementing these recommendations.

4.1 Reduce Wastewater Treatment Emissions

The third largest source of Queenstown Lakes District Council’s GHG emissions is from Wastewater Treatment with 19.9% of the overall footprint. Wastewater Treatment emissions are direct emissions source (Scope 1), so council has operational control over how these sites are run.

Wastewater Treatment emissions can be reduced by reducing the inflows and improving treatment methods. However, reducing wastewater inflows may be limited to working with a few large industrial users, therefore, most of the councils’ efforts should be focused towards reducing treatment emissions. It is advised to try to quantify the GHG potential of inflows, at the source; so GHG liabilities can be on-charged and addressed.

We recommend looking at opportunities to reduce treatment emissions by first gathering primary data via direct methane emission measurements, then exploring process improvements to reduce methane emissions.

4.2 Implement Sustainable Procurement Policies

49.6% of Queenstown Lakes District Council GHG emissions are generated from Capital Goods (Scope 3, Category 2) purchased during the financial year. This includes construction emissions from infrastructure added to council’s balance sheet. Additionally, it includes upstream emissions from purchased machinery, electrical equipment, and paper products.

In addition, 14.9% of the councils’ GHG emissions are from Purchased Goods and Services (Scope 3, Category 1) purchased during the financial year.

We recommend implementing sustainable procurement policies and guidelines to select relevant providers and to require larger contract providers to estimate and report their Scope 1 and Scope 2 emissions (at a minimum) and demonstrate their reduction performance. Communicating with suppliers to ensure they are able to provide high quality data, relevant to QLDC’s carbon footprint, will also help ensure emissions are accurately recorded and able to be addressed going forward.

4.3 Reduce and Improve Electricity Consumption

6.7% of Queenstown Lakes District Council GHG emissions are generated from Purchased Electricity. Most of this usage comes from major sites such as pump stations and aquatics centres.

We recommend looking at opportunities to improve efficiency at these sites. Additionally, renewable generation, such as solar, could be looked in to where possible, to mitigate the large amounts of purchased electricity being used. QLDC could also look to ensure sustainability forms a large part of its electricity procurement policy, so that it can work with retailers who can provide greener energy and assist QLDC's decarbonisation journey.

4.4 Reduce Stationary Fuel Consumption (LPG)

3.6% of Queenstown Lakes District Council GHG emissions are generated from Stationary Fuel Consumption (LPG). This is primarily used for water and space heating.

We recommend looking at opportunities to electrify water and space heating systems. Tying these changes in with an increase in renewable electricity consumption, could help further reduce QLDC's footprint.

5.0 Discussion

5.1 Emission reduction targets

Now that Queenstown Lakes District Council has completed their FY18/19 GHG Inventory and has a baseline of their GHG emissions, the next step for Queenstown Lakes District Council is to set an organisational (council wide) GHG emissions reduction target.

Council has set a goal to reduce our district's emissions by 44% by 2030 and a commitment to develop an Emissions Reduction Plan for all QLDC's operations with targets aligned to limit global warming to 1.5 degrees.

This would require council to focus on primarily on reducing gross emissions as the price of offsets will likely continue to rise. This means that council should invest in low emission infrastructure today to reduce future offsetting obligations.

5.2 New Zealand Units (NZUs) and Offsets

If the council decides to offset emissions, they might look to buy NZUs. If council holds these NZUs on their balance sheet, they are only applied to an emissions inventory when council surrenders NZUs to the ETS.

Any forestry assets which council owns via their equity share may potentially be eligible for NZUs to use as offsets in the future. We recommend exploring this opportunity further as part of the council's wider decarbonisation plan.

6.0 References

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Capital and Operational Carbon Baselines Report Project Shotover Stage 3 (Beca 2020)

Project Pure – Capital and Operational Carbon Baselines (Beca 2021)

David A. Turner, Ian D. Williams, Simon Kemp (2015) - Greenhouse gas emission factors for recycling of source-segregated waste materials. Resources, Conservation and Recycling, Volume 105, Part A, December 2015, Pages 186-197. <https://doi.org/10.1016/j.resconrec.2015.10.026>

Appendix A Data quality

Data Quality

The table below describes the data quality indicators used in the above sections. Explanations of these terms are provided below.

Data management	Data collection		
	Measured	Derived	Estimated
Robust	M1	D1	E1
Satisfactory	M2	D2	E2
Questionable	M3	D3	E3

Measured = Data directly provided by a service provider, contractor or directly obtained from a monitoring device. For example, electricity invoices, contractor receipts, emissions monitoring equipment, incident reports, consultant reports etc.

Derived = Data obtained from calculations, mass balances, use of physical/chemical properties, use of coefficients and emission factors etc., for example converting cubic meters of waste into tonnes.

Estimated = Usually, where there is no other available method for obtaining the data. Such data could be prorated on previous results, use of precedents or historical data, or even a calculated guess.

Robust = Evidence of sound, mature and correct reporting system, where room for error is negligible. Examples would include use of spreadsheets, databases and on-line reporting.

Satisfactory = Examples would include manual, but structured keeping of records, files and results. Some potential for error or loss of data.

Questionable = No logical or structured approach to data or record keeping. High potential for error &/or loss of data. Data may appear to differ from those initially reported.

Appendix B Council Update on Waste Minimisation and Management

Managing waste is a major challenge across the world. Reliance on single-use and short-lived products is creating pressure on our environment. Globally, we need to transition to a circular economy – where we keep items produced in use for longer, where waste and pollution is designed out of products, and natural systems are regenerated.

Our transition to this future state will take time and we will still need to manage the waste of the district in the most efficient way possible while driving down greenhouse gas emissions (e.g., methane).

The New Zealand Emissions Trading Scheme (ETS) regulates emissions for the waste sector. Scope Resources currently operates the Landfill at Victoria Flats, Gibbston. We ensure compliance with the ETS which includes payment of ETS levies for the emissions generated.

In 2021 a landfill gas capture and flare system were installed, which will significantly decrease emissions released into the atmosphere. In some landfills, it is possible to capture and reuse the gas emitted from the landfill. Currently the landfill does not produce enough gas for this to be possible, however we'll continue to assess the gas output for opportunities to reuse the gas in the future.

Our principal focus is to reduce reliance on the landfill and divert high emitting materials such as organic waste away from landfill to be reused as compost or soil improvements.

A copy of the current Waste Minimisation and Management Plan (WMMP) can be found here www.qldc.govt.nz/your-council/council-documents/strategies-and-publications. The National Emissions Reduction Plan and National Waste Strategy will include a greater focus on waste emissions and Council will review its WMMP to respond to these new targets and regulatory requirements.