

Greenhouse Gas Emissions Annual Report

FOR THE YEAR ENDED
30 JUNE 2025



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1. Executive Summary

This report is a calculation of the GHG emissions due to activities by, or under the control of, Environment Southland for the financial year ended 30 June 2025.

Environment Southland's total GHG emissions for the year ended 30 June 2025 are calculated to be 1,259.92 tonnes of carbon dioxide equivalent gas, which equates to 6.92 tonnes per FTE employee and 12.30 kg per Southland resident.

The total represents a reduction in GHG emissions of 825.92 tonnes (40%) over the previous year, which reported 2,085.84 tonnes of emissions.

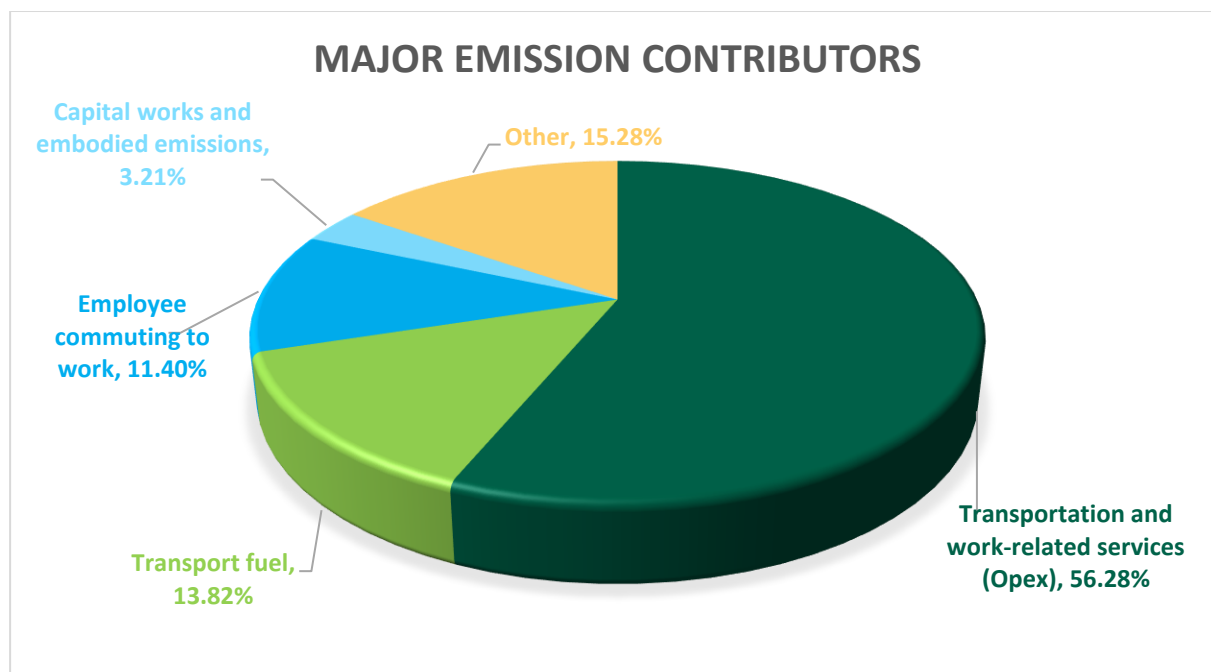
The following table lists the GHG emissions, by Council's categories and subcategories, for the financial year ended 30 June 2025.

Category	Description	T CO2e	%
4.1	Works and related services (Opex)	530.75	42.13%
3.1	Transportation and related services (Opex)	285.06	22.63%
1.3	Transport fuel	200.29	15.90%
3.4	Employee commuting to work	165.26	13.12%
3.3	Business travel	84.03	6.67%
4.6	Embodied emissions in construction materials	60.77	4.82%
2.1	Purchased energy - electricity use	46.20	3.67%
1.4	Refrigerant and other gases	42.33	3.36%
4.5	Works and related services (Capex)	17.81	1.41%
4.4	Disposal of solid and liquid waste	5.29	0.42%
1.2	Stationary combustion - Biomass (N2O and CH4)	4.23	0.34%
4.2	Energy transmission and distribution losses	3.65	0.29%
1.1	Stationary combustion - Diesel	1.44	0.11%
3.5	Employee working from home	1.35	0.11%
3.2	Freight of other goods	0.67	0.05%
4.3	Provision of water supply	0.33	0.03%
1.6	Forestry - managed (land use changes)	0.00	0.00%
3.6	Transportation and related services (Capex)	0.00	0.00%
1.5	Forestry - natural (removal)	-189.54	-15.04%
		1259.92	100.00%

Table 1: Category summary GHG Emissions Report for the year ended 30 June 2025

Major emission contributors

Transportation and work-related services, transport fuel, employee commuting to work, and capital works and embodied emissions are the major contributors to Environment Southland's GHG emissions, accounting for approximately 85 % of total emissions.



Graph 1: Major Emission Contributors

(NB The percentages represented in the graph are the total percentages of emissions prior to the reduction from the Forestry – natural. Therefore, they differ from other percentages presented elsewhere in this report.)

Business as usual (BAU)

Included within this year's emissions are capital and extraordinary emissions of 17.81 T (661.89 T FY24) and embodied emissions on capital construction materials of 60.77 T (65.50 T FY24).

These capital and extraordinary emission sources have been shown separately, as while we expect these types of projects to continue, they will fluctuate in size and timing, impacting Council's total emissions and potentially masking movements in the BAU emissions.

The council's BAU operating emissions (excluding capital and extraordinary) are 1,181.34 T. This represents a 13% decrease of 177.11 T CO₂e from the prior year which reported 1,358.45 T.

Report development

Council and staff will be the primary users of this report. It has been prepared to provide transparency of emissions in order to inform decision making and emissions reduction activity.

The development of this report has followed:

- ISO 14064-1:2018 Greenhouse Gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals,

- 
- Carbon Neutral Government Programme (CNGP) – A guide to managing your greenhouse gas emissions (Version 3.0, May 2023), including the CNGP Guide Appendix 2 – A guide to measuring and reporting GHG emissions under the CNGP.
 - The Global Warming Potential (GWP) values and emission factors used in this report are sourced from the Ministry for the Environment’s Measuring Emissions: A Guide for Organisations (latest edition). The GWP values align with those published in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5), as recommended for GHG inventories in New Zealand.

Environment Southland is the responsible party for the greenhouse gas emissions disclosed in this report.

Verification

This report was independently verified by Toitu in September / October 2025. Toitu’s verification statement is attached as Appendix 4.



2. Movement Summary

Environment Southland compiled its Organisational Greenhouse Gas (GHG) Emissions Baseline for the financial year ended 30 June 2023. This report is the third annual GHG report and is for the financial year ended 30 June 2025.

The compilation of this annual GHG report has validated the approach and findings from the Baseline year. There were no significant issues uncovered that necessitate change to any previous reports.

In each year, MfE reissues their emissions factors. See Appendix 3 – Summary of changes to MfE’s emission factors since the 2024 edition.

The following table sets out Council’s emissions for the year ending 30 June 2025, compared to the previous year ending 30 June 2024.

EMISSIONS (measured in tonnes p.a.)		FY25 CO2e Total	FY24 CO2e Total	Variance CO2e Total	Variance CO2e %age
Direct emissions					
1	Category 1: Direct emissions and removals				
1.1	Stationary combustion - Diesel	1.44	0.18	1.26	700%
1.2	Stationary combustion - Biomass (N2O and CH4)	4.23	2.41	1.82	76%
1.3	Transport fuel	200.29	201.41	-1.12	-1%
1.4	Refrigerant and other gases	42.33	0.00	42.33	0%
1.5	Forestry - natural (removal)	-189.54	-189.53	-0.01	0%
1.6	Forestry - managed (land use changes)	0.00	0.00	0.00	0%
	Total direct emissions and removals	58.75	14.47	44.28	306%
Indirect emissions					
2	Category 2: Indirect emissions from purchased energy				
2.1	Purchased energy - electricity use	46.20	42.99	3.21	7%
	Total indirect emissions from purchased energy	46.20	42.99	3.21	7%
3	Category 3: Indirect emissions from freight and transportation				
3.1	Transportation and related services (Opex)	285.06	249.69	35.37	14%
3.2	Freight of other goods	0.67	0.00	0.67	0%
3.3	Business travel	84.03	69.25	14.78	21%
3.4	Employee commuting to work	165.26	231.28	-66.02	-29%
3.5	Employee working from home	1.35	0.71	0.64	90%
3.6	Transportation and related services (Capex)	0.00	296.05	-296.05	-100%
	Total indirect emissions from freight and transportation	536.37	846.98	-310.61	-37%
4	Category 4: Indirect emissions from products and services				
4.1	Works and related services (Opex)	530.75	740.78	-210.03	-28%
4.2	Energy transmission and distribution losses	3.65	3.14	0.51	16%
4.3	Provision of water supply	0.33	0.27	0.06	22%
4.4	Disposal of solid and liquid waste	5.29	5.87	-0.58	-10%
4.5	Works and related services (Capex)	17.81	365.84	-348.03	-95%
4.6	Embodied emissions in construction materials	60.77	65.50	-4.73	-7%
	Total indirect emissions from products and services	618.60	1181.40	-562.80	-48%
	Total Organisational GHG Emissions	1259.92	2085.84	-825.92	-40%
Direct emissions in tonnes of CO2 from biomass					
	Biogenic GHG emissions (outside of boundary)	49.95	28.56	21.39	75%
Liability type					
	Contingent liability (carbon sequestered)	-568.72	-379.18		

Council's total emissions reduced by 825.92 tonnes of CO2e over the year to 30 June 2025.

The significant subcategory variances are:

EMISSIONS (measured in tonnes p.a.)		FY25 CO2e Total	FY24 CO2e Total	Variance CO2e Total	Variance CO2e %age
1.2	Stationary combustion – Biomass (N2O and CH4) There was a larger amount of wood burned in the boiler.	4.23	2.41	1.82	76%
1.4	Refrigerant and other gases There was a leak in the variable refrigerant system that resulted in the replacement of 22kg of R410a refrigerant. This refrigerant has an emission factor of 1,924 CO2e.	42.33	0.00	42.33	0%
2.1	Purchased energy – electricity use There was a 22.4% decrease in activity, with Council assets consuming 457,447 kWh compared with 589,768 kWh in FY24, however there was an emission factor increase of 38.7% (see Appendix 3) which resulted in an overall increase. The emission factor increase can be attributed to shifting electricity generation dynamics.	46.20	42.99	3.21	7%
3.1	Transportation and related services There were increases in helicopter services, boat services, vehicle transport, and heavy haulage. Fixed wing activity decreased.	285.06	249.69	35.37	14%
3.3	Business Travel There was a moderate increase in the amount of business travel with Air NZ activity being 374,098 passenger.kms, compared with 304,487 passenger.kms, the previous year.	84.03	69.25	14.78	21%
3.4	Employee commuting to work The survey had a 64% response rate. The total activity was derived from the respondent's data. Total activity decreased to 689,231 kms, down from 925,177 kms in the previous year. In addition, there's been a move by employees towards lower emission commuting.	165.26	231.28	-66.02	-29%

3.6	Transportation and related services (Capex)	0.00	296.05	-296.05	-100%
	There was no capital or extraordinary transportation.				
4.1	Works and related services (Opex)	530.75	740.78	-210.03	-28%
	The emissions reduction is reflective of the reduction in works activity.				
4.5	Works and related services (Capex)	17.81	365.84	-348.03	-95%
	There was a substantial reduction in the amount of capital and extraordinary works performed over the year.				

3. Defining Boundaries

The purpose of defining boundaries is to provide transparency of what is included within an organisation's GHG emissions baseline report. This will prevent double counting (i.e. counting by multiple organisations) and assist the production of future GHG emission reports.

Organisational Boundary

The organisational boundary is the boundary of the organisation as it applies to the measurement of GHG emissions. This typically aligns with legal and organisational structures.

An organisation may set its boundaries by one of the following approaches:

1. Control - the organisation accounts for 100 % of the GHG emissions and removals over which it has financial or operational control. The organisation can choose between financial or operational control.
2. Equity share - the organisation accounts for its portion of GHG emissions and removals from respective operations that it has a share of ownership.

To seek consistency and alignment among local councils, a staff inter-agency group was established (as a sub-group of the staff-level Regional Climate Change Working Group). The group has agreed to apply the operational control approach to establishing organisational boundaries.

Under this approach councils include 100 % of an organisation's GHG emissions within its organisational boundary when it has operational control over the organisation. Operational control has been defined as the authority (or greatest authority) to introduce and implement operating policies, health and safety policies, or environmental policies.

To ensure consistent treatment among the inter-agency group, the group developed an Inter-Agency Organisational GHG Boundaries diagram (appendix 1), setting out the agreed treatment of agencies the inter-agency group have in common.

For organisations that Council is involved with, but does not have operational control, it could look to influence the organisation to self-report its GHG emissions and removals.

Environment Southland's Organisational Boundary is set out in figure 1. While Council is involved with a range of organisations, the only one that meets the control criteria and is included within its organisational boundary is Emergency Management Southland.

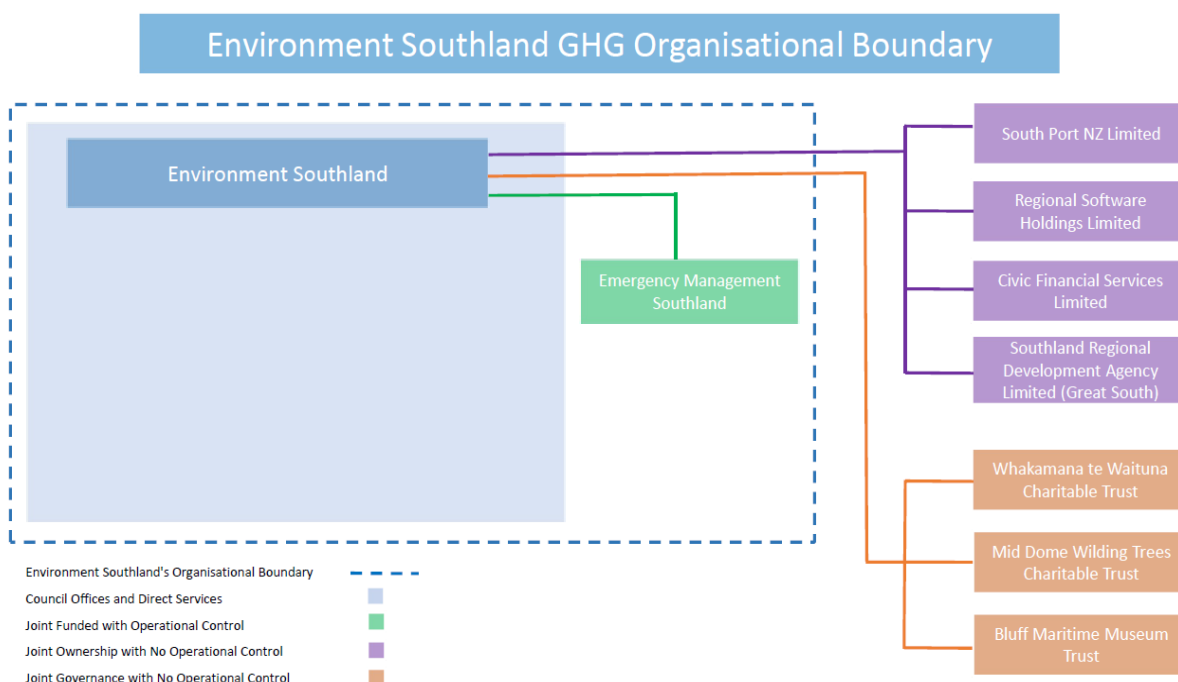


Figure 1. ES's Organisational Boundary

Emergency Management Southland

Emergency Management Southland (EMS) is co-funded by the region's councils and its financial results are apportioned to all councils, however the EMS Joint Arrangement states that Environment Southland (ES) will provide operational management, giving ES operational control in accordance with the organisational boundary approach. Consequently, EMS has been included with Environment Southland's organisational boundary.

South Port NZ Limited (SPNZ)

Environment Southland holds a majority equity stake in SPNZ (66.48 %) and is instrumental in appointing its governance, however SPNZ is a publicly listed company on the NZX stock exchange and Council ensures that it remains at arm's length and has no operational involvement.

Regional Software Holdings Limited

Environment Southland is a minor stakeholder without operational control.

Civic Financial Services Limited

Environment Southland is a minor stakeholder without operational control.

Southland Regional Development Agency Limited (Great South)

Environment Southland is a minor stakeholder without operational control.

Whakamana te Waituna Trust

Environment Southland provides one of six trustees, so does not hold operational control.



Mid Dome Wilding Trees Charitable Trust

Environment Southland is one of several partners involved in this operation and does not have operational control.

Bluff Maritime Museum Trust

Environment Southland provides some governance but does not have operational control.

Operational (Reporting) Boundary

Council's GHG Emissions Baseline report includes the emissions that are the result of operations within Council's organisational boundary over the reporting period.

Council's operations include the activities of, or under the control of, Council. This includes ordinary operations, extraordinary operations, and capital developments. The extraordinary operations and capital developments are inconsistent in nature and not expected to occur year on year. They have been reported separately to provide transparency of standard operations.

Where Council has co-funded operational services with partner agencies, the default expectation is that Council will account for the portion of emissions relating to its percentage of funding. For further explanation of the proposed approach see Proposed Approach to Co-funding with Partner Agencies (appendix 2).

4. Emission Calculation Methodology

In general, the process for calculating the emissions is:

1. Identify emission sources.
2. Collect the sources activity data over the reporting period (measured by the activity unit);
and
3. Determine the sources emission factor (which sets out the activity unit).

The GHG inventory comprises a list of the emission sources and the sources activity (measured by the activity unit). The source's activity is then multiplied by the source's emission factor to determine the total emissions for the source.

An example being a diesel utility vehicle (an emissions source) that is driven (a source activity) and consumes one litre of diesel (activity unit) emits 2.68 kg CO₂ e (activity unit emission factor).

The emissions from all organisational sources are added to determine the total organisations emissions.

Emission Source Identification

The data source summary tables set out the identified emission sources within Council's GHG inventory.

Identifying the emission sources within some of the subcategories was relatively straight forward as there was either a single emission source and/or single supplier, however for many subcategories it required a detailed review of suppliers' invoices to identify sources amongst the range of procured goods and services.

The following process was used to identify sources from supplier invoices:

- Step 1:** Obtain a full list of active suppliers for the period.
- Step 2:** Identify those suppliers that are likely to use emission sources to provide the goods and services to Council. This included:
- Accommodation providers (e.g. hotels, motels, motor lodges)
 - Heavy freight transporters (e.g. rock and quarry transport)
 - Heavy earthmoving vehicle users (e.g. diggers, graders, cranes)
 - Aerial works services (e.g. helicopters, aircraft)
 - Passenger transporters (e.g. flights, taxis, rental vehicles)
 - Other suppliers deemed worthy of inclusion.
- Step 3:** Identify other suppliers with annual spend over \$50,000 and review their invoices to determine whether they have emission sources and activity.
- Step 4:** Work through the identified suppliers' invoices to obtain data on emission sources and source activity.
- Step 5:** Compile a register of suppliers, their emission sources and their source activity.
- Step 6:** Add this data into Council's GHG inventory.

Supplier Data

A significant amount of emission data was obtained from Council's suppliers.

While Council seeks robust data that provides clear visibility of emission causes that can lead to good decision making and emission reduction, Council also recognises the need to be pragmatic and to accept that suppliers often do not (yet) have the systems or processes required to capture and retain the required data.

In instances where detailed, measured data was not available, Council has derived satisfactory data from calculations and extrapolations. The data quality has been disclosed in the data source summary tables.

It is expected that the availability and quality of supplier data will improve as suppliers develop their GHG emissions source and activity measurement systems. As systems develop, the reporting process will become easier and the supplier's data will move up Council's data quality table (Table 2), improving its quality and the accuracy of Council's emission reporting.

Council has the opportunity to use its influence and procurement processes to support and encourage this transition.

	Data Quality		
	Questionable	Satisfactory	Robust
Emission Source	Unknown	Similar	Known
Source Activity	Estimated	Derived	Measured
Emission Factor		Default (MfE)	Measured (MfE)

Table 2: Council's data quality table

Significance Criteria

While compiling the GHG inventory, consideration has been given to the significance of the emissions source data and the source activity data.

Consideration involved assessing:

- The availability of information.
- The probable volume of emissions and their impact on the overall measurement.
- The cost and benefit associated with obtaining better quality data.

The process involved determining if the required information was readily available, and if not, then determining the impact of the probable emissions on the overall measurement. The approach taken to obtain data ensured that the effort applied to obtain it was relative to the probable impact that it had on the measurement.

Underpinning this process has been Council's intention to be pragmatic, while providing adequate information to inform Council's reduction planning.

Council's GHG Inventory Framework

Council's GHG inventory framework sets out the identified source activity types, the emitting activity and the activity units that were used to measure the level of activity. The activity units are those used in the MfE Emission factors.

Cat	Classification	Source activity type	Activity	Activity unit
1	Direct emissions and removals			
1.1		Stationary combustion	Diesel used	L
1.2		Stationary combustion	Wood used	Kg
1.3		Transport fuel	Petrol and diesel used	L
1.4		Refrigerant gases	Gases leaked	Kg
1.5		Forestry – natural	Regeneration	Hectares
1.6		Forestry – managed	Land use change	Hectares
2	Indirect emissions from purchased energy			
2.1		Purchased energy	Electricity used	KWh
3	Indirect emissions from freight and transportation			
3.1		Transportation and related services (Opex):		
		Heavy haulage	Diesel used	L
		Vehicle transport fuel	Diesel used	L
			Travel	Km
		Helicopter services	Flight time	Hours
			Av gas used	L
		Aircraft services	Av gas used	L
		Boat services	Petrol used	L
			Diesel used	L
3.2		Freight of other goods	Transport	T.km
3.3		Business travel	Air travel	Passenger.km
			Hotel nights	Guest nights
			Rental	Km
			Taxi	\$
3.4		Employee commuting to work	Travel	Km
3.5		Employee work from home	Electricity and waste	Days
3.6		Transportation and related services (Capex):		
		Heavy haulage	Diesel used	L

4	Indirect emissions from products and services			
4.1		Works and related services (Opex):		
		Earthmoving works	Diesel used	L
		Tractor services	Diesel used	L
4.2		Energy transmission and distribution losses	Electricity used	KWh
4.3		Provision of water supply	Water used	Staff No.
4.4		Disposal of solid and liquid waste	Solid waste	Kg
			Liquid waste	Staff No.
4.5		Works and related services (Capex)	Diesel used	L
			Transport	L
4.6		Embodied emissions in construction materials	Various	Various

Emission Source Exclusions

The following potential sources have been excluded from the emissions calculation:

Potential emission source	Reason for exclusion
Embodied emissions in purchased goods (non-capital). NB. Embodied emissions in purchased goods (capital) are included in subcategory 4.6.	Council was unable to obtain meaningful data on the embodied emissions relating to its purchase of non-capital goods and, as its objective is to obtain emission transparency to inform reduction activity, Council has opted not to include spend based emission factor calculations.
Category 5: Indirect GHG emissions associated with the use of products from the organisation.	This category does not apply to Council as it does not produce products.
Category 6: Indirect GHG emissions from other sources.	No other sources are known.
Emissions from leasehold land owned by Council	Council does not have direct operational control over the leaseholder's activity so, in accordance with the Organisational Boundary criteria set in Section 3, this has been excluded as outside of Council's organisational boundary.

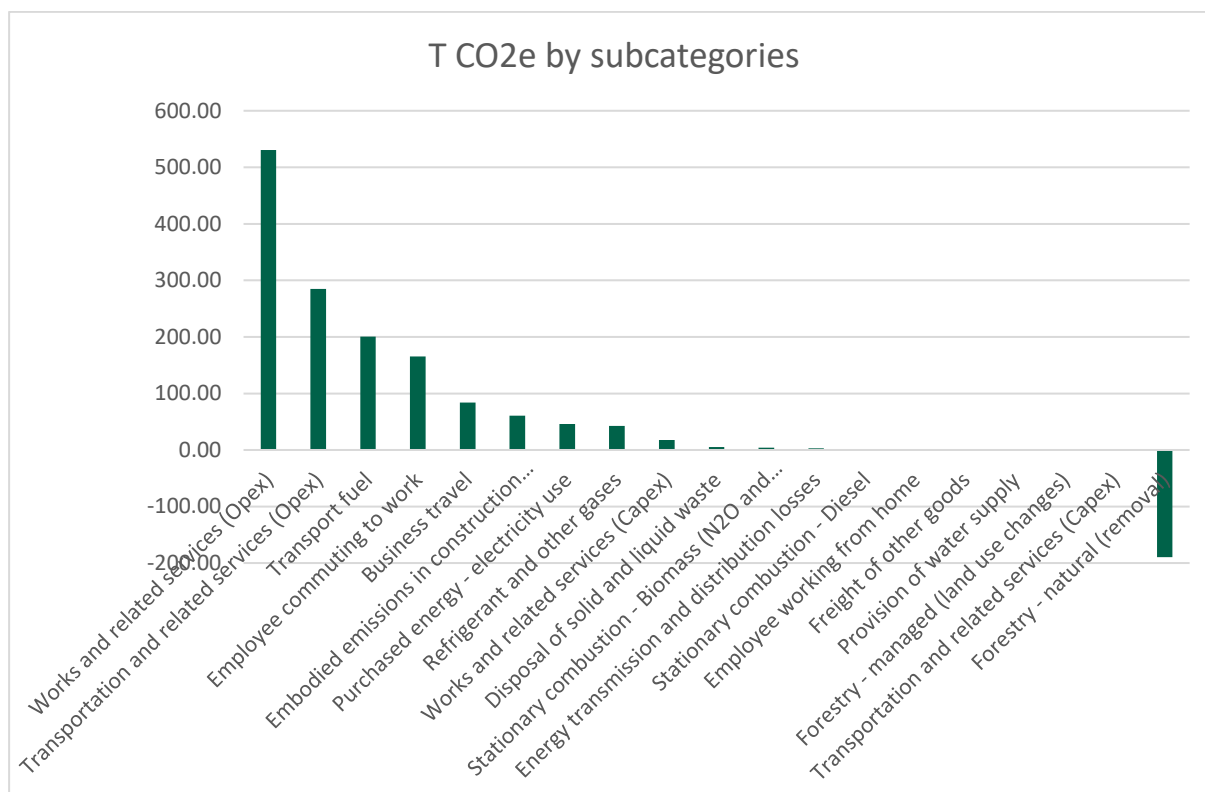
5. GHG Inventory

GHG Emissions Report for the year ended 30 June 2025

(the following report presents the total of each category and subcategory of Council's GHG inventory).

EMISSIONS (measured in tonnes p.a.)		CO2e Total	Carbon dioxide CO2	Methane CH4	Nitrous Oxide N2O
Direct emissions					
1	Category 1: Direct emissions and removals				
1.1	Stationary combustion - Diesel	1.44	1.44	0.01	0.00
1.2	Stationary combustion - Biomass (N2O and CH4)	4.23	0.00	3.76	0.47
1.3	Transport fuel	200.29	195.97	0.81	3.48
1.4	Refrigerant and other gases	42.33	42.33	0.00	0.00
1.5	Forestry - natural (removal)	-189.54	-189.54	0.00	0.00
1.6	Forestry - managed (land use changes)	0.00	0.00	0.00	0.00
	Total direct emissions and removals	58.75	50.20	4.58	3.95
Indirect emissions					
2	Category 2: Indirect emissions from purchased energy				
2.1	Purchased energy - electricity use	46.20	44.91	1.25	0.08
	Total indirect emissions from purchased energy	46.20	44.91	1.25	0.08
3	Category 3: Indirect emissions from freight and transportation				
3.1	Transportation and related services (Opex)	285.06	281.12	0.45	3.47
3.2	Freight of other goods	0.67	0.66	0.00	0.01
3.3	Business travel	84.03	83.62	0.04	0.49
3.4	Employee commuting to work	165.26	159.32	1.72	4.23
3.5	Employee working from home	1.35	1.31	0.04	0.00
3.6	Transportation and related services (Capex)	0.00	0.00	0.00	0.00
	Total indirect emissions from freight and transportation	536.37	526.03	2.25	8.20
4	Category 4: Indirect emissions from products and services				
4.1	Works and related services (Opex)	530.75	522.50	0.79	7.40
4.2	Energy transmission and distribution losses	3.65	3.42	0.09	0.00
4.3	Provision of water supply	0.33	0.32	0.01	0.00
4.4	Disposal of solid and liquid waste	5.29	0.46	3.55	1.29
4.5	Works and related services (Capex)	17.81	17.53	0.03	0.25
4.6	Embodied emissions in construction materials	60.77	60.77	0.00	0.00
	Total indirect emissions from products and services	618.60	605.00	4.47	8.94
	Total Organisational GHG Emissions	1259.92	1226.14	12.55	21.17

Direct emissions in tonnes of CO2 from biomass		
Biogenic GHG emissions (outside of boundary)	49.95	49.95
Liability type		
Contingent liability (carbon sequestered)	-568.72	



Graph 2: Tonnes of CO2e by subcategories

6. Data Source Summary Tables

The following tables set out the details relating to the data source activity types included in Councils GHG inventory.

Category 1: Direct emissions and removals

1.1 Stationary combustion – Diesel

Sources included:	Emergency generator based at Price Street.
Activity data:	Supplier invoiced litres.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.

1.2 Stationary combustion – Biomass

Sources included:	Heating boiler based at Price Street.
Activity data:	Supplier invoiced wood volume.
Data quality:	Satisfactory / robust derived data obtained. The activity data was received as wood volume and was converted to weight on the basis of 1m3 equals 210kg.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.
Comments:	As per the MfE emissions factors, the GHG calculation includes the CH4 and N2O emissions but excludes the CO2 emitted. For transparency the CO2 is shown separately as Direct emissions of CO2 from Biomass.

1.3 Transport fuel

Sources included:	All vehicles owned and leased by Council.
Activity data:	Supplier invoiced litres.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.

1.4 Refrigerant and other gases

Sources included:	All heat pumps and refrigeration appliances on Council premises.
Activity data:	Activity is measured based on gas top ups provided by suppliers.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Refrigerant Table.
Comments:	MfE guidance recommends the use of a top up activity method where we determine leakage by the amount of gas required to fill the equipment.

1.5 Forestry - Natural

Sources included:	All Council owned natural forests and high value asset (HVA) sites.
Sources excluded:	Managed forests.
Activity data:	Hectares of regenerating forestry that comply with specified size and age criteria were obtained from Council's Biodiversity HVA register.

Data quality:	Satisfactory / robust derived data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Agriculture, Forestry and Land Use Table. Pre 1990 regenerating natural forest factors were used.
Comments:	Where the mean height of a forest area is less than its expected maturity height, it has been assumed that the forest is between 30 – 100 years old and therefore regenerating.

1.6 Forestry – Managed (land use changes)

Sources included:	All Council owned managed forests.
Sources excluded:	Natural forests.
Activity data:	Hectares of land use changed, however there were no changes this year so there was no activity.
Data quality:	No data available as there was no activity in the reporting period.
Emission factor:	MfE Summary of Emission Factors 2025 – Agriculture, Forestry and Land Use Table.
Comments:	Council has applied the averaging accounting method. Under this approach Council will account for land use changes, which includes the removals resulting from the first rotation of a newly planted forest. Council will hold those removals until there is another land use change such as deforestation, when Council will then account for the emissions. Under this approach there is no requirement to account for activity that is not land use change, such as subsequent harvesting and replanting of rotations of the managed forest.

Category 2: Indirect emissions from purchased energy

2.1 Purchased energy

Sources included:	All Council owned and operated properties, including various powered monitoring sites.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	KWh obtained from supplier invoices.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Purchased Energy Table.

Category 3: Indirect emissions from freight and transportation

3.1 Transportation and related services (Opex)

Council engages contractors to provide a range of services for the community. The tables set out the primary freight and transportation related services and the approach towards determining the associated emissions.

Sources included:	Heavy truck haulage.
Activity data:	Litres of diesel used were obtained from some suppliers, and for others the dollar spent on invoice was converted, at a standard haulage rate, to litres of diesel used.
Data quality:	Robust / satisfactory derived data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.

Sources included:	Vehicles used for passenger transport.
Activity data:	Kms travelled were obtained from some supplier invoices while fuel consumption was obtained from others.
Data quality:	Robust / satisfactory derived data obtained. The vehicles were taken to be diesel utilities.
Emission factor:	MfE Summary of Emission Factors 2025 – Passenger Transport Table and Fuel Table.

Sources included:	Helicopter services.
Activity data:	Activity hours were obtained from supplier invoices. If hours weren't available a standard hourly rate was applied to determine activity hours. One supplier provided litres of Av Fuel used.
Data quality:	Satisfactory derived data obtained. An AS350B Squirrel was deemed to be the standard emission source.
Emission factor:	MfE Summary of Emission Factors 2025 – Helicopter Table and Fuel Table.

Sources included:	Aircraft services.
Activity data:	A standard hourly rate was applied to determine the Av Fuel used.
Data quality:	Satisfactory data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.

3.2 Freight of other goods

Sources included:	Significant road freight.
Activity data:	The actual weight and distance were known.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Road Freight Table.

3.3 Business travel

Sources included:	Business travel – including flights, taxis, rentals, and accommodation.
Sources excluded:	Work related travel.
Activity data:	Flights = passenger.km Taxis = dollars spent (incl GST) Rental = kms Accommodation = room nights
Data quality:	Robust data obtained from a range of suppliers.

Emission factor:	MfE Summary of Emission Factors 2025 – Various Tables.
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3.4 Employee commuting to work

Sources included:	Staff and councillors commute to and from work and use their private vehicle for council work.
Activity data:	Kms travelled in private vehicles, obtained from staff survey and expense claim forms.
Data quality:	Satisfactory data obtained with the survey achieving a 64% response rate that was extrapolated to represent all staff.
Emission factor:	MfE Summary of Emission Factors 2025 – Private Transport Table.

3.5 Employee working from home

Sources included:	Home emissions relating to staff working from home.
Sources excluded:	Partial WFH days.
Activity data:	Work from home days, obtained from staff survey.
Data quality:	Satisfactory data obtained with the survey achieving a 64% response rate that was extrapolated to represent all staff.
Emission factor:	MfE Summary of Emission Factors 2025 – Work from Home Table.

3.6 Transportation and related services (Capex)

Sources included:	Same as 3.1, but for capital and extraordinary related services.
Sources excluded:	As 3.1 above.
Activity data:	There were no capital and extraordinary Transportation and related services this year.
Data quality:	As 3.1 above.
Emission factor:	As 3.1 above.

Category 4: Indirect GHG emissions from products and services

4.1 Works related products and services (Opex)

Council engages contractors to provide a range of products and services for the community. The tables set out the primary works related products and services and the approach towards determining the associated emissions.

Sources included:	Earthmoving works.
Activity data:	Activity hours were obtained from supplier invoices. If hours weren't available a standard hourly rate was applied to determine activity hours.
Data quality:	Satisfactory derived data obtained. A 20T excavation digger was deemed to be the standard emission source, which uses an average of 14 litres of diesel per hour.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.

Sources included:	Tractor services (including mowing).
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Activity data:	Activity hours were obtained from supplier invoices.
Data quality:	Satisfactory derived data obtained. A 30 HP tractor was deemed to be the standard emission source, which uses an average of 6.6 litres of diesel per hour.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.

4.2 Energy transmission and distribution losses

Sources included:	All Council owned and operated properties, including various powered monitoring sites.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	KWh obtained from supplier invoices.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Energy T&D Table.
Comments:	This category covers energy loss when purchased energy is transported from point of generation to Council owned locations.

4.3 Provisions of water supply

Sources included:	Usage of water at all Council owned and operated properties.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	Based on per capita calculations.
Data quality:	Satisfactory data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Water Supply Table.

4.4 Disposal of solid and liquid waste

Sources included:	Solid and liquid wastage from all Council owned and operated properties.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	Based on per capita calculations.
Data quality:	Questionable / satisfactory data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Waste Table.

4.5 Works and related services (Capex)

Sources included:	Capital construction of: Completion of Stead St Pump House, Stop Bank development and extension works.
Sources excluded:	Typical annual stop bank maintenance. Embodied emissions in the significant capital materials as these are reported separately in 4.6 Embodied emissions on capital construction materials.
Activity data:	Various.
Data quality:	Various.
Emission factor:	MfE Summary of Emission Factors 2025 – Various Tables.
Comments:	The timing of the activity relating to capital projects has been included when the materials were delivered (as per invoice date) or when the services were performed.

4.6 Embodied emissions in construction materials

Sources included:	Significant construction materials used in the Stead Street Pump House project.
Activity data:	Based on volumes of concrete, steel and aluminium materials used in the construction.
Data quality:	Robust data obtained.
Emission factor:	CO2NSTRUCT embodied emissions tool.
Comments:	The timing of the activity relating to capital projects has been included when the materials were delivered (as per invoice date) or when the services were performed.

Direct emissions of CO2 from biomass

Biogenic GHG emissions (outside of boundary) – Biomass

Sources included:	Heating boiler at Price Street.
Activity data:	Supplier invoiced wood volume.
Data quality:	Satisfactory / robust derived data obtained. The activity data was received as wood volume and was converted to weight on the basis of 1m3 equals 210kg.
Emission factor:	MfE Summary of Emission Factors 2025 – Fuel Table.
Comments:	As per the MfE emissions factors, the GHG calculation includes the CH4 and N2O emissions but excludes the CO2 emitted. For transparency the emitted CO2 is shown here as being outside of the Council's reporting boundary.

Liability type

Contingent liability (carbon sequestered since base year)

Sources included:	All Council owned natural forests and high value assets (HVA).
Sources excluded:	Natural forests.
Activity data:	Hectares of regenerating forestry that comply with specified size and age criteria were obtained from Council's Biodiversity HVA register.
Data quality:	Satisfactory / robust derived data obtained.
Emission factor:	MfE Summary of Emission Factors 2025 – Agriculture, Forestry and Land Use Table.
Comments:	The liability is the sum of the annual sequestered carbon since the base year.

7. GHG Management Opportunities

The following work streams will provide some opportunity for Council to improve its GHG management.

Improve data

Improving data availability and quality will result in better reporting efficiency and effectiveness.

For some suppliers there may be a need to include emission reporting as a requirement within their engagement contract and for others it will merely be a request to provide specific data on their invoices or to collate the data elsewhere and to send it through periodically.

Include GHG emissions in procurement

There is a need for emissions to become a criterion that is considered in the scoping, design and procuring of services. This may include considering emission sources, source activity and total emissions relating to a project and setting specific emission removal requirements as part of the Request for Proposal (RFP), and/or evaluating suppliers' proposals on the basis of their intended emission sources and expected total emissions in relation to their proposed provision of the required services.

As noted above there will likely be a need to include emission reporting within supplier engagement contracts.

Reduction strategies

It is considered best practice to reduce emissions prior to undertaking activity to remove emission, such as planting forests.

To reduce emissions consideration should be given to:

- Reducing activity – which involves designing different, more efficient ways to achieve the required outcome.
- Selecting more efficient sources – which will reduce the emissions from the activity undertaken.

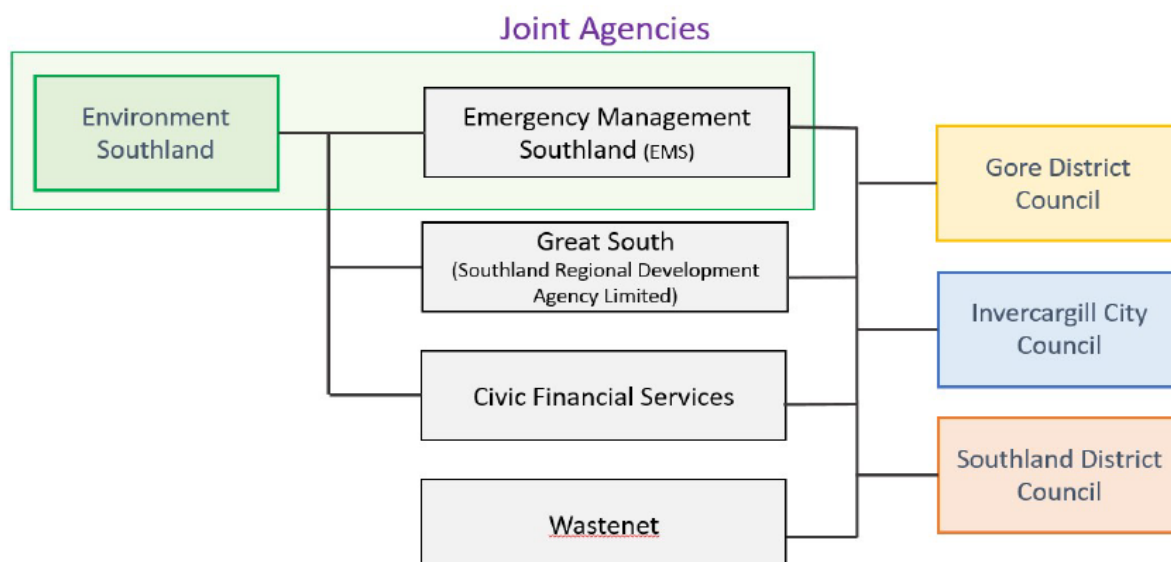
8. Glossary

Biomass	Material of biological origin, excluding material embedded in geological formations and material transformed into fossilised material.
CO2-e	Carbon dioxide equivalent. The impact of each GHG is expressed in terms of its global warming potential (GWP) by converting its impact to a unit of CO2. CO2-e is the sum of all gases expressed in units of CO2.
Greenhouse Gas (GHG)	Gases that influence the way the Earth's atmosphere traps heat.
GHG inventory	A quantification of an organisations GHG sources, sinks, emissions, and removals.
Organisational boundary	The boundary applied to measure GHG emissions. Typically aligning with a legal or organisational structure.
Operating (reporting) boundary	The grouping of emissions sources is to be included within the report, which includes direct and indirect emissions that the organisation controls or influences.
Sequestered carbon	The CO2 removed from the atmosphere and captured in a GHG reservoir.

9. Appendices

Appendix 1: Inter-Agency Organisational GHG Boundaries

Inter-Agency Organisational GHG Boundaries



Emergency Management Southland

Emergency Management Southland (EMS) is co-funded by the region's councils, and its financial results are apportioned to all councils, however the EMS Joint Arrangement states that Environment Southland (ES) will provide operational management, giving ES operational control in accordance with the agreed inter-agency organisational boundary approach. Consequently, 100 % of EMS is included within Environment Southland's organisational boundary.

Great South (Southland Regional Development Agency Limited)

All councils are shareholders in Great South with varying financial obligations, but no council has direct operational control. Consequently, Great South is outside of each council's organisational boundary.

Civic Financial Services Limited

All councils are shareholders in Civic Financial Services, but no council has direct operational control. Consequently, Civic Financial Services is outside of each council's organisational boundary.

WasteNet Southland

WasteNet is a joint committee of the Invercargill City, Southland District, and Gore District councils to provide the co-ordinated delivery of waste management and minimisation services across Southland. All three territorial authorities have representation in the governance group and have influence, but not operational control, over kerbside collection and the disposal of waste via the procurement of services. Consequently, WasteNet and its contractors remain outside the councils' organisational



boundaries. The creation and processing of waste and recycling is outside of each council's reporting boundary; however, each council is responsible for the collection, transfer, and transport of waste services by contractors and will include their portion of those procured services within their reporting boundaries.

Appendix 2: Approach to co-funding with partner agencies

(Partner agencies largely being local and central government agencies.)

Principle

Where Council is procuring operational services of a significant nature, the suppliers' operational emissions per dollar of funding will be used as the basis of attributing the emissions to each co-funder that is significantly influencing the operations and the procuring of the services.

If a co-funder is providing funds as a donation or a grant and is not significantly influencing the operations or procurement of services, emissions will be allocated amongst the remaining significantly influential co-funders.

The co-funding principles provide a default expectation; however, the approaches should be discussed during the development of the funding agreement and an allocation method agreed upon and written into the agreement. The overriding principle is that whichever approach is likely to result in better inclusion of emissions as a decision-making factor is the one that should be selected.

Rationale

There will often be a relationship between the emissions from the service and the cost of the service. The emissions per dollar allocation method allows each co-funder to jointly take responsibility for the emissions associated with the operation. This facilitates constructive discussion during the Request for Proposal evaluation phase as to the emissions related to the cost of the service and the selection of the best overall service provider with due consideration of emissions. If this approach is not taken, there is a risk of tension with some co-funders opting for the lower cost option with no consideration for the emissions.

Appendix 3: Summary of changes to MfE's emission factors since the 2024 edition.

The table below outlines the major changes in emission factor values since last year's edition of the Measuring Emissions Guide.			
Domain	Emission factor/s	Size of change	Explanation for change
Fuel	All factors	Minor	The methodology remains unchanged. Diesel emission factors have increased by 0.12%, while petrol emission factors have risen by 0.44%. This slight increase impacts associated diesel and electric transportation emissions factors.
Purchased Energy	Current / latest electricity factor	+38.7%	There is no change in methodology. The increase in the emissions factor can be attributed to shifting electricity generation dynamics. In 2022 and 2023, emissions from electricity generation were relatively low due to favourable weather conditions and strong hydro inflows. In contrast, 2024 saw an increase in the proportion of fossil-based generation. This rise impacts associated emissions factors, including Travel and Freight (for electric and PHEV vehicles), and working from home emissions factors. The 38.7% change is calculated as the difference between the 2023 emission factor, as published in the 2024 Measure Emissions Guide, and the 2024 emission factor in this edition.
Transmission & distribution losses	Electricity Transmission & distribution losses	+9.3%	Since the transmission and distribution (T&D) loss factors for 2024 were unavailable, a new methodology was adopted, using the average loss ratio of purchased energy over the 2011–2023 period. The Electricity Transmission & distribution losses factors are affected by the rise in Purchased Energy emissions factors.
	Natural Gas Transmission & distribution losses	-12.9%	Estimated fugitive emissions from both natural gas distribution and transmission networks decreased in 2023 relative to 2022.
Refrigerant & other gases	Propane (R-290)	-98%	Last year's edition of the Measure Emissions Guide used the AR4 value for this emissions factor. It has since been corrected to reflect the AR5 value.

	436A	-55%	This refrigerant blend contains R-290 and is affected by the correction to Propane (R-290). This gas has a low GWP at 1.35 kg CO2-e.
	436B	-51%	This refrigerant blend contains R-290 and is affected by the correction to Propane (R-290). This gas has a low GWP at 1.47 kg CO2-e.
Working from home	All factors	+39.1%	Change is driven by the increase in the latest annual electricity factor, which is used to derive these emissions factors.
Travel	All electric and PHEV passenger vehicles, electric motorcycles	+39.1%	The change in all-electric and PHEV passenger vehicles, as well as electric motorcycles, is driven by the increase in the latest annual electricity factor, which is used to derive these emissions factors.
	Business travel - Hotel Stays	-56.7% to +32.1%	The Cornell Hotel Sustainability Benchmarking Index has introduced a new hotel type classification, replacing the previous "All Hotels" group into separate "Resort" and "Non-Resort" categories, with the latter used to calculate the MEG 2025 emissions factors. This had a significant impact, with the factors decreasing for 40 out of the 48 countries provided. 26 of these countries decreased by over 20%.
	Domestic air travel	n/a	These factors have not been updated from the previous edition. The information required to update these factors was not available in time for this publication.
	International air travel	No change	The International air travel emission factors are sourced from the UK Greenhouse Gas Reporting: Conversion Factors 2022, published by the UK Department for Energy Security and Net Zero (DESNZ). These factors have remained unchanged in the 2023 and 2024 DESNZ editions, meaning they still reflect air travel data influenced by the COVID-19 pandemic. As a result, we continue to use the 2022 edition factors, which are based on pre-COVID air travel data which provides a more representative period for emissions reporting.
Freight	All electric, PHEV light commercial vehicles, Electric heavy goods vehicles	+39.1%	The change in all-electric, PHEV light commercial vehicles and Electric heavy goods vehicles, is driven by the increase in the latest annual electricity factor, which is used to derive these emissions factors.

	Air freight and International sea freight	Minor	The Air freight and International sea freight emission factors were updated using factors from DESNZ 2024.
Waste	Municipal solid waste	-12.3%	The change to municipal solid waste emission factors is due to a reduction in the assumed proportion of landfill gas composed of methane in the model used for calculating these emissions factors.
	Non-municipal solid waste	New emissions factors	The 2025 Greenhouse Gas Inventory introduced a new set of emissions factors to calculate non-municipal waste emissions, with the categories aligned to the Waste to Landfill emissions factors. The 2025 Measuring Emissions Guide has been updated to reflect these new categories.* These emissions factors were corrected on 11 June 2025.
Water supply & wastewater	Average for wastewater treatment plants	+8.2%	Change is driven by the increase in the latest annual electricity factor, which is used to derive this factor.
	Water supply	+39.1% (m3) +25.4 (per capita)	Change is driven by the increase in the latest annual electricity factor, which is used to derive this emissions factor.
Agriculture	Livestock factors	Between -10.5% to -36.2% for Deer and Swine and Non-dairy cattle +5.5% to +7%	The change is due to population, emissions calculation methodologies and how populations are accounted detailed in the New Zealand's latest Greenhouse Gas Inventory (1990–2023). In summary: - Population decrease for deer - Revisions in how different populations of poultry have been accounted for - New methodology to calculation emissions for deer and swine
Forestry	Land use growth and change	+40.6% removals +181.3% land-use change	Change is due to an update to the expected harvest age of hardwoods, based on new LUCAS research for the New Zealand's latest Greenhouse Gas Inventory (1990–2023). The expected harvest age has changed as follows: - Pinus radiata from 22 years to 23 years - Other Softwoods from 28 years to 29 years - All hardwoods from 13 years to 24 years
Sourced from the MfE EmissionFactors_Workbook_2025			

Appendix 4: Toitu Verification Statement





INDEPENDENT AUDIT OPINION

Toitū Verification

To the intended users

Organisation subject to audit: Southland Regional Council

ISO 14064-1:2018

Audit Criteria: ISO 14064-3:2019

Technical Requirements – Audit V3

Responsible Party: Southland Regional Council

Intended users: Council and staff

Registered address: 220 North Road, Waikiwi, Invercargill, 9810, New Zealand

Inventory period: 01/07/2024 - 30/06/2025

Inventory report: ES GHG Emissions FY2025 Report (v3).pdf

We have reviewed the greenhouse gas emissions inventory report ("the inventory report") for the above named Responsible Party for the stated inventory period.

Responsible Party's Responsibilities

The Management of the Responsible Party is responsible for the preparation of the GHG statement in accordance with ISO 14064-1:2018. This responsibility includes the design, implementation and maintenance of internal controls relevant to the preparation of a GHG statement that is free from material misstatement.

Responsibilities of verifiers

Our responsibility as verifiers is to express a verification opinion to the agreed level of assurance on the GHG statement, based on the evidence we have obtained and in accordance with the audit criteria. We conducted our verification engagement as agreed in the audit letter, which define the scope, objectives, criteria and level of assurance of the verification.

The International Standard ISO 14064-3:2019 requires that we comply with ethical requirements and plan and perform the verification to obtain the agreed level of assurance that the GHG emissions, removals and storage in the GHG statement are free from material misstatement.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit carried out in accordance with the ISO 14064-3:2019 Standards will always detect a material misstatement when it exists. The procedures performed on a limited level of assurance vary in nature and timing from, and are less in extent compared to reasonable assurance, which is a high level of assurance. The procedures performed on a limited level of assurance vary in nature and timing from, and are less in extent compared to reasonable assurance, which is a high level of assurance. Misstatements are differences or omissions of amounts or disclosures, and can arise from fraud or error. Misstatements are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of readers, taken on the basis of the information we audited.

GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

Basis of verification opinion

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Verification

We have undertaken a verification engagement relating to the Greenhouse Gas Emissions Inventory Report (the 'Inventory Report')/Emissions Inventory and Management Report of the organisation listed at the top of this statement and described in the emissions inventory report for the period stated above.

The Inventory Report provides information about the greenhouse gas emissions of the organisation for the defined measurement period and is based on historical information. This information is stated in accordance with the requirements of International Standard ISO 14064-1 Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals (ISO 14064-1:2018).

Verification strategy

Our verification strategy used a combined data and controls testing approach. Evidence-gathering procedures included but were not limited to:

- activities to inspect the completeness of the inventory;
- interviews of site personnel to confirm operational behaviour and standard operating procedures;
- reviewing emission factors for accuracy and appropriateness;
- reconciliation of transport of fuel records to confirm accuracy of source data into calculations;
- examination of opex transportation and related services;
- reconciliation and recalculation of business travel
- detailed retrace of employee commuting
- examination and sampling of Opex works and related services emissions
- examination of forestry removals emissions.

The data examined during the verification were historical in nature.

Basis for modified verification opinion

The following qualifications have been raised in relation to the verification opinion:

The opinion is unmodified.

Verification level of assurance

ISO CATEGORY	LOCATION BASED tCO ₂ e	LEVEL OF ASSURANCE
Direct Emissions:		
Category 1	248.29	Reasonable
Indirect emissions from imported energy:		
Category 2	46.20	Reasonable
Indirect emissions from transportation		
Category 3: <i>Freight, Taxi, Rental Car, Domestic Air Travel, NZ Accommodation</i>	84.70	Reasonable
Category 3: <i>Av Gas, Helicopters, Long-haul Truck Heavy, Private Car, Working from Home</i>	451.67	Limited
Indirect emissions from products used by organisation:		
Category 4: <i>Electricity T&D Losses, Disposal of Solid Waste</i>	8.94	Reasonable
Category 4: <i>Diesel, water Supply, Wastewater Treatment, Embodied Emissions Concrete, Embodied Emissions Steel</i>	609.66	Limited
TOTAL INVENTORY	1,449.46	
Total category 1 removals	-189.54	Limited
TOTAL NET EMISSIONS	1,259.92	

GHG PROTOCOL CATEGORIES

GHG SCOPE	tCO ₂ e
Scope 1	248.29
Scope 2	46.20
Scope 3	1,154.97
TOTAL INVENTORY	1,449.46

Responsible party's greenhouse gas assertion (claim)

Southland Regional Council trading as Environment Southland has measured its greenhouse gas emissions in accordance with ISO 14064-1:2018 in respect of the operational emissions of its organisation.

Verification conclusion

EMISSIONS - REASONABLE ASSURANCE

We have obtained all the information and explanations we have required. In our opinion, the emissions, removals and storage defined in the inventory report, in all material respects:

- comply with ISO 14064-1:2018 ; and
- provide a true and fair view of the emissions inventory of the Responsible Party for the stated inventory period.

EMISSIONS - LIMITED ASSURANCE

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the emissions, removals and storage defined in the inventory report:

- do not comply with ISO 14064-1:2018 ; and
- do not provide a true and fair view of the emissions inventory of the Responsible Party for the stated inventory period.

Other information

The responsible party is responsible for the provision of Other Information. The Other Information may include emissions management and reduction plan and purchase of carbon credits, but does not include the information we verified, and our auditor's opinion thereon.

Our opinion on the information we verified does not cover the Other Information and we do not express any form of audit opinion or assurance conclusion thereon. Our responsibility is to read and review the Other Information and consider it in terms of the inventory. In doing so, we consider whether the Other Information is materially inconsistent with the information we verified or our knowledge obtained during the verification.



	VERIFIED BY	AUTHORISED BY
Name:	Tom Worley	Ana Tatana
Position:	Verifier, Toitū Envirocare	Certifier, Toitū Envirocare
Signature:		

Date verification audit: 11 September 2025

Date opinion expressed: 23 September 2025 24 October 2025